Exhibit 2003, Part 2
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[0026] 상기 지지대(30)는 일단이 한 쌍의 다리부(10)에 형성된 가이드 공(11)에 안내가능하게 설치되고, 타단은 받침부(20)에 회동가능하게 설치되는 제1지지대(31)와, 상기 제1지지대(31)와 X자 형태로 구비되되, 일단이 한 쌍의 다리부(10) 타단부에 형성된 회동공(15)에 회동가능하게 설치되고, 타단은 받침부(20)에 형성된 가이드 공(21)에 안내가능하게 설치된 제2지지대(32)와, 상기 제1지지대(31)와 제2지지대(32) 중앙에 설치되어, X자 형태로 각각의 지지대(30) 단부 사이가 벌어지거나 좁히는 기능을 제공하기 위해 설치된 연결축(33)을 더 포함하고 있다.

[0027] 상기 로드부재(50)는 원형파이프 형태로, 받침부(20) 양측으로 설치된 지지부재(22)를 감싸 설치되어, 제2지지대(32)에 작용에 따라, 지지부재(22) 외주면을 타고, 수평좌우로 슬라이딩 이동하는 가능하게 설치된다.

[0028] 상기 고정부(50)는 로드부재(40) 일단에 일체형으로 연결형성되거나 분리 가능하게 형성되며, 일측면에는 지지부재(22)가 관통될 수 있게 관통공(51a)이 형성되고, 상면에는 공간부(51b)가 형성되며, 양측면 및 하부가 개방되는 형태를 갖는 스토퍼(51)와, 상기 스토퍼(51) 내측으로 마련되되, 지지부재(22)가 관통되거나 고정될 수 있게 관통공(52a)이 형성되고, 상부에는 스토퍼(51)의 공간부(51b) 내면에 밀착하여 지지부재(22)를 고정하기 위해 형성된 밀착부(52b)를 더 포함하는 한 쌍의 고정편(52)과, 상기 한 쌍의 고정편(52) 사이에 위치하여, 한 쌍의 고정편(52)의 상호 작용을 복원시키기 위해 마련된 탄성부재(53)를 더 포함하고 있다.

[0029] 한편, 고정편(52)이 설치되는데 있어서,

[0030] 상기 고정편(52)에 형성된 관통공(52a)은 지지부재(22)의 외경보다 크게 형성되며, 한 쌍의 고정편(52)이 상호 대칭하게 구비되되, 한 쌍의 고정편(52) 사이의 거리가 상부보다는 하부가 더 멀게, 즉, 상부에서 하부로 한 쌍의 고정편(52)이상호 점점 벌어지는 형태를 갖으며, 한 쌍의 고정편(52) 사이에 구비된 탄성부재(53)에 인장력에 의해, 한 쌍의 고정편(52)에 형성된 관통공(52a)의 상부 및 하부가 지지부재(22)의 외경에 밀착하여 고정되는 형태로 한 쌍의 고정편(52)이 설치된다.

[0031] 그럼, 상기와 같이 구성된 본 발명의 작동과정을 설명하면 다음과 같다.

[0032] 도 4 내지 도 5에서 도시한 바와 같이,

[0033] 먼저, 받침대(1)를 상향 이동시키는데 있어서,

[0034] 사용자가 한 쌍의 고정편(52)을 가압하여 탄성부재(53)를 수축시키는 작용과 함께, 상부에서 하부로 벌어진 한 쌍의 고정편(52)을 평행한 상태로 유지되며, 상기 작용과 동시에, 지지부재(22)의 외주면에 밀착고정됐던 각각 고정편(52)의 관통공(52a) 상부 및 하부가 해제된다.

[0035] 상기와 같은 상태에서, 사용자가 받침대(1)를 상부로 이동시키게 되면,

[0036] 지지부재(22)의 외주면을 따라 로드부재(40) 및 스토퍼(51)가 우측으로 수평이동하게 되는 동시에, 받침부(20)와 한 쌍의 다리부(10) 가이드 공(11)(21)에 설치된 제1지지대(31)와 제2지지대(32)의 일단부가 가이드 공(11)(21) 일단에서 타단으로 이동하는 작용, 즉, 연결축(33)을 중심으로 X자 형태로 설치된 각각의 지지대(30)가 상부 및 하부가 상호 좁아지는 동시에, 받침대(1)가 수직상향 이동하게 되며, 상기와 같은 작용으로 받침대(1)의 높이를 사용자의 신장에 알맞게 조절하게 된다.

[0037] 상기와 같은 상태에서,

[0038] 사용자가 가압하고 있던 한 쌍의 고정편(52)을 해제시키면,

[0039] 한 쌍의 고정편(52) 사이에 수축했던 탄성부재(53)가 복원되는 동시에,

[0040] 한 쌍의 고정편(52)에 형성된 관통공(52a) 상부 및 하부가 지지부재(22)에 밀착고정되어, 로드부재(40)에 연결된 스토퍼(51)를 정지시킴으로써, 상기 로드부재(40)에 연결된 제2지지대(32)가 고정됨으로, 받침부(20)를 고정한 상태로 유지할 수 있는 것이다.

[0041] 한편, 받침대(1)를 하향 이동시키는데 있어서,

[0042] 사용자가 한 쌍의 고정편(52)을 가압하여 탄성부재(53)를 수축시키는 작용과 함께, 상부에서 하부로 벌어진 한 쌍의 고정편(52)을 평행한 상태로 유지되며, 상기 작용과 동시에, 지지부재(22)의 외주면에 밀착고정됐던 각각 고정편(52)의 관통공(52a) 상부 및 하부가 해제된다.

[0043] 상기와 같은 상태에서, 사용자가 받침대(1)를 하부로 이동시키게 되면,

[0044] 지지부재(22)의 외주면을 따라 로드부재(40) 및 스토퍼(51)가 좌측으로 수평이동하게 되는 동시에, 받침부(20)와 한 쌍의 다리부(10) 가이드 공(11)(21)에 설치된 제1지지대(31)와 제2지지대(32)의 일단부가 가이드 공(11)(21) 일단에서 타단으로 이동하는 작용, 즉, 연결축(33)을 중심으로 X자 형태로 설치된 각각의 지지대(30)가 상부 및 하부가 상호 벌어지는 동시에, 받침대가 수직하향 이동하게 되며, 상기와 같은 작용으로 받침대의 높이를 사용자의 신장에 알맞게 조절하게 된다.

[0045] 상기와 같은 상태에서,

[0046] 사용자가 가압하고 있던 한 쌍의 고정편(52)을 해제시키면,

[0047] 한 쌍의 고정편(52) 사이에 수축했던 탄성부재(53)가 복원되는 동시에,

[0048] 한 쌍의 고정편(52)에 형성된 관통공(52a) 상부 및 하부가 지지부재(22)에 밀착고정되어, 로드부재(40)에 연결된 스토퍼(51)를 정지시킴으로써, 상기 로드부재(40)에 연결된 제2지지대(32)가 고정됨으로, 받침부(20)를 고정한 상태로 유지할 수 있는 것이다.

[0049] 한편, 도 6에서 도시한 바와 같이,

[0050] 상기 지지부재(22) 일단과, 제2지지대(32) 타단에 텐션부재(60)를 연결설치함으로써, 받침대(1) 상부로 놓인 다수개 물건의 하중에 의해 순간 받침부(20)가 하강하여, 각종 물건이 파괴되는 현상 및 물건이 떨어짐으로 발생하는 안전사고를 방지할 수 있는 이점을 제공할 수 있다.

[0051] 한편, 도 7에서 도시한 바와 같이,

[0052] 본 발명의 높이 조절이 가능한 받침대 사용은 국한되지 않고, 책상, 모니터 등, 각종 물건을 놓고 높이를 조절하여 사용할 수 있는 장점을 가진다.

[0053] 이상에서 설명한 것은 본 발명에 따른 하나의 실시 예 불과한 것으로서, 본 발명은 상기한 실시 예에 한정되지 않고, 이하의 청구 범위에서 청구하는 바와 같이 본 발명의 요지를 벗어남이 없이 당해 발명이 속하는 분야에서 통상의 지식을 가진 자라면 누구든지 다양한 변경 실시가 가능한 범위까지 본 발명의 기술적 정신이 있다고 할 것이다.

부호의 설명

[0054] 1: 받침대

10: 한 쌍의 다리부

11,21: 가이드 공

20: 받침부

22: 지지부재

30: 지지대

31: 제1지지대

32: 제2지지대

40: 로드부재

50: 고정부

51: 스토퍼

52: 한 쌍의 고정편

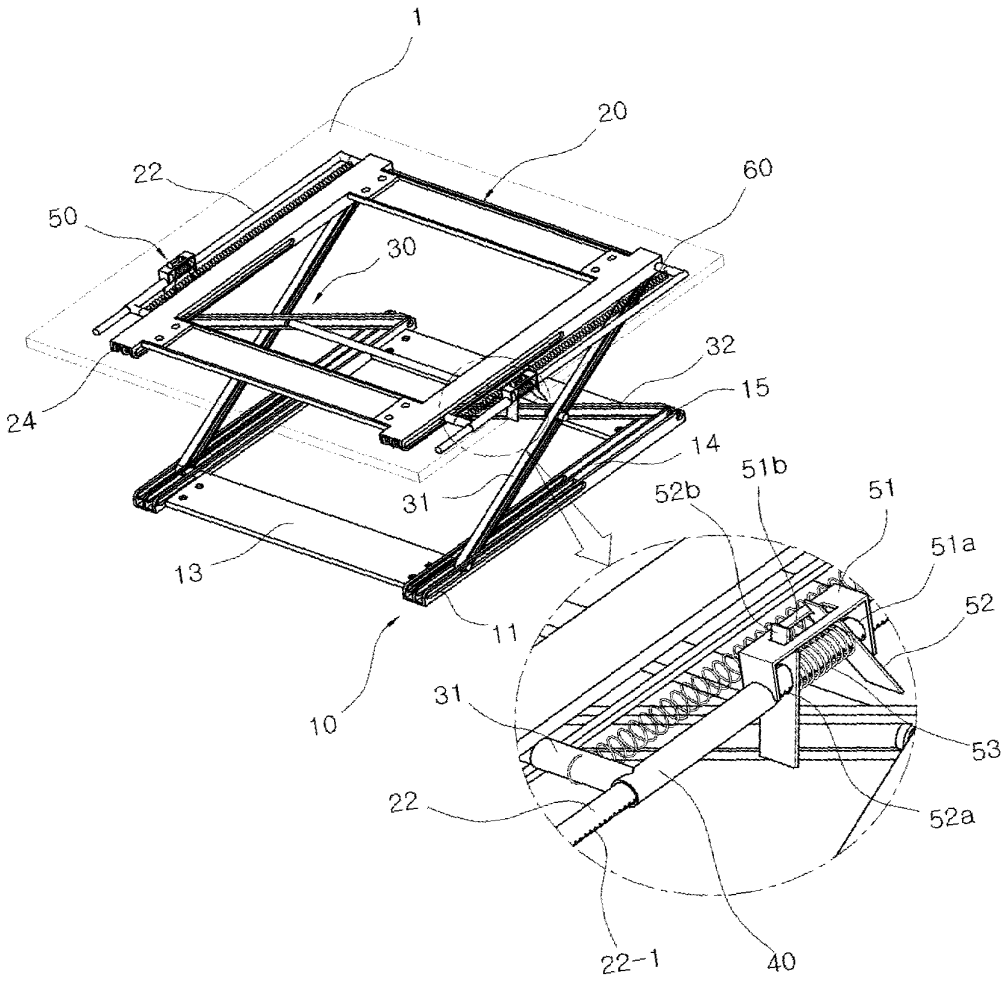
51a:52a: 관통공

53: 탄성부재

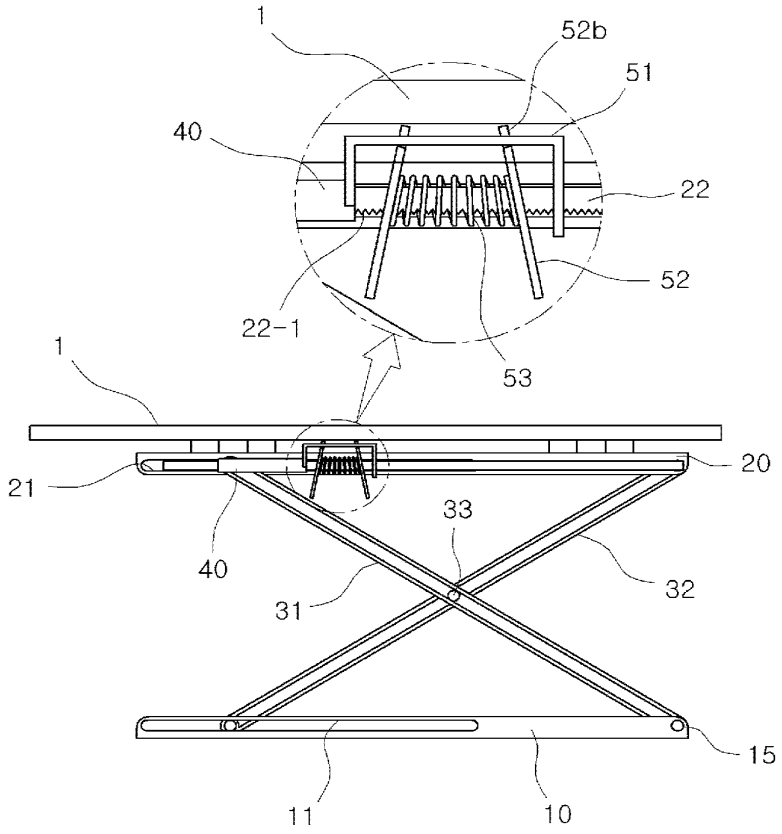
60: 텐션부재

도면

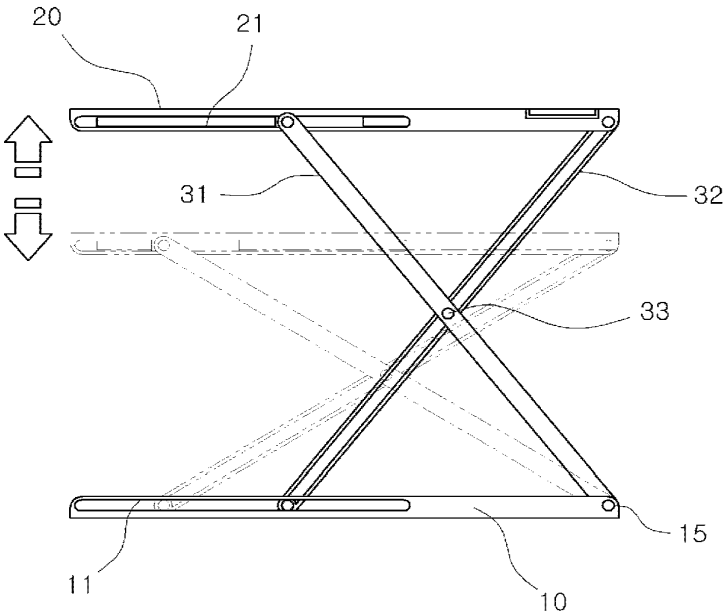
도면1


1
20
22
60
50
30
32
15
24
14
51b
52b
51
31
51a
13
52
11
31
53
10
52a
22
22-1
40

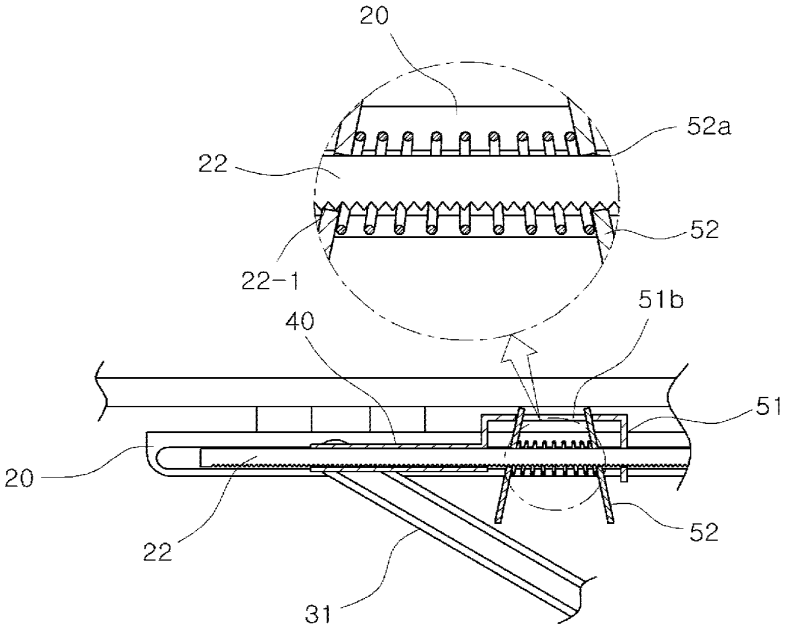
도면2


1
52b
51
40
22
52
22-1
53
1
20
21
33
40
32
31
15
11
10

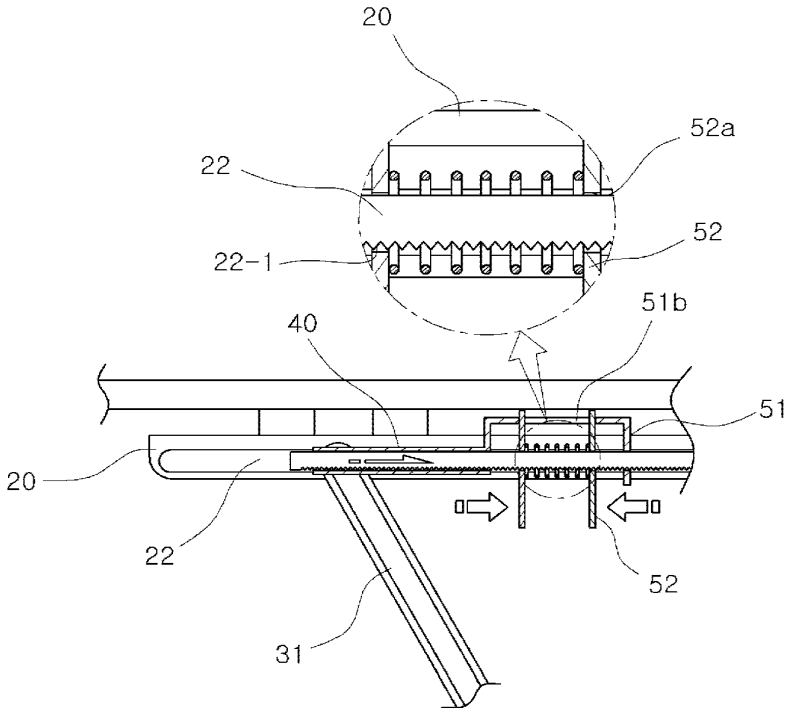
도면3


20
21
31
32
33
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11
10

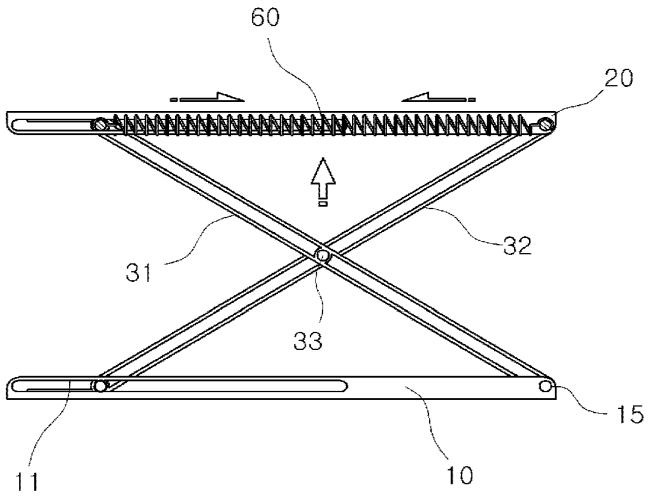
도면4


20
52a
22
52
22-1
51b
40
51
20
52
22
31

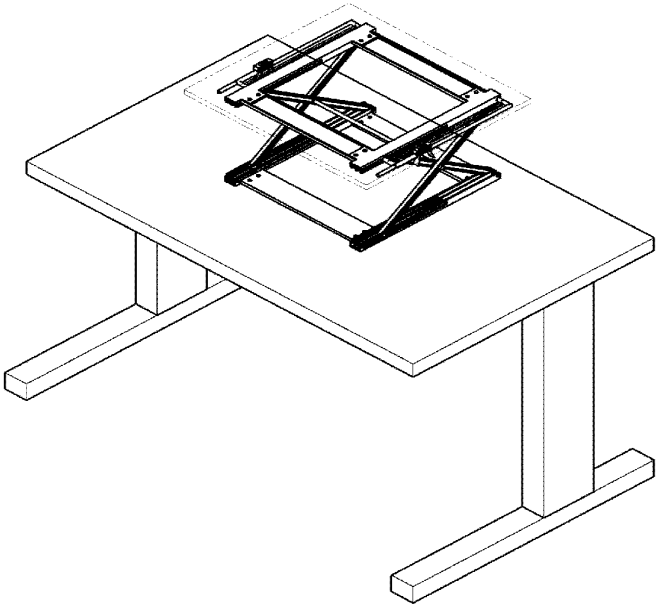
도면5


20
52a
22
52
22-1
51b
40
51
20
22
52
31

도6



도7



(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro

(43) Internationales Veröffentlichungsdatum
13. November 2014 (13.11.2014)

W I P O I P C T

(10) Internationale Veröffentlichungsnummer
WO 2014/180572 A1

(51) Internationale Patentklassifikation:
B66F 9/06 (2006.01) *B66F 9/12* (2006.01)
B66F 9/075 (2006.01)

(21) Internationales Aktenzeichen: PCT/EP20 14/00 1242

(22) Internationales Anmeldedatum:
8. Mai 2014 (08.05.2014)

(25) Einreichungssprache: Deutsch

(26) Veröffentlichungssprache: Deutsch

(30) Angaben zur Priorität:
10 2013 008 020.7 8. Mai 2013 (08.05.2013) DE

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Veröffentlicht:

— *mit internationalem Recherchenbericht (Artikel 21 Absatz V*

(54) **Title:** LOADING APPARATUS

(54) **Bezeichnung** : LADEVORRICHTUNG

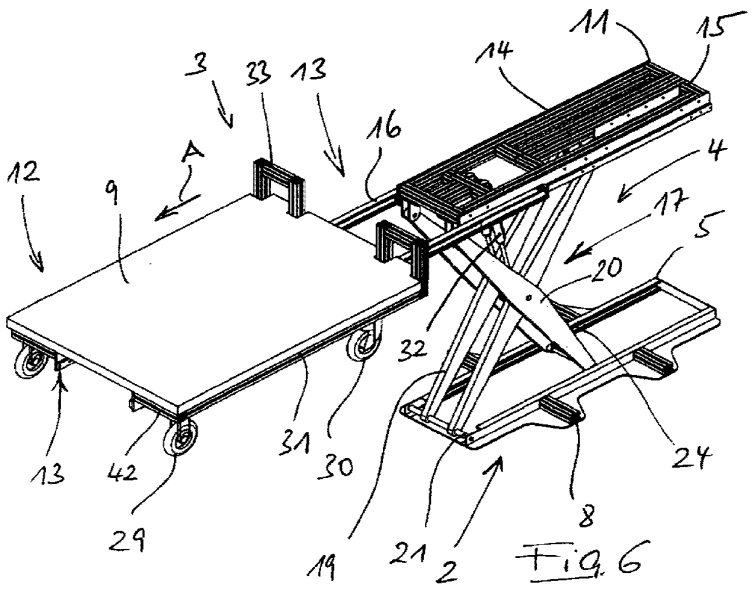


Fig. 6

(57) **Abstract:** A loading apparatus, in particular for conveying freight over a road surface and loading it into a transporting vehicle and unloading it therefrom, comprises a basic structure (2), a loading structure (3), with a freight holder, and a double-action lifting device (4) between the basic structure (2) and the loading structure (3). The loading structure (3) here comprises a lifting frame (11), on which the lifting device (4) acts, and a freight carrier (12), which is mounted on the lifting frame (11), via a pull-out guide (13) with a pull-out direction (A) oriented transversely to the lifting direction, and has the freight holder. An undercarriage serving for advancing the loading apparatus over the road surface is part of the freight carrier (12).

(57) **Zusammenfassung:** Eine Ladevorrichtung, insbesondere um Frachtgut auf einer Verkehrsfläche zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfasst eine Basisstruktur (2), eine Ladestruktur (3) mit einer Frachtgutaufiiahme und eine zwischen der Basisstruktur (2) und der Ladestruktur (3) doppelt wirkende Hubeinrichtung (4). Dabei umfasst die Ladestruktur (3) einen Hubrahmen (11), an welchem die Hubeinrichtung (4) angreift, und einen Frachtgutträger (12), der an dem Hubrahmen (11) über eine Ausziehführung (13) mit einer quer zur Hubrichtung orientierten Ausziehrichtung (A) gelagert ist und die Frachtgutaufiiahme aufweist. Ein der Fortbewegung der Ladevorrichtung auf der Verkehrsfläche dienendes Fahrwerk ist Teil des Frachtgutträgers (12).

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Ladevorrichtung

Die vorliegende Erfindung betrifft eine Ladevorrichtung, geeignet insbesondere um Frachtgut auf einer Verkehrsfläche zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfassend eine Basisstruktur, eine Ladestruktur mit einer Frachtgutaufnahme und eine zwischen der Basisstruktur und der Ladestruktur doppelt wirkende Hubeinrichtung.

Im Stand der Technik gibt es eine Reihe von Vorschlägen für Ladevorrichtungen der vorstehend angegebenen Art, welche übereinstimmend der Zielsetzung dienen, das Be- bzw. Entladen von Transport fahrzeugen mit Frachtgut zu erleichtern, damit dies - samt dem Befördern des Frachtguts auf einer Verkehrs fläche - möglichst durch eine einzige Person erledigt werden kann. Auf diese Weise soll beispielsweise der Personalaufwand beim Ausliefern von Frachtgut reduziert werden, indem ein Beifahrer, der ausschließlich kurzfristig beim Ladevorgang tätig wird, überflüssig wird. Indem die Hubeinrichtung doppelt -wirkend ausgeführt ist, kann sie nicht nur zum Anheben bzw. Absenken der Ladestruktur (samt dem geladenen Frachtgut) verwendet werden, sondern in gleicher Weise - bei auf die Ladefläche des Transportfahrzeugs aufgesetzter Ladestruktur - zum Anheben der Basisstruktur, um die Lade**Vorrichtung** auf der Ladefläche des Transportfahrzeugs verstauen zu können.

BESTÄTIGUNGSKOPIE

Repräsentiert wird der einschlägige Stand der Technik insbesondere durch Veröffentlichungen wie die FR 1506606, DE 2530634, US 4061237, WO 83/04226, US 4613272, WO 92/07746, EP 889000, US 2005/0042068 und CN 201896055 U.

Obwohl ersichtlich ein (zunehmender) Bedarf für Ladevorrichtungen der eingangs angegebenen Art besteht, konnten sich - mit einer Ausnahme - die diversen Vorschläge nicht in der Praxis etablieren. Und auch die - unter dem Handelsnamen "Innolift" - vertriebene Ladevorrichtung gemäß der WO 92/07746 bzw. der CN 201896055 U erfüllt die in sie gesetzten Erwartungen nicht.

Der vorliegenden Erfindung liegt die Aufgabe zugrunde, eine Ladevorrichtung der eingangs angegebenen Art bereitzustellen, die sich durch eine verbesserte Praxistauglichkeit auszeichnet.

Gelöst wird diese Aufgabenstellung gemäß der vorliegenden Erfindung, indem bei einer Ladevorrichtung der eingangs angegebenen Art die Ladestruktur einen Hubrahmen, an welchem die Hubeinrichtung angreift, und einen Frachtgutträger, der an dem Hubrahmen über eine Ausziehführung mit einer quer zur Hubrichtung orientierten Ausziehrichtung gelagert ist und die Frachtgutaufnähme aufweist, umfasst, wobei ein der Fortbewegung der Ladevorrichtung auf der Verkehrsfläche dienendes Fahrwerk Teil des Frachtgutträgers ist. In einer synergetischen funktionalen Wechselwirkung miteinander resultieren die

in Kombination miteinander für die erfindungsgemäße LadeVorrichtung bestimmenden Merkmale in einer Reihe gravierender praxisrelevanter Vorzüge, welche insbesondere die Einsatzmöglichkeiten der Ladevorrichtung substantiell erweitern, deren Handhabung erleichtern und die Sicherheit um ein entscheidendes Maß erhöhen, wobei zugleich eine all diese Vorzüge aufweisende Ladevorrichtung konstruktiv vergleichsweise einfach - und somit zuverlässig - sowie leicht und kompakt ausgeführt sein kann. Gerade im Hinblick auf die Sicherheit ist - im Zusammenwirken mit den übrigen für die erfindungsgemäße Ladevorrichtung charakteristischen Merkmalen - verantwortlich, dass die Ladestruktur in dem Sinne mehrteilig aufgebaut ist, dass die Frachtgutaufnahme an einem Frachtgutträger angeordnet ist, welcher über eine Ausziehführung an einem Hubrahmen gelagert ist, an welchem wiederum die - das Heben und Senken der Ladestruktur bei auf der Verkehrsfläche aufstehender Basiseinheit bewirkende - Hubeinrichtung angreift. Denn auf diese Weise kann das Frachtgut ohne gleichzeitige Bewegung der Basisstruktur relativ zu der Verkehrsfläche (Ausgangsfläche) in den Laderaum bzw. auf die Ladefläche (Zielfläche) des Transportfahrzeugs verschoben werden. Weder beim Beladen des Transportfahrzeugs mit dem Frachtgut, noch beim Entladen des Frachtguts aus dem Transportfahrzeug muss bei angehobener Last bzw. angehobenem Frachtgut die LadeVorrichtung, d.h. deren Basisstruktur auf der Verkehrsfläche verfahren werden. Dies ist gerade im Hinblick auf Anwendungen, bei denen eine vergleichsweise unebene Verkehrsfläche bzw. ein

vergleichsweise unebener sonstiger Untergrund existiert (beispielsweise beim Baustellenbetrieb) ein unschätzbarer Vorteil, weil ein solcher unebener Untergrund bei Verwendung von bekannten (insbesondere mit schwerer Fracht beladenen) LadeVorrichtungen deren Verfahren erheblich erschwert und darüber hinaus insbesondere bei einem Verfahren der Ladevorrichtung mit angehobener Last wegen einer Kippgefahr ein erhebliches Sicherheitsrisiko darstellt. Anders, als dies für jenen Stand der Technik (US 4613272, WO 92/07746 und CN 201896055 U) gilt, bei welchem die Basisstruktur ein Stück weit unter das Transportfahrzeug geschoben wird, lässt sich die erfindungsgemäße Ladevorrichtung auch in der (oft tatsächlich vorliegenden) Situation einsetzen, dass das Transportfahrzeug an eine Bordsteinkante herangefahren wird, und zwar typischerweise so weit, dass sich diese etwa unter der Ladekante befindet. Auch ist der Arbeitsablauf, wie er in Anwendung der Erfindung möglich ist, homogener und durch weniger Unterbrechungen geprägt, als dies für den Stand der Technik (insbesondere unter Verwendung von Ladevorrichtungen nach der WO 92/07746 und der CN 201896055 U) gilt, nämlich insbesondere in Anbetracht dessen, dass die Ladevorrichtung nach dem Aufladen typischerweise noch auf der Ladefläche des Transport fahrzeugs rangiert wird. Hierfür ist nach dem Stand der Technik erforderlich, die Last – durch teilweises Anheben der Ladestruktur – erneut auf die das Fahrwerk aufweisende Basisstruktur zu übergeben, wohingegen bei erfindungsgemäßen Ladevorrichtungen die Last sogleich auf das an dem Frachtgutträger ange-

ordnete Fahrwerk abgesetzt wird (insbesondere auf Räder, die zusammen mit den lasttragenden strukturellen Bereichen des Frachtgut trägers Teil des der Fortbewegung der Ladevorrichtung dienenden Fahrwerks sind) . Eine Reihe weiterer Vorteile werden aus der nachfolgenden detaillierten Erläuterung der vorliegenden Erfindung und spezifischer bevorzugter Weiterbindungen ersichtlich.

Die vorstehenden – wie auch die noch folgenden – Erläuterungen der vorliegenden Erfindung zeigen, dass die die erfindungsgemäße Ladevorrichtung definierenden Merkmale, soweit nichts anderes angegeben ist, breit zu verstehen sind. So kann die Basisstruktur jede beliebige konstruktive und statische Gestalt aufweisen, mittels derer sich die maßgebliche Funktion, die Hubstruktur auf der Verkehrs fläche abzustützen, erfüllen lässt. Als Hubeinrichtung ist wiederum jede Einrichtung geeignet, mittels derer sich, bei auf der Verkehrsfläche abgestützter Basisstruktur die Ladestruktur anheben (und absenken) und bei fixierter, d.h. beispielsweise auf der Ladefläche eines Transport fahr – zeugs abgestützter Ladestruktur die Basisstruktur anheben (und absenken) lässt. Ebenfalls ist der Begriff der "Verkehrsf läche" weit auszulegen und beinhaltet jeden tragfähigen, d.h. begehbaren bzw. befahrbaren Untergrund. Weiterhin ist unter "Hubrahmen" jede Struktur zu verstehen, die geeignet ist, mit der Hubeinrichtung verbunden zu werden und die von dem Frachtgut träger (samt aufgenommenem Frachtgut) über die Ausziehf ührung

auf den Hubrahmen übertragenen Kräfte in die Hubeinrichtung einzuleiten. Auch hinsichtlich der "Ausziehführung" existieren keine konstruktiven Beschränkungen; vielmehr kann eine solche "Ausziehführung" durch jede im Wesentlichen linear längenveränderbare Struktur realisiert werden, die imstande ist, quer zur Ausziehrichtung Kräfte zu übertragen. Auch die Angabe, wonach die Ausziehrichtung "quer" zur Hubrichtung orientiert wird, besagt im weitesten Sinne nicht mehr, als dass die Ausziehrichtung mehr oder weniger rechtwinklig zur Hubrichtung orientiert ist, also insbesondere bei einer mehr oder weniger vertikalen Hubrichtung mehr oder weniger horizontal.

Auch und gerade hinsichtlich des "Fahrwerks" gibt es kaum konstruktive Einschränkungen. Während sich die vorliegende Erfindung für die meisten Anwendungen mit Vorteil mit Räderfahrwerken realisieren lässt, welche bevorzugt vier Räder aufweisen, so ist dies keinesfalls zwingend. Andere geeignete Fahrwerke, die für bestimmte Anwendungen mit Vorteil einsetzbar sind, sind beispielsweise Raupenfahrwerke, Kufenfahrwerke, Luftkissenfahrwerke, Magnet schwebef ahrwerke und dergleichen. Entscheidend ist allein, dass eine Fortbewegung auf festen Untergrund wie der Verkehrs fläche und/oder der Ladefläche eines Transportfahrzeugs möglich ist. Wenn im Folgenden die vorliegende Erfindung anhand einer Ausführungsvariante erläutert wird, bei der das Fahrwerk als Räderfahrwerk ausgebildet ist, so dient dies allein der Erleichterung des Verständnisses, ohne dass

hiermit eine Beschränkung auf Räderfahrwerke verbunden wäre. Die aufgezeigten Gesichtspunkte gelten, sofern sich nichts anderes ergibt, in gleicher Weise für andere Fahrwerkstypen.

Gemäß einer ersten bevorzugten Weiterbildung der Erfindung umfasst das – einen Teil der Frachtgutaufnahme bildende – Fahrwerk (vorzugsweise vier) Räder, welche besonders bevorzugt randseitig an dem Frachtgutträger angeordnet sind, und zwar idealerweise direkt unter den seitlichen Begrenzungen des Frachtgutträgers bzw. unmittelbar außerhalb neben diesen. So ergibt sich eine große Spurweite des Fahrwerks, was einen bedeutenden sicherheitsrelevanten Aspekt darstellt. Zudem lassen sich insbesondere in diesem Falle Räder mit einem vergleichsweise großem Durchmesser einsetzen, was die Handhabung erleichtert und – wiederum im Hinblick auf die Verwendung der Ladevorrichtung auf einem unebenen Untergrund – ebenfalls ein sicherheitsrelevanter Aspekt ist. Im Interesse einer guten Handhabbarkeit ist bevorzugt mindestens ein Teil der Räder lenkbar, d.h. die betreffenden Räder sind z.B. als Lenkrollen (ggf. feststellbar für Geradeausfahrt) ausgeführt; dies erleichtert das Manövrieren der Ladevorrichtung auf der Verkehrsfläche und/oder der Ladefläche des Transport – fahrzeugs. Zudem ist bevorzugt zumindest ein Teil der Räder mit Bremsen ausgestattet, die beispielsweise beim Ladevorgang dann angezogen werden, wenn der Frachtgutträger auf der Ladefläche des Transportfahrzeugs abgesetzt wurde und – unter Verwendung der Hubeinrichtung –

die Basisstruktur anzuheben ist, um anschließend wieder unter die Ladestruktur geschoben zu werden. (Im Hinblick auf die Möglichkeit, die Hubeinrichtung raumsparend möglichst flach unter der Ladestruktur unterzubringen, ist die weiter unten eingehend erläuterte Verwendung eines Scherenhebers besonders zu bevorzugen.) Für die Handhabung der Ladevorrichtung ist dabei günstig, wenn die Bremsen fernbetätigbar sind, beispielsweise von einer am rückwärtigen Ende der Ladevorrichtung angeordneten, mit entsprechenden Bedienelementen ausgestatteten Handhabe aus .

Nachdem die Basisstruktur bei angehobener Last nicht auf dem Untergrund bewegt zu werden braucht, wird sich typischerweise eine hinreichende Kippsicherheit mit einer Basisstruktur erzielen lassen, die sich seitwärts nicht über die Spurbreite der Räder hinaus erstreckt . Dies ermöglicht einen kompakten Aufbau der Ladevorrichtung, wobei im Allgemeinen die Basisstruktur sogar vollständig in dem Zwischenraum zwischen den Rädern Platz findet. Sie kann allerdings auch auf der der Ausziehrichtung entgegen gesetzten Seite Stützfüße aufweisen, deren Ausladung im Wesentlichen der Spur der Räder entspricht. Für extreme Einsätze kommt, gemäß einer abermals anderen Weiterbildung der Erfindung, auch in Betracht, die Basisstruktur mit ausfahrbaren, ausziehbaren und ausklappbaren Stützfüßen auszustatten, um die Standsicherheit nochmals zu steigern.

Nachdem das zum Befördern der Ladevorrichtung (ggfs. samt aufgenommenem Frachtgut) auf der Verkehrs fläche geeignete Fahrwerk Teil des Frachtgutträgers ist, brauchen an der Basisstruktur keine Räder angeordnet zu sein. Dies spart Gewicht und ist unter statischen Gesichtspunkten von großem Vorteil. Absolut zwingend ist die Abwesenheit von Rädern bzw. Rollen an der Basis - struktur indessen nicht. So können beispielsweise (kleine) Rollen vorgesehen sein, welche allein dazu dienen, beim Verfahren der Ladevorrichtung auf der Verkehrsfläche das Gewicht der Basisstruktur zu stützen, so dass diese nicht von der Hubeinrichtung angehoben zu werden braucht .

Gemäß einer abermals anderen bevorzugten Weiterbildung der vorliegenden Erfindung umfasst die Hubeinrichtung einen Scherenheber. Dies ist günstig im Hinblick auf die Kinematik als auch im Hinblick auf die Statik sowie die Möglichkeit, die erfindungsgemäße Ladevorrichtung äußerst kompakt und leicht auszuführen. Namentlich lässt sich im Falle der Verwendung eines Scherenhebers als Teil der Hubeinrichtung letztere besonders flach und raumsparend zusammenlegen, so dass sie in dieser Konfiguration unter der Ladestruktur untergebracht werden kann. Mit insoweit besonderem Vorteil ist dabei mindestens einer der Lenker des Scherenhebers gekröpft ausgeführt und/oder greift ein Antriebselement versetzt zum Gelenkpunkt des Scherenhebers an einem der Lenker an, was die Bereitstellung ausreichend hoher Hubkräfte bei - bei abgesenkter Ladestruktur - besonders flachen

Scherenhebern ermöglicht. Im Sinne günstiger kinematischer Verhältnisse ist die in Ausziehrichtung (der Frachtgutaufnähme) gelegene Lagerung des Scherenhebers an der Basisstruktur besonders bevorzugt als Festlager ausgeführt; d.h. die der Ausziehrichtung entgegengesetzt gelegene Lagerung des Scherenhebers an der Basisstruktur ist als Loslager (mit in mindestens einer Linearführung geführtem Stützelement) ausgeführt.

Eine andere bevorzugte Weiterbildung der vorliegenden Erfindung zeichnet sich dadurch aus, dass die Hubeinrichtung eine elektrische oder eine elektro-hydraulische Antriebseinheit umfasst. Dies ermöglicht kompakte und gleichwohl sehr leistungsfähige Ladevorrichtungen, wobei namentlich bei größeren, zum Heben besonders schwerer Frachtgüter bestimmten Ladevorrichtungen der Einsatz elektro-hydraulischer Antriebseinheiten für die Hubeinrichtungen besonders vorteilhaft ist. Eine insoweit vorgesehene elektrische Speichereinheit der Antriebseinheit ist besonders bevorzugt an der Ladestruktur angeordnet, und zwar besonders bevorzugt am Hubrahmen an dessen in Ausziehrichtung vorne liegender Frontseite. Dies trägt, ohne dass eine (bei Anordnung der Speichereinheit an dem Frachtgutträger erforderliche) aufwändige Verlegung von elektrischen Leitungen notwendig ist, zu einer vergleichsweise günstigen Gewichtsverteilung bei, insbesondere im Hinblick auf die Phase des Anhebens bzw. Absenkens der Basisstruktur bei auf die Ladefläche des Transportfahrzeugs aufgesetztem Frachtgutträger. Wenn dabei die elektri-

sehe Speichereinheit einen Ladeanschluss aufweist, welcher an die elektrische Anlage eines (als Kraftfahrzeugs ausgeführten) Transport fahrzeugs anschließbar ist, so genügt für typische Anwendungen eine vergleichsweise kleine elektrische Speichereinheit. Dies ist vorteilhaft im Hinblick auf Kosten, Gewicht und Baugröße der Ladevorrichtung. Günstig ist auch, die elektrische Speichereinheit der Antriebseinheit als Wechselakku auszuführen. Dies gestattet die sehr kleinformatige Ausführung der Speichereinheit, damit diese in eine vergleichsweise kompakte Ladevorrichtung passt, ohne dass die Nutzungsmöglichkeiten der Ladevorrichtung hierdurch beschränkt würden. Ein der Ladevorrichtung entnommener Wechselakku kann an der elektrischen Anlage eines Transport fahrzeuges aufgeladen werden.

Eine weitere Antriebseinheit bewirkt in einer abermals anderen bevorzugten Weiterbildung der vorliegenden Erfindung das Ausfahren und Einfahren des Frachtgutträgers relativ zum Hubrahmen. Ein solcher Ausfahrantrieb kann beispielsweise elektrisch ausgeführt sein. Ebenfalls könnte ein solcher Ausfahrantrieb beispielsweise einen Hydraulikzylinder umfassen, der von dem Hydraulikaggregat der elektro-hydraulischen Antriebseinheit der Hubeinrichtung versorgt wird. Unter Aspekten der Betriebssicherheit ist vorteilhaft, wenn auf den Ausfahrantrieb eine Steuerung einwirkt, welche die Ausfahrbewegung unter Berücksichtigung von sicherheitsrelevanten Kenngrößen steuert . So kann in der Steuerung beispielsweise das Signal mindestens eines an dem

Frachtgutträger, bevorzugt im Bereich frontseitiger Räder, angeordneten, der Erfassung der Position des Frachtgutträgers relativ zu einer Ladefläche dienenden Sensors dergestalt verarbeitet werden, dass das (über einen festgesetzten Ausfahrweg von beispielsweise 400mm fortgesetzte) Ausfahren des Frachtgutträgers unterbunden wird, wenn sich das Fahrwerk nicht zumindest teilweise über einer Ladefläche befindet. Auch die Höhe des Fahrwerks des Frachtgut trägers oberhalb der Ladefläche kann in der Steuerung dergestalt berücksichtigt werden, dass ein (weiteres) Ausfahren des Frachtgutträgers unterbunden wird, wenn sich das Fahrwerk in einer oberhalb eines zulässigen Werts liegenden Höhe über einer Ladefläche befindet. Weiterhin können in der Steuerung des Ausfahrantriebs Signale von Lastsensoren, welche Stützfüßen der Basisstruktur und/oder Rädern des Fahrwerks zugeordnet sind, in dem Sinne ausgewertet werden, dass ein (weiteres) Ausfahren des Frachtgutträgers unterbleibt, wenn eine auf eine zunehmende Kippgefahr hindeutende Belastungssituation ermittelt wird. Die besagten sicherheitsrelevanten Kenngrößen können zusätzlich (oder alternativ) auch für die Erzeugung einer Benachrichtigung bzw. Warnung verwendet werden.

Unter statischen Gesichtspunkten kann es günstig sein, wenn die Basisstruktur zu ihrer Abstützung auf der Verkehrsfläche eine vergleichsweise große, durchgehende Auflagefläche aufweist. Umgekehrt kann es indessen für bestimmte Anwendungen auch vorteilhaft sein, an der Basisstruktur ausgeprägte Stützfüße anzuordnen. Dies

gilt namentlich dann, wenn zumindest einem Stützfuß ein Lastsensor (s.o.) zugeordnet wird, der die Last Situation überwacht und beispielsweise ein Signal auslöst, wenn sich die Lastverteilung einem im Hinblick auf die Standsicherheit kritischen Punkt annähert. Derartige Lastsensoren können mit dem gleichen Vorteil auch mindestens einem der an dem Frachtgutträger angeordneten Räder zugeordnet sein.

Der Frachtgutträger und der Hubrahmen sind besonders bevorzugt relativ zueinander verriegelbar. Und die Hubeinrichtung ist bevorzugt in einer teilweise angehobenen Stellung der Ladestruktur sperrbar. Dies ermöglicht es, für die Fahrt des Transportfahrzeuges die Ladevorrichtung auf der Ladefläche dadurch zu sichern, dass die Ladestruktur mittels der Hubeinrichtung so weit angehoben wird, dass die an dem Frachtgutträger angeordneten Räder von der Ladefläche abgehoben werden, wobei zudem über die Verriegelung des Frachtgutträgers relativ zum Hubrahmen die Lage des Frachtgutträgers und somit des Frachtguts relativ zur Basisstruktur gesichert wird. Vorteilhafterweise ist dabei, beispielsweise über einen entsprechende Einstellung in einer Steuerung der Ladevorrichtung, eine solche (teilweise angehobene) Stellung der Hubeinrichtung fest vorgegebenen, in der das Fahrwerk des Frachtgut trägers gerade außer Kontakt mit dem Untergrund gebracht wird, so dass sich das gesamte Gewicht von Ladevorrichtung und Last - bei möglichst niedrigem Schwerpunkt - ausschließlich über die Basisstruktur auf dem Untergrund abstützt. Zur

Sicherung des Frachtguts an bzw. auf dem Frachtgut träger weist Letzterer bevorzugt zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut geeignete Halterungen auf, beispielsweise Ösen, Bohrungen, Durchbrüche oder Haken.

Für die Bedienung der Ladevorrichtung samt deren Rangieren bzw. Manövrieren sowie die Betätigung vorgesehener Antriebe weist die Ladevorrichtung bevorzugt an ihrem rückwärtigen, der Ausziehrichtung entgegengesetzten Ende eine Handhabe auf, die mit entsprechenden, der Betätigung der Antriebe dienenden Bedienelementen ausgestattet ist. Bevorzugt ist eine solche Handhabe an der Basisstruktur oder dem Hubrahmen angeordnet . Die Anordnung und Ausgestaltung der Handhabe erfolgt dabei bevorzugt dergestalt, dass sie weder ein (vorzugsweise vollständiges) Unterschieben der Basisstruktur unter die Ladestruktur behindert, noch ständig nennenswert über die Minimalkontur der Hauptkomponenten des Ladegeräts (bei abgesenkter Ladestruktur und eingefahrenem Frachtgutträger) übersteht. In diesem Sinne kann die Handhabe beispielsweise gelenkig schwenk- bzw. klappbar und/oder einschiebbar an der Basisstruktur oder am Hubrahmen angebracht sein. Die Handhabe und/oder ihre Anbringung an der Basisstruktur bzw. dem Hubrahmen ist dabei vorzugsweise so ausgeführt, dass an ihr angeordnete Griffe auch bei einer bestimmungsgemäß beim Betrieb des Ladevorrichtung erfolgenden Veränderung der Höhe von Basisstruktur bzw. Hubrahmen über dem Untergrund ihre eigene Höhe nicht oder nur geringfügig ver-

ändern. Vor dem gleichen Hintergrund ist, gemäß einer anderen bevorzugten Weiterbildung, besonders vorteilhaft, wenn die Handhabe eine ausfahrbare, z.B. teleskopische verlänger- bzw. verkürzbare Deichsel aufweist; denn dies erleichtert die Bedienung der LadeVorrichtung bei ihrer bestimmungsgemäßen Verwendung, während derer sich die Höhe des Hubrahmens und der Basisstruktur über der Verkehrs fläche ändert. Besonders komfortabel ist es, wenn die Länge der Deichsel mittels eines Längenverstellantriebs veränderbar ist. Dieser kann, im Interesse einer weiter gesteigerten Bedienfreundlichkeit, mit dem Hubantrieb phasenweise in dem Sinne koppelbar sein, dass sich die Länge der Deichsel automatisch verkürzt, wenn die Komponente (Basisstruktur oder Hubrahmen) , an der sie angebracht ist, mittels der Hubeinrichtung angehoben wird. Im Falle der Anbringung der Deichsel an dem Hubrahmen ist hierfür eine (phasenweise) inverse Koppelung des Längenvers tellantriebs der Deichsel mit dem Antrieb der Hubeinrichtung vorzusehen. Unter ergonomischen Gesichtspunkten ist im Übrigen vorteilhaft, wenn die Ausfahrrichtung der Deichsel schräg zur Hubrichtung orientiert, d.h. insbesondere leicht nach hinten geneigt ist.

Für eine möglichst vielfältige Nutzbarkeit der erfindungsgemäßen Ladevorrichtung weist bei dieser, gemäß einer abermals anderen bevorzugten Weiterbildung, der Frachtgutträger einen austauschbaren, funktions- bzw. anwendungsspezifischen Aufsatz auf. Ein solcher Aufsatz kann beispielsweise eine (ebene) Ladeplattform, eine

Schüttgutaufnahme oder eine Spezialhalterung (z.B. für eine Kabeltrommel) umfassen.

Namentlich besonders große Ladevorrichtungen können mit einem zusätzlichen, auf mindestens eines der Räder wirkenden Fahrantrieb ausgestattet sein, der zur Unterstützung der Bedienperson beim Bewegen der Ladevorrichtungen auf der (ggf. unebenen) Verkehrsfläche bzw. der Ladefläche des Transport fahrzeugs (einschließlich des Rangierens) einsetzbar ist.

Im Sinne der vorstehenden Erläuterungen der Erfindung stellt sich der bei deren Nutzung vollziehender Ablauf wie folgt dar: Frachtgut bzw. Last wird auf einem Frachtgut träger, der Teil einer anhebbaren Ladestruktur ist und über ein der Fortbewegung dienendes Fahrwerk verfügt, aufgenommen auf einer Ausgangs fläche befördert. Eine Basisstruktur wird auf der Ausgangs fläche abgesetzt, und die Ladestruktur wird - auf der Basis - struktur abgestützt - so weit angehoben, dass das Fahrwerk des Frachtgutträgers sich oberhalb des Niveaus einer gegenüber der Ausgangs fläche erhöhten Zielfläche befindet. Der Frachtgutträger wird quer zur Hubrichtung ausgefahren und dabei über die Zielfläche verfahren, und zwar ohne dass gleichzeitig die Basisstruktur bewegt wird, wobei sich der Frachtgutträger bei jenem Verfahren (ggf. nach einem Absenken) mit seinem Fahrwerk auf der Zielfläche abstützt. Die Basisstruktur wird, wenn der Frachtgutträger vollständig auf der Zielfläche aufsteht, vollständig angehoben und in Rieh-

tung auf die Frachtgutaufnahme eingefahren und über die Zielfläche verfahren. Eine Fortbewegung der Fracht bzw. Last auf der Zielfläche mittels des Fahrwerks des Frachtgutträgers kann sich anschließen, ebenso ein Lagesichern durch Abheben des Frachtgutträger- Fahrwerks von der Zielfläche unter Aufsetzen der Basisstruktur auf der Zielfläche.

Die erfindungsgemäße Ladevorrichtung kann, was allerdings für typische Anwendungen nicht erforderlich ist, mindestens eine frontseitig an dem Frachtgutträger angeordnete veränderlich positionierbare Behelfsrolle aufweisen. Diese kann notfalls im Rahmen des Übersetzens des Frachtgut trägers auf die Ladefläche des Transportfahrzeugs eingesetzt werden, beispielsweise bei instabilen Stand der Basisstruktur aufgrund eines nicht tragfähigen Untergrunds oder aber wenn die Ladevorrichtung aus irgend welchen Gründen nicht unmittelbar an das Transport fahrzeug heran gefahren werden konnte.

Aus den vorstehenden Erläuterungen ist ersichtlich, dass die Be- bzw. Entladung von Transportfahrzeugen mittels der erfindungsgemäßen Ladevorrichtung nur eine beispielhafte von vielen denkbaren Anwendungen darstellt. Einsetzbar ist die erfindungsgemäße Ladevorrichtung, die insoweit auch als kombinierte Beförder- und Hubvorrichtung bezeichnet werden könnte, auch in diversen anderen Anwendungsumgebungen, beispielsweise in der Kommissionier- und Lagertechnik.

Im Folgenden wird die vorliegende Erfindung anhand zweier in der Zeichnung veranschaulichter Ausfuhrungs - beispiele näher erläutert. Dabei zeigt

Fig. 1 in Seitenansicht eine erste Ausfuhrungs form einer erfindungsgemäßen Ladevorrichtung in einer ersten Konfiguration,

Fig. 2 in perspektivischer Ansicht die Ausführungsform nach Fig. 1 in ihrer ersten Konfiguration,

Fig. 3 in Seitenansicht die Aus führungs form nach den Fig. 1 und 2 in einer zweiten Konfiguration,

Fig. 4 in perspektivischer Ansicht die Aus führungs - form nach den Fig. 1 bis 3 in ihrer zweiten Konfiguration,

Fig. 5 in Seitenansicht die Aus führungs form nach den Fig. 1 bis 4 in einer dritten Konfiguration,

Fig. 6 in perspektivischer Ansicht die Ausführungsform nach den Fig. 1 bis 5 in ihrer dritten Konfiguration,

Fig. 7 in perspektivischer Ansicht eine zweite Ausführungsform einer erfindungsgemäßen Ladevorrichtung in einer ersten Konfiguration,

Fig. 8 die Aus führungs form nach Fig. 7 in einer zweiten Konfiguration,

Fig. 9 die Ausführungsform nach den Fig. 7 und 8 in einer dritten Konfiguration

Fig. 10 die Aus führungs form nach den Fig. 7 bis 9 in einer vierten Konfiguration und

Fig. 11 in vergrößerter Darstellung in einem Vertikalschnitt eine LadeVorrichtung mit einer über einen bevorzugten Scherenheber verfügende Hubeinrichtung.

Die in den Fig. 1 bis 6 in verschiedenen Konfigurationen (d.h. Betriebssituationen) und Ansichten gezeigte Ladevorrichtung 1 dient der Beförderung von Frachtgut F auf einer Verkehrs fläche V sowie dem Einladen des Frachtguts in ein Transport fahrzeug bzw. dem Ausladen aus diesem.

Die Ladevorrichtung umfasst drei Hauptkomponenten, nämlich eine Basisstruktur 2, eine Ladestruktur 3 und eine zwischen der Basisstruktur 2 und der Ladestruktur 3 wirkende, dem Anheben und Absenken der Ladestruktur 3 dienende Hubeinrichtung 4. Die Hubeinrichtung 4 ist dabei in dem Sinne doppelt-wirkend ausgeführt, dass sie auch geeignet ist, bei ortsfester Ladestruktur 3 die Basisstruktur 2 anzuheben.

Die Basisstruktur 2 ist als Grundrahmen 5 ausgeführt mit zwei Längsträgern 6 und zwei sich zwischen und quer zu diesen erstreckenden Querträgern 7. Beidseits stehen von den Längsträgern 6 zwei ausgesteifte Stützfüße 8 seitwärts ab. Im Sinne einer - aus Gründen der Standsicherheit ggf. zweckmäßigen - Modifikation der Basisstruktur 2 können auch ausfahrbare, ausziehbare oder ausklappbare Stützfüße mit einer im Einsatz breiteren Ausladung zum Einsatz kommen.

Die Ladestruktur 3, die eine – vorliegend eine als Ladeplattform 9 ausgeführte – Frachtgutaufnahme 10 aufweist, umfasst einen Hubrahmen 11, einen Frachtgutträger 12 mit der Ladeplattform 9 und eine Ausziehführung 13, mittels derer der Frachtgutträger 12 an dem Hubrahmen 11 ausziehbar (Pfeil A) gelagert ist. Der Hubrahmen 11 umfasst Längsträger 14 und sich zwischen und quer zu diesen erstreckende Querträger 15. An ihm greift die Hubeinrichtung 4 an. Die Ausziehrichtung A, in welcher der Frachtgutträger 12 aus seiner zu dem Hubrahmen 11 im Wesentlichen fluchtenden Stellung in eine gegenüber dem Hubrahmen 11 versetzte Stellung ausfahrbar ist, ist dabei quer zu der Hubrichtung (Pfeil B) orientiert, welche durch die Hub- und Senkbewegung der Ladestruktur 3 gegenüber der Basisstruktur 2 definiert ist. Durch Einsatz einer Zwischenschiene 16 ist die Ausziehführung 13 als Vollauszug ausgeführt, so dass der Frachtgutträger 12 in seiner ausgefahrenen Stellung vollständig gegenüber dem Hubrahmen 11 versetzt ist. Der Frachtgutträger 12 weist (nicht näher dargestellte) Halterungen auf, die zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut F geeignet sind. Im Sinne einer – anwendungsbezogenen – Modifikation könnte der Frachtgutträger 12, an den jeweiligen spezifischen Einsatz angepasst, im Übrigen statt einer Ladeplattform 9 beispielsweise eine Schüttgutaufnahme (wie einen Trog oder dergl.) oder eine Spezialhalterung (wie eine Kabeltrommelhalterung oder dergl.) aufweisen.

Die Hubeinrichtung 4 umfasst einen Scherenheber 17 mit zwei gekreuzten, im Kreuzungspunkt 18 gelenkig miteinander verbundenen Lenkerpaaren 19, 20. Jedes Lenkerpaar 19, 20 ist an seinem einem Ende mit dem betreffenden Bauteil über ein Festlager 21, 22 gelenkig verbunden und an seinem anderen Ende an dem anderen Bauteil längs einer Linearführung 23, 24 verschiebbar geführt. So ist das erste Lenkerpaar 19 an seinem unteren - und in Ausziehrichtung A vorderen - Ende 25 mit dem Grundrahmen 5 über ein Festlager 21 gelenkig verbunden und an seinem oberen Ende 26 an dem Hubrahmen 11 längs einer Linearführung 23 verschiebbar geführt; und das zweite Lenkerpaar 20 ist an seinem oberen Ende 27 mit dem Hubrahmen 11 über ein Festlager 22 gelenkig verbunden und an seinem unteren Ende 28 an dem Grundrahmen 5 längs einer Linearführung 24 verschiebbar geführt. Der Kreuzungspunkt 18 der beiden Lenkerpaare 19, 20 wandert demgemäß beim Anheben der Ladestruktur 3 auf einer Kreisbahn um das Festlager 21 des ersten Lenkerpaares 19 und bewegt sich dabei (auch) mit einer Bewegungskomponente in Ausziehrichtung A. Im Sinne einer - aus kinematischen Gründen ggf. zweckmäßigen - Modifikation des Scherenhebers 17 können auch (als solches bekannte) gekröpfte Lenker zum Einsatz kommen.

Vier der Fortbewegung der Ladevorrichtung 1 auf der Verkehrsfläche V - für das Befördern des Frachtguts F auf dieser - dienende Räder 29, 30 sind an dem Frachtgutträger 12 angeordnet, und zwar randseitig an diesem

unmittelbar unterhalb der Seitenränder 31. Sie bilden mit den Rahmenteilen 42 des Frachtgutträgers 12 ein Fahrwerk 43. Die - in Ausziehrichtung A - vorderen Räder 29 sind vorliegend als Bockrollen ausgeführt, die hinteren Räder 30 demgegenüber als Lenkrollen, wobei ersichtlich auch andere Ausführungen der Räder (z.B. vier Lenkrollen) möglich sind. Die Räder 29, 30 weisen (feststellbare) Bremsen auf, mittels derer sich ein unbeabsichtigtes Wegrollen des Frachtgutträgers 12 bzw. der Ladevorrichtung 1 unterbinden lässt. An der Basisstruktur 2 sind demgegenüber vorliegend keine Räder angeordnet. Die Stützfüße 8 der Basisstruktur 2 sind so dimensioniert, dass sie zwischen den hinteren Rädern 30 des Frachtgutträgers 12 hindurchpassen. Im Sinne einer Modifikation könnten die hinteren Stützfüße 8 allerdings auch nach hinten hinter die hinteren Räder 30 versetzt und in diesem Falle so dimensioniert werden, dass ihre Ausladung im Wesentlichen der Spur der Räder 29, 30 entspricht. Seitwärts über die Spurbreite der Räder 29, 30 hinaus sollte sich die Basisstruktur 2 indessen - im Interesse einer guten Handhabbarkeit der Ladevorrichtung 1 - nicht erstrecken.

Die Ladevorrichtung 1 weist mehrere Antriebe auf. So ist insbesondere die Hubeinrichtung 4 mit einer Antriebseinheit ausgerüstet. Diese umfasst zwei parallel zueinander angeordnete Hydraulikzylinder 32, die sich, gelenkig an einem der Querträger 15 des Hubrahmens 11 angelenkt, zwischen dem Hubrahmen 11 und dem im Kreuzungspunkt 18 der Lenkerpaare 19, 20 des Scherenhebers

17 angeordneten Gelenkbolzen erstrecken. Der Beaufschlagung der Hydraulikzylinder 32 dient ein - nicht dargestelltes - Hydraulikaggregat, dessen Pumpe elektrisch betrieben wird. Die elektrische Speichereinheit der Antriebseinheit ist an dem Frachtgutträger 12 angeordnet. Sie weist einen Ladeanschluss auf, der an die elektrische Anlage eines als Kraftfahrzeug ausgeführten Transportfahrzeugs anschließbar ist. Alternativ wäre, insbesondre für LadeVorrichtungen mit reduzierter Leistung, beispielsweise die rein elektrische Ausführung der Antriebseinheit der Hubeinrichtung 4 möglich.

Mittels eine weiteren Antriebs, nämlich eines zwischen dem Hubrahmen 11 und dem Frachtgutträger 12 wirkenden elektrischen Ausfahrantriebs ist der Frachtgutträger 12 in seine ausgefahrene Stellung aus- und seine zu dem Hubrahmen 11 fluchtende Stellung einfahrbar. Weiterhin ist - beispielsweise durch Arretieren der Ausziehführung 13 oder Blockieren des Ausfahrantriebs - der Frachtgutträger 12 relativ zum Hubrahmen 11 verriegelbar und die Hubeinrichtung 4 in einer teilweise angehobenen Stellung der Ladestruktur 3 sperrbar. Auf diese Weise erfolgt eine Sicherung der Ladevorrichtung 1 (und des aufgenommenen Frachtguts F) auf der Ladefläche des Transportfahrzeugs während des Transports, indem nämlich der Frachtgutträger 12 relativ zu dem Hubrahmen 11 gesperrt und die Ladestruktur 3 als ganzes so weit angehoben wird, dass die Räder 29, 30 nicht mehr auf der Ladefläche aufliegen, so dass das gesamte Gewicht von

Frachtgut F und Ladevorrichtung 1 über deren Grundrahmen 5 auf der Ladefläche abgestützt wird.

Die Bedienung bzw. Betätigung der verschiedenen Antriebe durch eine Bedienperson erfolgt bei der Ausführungsform nach den Fig. 1 bis 6 durch Bedienelemente, die in die an dem Frachtgutträger 12 angebrachten Griffe 33 integriert sind. Namentlich in dieser Hinsicht verfolgt die zweite, in den Fig. 7 bis 10 illustrierte Ausführungsform einen anderen Ansatz. Denn bei dieser ist an dem Hubrahmen 11 an dessen der Ausziehrichtung A entgegengesetztem Ende 34 eine Handhabe 35 angeordnet, welche Bedienelemente 36 für die Betätigung der verschiedenen Antriebe aufweist und die weiterhin dazu dient, die Ladevorrichtung 1 bei deren Fortbewegung auf der Verkehrs fläche bzw. der Ladefläche des Transportfahrzeuges zu dirigieren bzw. zu manövrieren.

Die Handhabe 35 weist eine leicht nach hinten geneigte, aus ihrer Ver Staustellung (Fig. 7) teleskopisch in eine Betriebsstellung (Fig. 8) ausfahrbare Deichsel 37 auf. Der die Verstellung der Länge der Deichsel 37 bewirkende Längenverstellantrieb ist dabei - über die Steuerung der Ladevorrichtung 1 - in dem Sinne invers mit der Antriebseinheit der Hubeinrichtung 4 gekoppelt, dass sich beim Anheben der Ladestruktur 3 die Länge der Deichsel 37 im Wesentlichen in dem Maße verkürzt, wie die Ladestruktur 3 angehoben wird, so dass im Ergebnis die Griffe 38 der Handhabe 35 beim Heben der Ladestruktur 3 zumindest im Wesentlichen auf einer konstanten

Höhe verbleiben. Entsprechendes gilt beim Absenken der Ladestruktur 3. Über an der Handhabe 35 angeordnete Bedienelemente 36 sind bei dieser Ausführungsform im Übrigen auch die den Rädern 29, 30 zugeordneten Bremsen betätigbar.

Andere markante Abweichungen der Ausführungsform nach den Fig. 7 bis 10 von derjenigen nach den Fig. 1 bis 6 bestehen in konstruktiven Details des Scherenhebers 17 sowie der Ausziehführung 13 für den Frachtgutträger 12, wobei die Abweichungen allerdings ohne Auswirkung sind auf die grundsätzliche Funktion, so dass die vorstehenden Erläuterungen der ersten Ausführungsform im Wesentlichen auch für die zweite gelten. Anders gestaltet als bei der ersten Ausführungsform sind bei der zweiten im Übrigen auch die Räder 29, 30. Diese sind seitlich an dem Frachtgutträger 12 angeordnet, so dass sie - im Interesse einer gesteigerten Tauglichkeit für die Nutzung auf unebenen Verkehrsflächen - einen vergleichsweise großen Durchmesser aufweisen können.

Mit der Steuerung der Ladevorrichtung können im Übrigen insbesondere Lastsensoren verbunden sein, die den Rädern 29, 30 und/oder den Stützfüßen 8 der Basisstruktur 2 zugeordnet sind. Durch Überwachung der Belastungssituation an den Stützfüßen 8 und/oder den Rädern 29, 30 können Belastungszustände, die für die Standsicherheit der Ladevorrichtung 1 kritisch werden könnten, frühzeitig erkannt werden, und es kann eine (z.B. akustische)

Warnung und/oder ein automatisches Sperren eines oder mehrerer Antriebe erfolgen.

Was die in Fig. 11 veranschaulichte Ausführungsform angeht, so erklärt sich diese ohne weiteres aus den vorstehenden Erläuterungen der Fig. 1 bis 10. Hinzuweisen ist allerdings auf die gut erkennbare leichte Kröpfung der Lenker 19 und 20 des Scherenhebers 17 dergestalt, dass das im Kreuzungspunkt 18 vorgesehene Gelenk nicht exakt auf den Verbindungslinien VLi_9 und VL_{20} der beiden jeweils endseitig an den Lenkern 19, 20 angeordneten Lager liegt, sondern vielmehr geringfügig gegenüber diesen Verbindungslinien nach oben versetzt. Umgekehrt ist der Anlenkungspunkt 40 der Hydraulikzylinder 32 an den Lenkern 19 geringfügig gegenüber der Verbindungslinie VL_{i9} von dessen endseitigen Lagern nach unten versetzt. Auf diese Weise ergibt sich ein Scherenheber 17, der in seiner (gezeigten) vollständig eingefahrenen Konfiguration so flach ist, dass er nicht (geringfügig nach oben zwischen die Ausziehführungen 13 ragend) nur unter der Ladestruktur 3 Platz findet, sondern auch noch eine hinreichende Bodenfreiheit 41 verbleibt, und das bei einer für das Heben schwerer Lasten hinreichend starken Dimensionierung der Lenker 19, 20 und einem auf das Heben schwerer Lasten abgestimmten Kinematik des Antriebs. Zu erkennen ist in Fig. 11 auch, dass der Hubrahmen 11 und die beiden mit diesem über die Ausziehführungen 13 verbundenen Rahmenteile 42 des Frachtgutträgers 12, wie bereits in den Figuren 1 bis 6 veranschaulicht, im Wesentlichen in der selben

Ebene liegen, wobei in der eingefahrenen Stellung des Frachtgutträgers 12 der Hubrahmen 11 zwischen den Rahmenteilen 42 des Frachtgutträgers Platz findet.

Bei beiden Ausführungsformen stellt sich der Ablauf beim Beladen eines Transportfahrzeugs mit Frachtgut F (einschließlich des Beförderns des Frachtguts zum Transportfahrzeug) typischerweise wie folgt dar:
Die Ladevorrichtung 1 wird mit abgesenkter Ladestruktur 3 und auf deren eingefahrenen Frachtgutträger 12 aufgenommenem Frachtgut F - auf den an dem Frachtgutträger 12 angeordneten Rädern 29, 30 - auf der Verkehrsfläche V zum Transportfahrzeug bewegt, wobei die Ausziehführung verriegelt und Basisstruktur 2 mittels der Hubeinrichtung 4 vollständig angehoben ist.
Die Ladevorrichtung 1 wird benachbart zum Transportfahrzeug, nahe der Zugangsöffnung zu dessen Ladefläche positioniert, und zwar mit der Ausziehrichtung A zum Transportfahrzeug weisend.
Je nach den Geländeverhältnissen können bzw. sollten in dieser Situation die Räder 29, 30 gebremst werden.
Zum Absetzen der Basisstruktur 2 auf der Verkehrsfläche und anschließendem Anheben der Ladestruktur 3 wird die Hubeinrichtung 4 betätigt, und zwar so lange, bis sich die Räder 29, 30 des Frachtgutträgers 12 geringfügig über dem Niveau der Ladefläche des Transportfahrzeugs befinden. Ggf. angezogenen Bremsen der Räder 29, 30 können wieder gelöst werden.
Nach dem Entriegeln der Ausziehführung 13 wird der Frachtgutträger 12 unter Nutzung der Ausziehführung 13

(und des ggf. vorhandenen Ausfahrantriebs) in Ausziehrichtung A verfahren und gelangt dabei zunehmend über die Ladefläche des Transportfahrzeugs.
Sobald sich die frontseitigen Räder 29 des Frachtgut - trägers 12 über der Ladefläche des Transportfahrzeugs befinden, wird die Ladestruktur 3 mittels der Hubeinrichtung 4 so weit abgesenkt, dass die frontseitigen Räder 29 des Frachtgutträgers 12 auf der Ladefläche des Transport fahrzeugs aufsetzen.
Der Frachtgutträger 12 wird - unter fortgesetzter Nutzung der Ausziehführung 13 (und ggf. des Ausfahrantriebs) - weiter in Ausziehrichtung A verfahren, wobei auch die rückwärtigen Räder 30 des Frachtgut trägers 12 auf der Ladefläche des Transport fahrzeugs aufsetzen.
Die Bremsen der Räder 29, 30 werden angezogen.
Die Hubeinrichtung 4 wird im Sinne eines Anhebens der Basisstruktur 2 betätigt.
Bei vollständig angehobener Basisstruktur 2 wird diese unter Nutzung der Ausziehführung 13 (und ggf. des Ausfahrantriebs) eingefahren, d.h. unter die Ladestruktur 3 geschoben. Anschließend wird die Ausziehführung 13 verriegelt .
Die Bremsen werden gelöst, und die Ladevorrichtung 1 kann auf der Ladefläche des Transport fahrzeugs an ihre endgültige Position rangiert werden.
Je nach den Standverhältnissen des Trägerfahrzeugs können bzw. sollten bei Erreichen der endgültigen Position die Räder 29, 30 gebremst werden.
Mittels der Hubeinrichtung 4 wird die Ladestruktur 3 geringfügig angehoben, nämlich so weit, bis die Räder

29, 30 von der Ladefläche des Transportfahrzeugs abheben. In dieser Stellung wird die Hubeinrichtung 4 gesperrt .
Je nach Bedarf kann das - auf der Ladevorrichtung 1 verbleibende - Frachtgut F mittels gesonderter Sicherungsmittel direkt am Transport fahrzeug gegen Verrutschen etc. gesichert werden.

Zum Entladen von Frachtgut aus dem Transportfahrzeug wird in umgekehrter Reihenfolge vorgegangen.

Ansprüche

1. Ladevorrichtung (1), insbesondere um Frachtgut (F) auf einer Verkehrsfläche (V) zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfassend eine Basisstruktur (2), eine Ladestruktur (3) mit einer Frachtgutaufnahme (10) und eine zwischen der Basisstruktur (2) und der Ladestruktur (3) doppelt wirkende Hubeinrichtung (4), gekennzeichnet durch die folgenden Merkmale:
die Ladestruktur (3) umfasst einen Hubrahmen (11), an welchem die Hubeinrichtung (4) angreift, und einen Frachtgutträger (12), der an dem Hubrahmen (11) über eine Ausziehführung (13) mit einer quer zur Hubrichtung (B) orientierten Ausziehrichtung (A) gelagert ist und die Frachtgutaufnahme (10) aufweist;
ein der Fortbewegung der Ladevorrichtung (1) auf der Verkehrsfläche (V) dienendes Fahrwerk (43) ist Teil des Frachtgutträgers (12).

2. Ladevorrichtung nach Anspruch 1, dadurch gekennzeichnet, dass das Fahrwerk (43) Räder (29, 30), bevorzugt vier Räder (29, 30) umfasst, welche besonders bevorzugt randseitig an dem Frachtgutträger (12) angeordnet sind.

3. Ladevorrichtung nach Anspruch 2, dadurch gekennzeichnet, dass zumindest ein Teil der Räder (29, 30) lenkbar ist.

4. Ladevorrichtung nach Anspruch 2 oder Anspruch 3, dadurch gekennzeichnet, dass zumindest ein Teil der Räder (29, 30) Bremsen aufweist, welche bevorzugt fernbetätigbar sind.

5. Ladevorrichtung nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, dass sich die Basisstruktur (2) seitwärts nicht über die Breite des Fahrwerks (43), insbesondere die Spurbreite der Räder (29, 30) hinaus erstreckt.

6. Ladevorrichtung nach Anspruch 5, dadurch gekennzeichnet, dass die Breite der Basisstruktur (2) auf deren der Ausziehrichtung (A) entgegengesetzten Seite im Wesentlichen der Breite des Fahrwerks (43), insbesondere die Spurbreite der Räder (30) entspricht.

7. LadeVorrichtung nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, dass an der Basisstruktur (2) Stützfüße (8) angeordnet sind.

8. Ladevorrichtung nach Anspruch 7, dadurch gekennzeichnet, dass zumindest einem der Stützfüße (8) ein Lastsensor zugeordnet ist.

9. Ladevorrichtung nach Anspruch 7 oder Anspruch 8, dadurch gekennzeichnet, dass zumindest einer der Stützfüße (8) seitwärts ausfahrbar, ausziehbar oder ausklappbar ist.

10. Ladevorrichtung nach einem der Ansprüche 1 bis 9, dadurch gekennzeichnet, dass an der Basisstruktur (2) keine Räder angeordnet sind.

11. Ladevorrichtung nach einem der Ansprüche 1 bis 10, dadurch gekennzeichnet, dass ein zwischen dem Hubrahmen (11) und dem Frachtgutträger (12) wirkender Ausfahrantrieb vorgesehen ist.

12. Ladevorrichtung nach Anspruch 11, dadurch gekennzeichnet, dass auf den Ausfahrantrieb eine Steuerung einwirkt, welche die Ausfahrbewegung unter Berücksichtigung von sicherheitsrelevanten Kenngrößen steuert .

13. Ladevorrichtung nach einem der Ansprüche 1 bis 12, dadurch gekennzeichnet, dass an dem Frachtgutträger (12) , bevorzugt im Bereich frontseitiger Räder (29) , mindestens ein Sensor zur Erfassung der Position des Frachtgutträgers (12) relativ zu einer Ladefläche angeordnet ist .

14. Ladevorrichtung nach einem der Ansprüche 1 bis 13, dadurch gekennzeichnet, dass die Hubeinrichtung (4) einen Scherenheber (17) umfasst.

15. Ladevorrichtung nach Anspruch 14, dadurch gekennzeichnet, dass mindestens einer der Lenker (19, 20) des Scherenhebers gekröpft ist und/oder ein Antriebselement (32) versetzt zum Gelenkpunkt (18) an einem der Lenker (19) angreift.

16. Ladevorrichtung nach Anspruch 14 oder Anspruch 15, dadurch gekennzeichnet, dass die in Ausziehrichtung (A) gelegene Lagerung des Scherenhebers (17) an der Basisstruktur (2) als Festlager (21) ausgeführt ist.

17. Ladevorrichtung nach einem der Ansprüche 1 bis 16, dadurch gekennzeichnet, dass die Hubeinrichtung (4) eine elektrische oder eine elektro-hydraulische Antriebseinheit umfasst .

18. Ladevorrichtung nach Anspruch 17, dadurch gekennzeichnet, dass eine elektrische Speichereinheit der Antriebseinheit am Hubrahmen (11) , bevorzugt an dessen in Ausziehrichtung (A) weisender Frontseite angeordnet ist.

19. Ladevorrichtung nach Anspruch 17 oder Anspruch 18, dadurch gekennzeichnet, dass eine elektrische Speichereinheit der Antriebseinheit als Wechselakku ausgeführt ist.

20. Ladevorrichtung nach einem der Ansprüche 17 bis 19, dadurch gekennzeichnet, dass eine elektrische Speichereinheit der Antriebseinheit einen an die elektrische Anlage eines als Kraftfahrzeug ausgeführten Transport fahrzeugs anschließbaren Ladeanschluss aufweist.

21. Ladevorrichtung nach einem der Ansprüche 1 bis 20, dadurch gekennzeichnet, dass an dem Frachtgutträger (12) frontseitig mindestens eine veränderlich positionierbare Behelfsrolle angeordnet ist.

22. Ladevorrichtung nach einem der Ansprüche 1 bis 21, dadurch gekennzeichnet, dass der Frachtgutträger (12) relativ zum Hubrahmen (11) verriegelbar ist.

23. Ladevorrichtung nach einem der Ansprüche 1 bis 22, dadurch gekennzeichnet, dass die Hubeinrichtung (4) in einer teilweise angehobenen Stellung der Ladestruktur (3) sperrbar ist.

24. Ladevorrichtung nach einem der Ansprüche 1 bis 23, dadurch gekennzeichnet, dass an dem Hubrahmen (11) an dessen der Ausziehrichtung (A) entgegengesetzten Ende eine Bedienelemente aufweisende Handhabe (35) angeordnet ist.

25. Ladevorrichtung nach Anspruch 24, dadurch gekennzeichnet, dass die Handhabe (35) schwenkbar oder einschiebbar am Hubrahmen (11) oder an der Basisstruktur (2) angebracht ist.

26. LadeVorrichtung nach Anspruch 24, dadurch gekennzeichnet, dass die Handhabe (35) eine ausfahrbare Deichsel (37) aufweist, wobei die Ausfahrriehtung der Deichsel (37) bevorzugt in rückwärtiger Richtung geneigt schräg zur Hubrichtung (B) orientiert ist.

27. Ladevorrichtung nach Anspruch 26, dadurch gekennzeichnet, dass die Länge der Deichsel (37) mittels eines Längenvers tellantriebs veränderbar ist, wobei der Längenverstellantrieb bevorzugt phasenweise mit dem Hubantrieb invers koppelbar ist.

28. Ladevorrichtung nach einem der Ansprüche 1 bis 27, dadurch gekennzeichnet, dass der Frachtgutträger (12) , insbesondere als Teil eines auswechselbaren Aufsatzes, eine Ladeplattform (9) , mindestens eine Schüttgutaufnahme oder eine Spezialhalterung aufweist .

29. Ladevorrichtung nach einem der Ansprüche 1 bis 28, dadurch gekennzeichnet, dass der Frachtgutträger (12) zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut geeignete Halterungen aufweist.

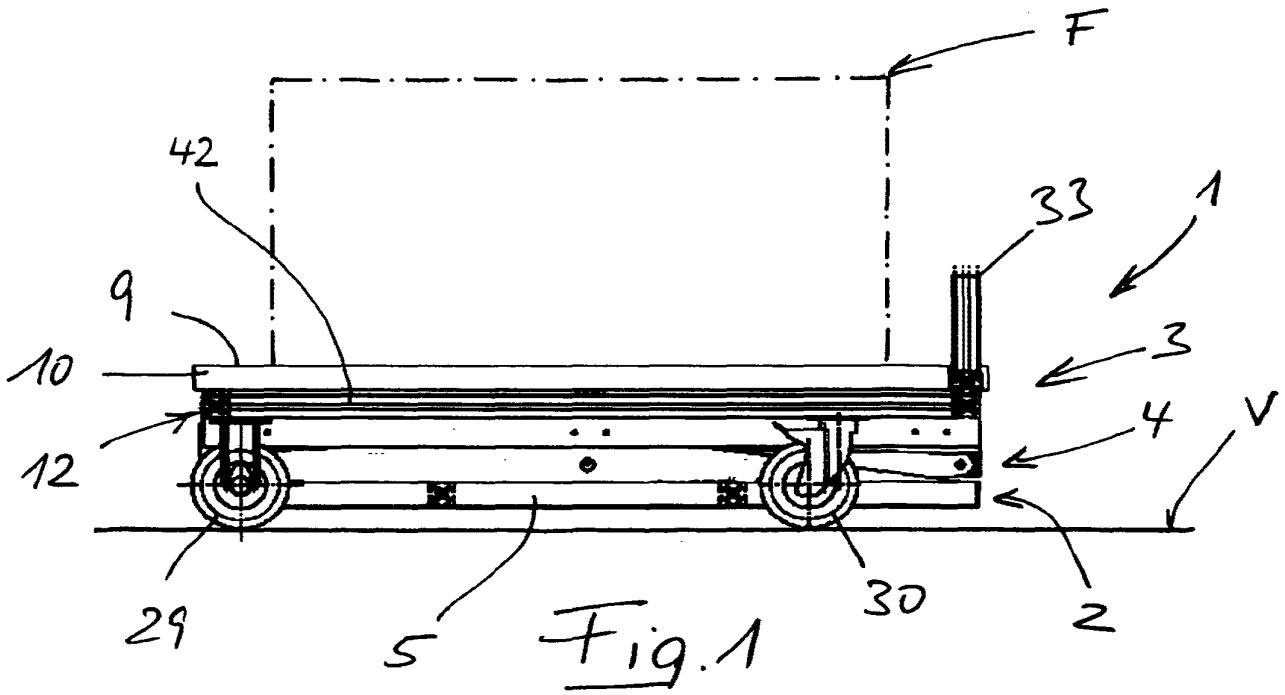


Fig.1

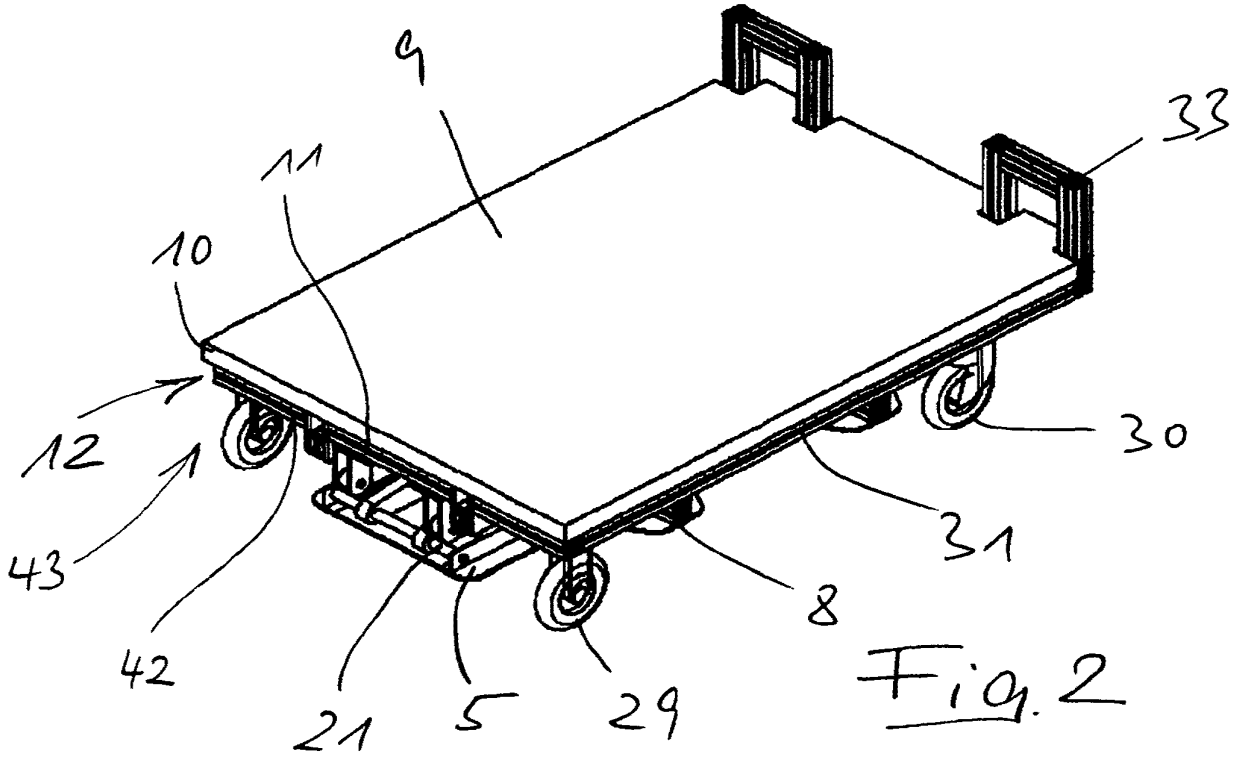


Fig.2

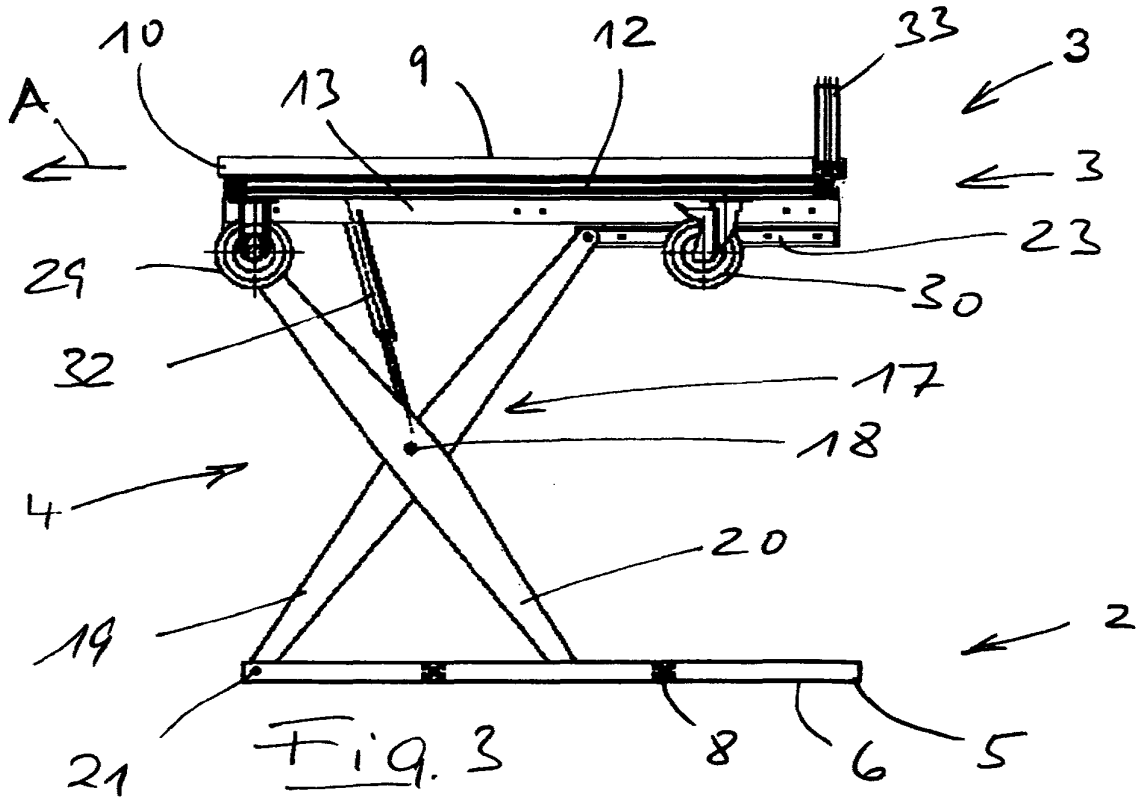

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Fig. 3

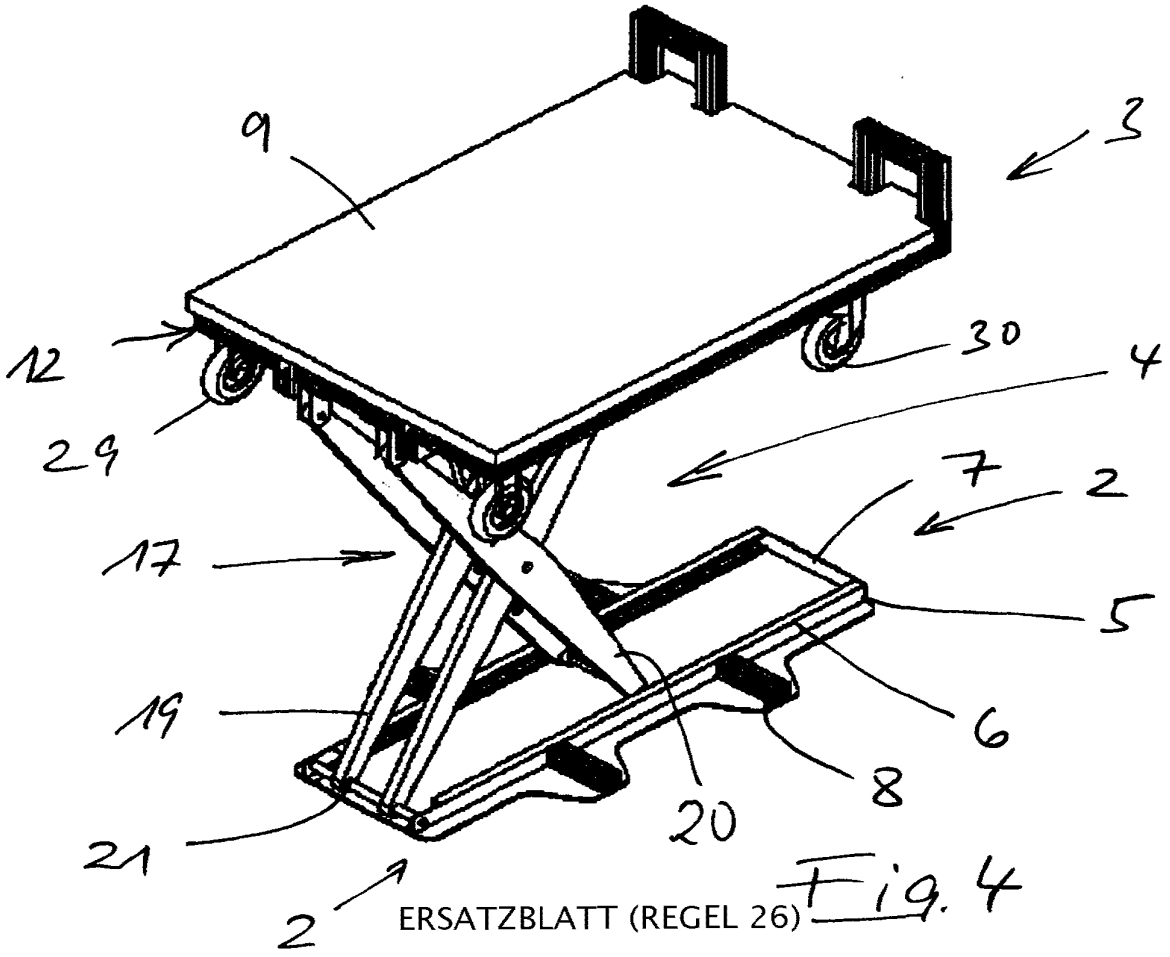

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Fig. 4

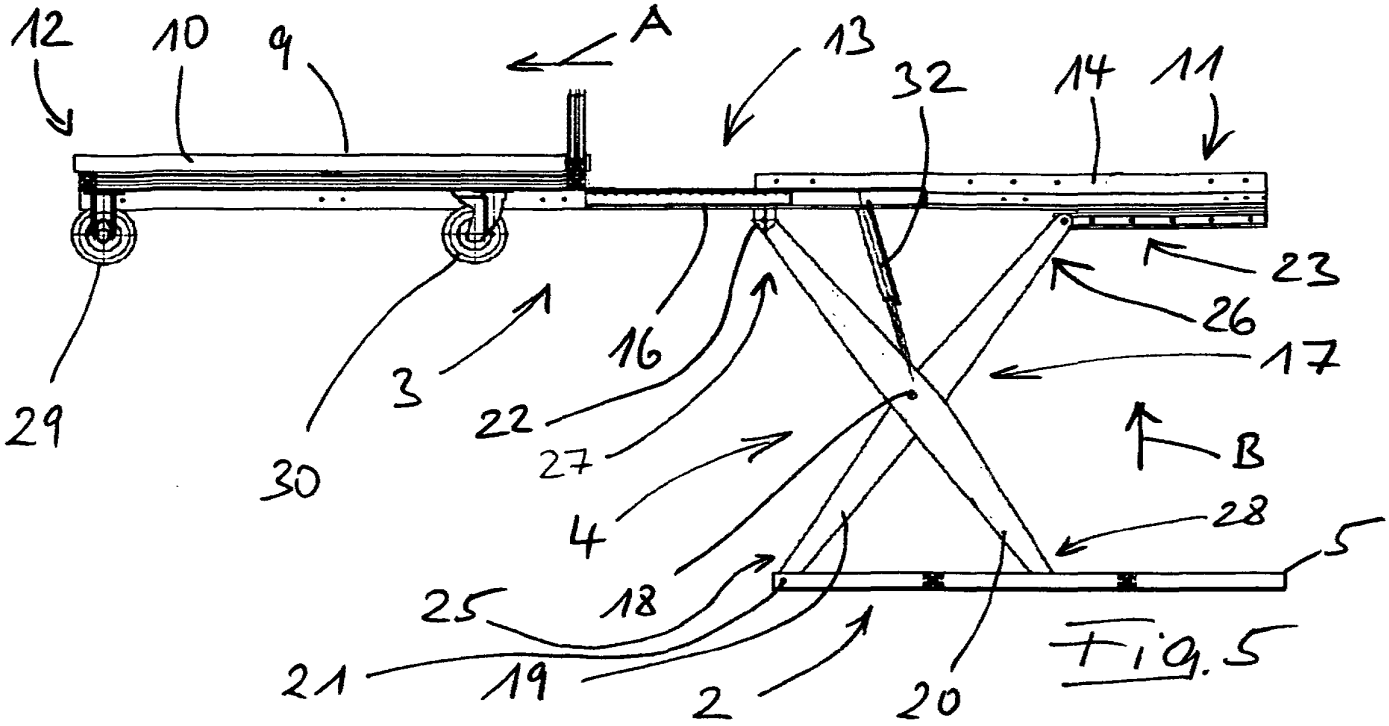


Fig. 5

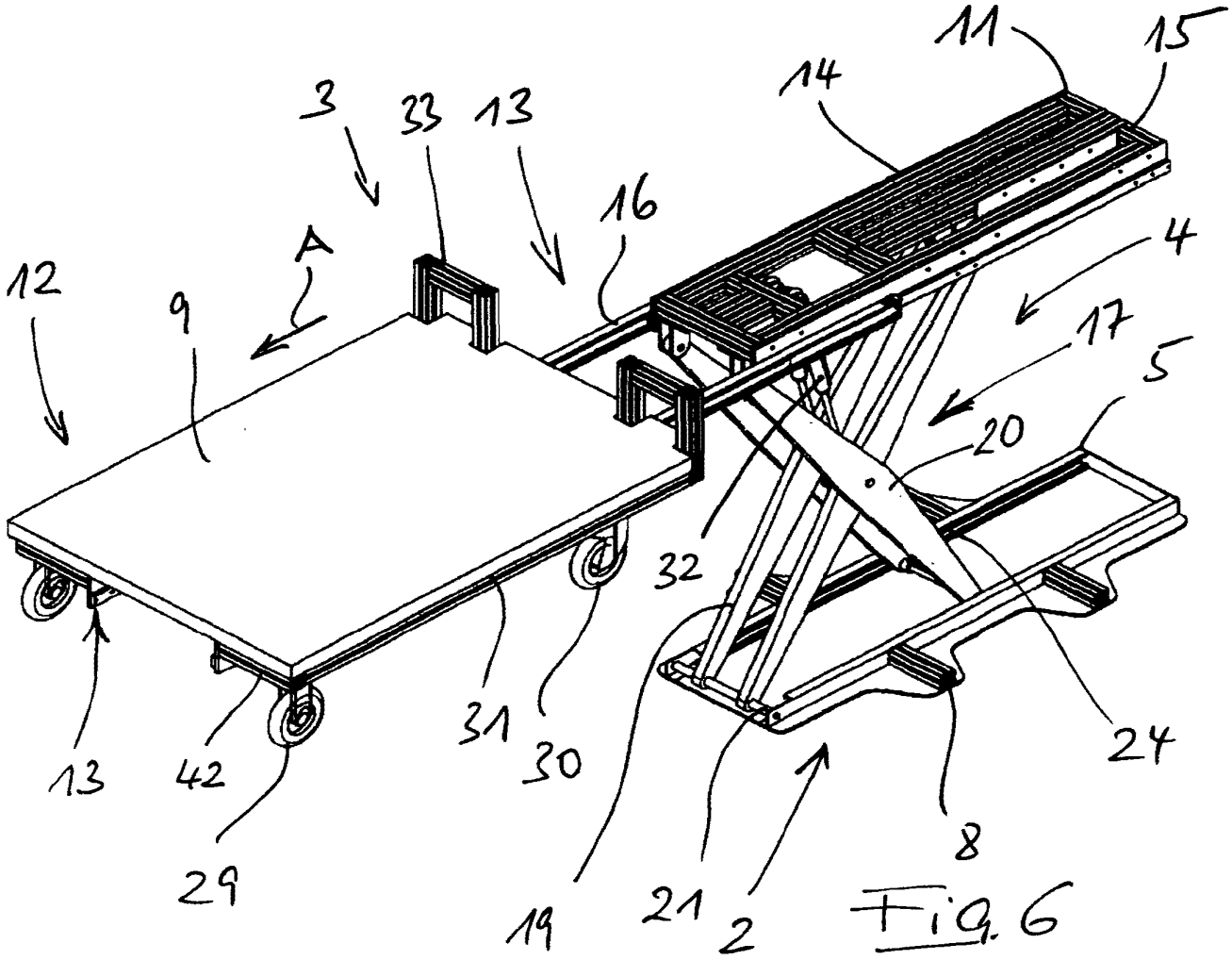


Fig. 6

ERSATZBLATT (REGEL 26)

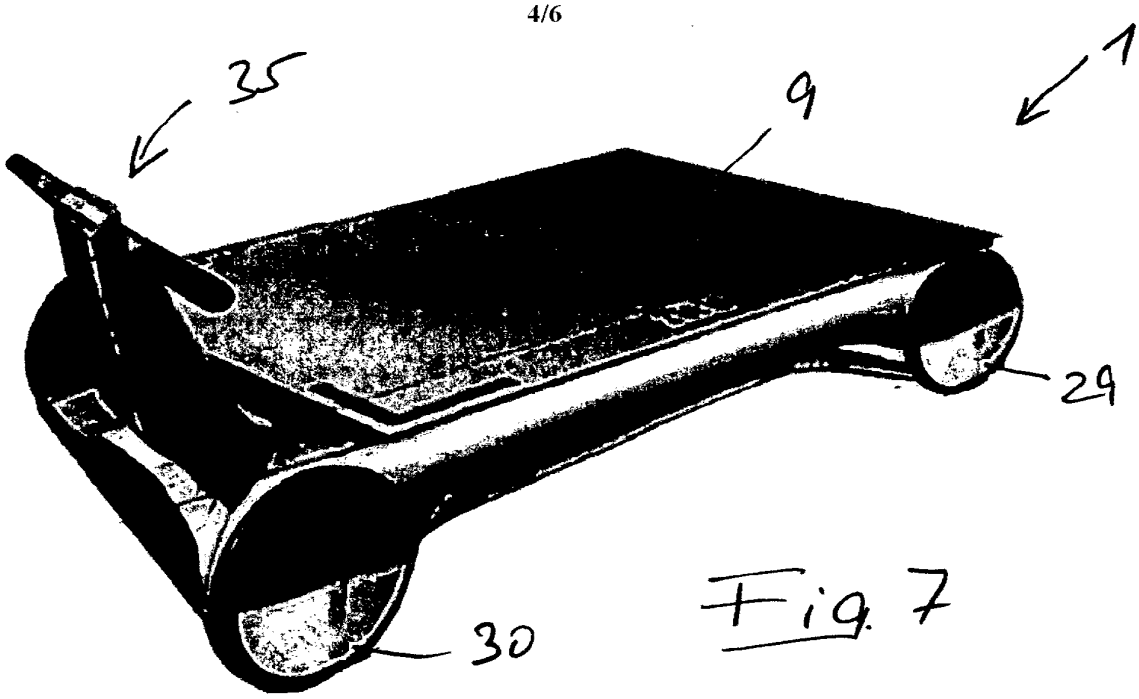


Fig. 7

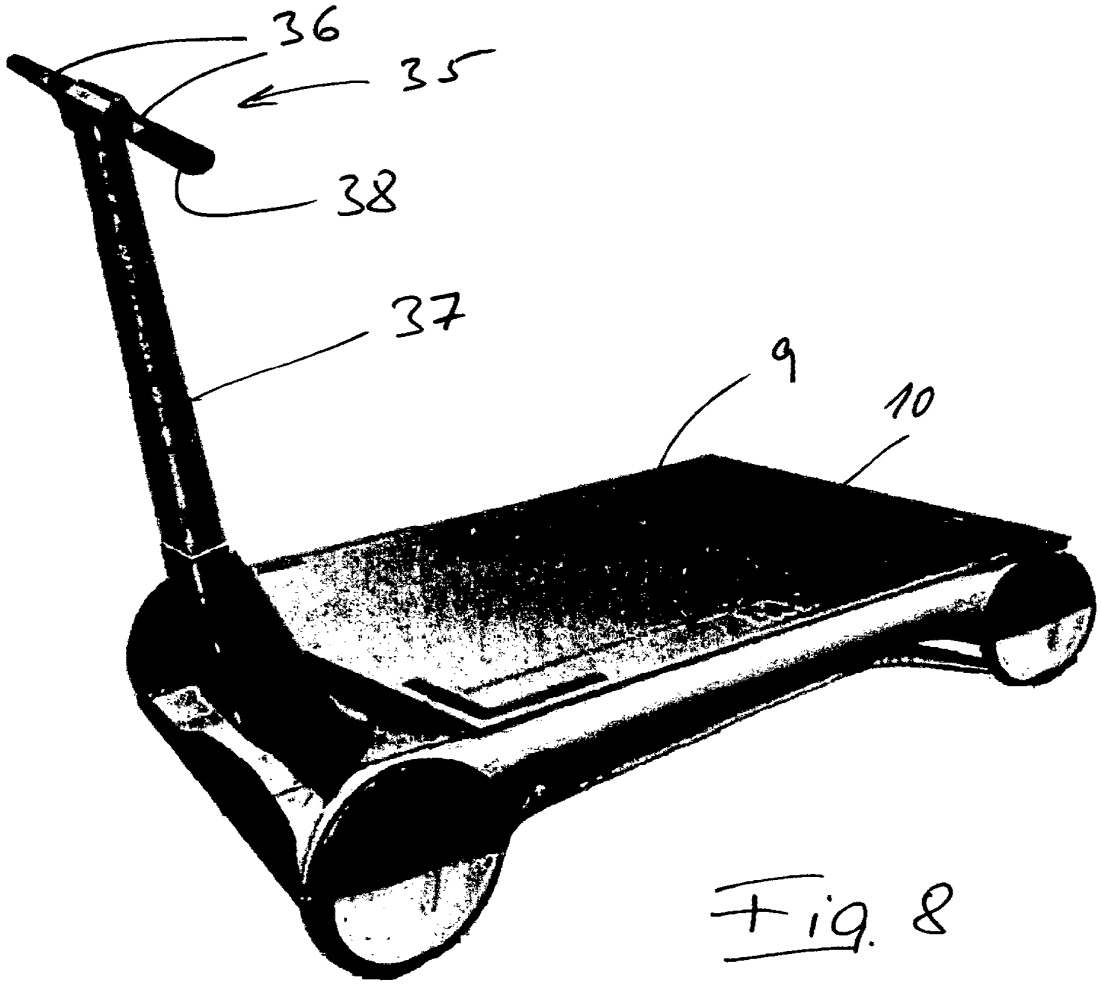


Fig. 8

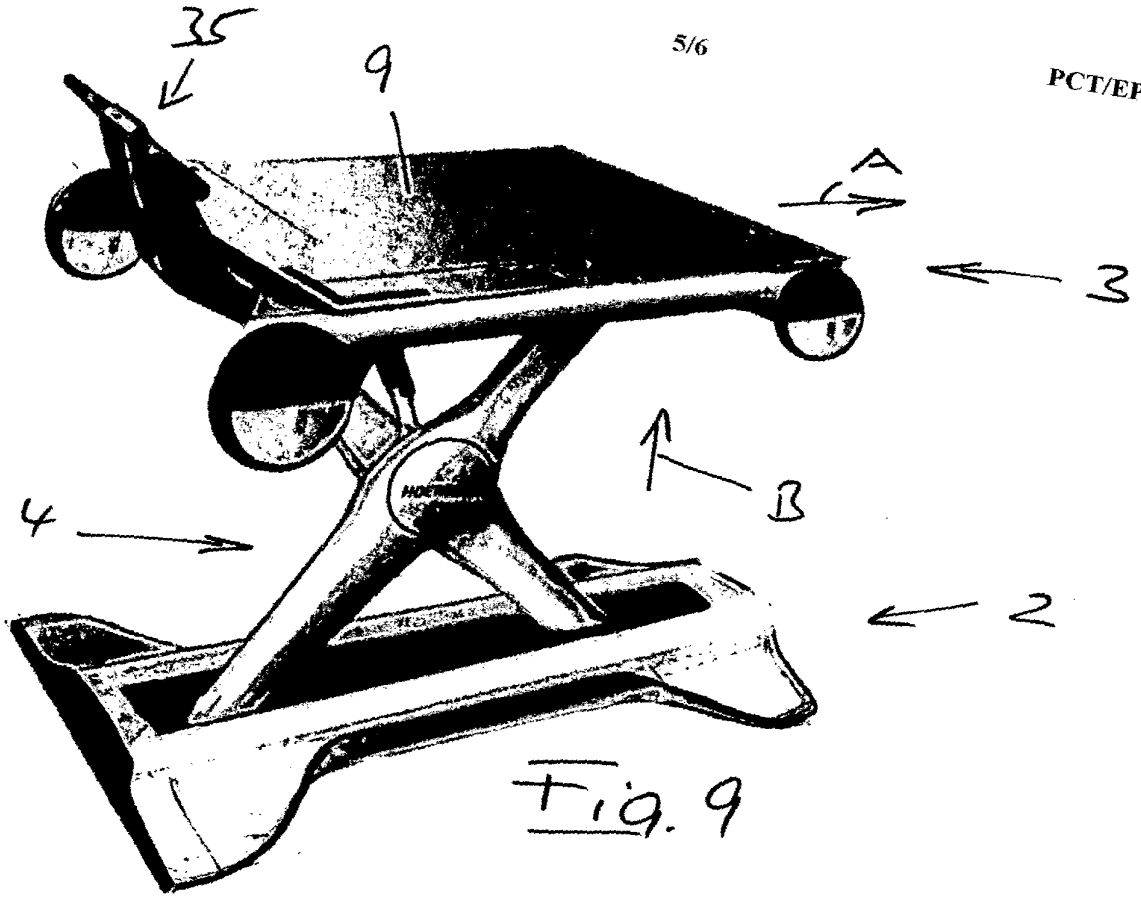


Fig. 9

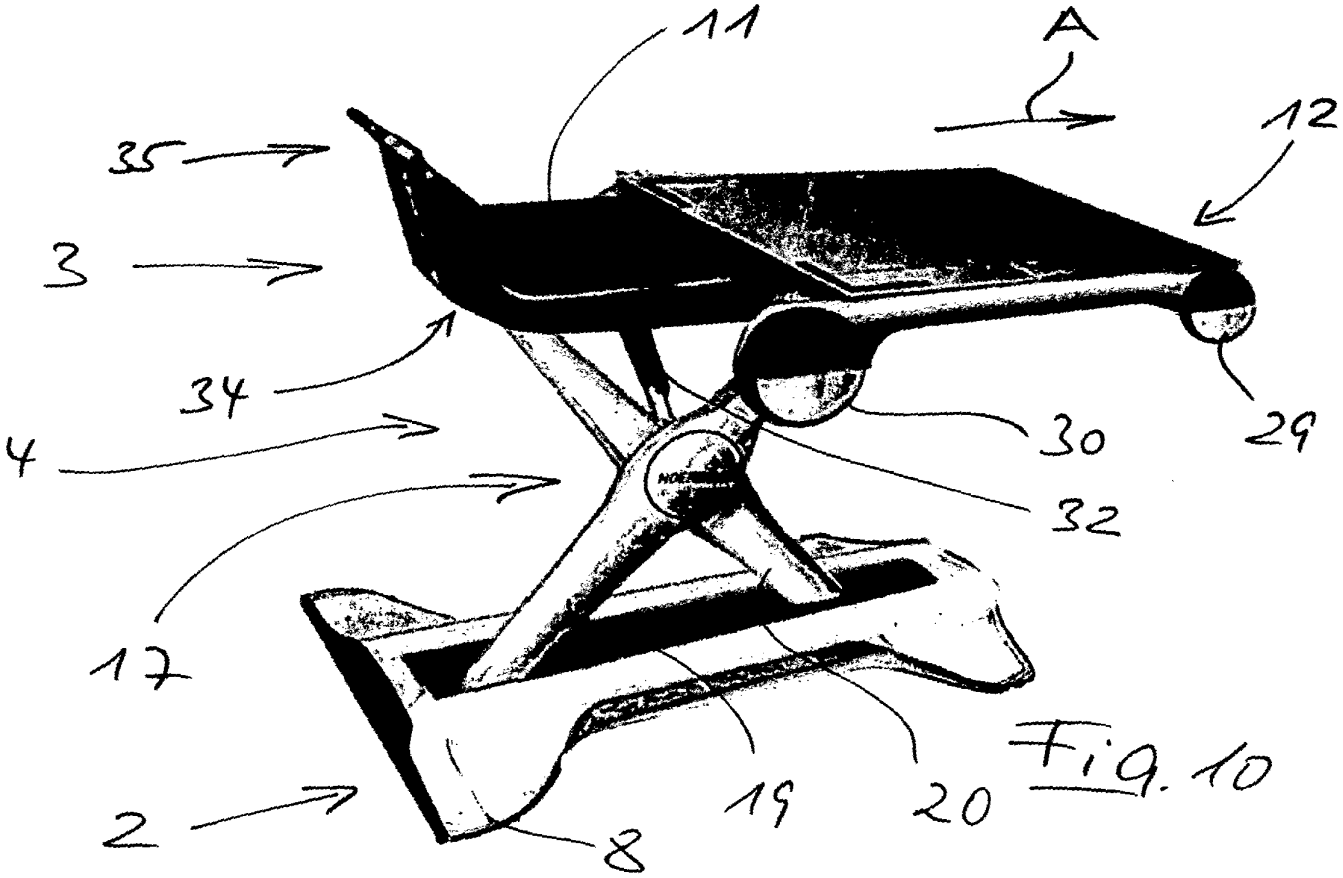


Fig. 10

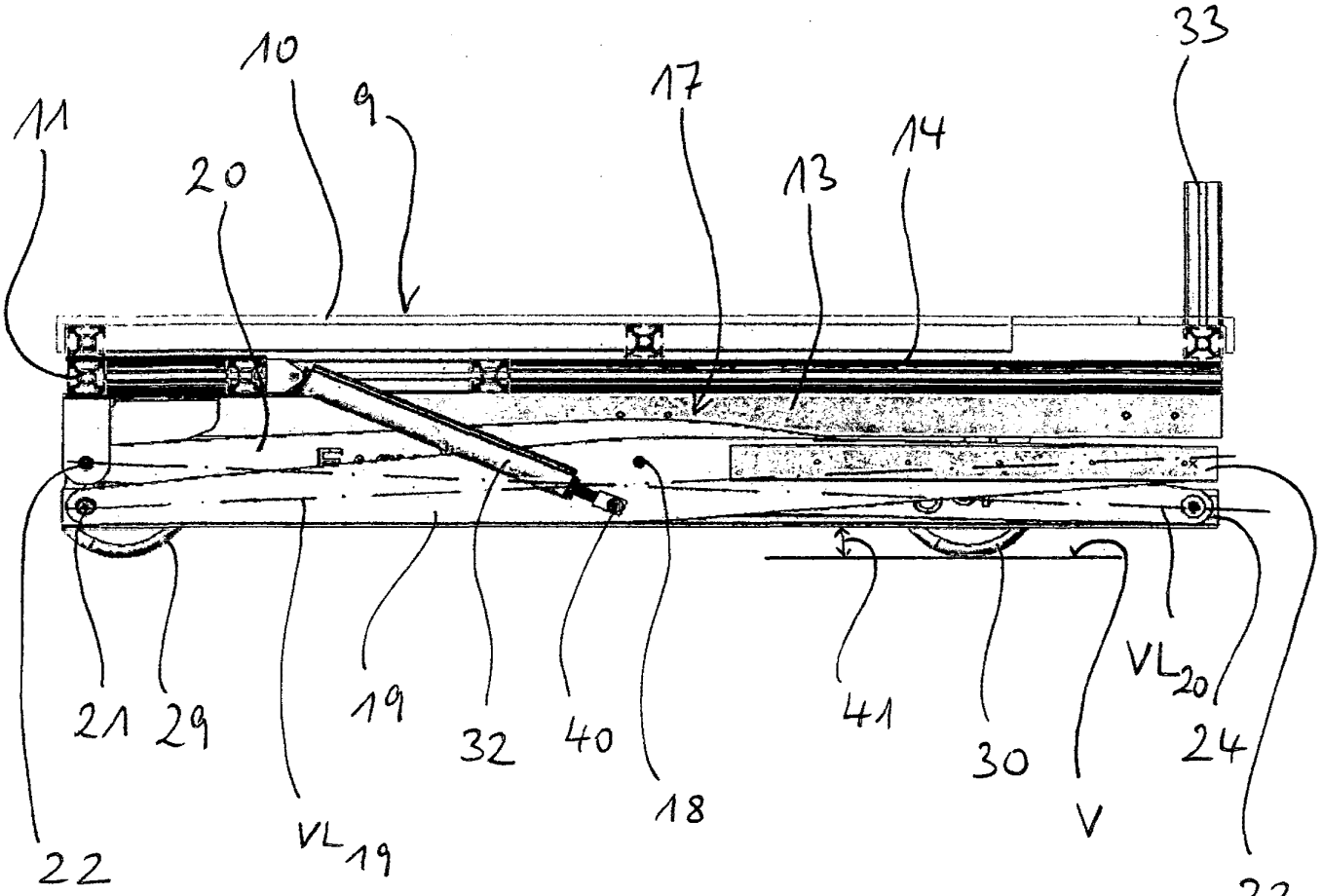


Fig. 11

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/0O1242

A. CLASSIFICATION OF SUBJECT MATTER
INV. B66F9/Q6 B66F9/075 B66F9/12
ADD.

According to International Patent Classification (IPC) orto both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (Classification system followed by classification symbok)
B66F

Documentation searched otherthan minimum documentation to the extent that such documents are included in thefields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 20O6/006860 A2 (MOFFETT K00I B V [NL] ; VAN DALEN ROBERT [NL] ; REITSMA GERRIT [NL] ; MOL) 19 January 2006 (2006-01-19) abstract page 9, line 9 - page 11, line 21 figures 1-7	1
A	EP 1 323 664 AI (CARTON DE TOURNAI FRANC0IS XAV [BE]) 2 July 2003 (2003-07-02) abstract Paragraph [0037] Paragraph [0043] - paragraph [0044] figures 1-6	1

[X] Further documents are listed in the oontinuation of Box C.

[X] See patent family annex.

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"L" document which may throw doubts on priority claim(s) orwhich is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle ortheory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 July 2014	28/07/2014

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Cabral Matos, A

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2014/0O1242

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	FR 2 702 751 AI (BLANCHARD XAVI ER [FR] BLANCHARD XAVI ER) 23 September 1994 (1994-09-23) abstract page 5, line 33 - page 6, line 9 page 7,]ine 13 - page 9, line 8 figures	1
A	US 4 288 195 A (BREWER JOHN) 8 September 1981 (1981-09-08) abstract figures	1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2014/001242

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006006860 A2	19-01-2006	NL 1026659 C2	17-01-2006
		WO 2006006860 A2	19-01-2006
EP 1323664 A1	02-07-2003	BE 1014810 A4	06-04-2004
		EP 1323664 A1	02--07--2003
FR 2702751 A1	23-09-1994	NONE	
US 4288195 A	08-09-1981	NONE	

Form PCT/ISA/210 (patent family annex) (April 2005)

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2014/0O1242

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES
INV. B66F9/Q6 B66F9/075 B66F9/12
ADD.

Nach der Internationalen Patentklassifikation (IPC) oder nach der nationalen Klassifikation und der IPC

B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)
B66F

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Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)
EPO-Internal , WPI Data

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	WO 20O6/006860 A2 (MOFFETT K00I B V [NL] ; VAN DALEN ROBERT [NL] ; REITSMA GERRIT [NL] ; MOL) 19. Januar 2006 (2006-01-19) Zusammenfassung Seite 9, Zeile 9 - Seite 11, Zeile 21 Abbildungen 1-7 -----	1
A	EP 1 323 664 AI (CARTON DE TOURNAI FRANC0IS XAV [BE]) 2. Juli 2003 (2003-07-02) Zusammenfassung Absatz [0037] Absatz [0043] - Absatz [0044] Abbildungen 1-6 -----	1
	-/--	

[X] Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen [IX] Siehe Anhang Patentfamilie

* Besondere Kategorien von angegebenen Veröffentlichungen :
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Datum des Abschlusses der internationalen Recherche	Absendedatum des internationalen Recherchenberichts
22. Juli 2014	28/07/2014

Name und Postanschrift der Internationalen Recherchenbehörde	Bevollmächtigter Bediensteter
Europäisches Patentamt, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Cabral Matos, A

Formblatt PCT/ISA/210 (Blatt 2) (April 2005)

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen
PCT/EP2014/0O1242

C. (Fortsetzung) ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie *	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
A	FR 2 702 751 AI (BLANCHARD XAVI ER [FR] BLANCHARD XAVI ER) 23. September 1994 (1994-09-23) Zusammenfassung Seite 5, Zeile 33 - Seite 6, Zeile 9 Seite 7, Zeile 13 - Seite 9, Zeile 8 Abbi 1düngen -----	1
A	US 4 288 195 A (BREWER JOHN) 8. September 1981 (1981-09-08) Zusammenfassung Abbi 1düngen -----	1

Formblatt PCT/ISA/210 (Fortsetzung von Blatt 2) (April 2005)

INTERNATIONALER RECHERCHENBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören

Internationales Aktenzeichen
PCT/EP2014/001242

Im Recherchenbericht angeführtes Patentdokument	Datum der Veröffentlichung	Mitglied(er) der Patentfamilie	Datum der Veröffentlichung
WO 2006006860 A2	19-01-2006	NL 1026659 C2	17-01-2006
		WO 2006006860 A2	19-01-2006
EP 1323664 A1	02-07-2003	BE 1014810 A4	06-04-2004
		EP 1323664 A1	02-07-2003
FR 2702751 A1	23-09-1994	KEINE	
US 4288195 A	08-09-1981	KEINE	

Formblatt PCT/ISA/210 (Anhang Patentfamilie) (April 2005)

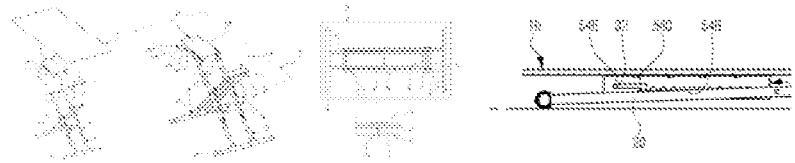
Patents KR 10-0802663

Apparatus for height controlling of folding and spreading type

Abstract

A folding type height control device is provided to control the height of a product safely, easily and promptly, to have a folding structure and to be moved easily despite a folding structure. A folding type height control device includes a first bracket(40), a second bracket(50), a first leg member(20), a second leg member(30) and a support member(60). The first bracket is installed on the bottom of a product(10). The second bracket is installed on the bottom of the product, being separated from the first bracket. The first leg member is rotatably coupled to the first bracket with a hinge. The second leg member is coupled to the middle of the first leg member with a hinge, and the upper end portion of the second leg member is selectively hung on a holding recess(543) of the second bracket.

Images (11)



Classifications

- A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

View 4 more classifications

KR100802663B1
South Korea

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Other languages: Korean

Inventor: 김영신

Worldwide applications

2006 KR

Application KR1020060111486A events

2006-11-13 Application filed by 김영신
2006-11-13 Priority to KR1020060111486A
2008-02-12 Application granted
2008-02-12 Publication of KR100802663B1

Info: Patent citations (2), Cited by (5), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (12)

Hide Dependent translated from Korean

delete delete To adjust the height of products such as tables, ironing boards, chairs, work benches, mounting tables and desks, A first bracket of which a first end of a first leg member is coupled to an axis of the first and second leg members of the first and second leg members, the middle parts of which are joined to each other by a hinge so as to cross each other; A second bracket provided on the other side of the bottom surface of the product by having at least one wing having a plurality of locking grooves to selectively hold the locking member provided at the front end of the second leg member to adjust the height of the product; The first leg member and the second leg member are elastically configured to elastically support the first and second leg members so as not to be folded by the weight of the product when the locking member is removed from the locking groove when the height of the product is adjusted. To each end is coupled to the support member by a hinge; including, The second bracket is provided with an operation hole for selectively engaging the locking groove while the locking member moves in the longitudinal direction of the second bracket, The operator, it is formed in the longitudinal direction in the wing has a rectangular shape, the engaging groove is formed continuously in the inner upper portion, is formed in a closed structure so that the locking member is not separated, Safety catch portion formed in the end portion of the folding direction so that the first and second leg members are not completely folded immediately when folded; And And a folding part connected to the safety catching area by a connection passage so that the first and second leg members are completely folded to be in close contact with the bottom surface of the product, and are formed to extend in the folding direction in the connection passage. Folding height adjustment device. The method of claim 3, wherein when the first and second leg members are unfolded, the curved guide surface is formed on the outer side of the connecting corner of the connecting passage and the folded portion so that the locking member is moved to the operating hole side through the connecting passage without interference. Folding height adjustment device. The folding type height adjusting device according to claim 3 or 4, further comprising folding holding means for maintaining a folded state of the first and second leg members. The method according to claim 5, The folding means is installed on one side of the first leg member or the second leg member facing the operating hole is elastically inserted into the operating hole when the first and second leg members are completely folded Foldable height adjusting device, characterized in that consisting of the ball stopper for maintaining the first and second leg members folded state. The method according to claim 5, The folding means for each fitting hole formed in the wing of the second bracket and the first leg member or the second leg member facing the wing; Insertion pins inserted into each of the fitting holes to maintain a folded state of the first and second leg members; And Foldable height adjustment device characterized in that consisting of; connecting the pin and the wing connecting strap for preventing the loss of the fitting pin. delete The foldable height adjusting device according to claim 6, wherein the support member comprises a shock absorber or a spring. delete The foldable height adjusting device according to claim 9, wherein wheels are provided at lower ends of the first and second leg members. delete

Description

translated from Korean

Folding height adjustment device {APPARATUS FOR HEIGHT CONTROLLING OF FOLDING AND SPREADING TYPE}

1 is an exploded perspective view showing a folding height adjustment device according to the present invention.

Figure 2 is a perspective view of the coupled state of the folding height adjustment device shown in FIG.

Figure 3a, 3b, 3c, 3d is an operating state diagram showing a state in which the height of the product is adjusted by the folding height adjustment device shown in FIG.

Figure 4 is a bottom view showing a state in which the leg member of the folding height adjustment device shown in FIG.

5 is a partially enlarged view showing another embodiment of the folding holding means according to the present invention.

Figure 6a, 6b is a view showing a state provided with a moving means in the leg member of the foldable height adjustment device.

7 is a partially enlarged view showing a state in which a curved guide surface is formed in the corner connection region of the folded portion and the connection passage according to the present invention.

<Description of the symbols for the main parts of the drawings>

10: product 20: first leg member

30: second leg member 32: locking member

40: first bracket 42: insertion portion

50: second bracket 52: wings

54A: Operator 54B: Hanging Groove

54C: Safety catching part 54D: Connecting passage

54E: Folded portion 60: Support member

70: ball stopper

The present invention relates to a folding height adjustment device, in particular, it is possible to easily adjust the height of various products such as tables, ironing boards, chairs, work tables, mounting tables and desks, as well as shock absorbers on each leg member to be crossed it is related to the folding height adjustment device that can ensure the stability during folding and unfolding.

In general, various products such as tables, ironing boards, chairs, work benches, mounting tables and desks have means for adjusting their height.

For example, there is provided a structure in which a female screw is formed at the lower end of the leg of the product, and a support member is coupled to the bottom of the male screw after the male screw is fastened to the female screw. The height adjusting device of this structure is that the male screw is fastened to the female screw in accordance with the rotation of the support member in the tightening direction or loosening direction, so that the height of the legs is adjusted.

On the other hand, the height adjustment device configured to adjust the height of the upper plate disposed on the upper side as the pair of legs to cross and unfold the legs provided. However, the height adjusting device of such a structure could be easily detached from the upper end of the leg because the mounting groove of the bracket fixed to the bottom of the top plate was opened directly downward, whereby the height adjustment state of the product is the user's will irrespective of whether there was a problem that is released, this also caused a problem that the user is injured. In addition, the height adjustment device of such a structure was to turn the product upside down to adjust the height of the product, insert the tip of the leg into the locking groove and then has to work to reverse the product back to its original state.

The present invention has been made to solve the problems of the prior art as described above, the technical problem of the present invention can safely adjust the height of the product, can be easily and quickly adjusted, providing a height adjustment device having a folding structure There is.

Another technical problem of the present invention is to provide a height adjustment device that is easy to move while having a folding structure.

In order to solve the above technical problem, the present invention,

To adjust the height of products such as tables, ironing boards, chairs, work benches, mounting tables and desks,

A first bracket of which a first end of a first leg member is coupled to an axis of the first and second leg members of the first and second leg members, the middle parts of which are joined to each other by a hinge so as to cross each other;

A second bracket provided on the other side of the bottom surface of the product by having at least one wing having a plurality of locking grooves to selectively hold the locking member provided at the front end of the second leg member to adjust the height of the product;

When the height of the product is adjusted to the elasticity to support the first and second leg members not to be folded and give elasticity to the first and second leg members when the locking member is removed from the locking groove when the height of the product Provides a foldable height adjusting device comprising a; support member coupled to the first leg member and the second leg member by a hinge.

The second bracket is provided with an operation hole for selectively engaging the locking groove while the locking member moves in the longitudinal direction of the second bracket,

The operator,

It is formed long in the longitudinal direction in the wing has a rectangular shape, the engaging groove is formed continuously in the inner upper portion, it characterized in that it has a closed structure so that the locking member is not separated.

The operator,

Safety catch portion formed in the end portion of the folding direction so that the first and second leg members are not completely folded immediately when folded; And

The first and second leg members are completely folded and connected to the safety catching area by a connecting passage so as to be in close contact with the bottom surface of the product, and a folded portion extending in the folding direction from the connecting passage. do.

A curved guide surface is formed on the outer side of the connecting corner of the connecting passage and the folded portion so that the catching member moves to the operating hole side through the connecting passage without interference when the first and second leg members are unfolded.

It is characterized in that the folding holding means for maintaining the folded state of the first and second leg members.

The folding holding means is installed on one surface of the first leg member or the second leg member facing the operating hole and is elastically inserted into the operating hole when the first and second leg members are completely folded. It characterized in that the ball stopper for maintaining the folded state.

The folding holding means is each fitting hole formed in the wing of the second bracket and the first leg member or the second leg member facing the wing;

Insertion pins inserted into each of the fitting holes to maintain a folded state of the first and second leg members; And

It characterized in that consisting of; connecting the fitting pin and the wing to prevent the loss of the fitting pin.

The support member is characterized by consisting of a shock absorber or a spring.

The lower end of the first and second leg members in contact with the ground is characterized in that the closing member for preventing slipping is installed.

The lower end of the first and second leg members is characterized in that the wheel is provided as a moving means.

Prior to this, terms or words used in the present specification and claims should not be construed as being limited to the ordinary or dictionary meanings, and the inventors should properly explain the concept of terms in order to best explain their own invention. Based on the principle that can be defined, it should be interpreted as meaning and concept corresponding to the technical idea of the present invention.

Therefore, the embodiments described in the specification and the drawings shown in the drawings are only the most preferred embodiments of the present invention, and do not represent all of the technical idea of the present invention, which can be replaced at the time of the present application It should be understood that there may be various equivalents and variations.

When described in detail with reference to the accompanying drawings a preferred embodiment of the present invention as follows.

As shown in FIGS. 1 and 2, the foldable height adjusting device includes a first bracket 40, a first bracket 40, and a predetermined bracket installed on a bottom surface of the product 10, that is, a bottom surface of the top surface of the product 10. The second bracket 50 is installed on the bottom surface of the product 10 by maintaining a distance, the first leg member 20 rotatably coupled to the first bracket 40 by a hinge, and the first leg member 20 And the second leg member 30 and the first and second leg members 20 and 30, which are coupled to the middle part of the center and the hinge (shaft), and whose upper end part is selectively caught by the locking groove 54B of the second bracket 50. It is provided between the support member 60 for elastically supporting the first and second leg members (20, 30).

Looking at this in more detail as follows.

The product 10 is not limited to tables, ironing boards, chairs, work benches, mounting tables and desks.

The first bracket 40 has a middle portion fixed to one side of the bottom surface of the product 10 by a plurality of screws, and the wings 41 on both sides are bent at a right angle so that the tip portion of the first leg member 20 rotates axially. Possibly combined.

The first bracket 40 is formed with a pair of auxiliary wings 44 for insertion when the second leg member 30 is folded. Therefore, the front end of the first leg member 20 is located inside each auxiliary wing 44 and the second leg member 30 is located between the auxiliary wing 44 and the wings 41 on both sides. The insertion part 42 is intended to maintain a stable and flow-free state when the first and second leg members 20 and 30 are folded, and to stably fix the first leg member 20. At this time, the structure of the first bracket 40 is not limited to this embodiment and may be modified into various structures.

The first and second leg members 20 and 30 may be folded such that their middle portions are rotatably coupled by a hinge (shaft) and overlap each other. Lower ends of the first and second leg members 20 and 30 are formed to extend to both sides, respectively, and both ends of each support part can prevent slippage, and a closing member 80 having a finishing function is installed.

The upper end of the second leg member 30 is provided with a locking member 32. The locking member 32 is fixed to both ends of the upper end of the pair of second leg member 30, the locking member 32 is selectively in the locking groove 54B of the working hole 54A to be described later. It is configured to be caught.

Such first and second leg members 20 and 30 are made of metal and have a square or round pipe structure, but preferably have a square pipe structure.

The second bracket 50 is configured to selectively engage the engaging member 32 provided on the upper end of the second leg member 30, the middle portion is fixed to the bottom of the product 10, the wings 52 on both sides) Is bent at right angles to each other, and the blade 52 is formed with a rectangular working hole 54A having a locking groove 52. The operating hole 54A is formed to have a long length direction of the second bracket 50, that is, a length direction of the blade 52, and has a closed structure. As a result, the closing member 32 is prevented from being separated from the second bracket 50 by the closed structure.

And, the specific structure of the operating hole 54A is as follows. A locking groove 52 is formed successively in the upper portion of the operating hole 54A. The locking groove 52 has a structure that is downwardly opened so that the locking member 32 moving in the longitudinal direction in the operating hole 54A is selectively inserted and locked. On the other hand, at the end of the operating hole 54A in the folding direction (in the direction of the arrow indicated by a dashed line in FIG. 1), a safety catching portion 54C is formed to catch the locking member 32 that is pulled out of the locking groove 52. The safety catching portion 54C serves to prevent the first and second leg members 20 and 30 from being completely folded by the locking member 32. That is, when the first and second leg members 20 and 30 are folded so that the height of the product 10 is not high, the first and second leg members 20 and 30 are not immediately folded and are kept at a constant distance from the ground. It is to prevent the safety accident caused by folding the first and second leg members 20, 30 immediately.

In other directions, the length of the operating hole 54A is not long enough for the locking member 32 to be moved so that the first and second leg members 20 and 30 can be completely folded. That is, in order for the first and second leg members 20 and 30 to be fully folded, the working hole 54A should have a sufficient length. However, the working hole 54A according to the present invention is secured by the safety catching part 54C. Length limit is to prevent the movement of the locking member (32).

A connection passage 54D is formed in an upper portion of the inlet region of the safety catching portion 54C. Then, the folded portion 54E extends in the folding direction with respect to the connection passage 54D. Folded portion 54E is parallel to actuation hole 54A as shown in FIG. 1 or FIG. 2. However, the starting position is the connecting passage 54D located in the area of the safety catching portion 54C, and is formed to extend in the folding direction from the connecting passage 54D. Therefore, when the locking member 32 moves to the folded portion 54E through the connection passage 54D, the first and second leg members 20 and 30 can be completely folded.

The supporting member 60 is provided at both ends of the first and second leg members 20 and 30 so that the first and second leg members 20 and 30 are formed when the locking member 32 is removed from the locking groove 54B. It is to prevent the straight folding by the weight of (10), and may be composed of a spring, elastic rubber, shock absorber, gas cylinder, etc., but preferably made of a shock absorber (Shock Absorber). In general, the shock absorber should be used having a supporting force capable of sufficiently withstanding the weight of the top plate of the product (10). If the shock absorber has a weak support force (buffer force), the weight of the product 10 may not be sufficiently supported, and the first and second leg members 20 and 30 may be folded while the catching member 32 is pulled out of the catching groove 54B. It may cause a safety accident, if the bearing force is too strong, a problem that takes a lot of force to fold the first and second leg members (20,30) occurs.

On the other hand, this embodiment is provided with a folding holding means (90). The folding holding means 90 is composed of a ball stopper 70 is installed on one surface of the first leg member 20 in a position facing the operating hole 54A formed in the blade 52 of the second bracket 50. . The ball stopper 70 is composed of a

steel ball, a spring and a support housing and the like are installed inside the first leg member 20 and the steel ball is exposed to the outside. The ball stopper 70 has a structure in which the spring stops due to the elasticity of the spring, and when the first and second leg members 20 and 30 are folded, the steel ball of the ball stopper 70 is operated by the blade 52. 54A) to be elastically inserted so that the folded state of the first and second leg members 20 and 30 is maintained. At this time, the steel ball of the ball stopper 70 may be formed in a separate hole in the wing 52 to be inserted into a separate hole rather than the operating hole (54A).

As shown in FIG. 5, the folding retaining means 90 according to another embodiment may include the wings 52 of the second bracket 50 and the first leg member 20 or the second facing the wings 52. The fitting holes 94 and 96 formed in the leg members 30 and the fitting holes 94 and 96 are inserted into the fitting holes 94 and 96 to maintain the folded state of the first and second leg members 20 and 30. Pin 92, the fitting pin 92 and the blade 52 is made of a connecting string 98 to prevent the loss of the fitting pin 92 by connecting. The folding retaining means 90 is the fitting hole 94 and the first leg member 20 or the first leg member formed in the blade 52 when the first and second leg members 20 and 30 are folded. It is inserted into the fitting hole 96 formed in the two leg member 30 to prevent the first and second leg members 20 and 30 from being unfolded arbitrarily.

Referring to the operation of the height adjustment device configured as described above is as follows.

The height adjusting device maintains a state in which the first and second leg members 20 and 30 are in close contact with the bottom surface of the upper surface of the product 10, as shown in FIG. 3 or 4A.

At this time, the first and second leg members 20 and 30 maintain their folded state as shown in FIG. 4A by the ball stopper 70 which is the folding holding means 90. That is, since a part of the steel ball of the ball stopper 70 is elastically inserted into the operating hole 54A, the first and second leg members 20 and 30 are not applied without external force applied to the steel ball. It will remain folded. And the locking member 32 is in the state located in the folded part 54E.

And, the support member 60 is reduced in length and provided with elasticity and compressed.

Subsequently, in order to expand the first and second leg members 20 and 30 and adjust the height of the product 10, the lower ends of the first and second leg members 20 and 30 are in contact with the ground. Move the top plate to the top. In this process, the steel ball of the ball stopper 70 is pulled out of the operating hole 54A, and thus the first and second leg members 20 and 30 can be unfolded.

In this operation, the first and second leg members 20 and 30 are unfolded by the elastic force of the support member 60, and thus the locking member 32 is moved from the folded portion 54E to the connection passage 54D.

Subsequently, the user moves the locking member 32 from the connection passage 54D to the safety locking portion 54C side as shown in FIG. 4B. In this process, the top plate of the product 10 maintains a predetermined height on the ground.

After supporting the first leg member 20 or the second leg member 30 and moving the upper plate of the product 10 upwards, the locking member 32 is shown in FIG. 4C along the working hole 54A. The solid member moves in the direction of the solid arrow (unfolding direction), and in such a state, when stopping the operation of lifting the product 10 upward, the locking member 32 is inserted into the adjacent locking groove 54B, and thus the first and second The leg members 20 and 30 maintain the unfolded state and the height of the product 10 is increased. On the other hand, since the support member 60, which was compressed when the upper plate of the product 10 is lifted, generates elasticity, the operation of lifting the upper plate to the top is smooth, and it can be lifted with a small force.

When the upper plate of the product 10 is lifted further, the locking member 32 is moved in the unfolding direction while being pulled out of the locking groove 54B which has been inserted.

In this process, the height of the upper plate of the product 10 can be increased.

Then, to lower the height, the locking member 32 is pulled out of the locking groove 54B. At this time, even if the locking member 32 is pulled out of the locking groove 54B, the support member 60 is installed between the first and second leg members 20 and 30 to resilient the first and second leg members 20 and 30. Since it is supporting, the 1st and 1st leg members 20 and 30 will not be folded by the weight of the upper board.

Subsequently, the height of the product 10 is lowered by inserting the locking member 32 into the locking groove 54B at a desired position.

On the other hand, in order to fold the finished product 10, the locking member 32 is moved in the folding direction (one dashed line arrow direction shown in FIG. 4D), and then the folding part 54E is moved through the connecting passage 54D. . The first and second leg members 20 and 30 are folded as shown in FIG. 4A while the locking member 32 moves to the end with the folded portion 54E, and the ball stopper 70 is operated by the hole 54A.) To be folded.

Foldable height adjustment device according to another embodiment is provided with a moving means 100 in the lower end of the first and second leg members 20, 30 as shown in Figure 6a, 6b. This means for moving 100 is to facilitate the movement of the product (10). For this purpose, a wheel having straightness as shown in FIG. 5A may be used, and a caster-type wheel free of steering (rotation) as shown in FIG. 6B may be used. In particular, the caster-type wheel is provided with a locking device to prevent the rolling of the wheel to be able to be stably fixed the position of the product (10). Caster-type wheels used in this embodiment and its locking device are generally used, so detailed description thereof will be omitted.

On the other hand, according to another embodiment, the curved guide surface 54F is formed on the outer side of the connection corner of the connecting passage 54D and the folded portion 54E, as shown in FIG. This curved guide surface 54F is for causing the catching member 32 to move to the operating hole 54A side through the connecting passage 54D without interference when the first and second leg members 20 and 30 are unfolded. In other words, when the upper plate is moved upward to unfold the first and second leg members 20 and 30, the locking member 32 moves from the folded portion 54E to the connecting passage 54D and then the curved guide groove (54F) can be moved to the operating hole 54A through the connection passage 54D without interference, so that an operation for raising the height of the product 10 can be quickly and easily performed.

Since the folding height adjusting device according to the present invention has a closed structure in which a working hole having a locking groove is formed, the locking member is not separated from the working hole, thereby preventing a safety accident caused by the departure of the locking member. Since the support member is installed between the two leg members to support the elasticity, even if the locking member is pulled out of the locking groove, the product can prevent the first and second leg members from being folded due to its own weight, thereby preventing safety accidents. Since the ball stopper, which is a folding holding means, is elastically inserted into the operation hole in the folded state of the first and second leg members, the first and second leg members can be stably maintained in the folded state. In addition, since the locking member is located in the operating hole of the closed structure, there is no detachment phenomenon, and the height of the product is adjusted only by lifting the top plate of the product or removing the locking member from the locking groove so that the height adjustment of the product is easy. It can be done. On the other hand, since the first and second leg members are folded, the storage performance of the product is improved.

As described above, although the present invention has been described by way of limited embodiments and drawings, the present invention is not limited thereto, and the present invention is provided by the person skilled in the art to which the present invention pertains. Of course, various modifications and variations are possible within the scope of equivalents of the claims to be described.

Patent Citations (2)

Publication number	Priority date	Publication date	Assignee	Title
KR100339486B1	2000-05-17	2002-06-15	서광훈	A up and down assembly of bed
KR200284468Y1	2002-05-06	2002-08-03	(주)은행인더스트리	ironing board
Family To Family Citations				

* Cited by examiner, † Cited by third party

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Publication number	Priority date	Publication date	Assignee	Title
KR200470921Y1 *	2012-03-15	2014-01-21	(주)테크노밸리	Transportable checkstand
KR20180057800A *	2016-11-22	2018-05-31	윤형한	electromotive bed
KR101958175B1 *	2018-06-26	2019-03-18	주식회사 씨아이에프	Larva selecting system
KR20190072159A *	2017-12-15	2019-06-25	주식회사 삼흥사	Height-adjustable table
KR20200002379U *	2019-04-19	2020-10-28	주식회사 뉴런모터스	Flat bench using as working table by convenient height-adjustable
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
US6302479B1	2001-10-16	Foldable beach chair
KR100802663B1	2008-02-12	Apparatus for height controlling of folding and spreading type
US7712422B2	2010-05-11	Folding table
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US20180177290A1	2018-06-28	Integrated foldable table tennis table
US3028205A	1962-04-03	Folding table tray and the like with operating handle
US20070278363A1	2007-12-06	Collapsible door painting support stand
KR200457810Y1	2012-01-03	The table for a bed
CN101152715B	2011-02-16	Folding structure for supporting table-board tool
CN210025585U	2020-02-07	Lifting saw bench
KR200195263Y1	2000-09-01	A foldable table leg
JP6153102B2	2017-06-28	Folding table

CN209950625U	2020-01-17	Folding table
AU713350B3	1999-12-02	Banquet table
GB2417196A	2006-02-22	A collapsible item of furniture with spring biased stays

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
KR1020060111486A	2006-11-13	2006-11-13	Apparatus for height controlling of folding and spreading type

Applications Claiming Priority (1)

Application	Filing date	Title
KR1020060111486A	2006-11-13	Apparatus for height controlling of folding and spreading type

Legal Events

Date	Code	Title	Description
2006-11-13	A201	Request for examination	
2007-08-29	E902	Notification of reason for refusal	
2007-10-31	E701	Decision to grant or registration of patent right	
2008-02-01	GRNT	Written decision to grant	
2008-04-10	G170	Publication of correction	
2011-01-31	FPAY	Annual fee payment	**Payment date:** 20110131 **Year of fee payment:** 4
2012-02-02	LAPS	Lapse due to unpaid annual fee	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
absorbing agent		claims,description	8	0.000
shock		claims,description	8	0.000
insertion		claims,description	5	0.000
ironing		claims,description	5	0.000

Show all concepts from the description section

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(19) 대한민국특허청(KR)
(12) 등록특허공보(B1)

(45) 공고일자 2008년02월12일
(11) 등록번호 10-0802663
(24) 등록일자 2008년02월01일

(51) Int. Cl.
A47B 9/16 (2006.01) *A47B 13/08* (2006.01)
A47B 3/08 (2006.01)
(21) 출원번호 10-2006-0111486
(22) 출원일자 2006년11월13일
심사청구일자 2006년11월13일
(56) 선행기술조사문헌
KR100339486 B1
KR200284468 Y1

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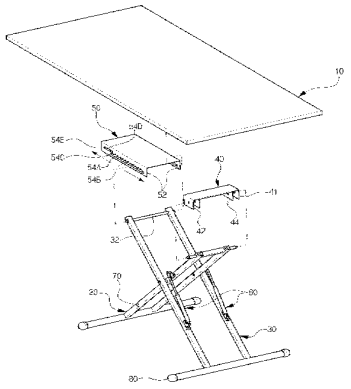
전체 청구항 수 : 총 7 항 심사관 : 박미정

(54) 접철식 높이조절장치

(57) 요 약

접철식 높이조절장치가 개시된다. 이 접철식 높이 조절장치는 탁자, 다림질판, 의자, 작업대, 재치대 및 책상과 같은 제품의 높이를 조절하기 위한 것으로서, 힌지에 의해 그 중간부가 서로 교차되게 결합되어 접혀지도록 된 제 1,2다리부재 중에서 제 1다리부재 선단부가 축으로 결합되고, 상기 제품의 저면 일측에 설치되는 제 1브라켓; 상기 제 2다리부재의 선단부에 구비된 걸림부재가 선택적으로 걸려 제품의 높이가 조절되도록 하기 위한 다수의 걸림홈을 갖는 적어도 하나 이상의 날개를 구비하여 제품의 저면 타측에 설치되는 제 2브라켓; 상기 제품의 높이 조절시 상기 걸림부재가 상기 걸림홈에서 빠졌을 때 상기 제품의 자중에 의해 제 1,2다리부재가 접혀지지 않게 탄력 지지하도록 신축가능하게 구성되어 상기 제 1다리부재와 제 2다리부재에 각 일단이 힌지로 결합되는 지지부;를 포함하는 것을 특징으로 한다. 이러한 접철식 높이조절장치는 폐쇄형의 작동공 및 제 1,2다리부재를 탄력 지지하는 지지부재 등에 의해 안정적이고 용이하게 높이조절이 가능하게 되고, 제품을 사용하지 않을 경우에는 다리부재들을 접을 수 있어서 보관성이 향상된다.

대표도 - 도1



청구항 1

삭제

청구항 2

삭제

청구항 3

탁자, 다림질판, 의자, 작업대, 재치대 및 책상과 같은 제품의 높이를 조절하기 위한 것으로서,

힌지에 의해 그 중간부가 서로 교차되게 결합되어 접혀지도록 된 제 1,2다리부재 중에서 제 1다리부재 선단부가 축으로 결합되고, 상기 제품의 저면 일측에 설치되는 제 1브라켓;

상기 제 2다리부재의 선단부에 구비된 걸림부재가 선택적으로 걸려 제품의 높이가 조절되도록 하기 위한 다수의 걸림홈을 갖는 적어도 하나 이상의 날개를 구비하여 제품의 저면 타측에 설치되는 제 2브라켓;

상기 제품의 높이 조절시 상기 걸림부재가 상기 걸림홈에서 빠졌을 때 상기 제품의 자중에 의해 제 1,2다리부재가 접혀지지 않게 탄력 지지하도록 신축가능하게 구성되어 상기 제 1다리부재와 제 2다리부재에 각 일단이 힌지로 결합되는 지지부재;를 포함하고,

상기 제 2브라켓은 상기 걸림부재가 제 2브라켓의 길이방향으로 이동하면서 선택적으로 상기 걸림홈에 걸리기 위한 작동공을 구비하되,

상기 작동공은,

상기 날개에 길이방향으로 길게 형성되어 장방형 형태를 갖고, 내측 상부에는 상기 걸림홈이 연이어 형성되며,

상기 걸림부재가 이탈되지 않도록 폐쇄된 구조로 형성되며,

상기 제 1,2다리부재가 접혀질 때 곧바로 완전히 접혀지지 않도록 접힘방향 끝부분에 형성되는 안전걸림부: 및

상기 제 1,2다리부재가 완전히 접혀져 제품의 저면에 밀착되도록 연결통로에 의해 상기 안전걸림부 양옆과 연결되고, 상기 연결통로에서 접힘방향으로 길게 연장 형성되는 접힘부;를 구비하여 구성되는 것을 특징으로 하는 접철식 높이조절장치.

청구항 4

청구항 3에 있어서, 상기 연결통로와 접힘부의 연결코너 외측에는 상기 제 1,2다리부재가 펼쳐질 때 상기 걸림부재가 간섭없이 연결통로를 통하여 작동공 측으로 이동되도록 하기 위한 곡선 안내면이 형성되는 것을 특징으로 하는 접철식 높이조절장치.

청구항 5

청구항 3 또는 청구항 4에 있어서, 제 1,2다리부재의 접힘상태를 유지하기 위한 접힘유지수단이 구비되는 것을 특징으로 하는 접철식 높이조절장치.

청구항 6

청구항 5에 있어서, 상기 접힘유지수단은 상기 작동공과 마주보는 제 1다리부재 또는 제 2다리부재의 일면에 설치되어 제 1,2다리부재가 완전히 접혀질 때 상기 작동공에 탄력적으로 삽입되어 상기 제 1,2다리부재가 접힘상태를 유지하도록 하기 위한 볼 스톱퍼로 구성되는 것을 특징으로 하는 접철식 높이조절장치.

청구항 7

청구항 5에 있어서, 상기 접힘유지수단은 상기 제 2브라켓의 날개와 상기 날개와 마주보는 제 1다리부재 또는 제 2다리부재에 형성되는 각각의 끼움공;

각 상기 끼움공에 삽입되어 제 1,2다리부재의 접힘상태를 유지하기 위한 끼움편; 및

상기 끼움핀과 날개를 연결하여 끼움핀의 분실을 방지하기 위한 연결끈;으로 이루어지는 것을 특징으로 하는 접철식 높이조절장치.

청구항 8

삭제

청구항 9

청구항 6에 있어서, 상기 지지부재는 속업쇼버 또는 스프링으로 이루어지는 것을 특징으로 하는 접철식 높이조절장치.

청구항 10

삭제

청구항 11

청구항 9에 있어서, 상기 제 1,2다리부재의 하단부에는 이동수단으로서 바퀴가 구비되는 것을 특징으로 하는 접철식 높이조절장치.

청구항 12

삭제

명 세 서

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

<17> 본 발명은 접철식 높이조절장치에 관한 것으로, 특히 탁자, 다림질판, 의자, 작업대, 재치대 및 책상과 같은 다양한 제품의 높이를 용이하게 다단계로 조절할 수 있을 뿐만 아니라, 교차되는 각 다리부재에 속업쇼버가 설치됨으로써 접힘 및 펼침시 안정성을 확보할 수 있는 접철식 높이조절장치에 관한 것이다.

<18> 일반적으로 탁자, 다림질판, 의자, 작업대, 재치대 및 책상과 같은 다양한 제품들은 그 높이를 조절하기 위한 수단을 구비하고 있다.

<19> 예를 들면, 제품의 다리 하단부에 암나사를 형성하고, 이 암나사에 숫나사를 체결한 후 숫나사의 하단에 받침부재를 결합한 구조가 제공된다. 이 구조의 높이조절장치는 받침부재를 조임방향 또는 풀림방향으로 회전시키는 것에 따라 숫나사가 암나사에 체결되어 이동하게 되므로 결국 다리의 높이가 조절되는 것이다.

<20> 한편, 한 쌍의 다리를 교차시켜 다리를 접고 펼치는 것에 따라 그 상부에 배치된 상판의 높이가 조절되도록 구성된 높이조절장치가 제공되었다. 그러나, 이러한 구조의 높이조절장치는 상판의 저면에 고정 설치된 브라켓의 설치홈이 직하방으로 개구되어 있었기 때문에 다리의 상단부가 쉽게 이탈될 수 있었고, 이로 인하여 제품의 높이조절된 상태가 사용자의 의지와 상관없이 해제되는 문제점이 있었으며, 이로 인하여 사용자가 상해를 입는 문제점도 유발되었다. 그리고, 이러한 구조의 높이조절장치는 제품의 높이를 조절하기 위해서 제품을 뒤집은 후 다리의 선단부를 걸림홈에 삽입시킨 후 제품을 다시 원상태로 뒤집는 작업을 해야 하는 번거러움이 있었던 것이다.

발명이 이루고자 하는 기술적 과제

<21> 본 발명은 상기와 같은 종래기술의 문제점을 해소하기 위하여 안출된 것으로, 본 발명의 기술적 과제는 제품의 높이를 안전하게 조절할 수 있고, 용이하고 신속하게 조절할 수 있으며, 접힘구조를 갖는 높이조절장치를 제공하는 데 있다.

<22> 본 발명의 다른 기술적 과제는 접힘구조를 갖으면서도 이동이 용이한 높이조절장치를 제공하는 데 있다.

발명의 구성 및 작용

<23> 상기와 같은 기술적 과제를 해소하기 위해, 본 발명은,

<24> 탁자, 다림질판, 의자, 작업대, 재치대 및 책상과 같은 제품의 높이를 조절하기 위한 것으로서,

<25> 힌지에 의해 그 중간부가 서로 교차되게 결합되어 접혀지도록 된 제 1,2다리부재 중에서 제 1다리부재 선단부가 축으로 결합되고, 상기 제품의 저면 일측에 설치되는 제 1브라켓;

<26> 상기 제 2다리부재의 선단부에 구비된 걸림부재가 선택적으로 걸려 제품의 높이가 조절되도록 하기 위한 다수의 걸림홈을 갖는 적어도 하나 이상의 날개를 구비하여 제품의 저면 타측에 설치되는 제 2브라켓;

<27> 상기 제품의 높이 조절시 상기 걸림부재가 상기 걸림홈에서 빠졌을 때 상기 제품의 자중에 의해 제 1,2다리부재가 접혀지지 않게 지지하고 제 1,2다리부재에 탄력을 부여하도록 신축가능하게 구성되어 상기 제 1다리부재와 제 2다리부재에 각 일단이 힌지로 결합되는 지지부재;를 포함하는 것을 특징으로 하는 접철식 높이조절장치를 제공한다.

<28> 상기 제 2브라켓은 상기 걸림부재가 제 2브라켓의 길이방향으로 이동하면서 선택적으로 상기 걸림홈에 걸리기 위한 작동공을 구비하되,

<29> 상기 작동공은,

<30> 상기 날개에 길이방향으로 길게 형성되어 장방형 형태를 갖고, 내측 상부에는 상기 걸림홈이 연이어 형성되며, 상기 걸림부재가 이탈되지 않도록 폐쇄된 구조를 갖는 것을 특징으로 한다.

<31> 상기 작동공은,

<32> 상기 제 1,2다리부재가 접혀질 때 곧바로 완전히 접혀지지 않도록 접힘방향 끝부분에 형성되는 안전걸림부; 및

<33> 상기 제 1,2다리부재가 완전히 접혀져 제품의 저면에 밀착되도록 연결통로에 의해 상기 안전걸림부 영역과 연결되고, 상기 연결통로에서 접힘방향으로 길게 연장 형성되는 접힘부;를 더 포함하는 것을 특징으로 한다.

<34> 상기 연결통로와 접힘부의 연결코너 외측에는 상기 제 1,2다리부재가 펼쳐질 때 상기 걸림부재가 간섭없이 연결통로를 통하여 작동공 측으로 이동되도록 하기 위한 곡선 안내면이 형성되는 것을 특징으로 한다.

<35> 제 1,2다리부재의 접힘상태를 유지하기 위한 접힘유지수단이 구비되는 것을 특징으로 한다.

<36> 상기 접힘유지수단은 상기 작동공과 마주보는 제 1다리부재 또는 제 2다리부재의 일면에 설치되어 제 1,2다리부재가 완전히 접혀질 때 상기 작동공에 탄력적으로 삽입되어 상기 제 1,2다리부재가 접힘상태를 유지하도록 하기 위한 볼 스톱퍼로 구성되는 것을 특징으로 한다.

<37> 상기 접힘유지수단은 상기 제 2브라켓의 날개와 상기 날개와 마주보는 제 1다리부재 또는 제 2다리부재에 형성되는 각각의 끼움공;

<38> 각 상기 끼움공에 삽입되어 제 1,2다리부재의 접힘상태를 유지하기 위한 끼움핀; 및

<39> 상기 끼움핀과 날개를 연결하여 끼움핀의 분실을 방지하기 위한 연결끈;으로 이루어지는 것을 특징으로 한다.

<40> 상기 지지부재는 쇽업쇼버 또는 스프링으로 이루어지는 것을 특징으로 한다.

<41> 지면과 닿는 상기 제 1,2다리부재의 하단부에는 미끄럼을 방지하기 위한 마감부재가 설치되는 것을 특징으로 한다.

<42> 상기 제 1,2다리부재의 하단부에는 이동수단으로서 바퀴가 구비되는 것을 특징으로 한다.

<43> 이에 앞서, 본 명세서 및 청구범위에 사용된 용어나 단어는 통상적이거나 사전적인 의미로 한정해서 해석되어서는 아니 되며, 발명자는 그 자신의 발명을 가장 최선의 방법으로 설명하기 위해서 용어의 개념을 적절하게 정의할 수 있다는 원칙에 입각하여 본 발명의 기술적 사상에 부합하는 의미와 개념으로 해석되어야만 한다.

<44> 따라서, 본 명세서에 기재된 실시 예와 도면에 도시된 구성은 본 발명의 가장 바람직한 일 실시 예에 불과할 뿐이고, 본 발명의 기술적 사상을 모두 대변하는 것은 아니므로, 본 출원시점에 있어서 이들을 대체할 수 있는 다양한 균등물과 변형 예들이 있을 수 있음을 이해하여야 한다.

<45> 이와 같은 본 발명의 바람직한 실시 예를 첨부된 도면을 토대로 상세하게 설명하면 다음과 같다.

<46> 도 1 및 도 2에 도시된 바와 같이 접철식 높이조절장치는 제품(10)의 저면, 즉 제품(10)의 상판 저면에 설치되는 제 1브라켓(40)과, 제 1브라켓(40)과 소정의 거리를 유지하여 제품(10)의 저면에 설치되는 제 2브라켓(50)과, 제 1브라켓(40)에 힌지로 회전가능하게 결합되는 제 1다리부재(20)와, 제 1다리부재(20)의 중간부와 힌지(축)로 결합되고 상단부가 제 2브라켓(50)의 걸림홈(54B)에 선택적으로 걸리는 제 2다리부재(30)와, 제 1,2다리부재(20,30) 사이에 설치되어 제 1,2다리부재(20,30)를 탄력 지지하는 지지부재(60)로 이루어진다.

<47> 이를 보다 구체적으로 살펴보면 다음과 같다.

<48> 여기서 제품(10)은 탁자, 다림질판, 의자, 작업대, 재치대 및 책상에 한정되지 않는다.

<49> 제 1브라켓(40)은 중간부가 다수의 나사들에 의해 제품(10)의 저면 일측에 고정되고, 양측의 날개(41)는 직각으로 절곡되어 제 1다리부재(20)의 선단부가 축으로 회전가능하게 결합된다.

<50> 이러한 제 1브라켓(40)에는 제 2다리부재(30)가 접혀질 때 삽입되기 위한 삽입부(42)가 한 쌍의 보조날개(44)에 의해 형성된다. 따라서, 제 1다리부재(20)의 선단부는 각 보조날개(44)의 내측에 위치하게 되고 제 2다리부재(30)는 보조날개(44)와 양측의 날개(41) 사이에 위치하게 된다. 이러한 삽입부(42)는 제 1,2다리부재(20,30)가 접혀졌을 때 안정되고 유동없는 상태를 유지하도록 하고, 제 1다리부재(20)를 안정되게 고정하기 위한 것이다. 이때 상기 제 1브라켓(40)의 구조는 본 실시 예에 국한되는 것은 아니고 다양한 구조로 변형될 수 있다.

<51> 제 1,2다리부재(20,30)는 그 중간부가 힌지(축)에 의해 회전가능하게 결합되어 서로 겹쳐지도록 접힐 수 있다. 이 제 1,2다리부재(20,30)의 하단은 지지부가 양측으로 각각 연장 형성되며, 각 지지부의 양단에는 미끄럼을 방지할 수 있고, 마감기능을 갖는 마감부재(80)가 설치된다.

<52> 그리고, 제 2다리부재(30)의 상부 선단에는 걸림부재(32)가 구비된다. 이 걸림부재(32)는 한 쌍으로 이루어진 제 2다리부재(30)의 상단 선단부에 양단이 고정되고, 이러한 걸림부재(32)는 후술할 작동공(54A)의 걸림홈(54B)에 선택적으로 걸리도록 구성된다.

<53> 이와 같은 제 1,2다리부재(20,30)는 금속재로 구성되고 사각 또는 원형 파이프 구조를 갖으나, 사각 파이프 구조를 갖는 것이 바람직하다.

<54> 제 2브라켓(50)은 제 2다리부재(30)의 상단에 구비된 걸림부재(32)가 선택적으로 걸리도록 구성된 것으로, 중간부는 제품(10)의 저면에 고정 설치되고, 양측에는 날개(52)가 직각으로 각각 절곡되어 형성되며, 이 날개(52)에는 걸림홈(52)을 구비한 장방형의 작동공(54A)이 형성된다. 이 작동공(54A)은 제 2브라켓(50)의 길이방향 즉, 날개(52)의 길이방향을 길게 형성되며 폐쇄된 구조를 갖는다. 이와 같이 폐쇄된 구조에 의해 걸림부재(32)가 제 2브라켓(50)으로부터 이탈되는 현상이 방지된다.

<55> 그리고, 작동공(54A)의 구체적 구조는 다음과 같다. 작동공(54A)의 상부에는 걸림홈(52)이 연이어 형성된다. 이 걸림홈(52)은 작동공(54A) 내에서 길이방향으로 이동하는 걸림부재(32)가 선택적으로 삽입되어 걸리도록 하향 개구된 구조를 갖는다. 한편, 접혀지는 방향(도 1에 일점쇄선으로 표시된 화살표 방향)의 작동공(54A) 끝부분에는 걸림홈(52)에서 빠진 걸림부재(32)가 걸리는 안전걸림부(54C)가 형성된다. 이 안전걸림부(54C)는 걸림부재(32)가 걸림으로써 제 1,2다리부재(20,30)가 완전히 접히지 않도록 하는 역할을 한다. 즉, 제품(10)의 높이가 높지 않도록 제 1,2다리부재(20,30)를 접을 경우에, 제 1,2다리부재(20,30)가 곧바로 접혀지지 않고 지면과 일정한 거리를 유지한 상태가 되도록 하여 제 1,2다리부재(20,30)가 곧바로 접힘으로써 발생되는 안전사고를 방지하기 위한 것이다.

<56> 다른 방향에서 설명하면, 작동공(54A)의 길이는 제 1,2다리부재(20,30)가 완전히 접힐 수 있도록 걸림부재(32)가 이동될 수 있는 충분한 길이가 아닌 것이다. 즉, 제 1,2다리부재(20,30)가 완전히 접히기 위해서는 작동공(54A)가 충분한 길이를 구비하여야 하나, 본 발명에 따른 작동공(54A)은 안전걸림부(54C)에 의해 그 길이제한이 되어 걸림부재(32)의 이동을 방지하는 것이다.

<57> 안전걸림부(54C)의 입구 영역에는 상부로 연결통로(54D)가 형성된다. 그리고, 연결통로(54D)를 기준으로 접힘방향으로는 접힘부(54E)가 연장 형성된다. 접힘부(54E)는 도 1 또는 도 2에 도시된 바와 같이 작동공(54A)와 평행하다. 그러나 그 시작 위치가 안전걸림부(54C)의 영역에 위치한 연결통로(54D)이고, 이러한 연결통로(54D)에서 접힘방향으로 연장 형성된 것이다. 따라서, 걸림부재(32)가 연결통로(54D)를 통하여 접힘부(54E)로 이동하게 되면 제 1,2다리부재(20,30)는 완전히 접힐 수 있게 된다.

<58> 지지부재(60)는 제 1,2다리부재(20,30)에 양단이 각각 설치되어 걸림부재(32)가 걸림홈(54B)에서 빠졌을 때 제 1,2다리부재(20,30)가 제품(10)의 자중에 의해 곧바로 접혀지는 것을 방지하기 위한 것으로, 스프링, 탄성고무, 속업쇼버, 가스실린더 등으로 구성될 수 있으나, 속업쇼버(Shock Absorber)로 이루어지는 것이 바람직하다. 일반적으로 사용되는 속업쇼버는 제품(10)의 상판 무게를 충분히 견딜 수 있는 지지력을 구비한 것이 사용되어야 한다. 만약, 속업쇼버의 지지력(완충력)이 약하면 제품(10)의 무게를 충분히 지지하지 못하여 걸림부재(32)가 걸림홈(54B)에서 빠짐과 동시에 제 1,2다리부재(20,30)가 접혀져 안전사고를 유발할 수 있고, 지지력이 너무 강하면 제 1,2다리부재(20,30)를 접는 작업에 많은 힘이 소요되는 문제점이 발생된다.

<59> 한편, 본 실시 예는 접힘유지수단(90)을 구비한다. 이 접힘유지수단(90)은 제 2브라켓(50)의 날개(52)에 형성된 작동공(54A)과 마주보는 위치의 제 1다리부재(20) 일면에는 설치되는 볼 스톱퍼(70)로 구성된다. 이 볼 스톱퍼(70)는 강철볼과 스프링 및 지지 하우징 등으로 구성되어 제 1다리부재(20)의 내부에 설치되고 강철볼은 외부로 노출된다. 이 볼 스톱퍼(70)는 스프링의 탄성에 의해 출몰하는 구조를 갖는 것으로, 제 1,2다리부재(20,30)를 접을 때 볼 스톱퍼(70)의 강철볼이 날개(52)의 작동공(54A)에 탄력적으로 삽입되도록 하여 제 1,2다리부재(20,30)의 접혀진 상태가 유지되도록 하는 기능을 갖는다. 이때, 볼 스톱퍼(70)의 강철볼이 작동공(54A)이 아닌 별도의 구멍에 삽입되도록 날개(52)에 별도의 구멍을 형성할 수 있다.

<60> 다른 실시 예에 따른 접힘유지수단(90)은 도 5에 도시된 바와 같이 상기 제 2브라켓(50)의 날개(52)와 상기 날개(52)와 마주보는 제 1다리부재(20) 또는 제 2다리부재(30)에 형성되는 각각의 끼움공(94,96)과, 각 상기 끼움공(94,96)에 삽입되어 제 1,2다리부재(20,30)의 접힘상태를 유지하기 위한 끼움핀(92)와, 상기 끼움핀(92)과 날개(52)를 연결하여 끼움핀(92)의 분실을 방지하기 위한 연결끈(98)으로 이루어지는 것이다. 이러한 접힘유지수단(90)은 제 1,2다리부재(20,30)가 접혀졌을 때 끼움핀(92)을 날개(52)에 형성된 끼움공(94)과 제 1다리부재(20) 또는 제 2다리부재(30)에 형성된 끼움공(96)으로 끼워서 제 1,2다리부재(20,30)가 임의로 펼쳐지는 현상을 방지하게 된다.

<61> 이와 같이 구성된 본 높이조절장치의 작용을 설명하면 다음과 같다.

<62> 본 높이조절장치는 제 1,2다리부재(20,30)가 접혀졌을 때 도 3 또는 도 4a에 도시된 바와 같이 제품(10)의 상면 저면에 밀착(근접)된 상태를 유지하게 된다.

<63> 이때, 제 1,2다리부재(20,30)는 접힘유지수단(90)인 볼 스톱퍼(70)에 의해 도 4a에 도시된 바와 같이 그 접힘상태를 유지한다. 즉, 볼 스톱퍼(70)의 강철볼 일부가 작동공(54A)에 탄력적으로 삽입되어 있기 때문에 강철볼을 밀어넣을 정도의 외력이 가해지지 않고서는 제 1,2다리부재(20,30)는 그 접혀진 상태를 유지하게 된다. 그리고, 걸림부재(32)는 접힘부(54E)에 위치한 상태이다.

<64> 그리고, 지지부재(60)는 그 길이가 축소되고 탄력을 구비하여 압축된 상태이다.

<65> 이어서, 제 1,2다리부재(20,30)를 펼쳐 제품(10)의 높이를 조절하기 위해서는, 제 1,2다리부재(20,30)의 하단부가 지면에 닿은 상태에서 제품(10)의 상판을 상부로 이동시킨다. 이 과정에서 볼 스톱퍼(70)의 강철볼은 작동공(54A)에서 빠지게 되고, 따라서 제 1,2다리부재(20,30)는 펼쳐질 수 있게 된다.

<66> 이러한 동작으로 제 1,2다리부재(20,30)는 지지부재(60)의 탄성력에 의해 펼쳐지게 되고, 따라서 걸림부재(32)가 접힘부(54E)에서 연결통로(54D) 측으로 이동된다.

<67> 이어서, 사용자가 걸림부재(32)를 도 4b에 도시된 바와 같이 연결통로(54D)에서 안전걸림부(54C) 측으로 이동시킨다. 이 과정으로 제품(10)의 상판은 지면에서 소정의 높이를 유지하게 된다.

<68> 계속하여 제 1다리부재(20) 또는 제 2다리부재(30)를 지지한 후 제품(10)의 상판을 상부로 이동시키게 되면 걸림부재(32)는 작동공(54A)을 따라 도 4c에 도시된 실선 화살표 방향(펼침방향)으로 이동하게 되고, 이러한 상태에서 제품(10)을 상부로 들어올리는 동작을 멈추게 되면 걸림부재(32)는 인접한 걸림홈(54B)에 삽입되고, 따라서 제 1,2다리부재(20,30)는 펼쳐진 상태를 유지하게 되며 제품(10)의 높이는 높아지게 된다. 한편, 제품(10)의 상판을 들어올릴 때 압축되었던 지지부재(60)가 신장되면서 탄력을 발생시키기 때문에 상판을 상부로 들어올리는 동작이 원활함은 물론, 적은 힘으로 들어올릴 수 있게 된다.

<69> 그리고 제품(10)의 상판을 더욱 들어올리게 되면 걸림부재(32)는 삽입되어 있던 걸림홈(54B)에서 빠지면서 펼침방향으로 이동하게 되는 것이다.

<70> 이러한 과정으로 제품(10)의 상판 높이는 높아질 수 있게 된다.

<71> 그리고, 그 높이를 낮추기 위해서는 걸림부재(32)를 걸림홈(54B)에서 빼낸다. 이때, 걸림부재(32)가 걸림홈(54B)에서 빠져있더라도 제 1,2다리부재(20,30) 사이에 지지부재(60)가 설치되어 제 1,2다리부재(20,30)를 탄력지지하고 있기 때문에 제 1,2다리부재(20,30)는 상판의 자중에 의해 접혀지지 않게 된다.

<72> 이어서, 걸림부재(32)를 원하는 위치의 걸림홈(54B)에 삽입시킨 것으로 제품(10)의 높이는 낮아진다.

<73> 한편, 사용이 완료된 제품(10)을 접기 위해서는 걸림부재(32)를 접힘방향(도 4d에 도시된 일점쇄선 화살표 방향)으로 이동시킨 후 연결통로(54D)를 통하여 접힘부(54E)로 이동시킨다. 상기 걸림부재(32)가 접힘부(54E)로 끝부분으로 이동하면서 제 1,2다리부재(20,30)는 도 4a에 도시된 바와 같이 접혀지고, 볼 스톱퍼(70)는 작동공(54A)에 삽입되어 그 접힘상태를 유지하게 되는 것이다.

<74> 다른 실시 예에 따른 접철식 높이조절장치는 도 6a,6b에 도시된 바와 같이 제 1,2다리부재(20,30)의 하단부에 이동수단(100)이 구비된 것이다. 이 이동수단(100)은 제품(10)의 이동을 원활하게 이루어지도록 하기 위한 것이다. 이를 위해서 도 5a에 도시된 바와 같은 직진성을 갖는 바퀴가 사용될 수도 있고, 도 6b에 도시된 바와 같은 조향(회전)이 자유로운 캐스터타입 바퀴가 사용될 수 있다. 특히, 캐스터타입 바퀴에는 잠금장치를 구비하여 바퀴의 구름을 방지함으로써 제품(10)의 위치가 안정되게 고정되도록 할 수도 있는 것이다. 본 실시 예에 사용되는 캐스터타입의 바퀴 및 그 잠금장치는 일반적으로 사용되는 것이므로 상세한 설명은 생략한다.

<75> 한편, 또 다른 실시 예에 따르면, 도 7에 도시된 바와 같이 연결통로(54D)와 접힘부(54E)의 연결코너 외측에는 곡선 안내면(54F)가 형성된다. 이 곡선 안내면(54F)는 제 1,2다리부재(20,30)가 펼쳐질 때 걸림부재(32)가 간섭없이 연결통로(54D)를 통하여 작동공(54A) 측으로 이동되도록 하기 위한 것이다. 다시 설명하면, 제 1,2다리부재(20,30)를 펼치기 위해서 상판을 상부로 이동시키게 되면 걸림부재(32)는 접힘부(54E)에서 연결통로(54D) 측으로 이동한 후 곡선 안내홈(54F)을 따라 간섭없이 연결통로(54D)를 통과하여 작동공(54A)으로 이동될 수 있어서, 제품(10)의 높이를 높이기 위한 동작이 신속하게 용이하게 이루어질 수 있게 된다.

발명의 효과

<76> 본 발명에 따른 접철식 높이조절장치는 걸림홈이 형성된 작동공이 폐쇄된 구조를 갖기 때문에 걸림부재가 작동공으로부터 이탈되지 않아 걸림부재의 이탈로 발생되는 안전사고를 미연에 방지할 수 있고, 제 1,2다리부재 사이에 지지부재가 설치되어 탄력 지지하고 있기 때문에 걸림부재가 걸림홈에서 빠지더라도 제품이 자중에 의해 제 1,2다리부재가 접혀지는 현상을 방지하여 안전사고를 방지할 수 있으며, 제 1,2다리부재가 접혀진 상태에서 접힘유지수단인 볼 스톱퍼가 작동공에 탄력적으로 삽입되어 있으므로 제 1,2다리부재가 접혀진 상태를 안정적으로 유지할 수 있게 되는 효과가 제공된다. 또한, 걸림부재가 폐쇄된 구조의 작동공에 위치하게 되므로 이탈현상이 발생하지 않아 제품의 상판을 들어올리거나 걸림부재를 걸림홈에서 빼내는 동작만으로 제품의 높이가 조절되므로 제품의 높이조절작업이 용이하게 이루어질 수 있게 된다. 한편, 제 1,2다리부재가 접혀지므로 제품의 수납성이 향상된다.

<77> 이상과 같이 본 발명은 비록 한정된 실시 예와 도면에 의해 설명되었으나, 본 발명은 이것에 의해 한정되지 않으며, 본 발명이 속하는 기술분야에서 통상의 지식을 가진 자에 의해 본 발명의 기술 사상과 아래에 기재될 청구범위의 균등 범위 내에서 다양한 수정 및 변형이 가능함은 물론이다.

도면의 간단한 설명

<1> 도 1은 본 발명에 따른 접철식 높이조절장치를 도시한 분해 사시도.

<2> 도 2는 도 1에 도시된 접철식 높이조절장치의 결합상태 사시도.

<3> 도 3a,3b,3c,3d는 도 1에 도시된 접철식 높이조절장치에 의해 제품의 높이가 조절되는 상태를 도시한 작동상태도.

<4> 도 4는 도 1에 도시된 접철식 높이조절장치의 다리부재가 접혀진 상태를 도시한 저면도.

<5> 도 5는 본 발명에 따른 접힘유지수단의 다른 실시 예를 도시한 일부확대도.

<6> 도 6a,6b는 접철식 높이조절장치의 다리부재에 이동수단이 구비된 상태를 도시한 도면.

<7> 도 7은 본 발명에 따른 접힘부와 연결통로의 코너 연결 영역에 곡선 안내면이 형성된 상태를 도시한 일부확대도.

<8> <도면의 주요부분에 대한 부호의 설명>

<9> 10 : 제품 20 : 제 1다리부재

<10> 30 : 제 2다리부재 32 : 걸림부재

<11> 40 : 제 1브라켓 42 : 삽입부

<12> 50 : 제 2브라켓 52 : 날개

<13> 54A : 작동공 54B : 걸림홈

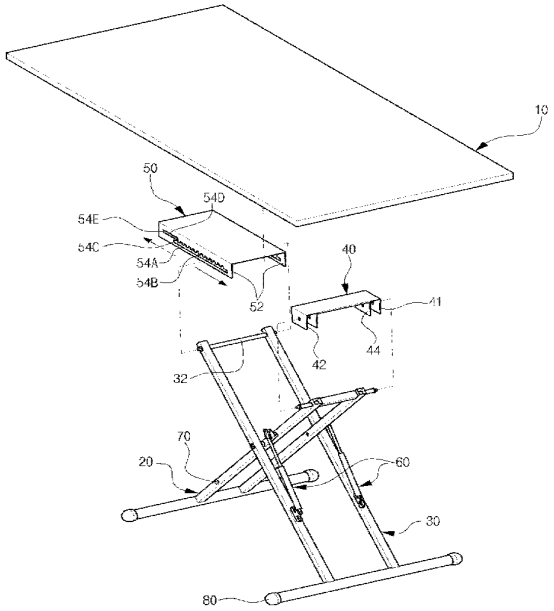
<14> 54C : 안전걸림부 54D : 연결통로

<15> 54E : 접힘부 60 : 지지부재

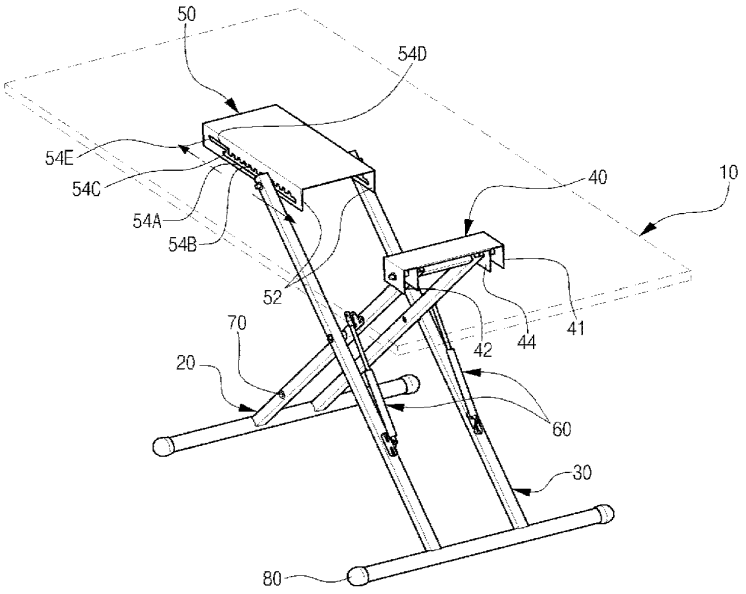
<16> 70 : 볼 스톱퍼

도면

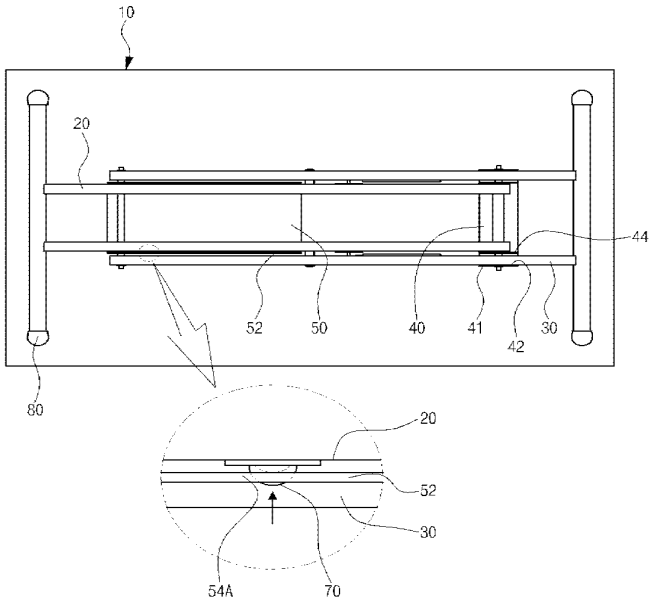
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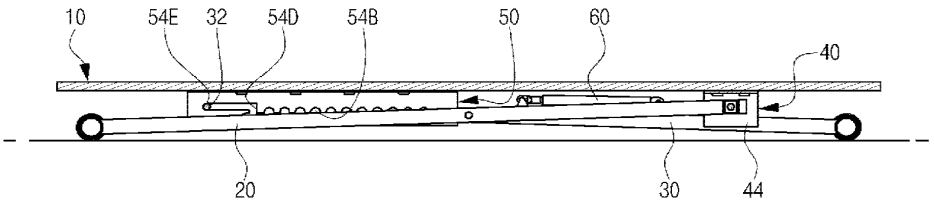
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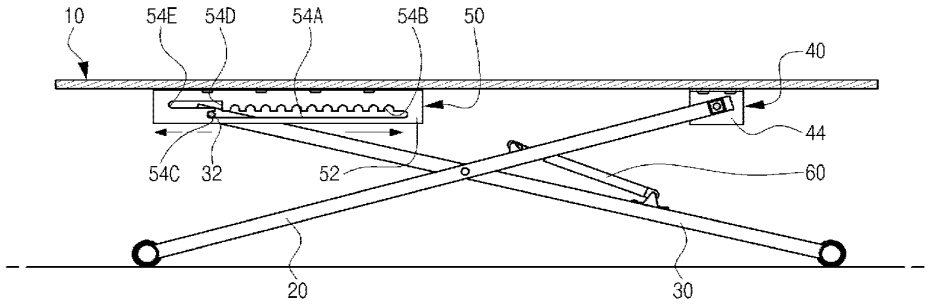
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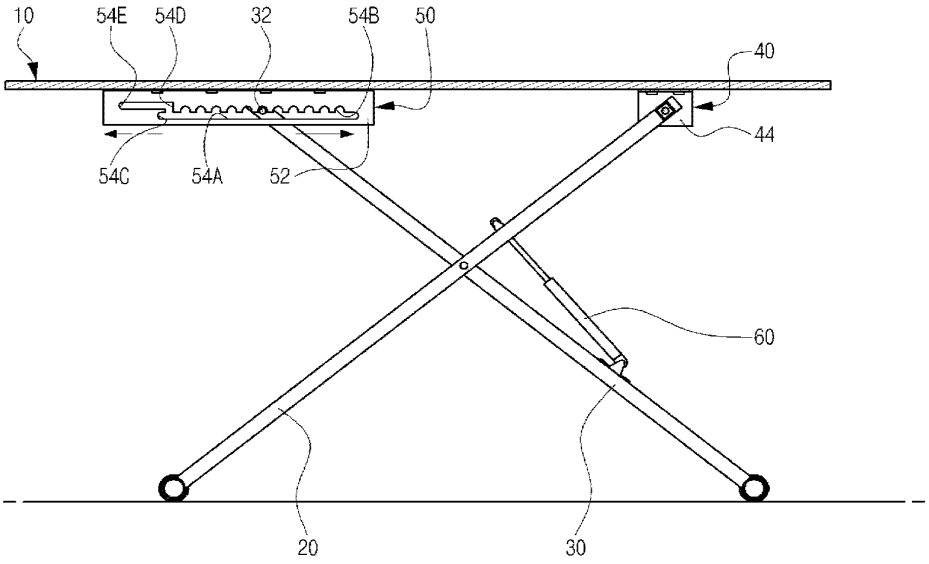
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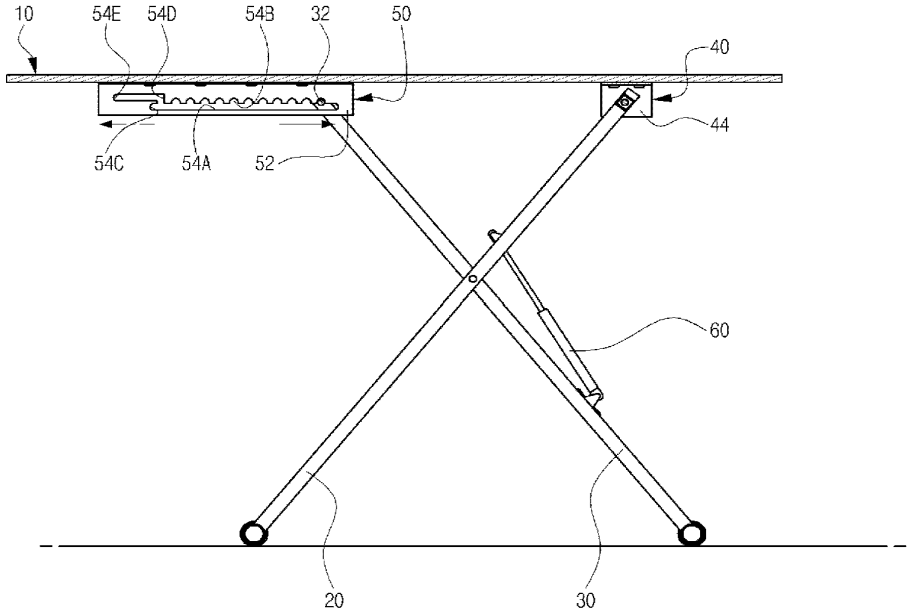
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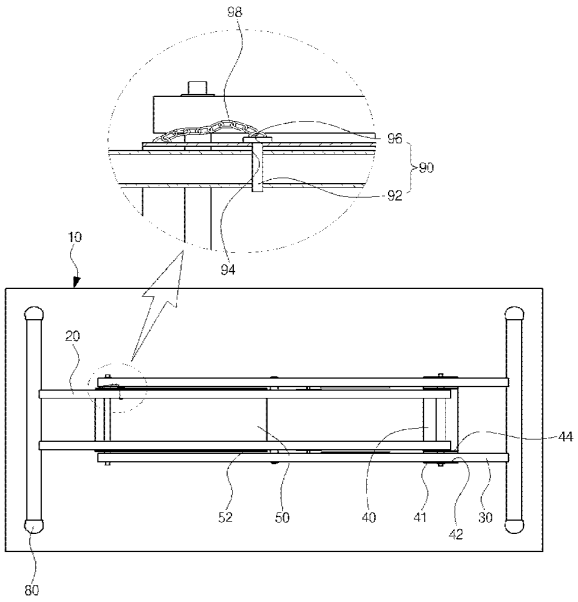
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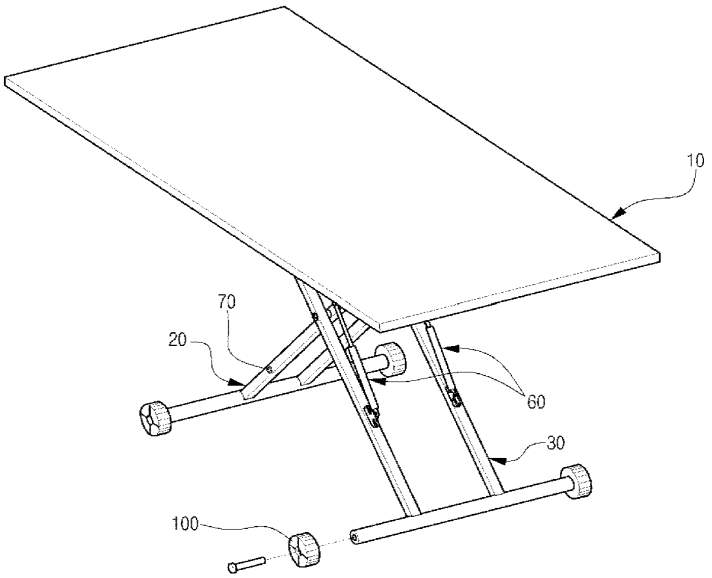
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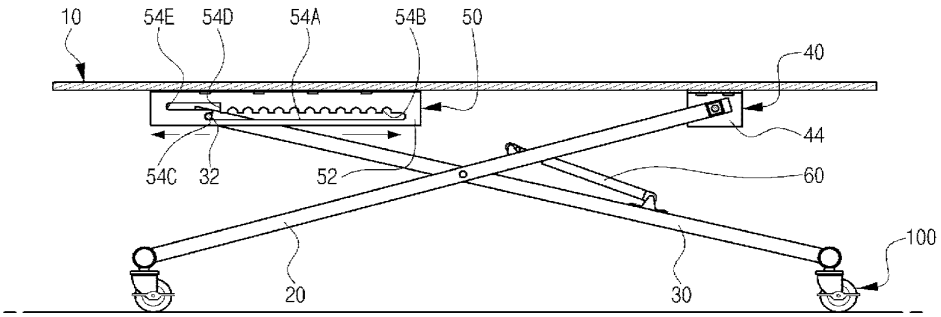
도면5


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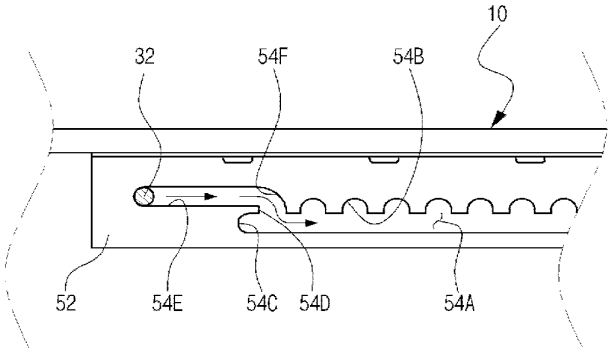
도면6a



도면6b



도면7



Patents

A kind of liftable desk

Abstract

The invention discloses a kind of liftable desk, it solve the problems, such as in the prior art desk range it is smaller, it is complicated, involve great expense, there is the effect that installing space is small, rising height is high, supporting & stablizing, cost are low; its technical scheme is: including table, display bracket, lockable mechanism and intersect elevating mechanism, the display bracket is slidably connected to the front side of table, the lockable mechanism is connected with located at the elevating mechanism that intersects of the bottom of the table, and realizes that table lifts and is stably fixed on different height by adjusting lockable mechanism.

Classifications

- A47B21/00 Tables or desks for office equipment, e.g. typewriters, keyboards

View 5 more classifications

CN107744256A

China

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Other languages: Chinese

Inventor: [redacted]

Worldwide applications

2017 CN

Application CN201710954985.5A events

2017-10-13	Application filed by [redacted]
2017-10-13	Priority to CN201710954985.5A
2018-03-02	Publication of CN107744256A
2020-01-03	Application granted
2020-01-03	Publication of CN107744256B
Status	Active
2037-10-13	Anticipated expiration

Info: Patent citations (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (10)

Hide Dependent

1. A kind of 1. liftable desk, it is characterised in that including table, display bracket, lockable mechanism and intersect elevating mechanism, The display bracket is slidably connected to the front side of table, and the lockable mechanism connects with the elevating mechanism that intersects located at the bottom of the table Connect, realize that table lifts and is stably fixed on different height by adjusting lockable mechanism.
    2. 2. a kind of liftable desk according to claim 1, it is characterised in that the bottom of the table, which is provided with, to be used to pacify Dress intersects the pedestal of elevating mechanism, and elastomeric element, the both sides of the pedestal are connected between the intersection elevating mechanism and pedestal Provided with slideway and some pin shaft holes, the front side of pedestal is provided with pipe.
    3. 3. a kind of liftable desk according to claim 1, it is characterised in that the intersection elevating mechanism includes two groups On the centrosymmetric lifting assembly of table, the lifting assembly includes at least two and intersects lifter group.
    4. 4. a kind of liftable desk according to Claims 2 or 3, it is characterised in that what is be connected with pedestal intersects lifting Bar group is provided with sliding block, and the sliding block, which is located in slideway, forms linear slide connection, and the end of sliding block is provided with packing ring.
    5. 5. a kind of liftable desk according to claim 1, it is characterised in that the lockable mechanism includes preceding stull Plate, rear cross member plate and threaded rod, the threaded rod sequentially pass through rear cross member plate and preceding wale piece, threaded rod and rear cross member plate screw thread Connection, the preceding wale piece, which is provided with, is used for the through hole that threaded rod passes through.
    6. 6. a kind of liftable desk according to claim 5, it is characterised in that the rear end of the threaded rod is provided with spacing Boss and handwheel.
    7. 7. a kind of liftable desk according to claim 1, it is characterised in that the display bracket includes bracket Plate, fixed mount and carrier bar, the carrier bar are installed on the bottom of carrier frame plate by stator, and the fixed mount is located at carrier frame plate Top and its both ends bending be fixed on the bottom of carrier frame plate.
    8. A kind of 8. liftable desk according to claim 2 or 7, it is characterised in that in the carrier bar insertion pipe, And the end both sides of carrier bar are arranged with salient point; The length adjustment display bracket and table entered by carrier bar in pipe Spacing.
    9. 9. a kind of liftable desk according to claim 1, it is characterised in that the bottom for intersecting elevating mechanism is set There is base, the base includes two backing plates and the transverse slat being connected between backing plate; The backing plate is provided with slideway and some pins Axis hole; The base is hinged by the bearing pin in pin shaft hole with intersecting elevating mechanism.
    10. A kind of 10. liftable desk according to claim 9, it is characterised in that the top undulate of the backing plate Set.

Description

A kind of liftable desk

Technical field

The present invention relates to daily life field, more particularly to a kind of liftable desk.

Background technology

At present, computer office has been popularized, and existing desk is generally operating personnel and set in front of the display by seat, on it is in long-term hanging working condition, this can cause cervical vertebra, lumbar vertebrae are ailing to occur, and influence health and office efficiency.Therefore, A kind of liftable desk is needed to solve the above problems.But existing liftable do work table have range it is smaller, knot Structure is complicated, the defects of involving great expense.

In summary, in the prior art for how to design it is a kind of be more suitable for computer office and will not increase fatigue ask Topic, still lacks effective solution.

The content of the invention

For overcome the deficiencies in the prior art, the invention provides a kind of liftable desk, its have installing space it is small, The low effect of rising height height, supporting & stablizing, cost, is especially suitable for the place for being positioned over limited space.

The present invention uses following technical proposals:

A kind of liftable desk, including table, display bracket, lockable mechanism and intersection elevating mechanism, the display Device bracket is slidably connected to the front side of table, and the spacing between display bracket and table is adjustable; The lockable mechanism is with being located at The intersection elevating mechanism connection of the bottom of the table, realize that table lifts and is stably fixed on different height by adjusting lockable mechanism.

Further, the bottom of the table, which is provided with, is used to install the pedestal for intersecting elevating mechanism, the intersection lift Elastomeric element is connected between structure and pedestal, the both sides of the pedestal are provided with slideway and some pin shaft holes, and the front side of pedestal is provided with Pipe.

Preferably, the elastomeric element is spring.

Further, the pedestal includes two the first backing plates be arrangeding in parallel, passes through two between first backing plate Parallel stator is connected, and the top of the first backing plate is provided with stator, and first backing plate is anchored on by stator and bolt The bottom of table.

Further, the bottom undulate of first backing plate.

Further, the intersection elevating mechanism includes two groups on the centrosymmetric lifting assembly of table, the lifting Component includes at least two and intersects lifter group.

Further, the lifter group of intersecting being connected with pedestal is provided with sliding block, and the sliding block is located in slideway and formed directly Line is slidably connected, and the end of sliding block is provided with packing ring.

Further, the lockable mechanism includes preceding wale piece, rear cross member plate and threaded rod, and the threaded rod sequentially passes through Rear cross member plate and preceding wale piece, threaded rod are threadedly coupled with rear cross member plate, and the preceding wale piece is provided with and passed through for threaded rod Through hole.

Further, the rear end of the threaded rod is provided with positive stop lug boss and handwheel.

Further, the display bracket includes carrier frame plate, fixed mount and carrier bar, and the carrier bar passes through stator The bottom of carrier frame plate is installed on, the fixed mount is fixed on the bottom of carrier frame plate located at the top of carrier frame plate and its both ends bending.

Further, in the carrier bar insertion pipe, and the end both sides of carrier bar are arranged with salient point, prevent bracket Bar skids off from pipe; The length adjustment display bracket and the spacing of table entered by carrier bar in pipe.

Further, the bottom for intersecting elevating mechanism is provided with base, and the base includes two the second backing plates and company The transverse slat being connected between the second backing plate; Second backing plate is provided with slideway and some pin shaft holes; The base passes through located at pin Bearing pin in axis hole is hinged with intersecting elevating mechanism.

Further, the top undulate of second backing plate is set, and the waveform of the first backing plate and the second backing plate is delayed Punching design, avoids backing plate from sharp angles occur and causes injury of human.

Compared with prior art, the beneficial effects of the invention are as follows:

(1) intersection elevating mechanism of the invention is compact-sized, and the width of elevating mechanism can be adjusted by different pin shaft holes Spend suitable for different spaces, desk can be fixed on to a certain height by lockable mechanism, supporting & stabilizing, be not in Rock;

(2) lifting lockable mechanism of the invention uses screw mechanism, has auto-lock function, simple in construction, easy to operate; And And threaded rod sets positive stop lug boss between elevating mechanism with intersecting, further increase the stability of mechanism;

(3) display bracket of present invention placement computer monitor can stretch, and can easily adjust eye distance and show Show the distance of device, avoid long-time from closely keeping a close watch on display screen and cause eye strain; Meanwhile go for the people of different eyesights Group;

(4) range of present invention intersection elevating mechanism is big, can be applied to the working method stood, sat simultaneously; Knot Structure is compact, occupies little space.

Brief description of the drawings

The Figure of description for forming the part of the application is used for providing further understanding of the present application, and the application's shows Meaning property embodiment and its illustrate be used for explain the application, do not form the improper restriction to the application.

Fig. 1 is the assembly structure schematic diagram of the present invention;

Fig. 2 is the intersection elevating mechanism schematic diagram of the present invention;

Fig. 3 is the base construction schematic diagram of the present invention;

Fig. 4 is the understructure schematic diagram of the present invention;

Fig. 5 is the display bracket top view of the present invention;

Fig. 6 is the display bracket upward view of the present invention;

Fig. 7 is the intersection lifter group structural representation of the present invention;

Fig. 8 is the supporting bar structure schematic diagram of the present invention;

Fig. 9 is the front transverse bar structural representation of the present invention;

Figure 10 is the back transverse bar structural representation of the present invention;

Figure 11 is the threaded rod structural representation of the present invention;

Figure 12 is the slide block structure schematic diagram of the present invention;

Wherein, 1- backing plates, 2- intersect elevating mechanism, 3- sleeves, 4- singletrees, 5- bases, wale piece before 6-, 7- rear cross members Plate, 8- threaded rods, 9- bearing pins, the backing plates of 10- second, 11- second support bars, 12- pedestals, 13- tables, the sliding blocks of 14- first, 15- Display bracket, 16- springs, the slideways of 17- second, 18- pin shaft holes, 19. pipes, the stators of 20- the 3rd, the slideways of 21- first, The stators of 22- second, the backing plates of 23- first, the stators of 24- the 4th, 25- carrier bars, 26- fixed mounts, 27- carrier frame plates, 28- are horizontal Plate, 29- intersect lifter group, 30- through holes, 31- the first reducing bars, the stators of 32- first, 33- screwed holes, the reducings of 34- second Bar, the stators of 35- the 5th, 36- first support bars, the positive stop lug boss of 37- second, 38 first positive stop lug boss, 39- handwheels, 40- second Sliding block, 41- holes, 42- packing rings.

Embodiment

It is noted that described further below is all exemplary, it is intended to provides further instruction to the application.It is uniess another indicate, all technologies used herein and scientific terminology are with usual with the application person of an ordinary skill in the technical field The identical meanings of understanding.

It should be noted that term used herein above is merely to describe embodiment, and be not intended to restricted root According to the illustrative embodiments of the application.As used herein, unless the context clearly indicates otherwise, otherwise singulative it is also intended to include plural form, additionally, it should be understood that, when in this manual using term "comprising" and/or " bag include " when, it indicates existing characteristics, step, operation, device, component and/or combinations thereof.

As background technology is introduced, exist in the prior art range it is smaller, it is complicated, involve great expense not Foot, In order to solve technical problem as above, present applicant proposes a kind of liftable desk.

In a kind of typical embodiment of the application, as shown in Fig. 1-Figure 12, there is provided a kind of liftable desk, fit Alternately office mode, including table 13, display bracket 15, lockable mechanism, intersection elevating mechanism 2 and bottom are stood or sat for people Seat 5, the display bracket 15 is located at the front side of table 13 (using the side away from user as front side), the intersection lift Structure 2 is located at the bottom of table 13, and the base 5 lifts located at the bottom for intersecting elevating mechanism 2, the lockable mechanism located at intersection The inside of mechanism 2.

The table 13 can be rectangle, circle, ellipse or rectangle, circle that arc-shaped recess is provided with close to position of human body Shape, ellipsoidal structure.

The top for intersecting elevating mechanism 2 is installed on the bottom of table 13 by pedestal 12, as shown in figure 3, the base Seat 12 includes two the first backing plates 23, and the head and the tail between two the first backing plates 23 are connected by the first stator 32 respectively, and first pads Coffin is surrounded between the stator 32 of plate 23 and first.

Position between the top of first backing plate 23, two the first stators 32 is respectively equipped with multiple second stators 22, the particular number of the second stator 22 is depending on the size of table 13; The length of second stator 22 is less than first Stator 32, two the first backing plates 23 are bolted in the bottom of table 13 by the first stator 32, the second stator 22.

Two parallel pipes 19, two pipes 19 are provided with positioned at the front side of the first stator 32 of the stem of the first backing plate 23 Between top be provided with the 3rd stator 20, the 3rd stator 20 is secured by bolts in the bottom of table 13, and pipe 19 passes through The mode of welding is connected with the first stator 32, the 3rd stator 20.

The pipe 19 is steel pipe.

First backing plate 23 is rectangular, and bottom is provided with some wavy bulges, and the flank forward section of the first backing plate 23 is provided with First slideway 21, phase side back segment are provided with some evenly spaced pin shaft holes 18, and according to actual conditions, adjustment intersects elevating mechanism 2 are articulated with the pin shaft hole 18 of diverse location, to increase the stability of table 13.

As shown in figure 4, the base 5 includes transverse slat 28 and two the second backing plates 10, the transverse slat 28 is fixed on two I-shaped structure is formed between two backing plates 10.

Second backing plate 10 is rectangular, and top is provided with some wavy bulges, and the flank forward section of the second backing plate 10 is provided with Second slideway 17, its side back segment are provided with some evenly spaced pin shaft holes 18.

As shown in Fig. 2 the intersection elevating mechanism 2 includes symmetrically arranged two groups of lifting assemblies, two groups of lifting assemblies it Between by singletree 4 be connected.The lifting assembly includes two intersection lifter groups 29, the intersection lifter group 29 and base on top Seat 12 is connected, and the intersection lifter group 29 of bottom is connected with base 5.

The intersection lifter group 29 on top and bottom to intersect lifter group 29 hinged.

The first support bar 36 and second support bar 11 intersected lifter group 29 and include setting in X-type cross, such as Fig. 7 Shown in Fig. 8, the intersection and singletree 4 of first support bar 36 and second support bar 11 are be hinged.Located at first support bar 36 The part of singletree 4 between second support bar 11 is provided with sleeve 3.

The top of first support bar 36 is provided with the first sliding block 14 in the intersection lifter group 29 on top, second support bar 11 Top is provided with bearing pin 9, and the first sliding block 14 is located at outside, and bearing pin 9 is located at inner side; One end of spring 16 is fixed with the bearing pin 9, The other end of the spring 16 is fixed in first support bar 36 close to the position of the first sliding block 14.Horizontality is presented in spring 36. To intersect auxiliary power is provided during elevating mechanism hoisting depth.

In the first slideway 21 of pedestal 12, the first sliding block 14 can be slided first sliding block 14 in the first slideway 21 it is dynamic; The end of first sliding block 14 is provided with packing ring 42, and the diameter of packing ring 42 is more than the height of the first slideway 21, prevents the first sliding block 14 skid off the first slideway 21.

The end of the first support bar 36 of the intersection lifter group 29 of bottom is provided with bearing pin 9, the end of second support bar 11 Provided with the second sliding block 40, for second sliding block 40 in the second slideway 17 of base 5, the second sliding block 40 can be in the second slideway 17 interior slip; The end of second sliding block 40 is provided with packing ring 42.

As shown in figure 12, the inside of the sliding block 40 of the first sliding block 14 and second is provided with the hole for being used for being connected with support bar 41。

Lockable mechanism is provided between two groups of lifting assemblies, the lockable mechanism includes preceding wale piece 6, rear cross member plate 7 and spiral shell Rasp bar 8, preceding wale piece 6 and rear cross member plate 7 are respectively arranged on the intersection lifter group on top and the hinge for intersecting lifter group of bottom Between contact.

As shown in figure 9, the section of the preceding wale piece 6 assumes diamond in shape, through hole 30, the both ends of preceding wale piece 6 are provided among it Provided with the first reducing bar 31, the maximum gauge of the first reducing bar 31 is less than the end cross-sectional size of preceding wale piece 6, to be formed Two layers of boss structure, by two layers of boss structure, before making wale piece 6 and top intersect lifter group, bottom intersects lifting Stable connection between bar group, it will not slide.

As shown in Figure 10, the section of the rear cross member plate 7 assumes diamond in shape, and is provided with screwed hole 33 among it, and the two of rear cross member plate 7 End is provided with the second reducing bar 34, and the maximum gauge of the second reducing bar 34 is less than the end cross-sectional size of rear cross member plate 7, with shape into two layers of boss structure, by two layers of boss structure, make rear cross member plate 7 and top intersect lifter group, bottom intersects liter The stable connection between bar group is dropped, will not be slided.

The threaded rod 8 passes through preceding wale piece 6 and rear cross member plate 7, to be threadedly coupled between threaded rod 8 and rear cross member plate 7, The front end of threaded rod 8 passes through the through hole 30 of preceding wale piece 6, and through hole 30 plays guide effect to threaded rod 8.

As shown in figure 11, the rear end of the threaded rod 8 is provided with handwheel 39, is set successively between the handwheel 39 and threaded rod 8 There are the first positive stop lug boss 38 and the second positive stop lug boss 37, handwheel 39 is fixed at the rear portion of first positive stop lug boss 37, and described second The diameter that the size of positive stop lug boss 37 is more than threaded rod 8 is less than the size of the first positive stop lug boss 37.

The handwheel 39 can be circular, ellipse or other are easy to the manually operated shape of people.

As shown in Figure 5 and Figure 6, the display bracket 15 includes carrier frame plate 27, fixed mount 26 and carrier bar 25, the support Hack lever 25 is formed by steel pipe bending, and middle bending forms U-shaped portion, and both ends bending forms horizontal part; The top of the U-shaped portion of carrier bar 25 End is welded with the 4th stator 24, and the 4th stator 24 is fastened by bolts in the bottom of carrier frame plate 27; The level of carrier bar 25 in portion's insertion pipe 19, the end both sides of horizontal part are provided with salient point, make it in pipe 19 by the horizontal part of pull carrier bar 25 Movement adjusts the distance between eye and display to adjust the spacing between carrier frame plate 27 and table 13, makes it suitable Crowd for different eyesights.

The fixed mount 26 is formed by steel pipe bending, and middle bending forms U-shaped portion, and both ends bending forms horizontal part; It is fixed The U-shaped portion width of frame 26 is more than the U-shaped portion width of carrier bar, and the U-shaped portion of fixed mount 26 is used to support display; Fixed mount 26 U-shaped portion is located at the top of carrier frame plate 27, and its horizontal part bending makes carrier frame plate 27 be stuck in the U of fixed mount 26 to the bottom of carrier frame plate 27 Type subordinate side; The horizontal part of fixed mount 26 by the 5th stator 35 on the upside of the middle part of the U-shaped portion of carrier bar 25 with being anchored on support The bottom of frame plate 27.

The carrier frame plate 27 can be circular, ellipse, but be not limited to both shapes.

The application when in use, by rotating threaded rod 8, shortens the distance between rear cross member plate 7 and preceding wale piece 6, handed over The longitudinal separation of fork elevating mechanism 2 is shortened, and height increases, and the height of table 13 is lifted therewith; Otherwise operation, increase rear cross member plate 7 The distance between preceding wale piece 6, the height reduction of table 13, because screw thread has auto-lock function, therefore table 13 can be realized Height adjustable, and can be firmly secured in some height.

In the another embodiment of the application, unilateral lifting assembly intersects lifter group including three or more than three, The hoisting depth of intersection elevating mechanism can be increased by increasing the lifter group quantity on vertical direction, passing through increases level Lifter group quantity on direction intersects the width and stability of elevating mechanism to increase.intersect the specific setting side of lifter group Formula is decided according to the actual requirements.

In another embodiment of the application, the afterbody of the threaded rod is provided with positive stop lug boss, and the positive stop lug boss is consolidated Due on the motor shaft of motor, pass through the rotation of motor control threaded rod.

Other structures are identical with above-mentioned embodiment, and here is omitted.

The preferred embodiment of the application is the foregoing is only, is not limited to the application, for the skill of this area For art personnel, the application can have various modifications and variations.It is all within spirit herein and principle, made any repair Change, equivalent substitution, improvement etc., should be included within the protection domain of the application.

Patent Citations (1)

Publication number	Priority date	Publication date	Assignee	Title
CN107041626A *	2017-03-16	2017-08-15	[redacted]	A kind of liftable desk

Family To Family Citations

* Cited by examiner, † Cited by third party

Similar Documents

Publication	Publication Date	Title
CN1051799028	2017-07-28	A kind of display is freely lifted frame
CN107013794A	2017-08-04	A kind of computer display support
CN103663255A	2014-03-26	Liftable operating platform in force bearing barrel of satellite
CN108285104A	2018-07-17	A kind of lightweight single leg support recreational vehicle electric jack stand
CN104806857A	2015-07-29	Computer displayer supporting frame
CN107744256A	2018-03-02	A kind of liftable desk
CN108751023A	2018-11-06	A kind of elevator lifting arm
CN205876157U	2017-01-11	Electric power overhaul ladder
CN109655353A	2019-04-19	Mud motor creeps into Behavior modeling experimental system
CN205842138U	2016-12-28	A kind of electrodynamic type computer display screen lowering or hoisting gear
CN208676539U	2019-04-02	A kind of folding lifting platform
CN205214602U	2016-05-11	Lifting office table
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CN107616818A	2018-01-23	Neurosurgery retractor fixing device
CN106473451A	2017-03-08	Controllable gas spring same table
CN103720226B	2016-08-31	A kind of rocking chair structure
CN209235239U	2019-08-13	A kind of hand stepless lifting desk
CN209203813U	2019-08-06	A kind of Pediatric nursing bed of adjustable guardrail position
CN203321455U	2013-12-04	Lifting rope replacing device for guide wheel of pumping unit
CN213046230U	2021-04-27	Split type lifting bed

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201710954985.5A	2017-10-13	2017-10-13	Liftable desk

Applications Claiming Priority (1)

Application	Filing date	Title
CN201710954985.5A	2017-10-13	Liftable desk

Legal Events

Date	Code	Title	Description
2018-03-02	PB01	Publication	
2018-03-02	PB01	Publication	
2018-03-27	SE01	Entry into force of request for substantive examination	
2018-03-27	SE01	Entry into force of request for substantive examination	
2020-01-03	GR01	Patent grant	
2020-01-03	GR01	Patent grant	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
elevating		claims,abstract,description	30	0.000
carrier		claims,description	32	0.000
bending		claims,description	9	0.000
insertion		claims,description	3	0.000
effects		abstract,description	4	0.000
rising		abstract,description	2	0.000

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(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 107744256 A
(43)申请公布日 2018.03.02

(21)申请号 201710954985.5

(22)申请日 2017.10.13

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(51)Int.Cl.
A47B 21/00(2006.01)
A47B 21/013(2006.01)
A47B 17/00(2006.01)
A47B 21/04(2006.01)

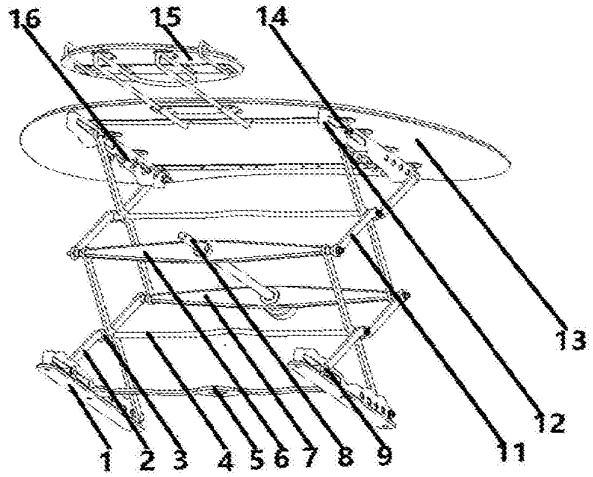
权利要求书1页 说明书5页 附图6页

(54)发明名称

一种可升降办公桌

(57)摘要

本发明公开了一种可升降办公桌，它解决了现有技术中办公桌升降范围较小、结构复杂、造价昂贵的问题，具有安装空间小、抬升高度高、支撑稳定、成本低的效果；其技术方案为：包括桌板、显示器托架、锁止机构和交叉升降机构，所述显示器托架滑动连接于桌板的前侧，所述锁止机构与设于桌板底部的交叉升降机构连接，通过调节锁止机构实现桌板升降并稳定固定于不同高度。



CN 107744256 A

1.一种可升降办公桌，其特征在于，包括桌板、显示器托架、锁止机构和交叉升降机构，所述显示器托架滑动连接于桌板的前侧，所述锁止机构与设于桌板底部的交叉升降机构连接，通过调节锁止机构实现桌板升降并稳定固定于不同高度。

2.根据权利要求1所述的一种可升降办公桌，其特征在于，所述桌板的底部设有用于安装交叉升降机构的基座，所述交叉升降机构与基座之间连接有弹性部件，所述基座的两侧设有滑道和若干销轴孔，基座的前侧设有圆管。

3.根据权利要求1所述的一种可升降办公桌，其特征在于，所述交叉升降机构包括两组关于桌板中心对称的升降组件，所述升降组件包括至少两个交叉升降杆组。

4.根据权利要求2或3所述的一种可升降办公桌，其特征在于，与基座相连的交叉升降杆组上设有滑块，所述滑块设于滑道中形成直线滑动连接，且滑块的端部设有垫圈。

5.根据权利要求1所述的一种可升降办公桌，其特征在于，所述锁止机构包括前横撑板、后横撑板和螺纹杆，所述螺纹杆依次穿过后横撑板和前横撑板，螺纹杆与后横撑板螺纹连接，所述前横撑板上设有用于螺纹杆穿过的通孔。

6.根据权利要求5所述的一种可升降办公桌，其特征在于，所述螺纹杆的后端设有限位凸台和手轮。

7.根据权利要求1所述的一种可升降办公桌，其特征在于，所述显示器托架包括托架板、固定架和托架杆，所述托架杆通过固定片安装于托架板的底部，所述固定架设于托架板的上部且其两端折弯固定于托架板的底部。

8.根据权利要求2或7所述的一种可升降办公桌，其特征在于，所述托架杆插入圆管中，且托架杆的端部两侧对称设有凸点；通过托架杆进入圆管内的长度调节显示器托架与桌板的间距。

9.根据权利要求1所述的一种可升降办公桌，其特征在于，所述交叉升降机构的底部设有底座，所述底座包括两个垫板和连接于垫板之间的横板；所述垫板上设有滑道和若干销轴孔；所述底座通过设于销轴孔中的销轴与交叉升降机构铰接。

10.根据权利要求9所述的一种可升降办公桌，其特征在于，所述垫板的顶部呈波浪形设置。

一种可升降办公桌

技术领域

[0001] 本发明涉及日常生活领域，尤其涉及一种可升降办公桌。

背景技术

[0002] 目前，电脑办公已经普及，现有办公桌一般为操作人员通过座椅坐在显示器前，上身处于长期悬空工作状态，这会导致颈椎、腰椎病痛出现，影响身体健康和办公效率。因此，需要一种可升降办公桌以解决上述问题。但是，现有的可升降办工桌具有升降范围较小、结构复杂、造价昂贵的缺陷。

[0003] 综上所述，现有技术中对于如何设计一种更适用于电脑办公且不会增加疲劳的问题，尚缺乏有效的解决方案。

发明内容

[0004] 为了克服现有技术的不足，本发明提供了一种可升降办公桌，其具有安装空间小、抬升高度高、支撑稳定、成本低的效果，尤其适合放置于空间受限的地方。

[0005] 本发明采用下述技术方案：

[0006] 一种可升降办公桌，包括桌板、显示器托架、锁止机构和交叉升降机构，所述显示器托架滑动连接于桌板的前侧，显示器托架与桌板之间的间距可调；所述锁止机构与设于桌板底部的交叉升降机构连接，通过调节锁止机构实现桌板升降并稳定固定于不同高度。

[0007] 进一步的，所述桌板的底部设有用于安装交叉升降机构的基座，所述交叉升降机构与基座之间连接有弹性部件，所述基座的两侧设有滑道和若干销轴孔，基座的前侧设有圆管。

[0008] 优选的，所述弹性部件为弹簧。

[0009] 进一步的，所述基座包括两个平行设置的第一垫板，所述第一垫板之间通过两个平行的固定片相连，第一垫板的上部设有固定片，所述第一垫板通过固定片及螺栓紧固于桌板的下部。

[0010] 进一步的，所述第一垫板的底部呈波浪形。

[0011] 进一步的，所述交叉升降机构包括两组关于桌板中心对称的升降组件，所述升降组件包括至少两个交叉升降杆组。

[0012] 进一步的，与基座相连的交叉升降杆组上设有滑块，所述滑块设于滑道中形成直线滑动连接，且滑块的端部设有垫圈。

[0013] 进一步的，所述锁止机构包括前横撑板、后横撑板和螺纹杆，所述螺纹杆依次穿过后横撑板和前横撑板，螺纹杆与后横撑板螺纹连接，所述前横撑板上设有用于螺纹杆穿过的通孔。

[0014] 进一步的，所述螺纹杆的后端设有限位凸台和手轮。

[0015] 进一步的，所述显示器托架包括托架板、固定架和托架杆，所述托架杆通过固定片安装于托架板的底部，所述固定架设于托架板的上部且其两端折弯固定于托架板的底部。

[0016] 进一步的，所述托架杆插入圆管中，且托架杆的端部两侧对称设有凸点，防止托架杆从圆管中滑出；通过托架杆进入圆管内的长度调节显示器托架与桌板的间距。

[0017] 进一步的，所述交叉升降机构的底部设有底座，所述底座包括两个第二垫板和连接于第二垫板之间的横板；所述第二垫板上设有滑道和若干销轴孔；所述底座通过设于销轴孔中的销轴与交叉升降机构铰接。

[0018] 进一步的，所述第二垫板的顶部呈波浪形设置，第一垫板和第二垫板的波浪形缓冲设计，避免垫板出现尖锐角度造成人体损伤。

[0019] 与现有技术相比，本发明的有益效果是：

[0020] (1)本发明的交叉升降机构结构紧凑，能够通过不同的销轴孔调整升降机构的宽度以适用于不同的空间，通过锁止机构能够将办公桌固定于某一高度，支撑稳定，不会出现晃动；

[0021] (2)本发明的升降锁止机构采用螺杆机构，具有自锁功能，结构简单，操作方便；并且螺纹杆与交叉升降机构之间设置限位凸台，进一步增加机构的稳定性；

[0022] (3)本发明放置电脑显示器的显示器托架可以伸缩，能够方便的调节眼睛距离显示器的距离，避免长时间近距离盯住显示屏造成眼部疲劳；同时，可以适用于不同视力的人群；

[0023] (4)本发明交叉升降机构的升降范围大，能够同时适用于站立、坐的工作方式；结构紧凑、占用空间小。

附图说明

[0024] 构成本申请的一部分的说明书附图用来提供对本申请的进一步理解，本申请的示意性实施例及其说明用于解释本申请，并不构成对本申请的不当限定。

[0025] 图1为本发明的总成结构示意图；

[0026] 图2为本发明的交叉升降机构示意图；

[0027] 图3为本发明的基座结构示意图；

[0028] 图4为本发明的底座结构示意图；

[0029] 图5为本发明的显示器托架俯视图；

[0030] 图6为本发明的显示器托架仰视图；

[0031] 图7为本发明的交叉升降杆组结构示意图；

[0032] 图8为本发明的支撑杆结构示意图；

[0033] 图9为本发明的前横撑杆结构示意图；

[0034] 图10为本发明的后横撑杆结构示意图；

[0035] 图11为本发明的螺纹杆结构示意图；

[0036] 图12为本发明的滑块结构示意图；

[0037] 其中，1-垫板，2-交叉升降机构，3-套筒，4-横撑杆，5-底座，6-前横撑板，7-后横撑板，8-螺纹杆，9-销轴，10-第二垫板，11-第二支撑杆，12-基座，13-桌板，14-第一滑块，15-显示器托架，16-弹簧，17-第二滑道，18-销轴孔，19.圆管，20-第三固定片，21-第一滑道，22-第二固定片，23-第一垫板，24-第四固定片，25-托架杆，26-固定架，27-托架板，28-横板，29-交叉升降杆组，30-通孔，31-第一变径杆，32-第一固定片，33-螺纹孔，34-第二变径

杆，35-第五固定片，36-第一支撑杆，37-第二限位凸台，38第一限位凸台，39-手轮，40-第二滑块，41-孔，42-垫圈。

具体实施方式

[0038] 应该指出，以下详细说明都是例示性的，旨在对本申请提供进一步的说明。除非另有指明，本文使用的所有技术和科学术语具有与本申请所属技术领域的普通技术人员通常理解的相同含义。

[0039] 需要注意的是，这里所使用的术语仅是为了描述具体实施方式，而非意图限制根据本申请的示例性实施方式。如在这里所使用的，除非上下文另外明确指出，否则单数形式也意图包括复数形式，此外，还应当理解的是，当在本说明书中使用术语“包含”和/或“包括”时，其指明存在特征、步骤、操作、器件、组件和/或它们的组合。

[0040] 正如背景技术所介绍的，现有技术中存在升降范围较小、结构复杂、造价昂贵的不足，为了解决如上的技术问题，本申请提出了一种可升降办公桌。

[0041] 本申请的一种典型的实施方式中，如图1-图12所示，提供了一种可升降办公桌，适用于人站立或坐交替办公模式，包括桌板13、显示器托架15、锁止机构、交叉升降机构2和底座5，所述显示器托架15设于桌板13的前侧(以远离使用者的一侧为前侧)，所述交叉升降机构2设于桌板13的底部，所述底座5设于交叉升降机构2的底部，所述锁止机构设于交叉升降机构2的内部。

[0042] 所述桌板13可以为矩形、圆形、椭圆形或靠近人体位置设有弧形凹陷的矩形、圆形、椭圆形结构。

[0043] 所述交叉升降机构2的顶部通过基座12安装于桌板13的底部，如图3所示，所述基座12包括两个第一垫板23，两个第一垫板23之间的首尾分别由第一固定片32相连，第一垫板23与第一固定片32之间围成矩形空间。

[0044] 所述第一垫板23的上部、两个第一固定片32之间的位置分别设有多个第二固定片22，第二固定片22的具体数量根据桌板13的尺寸而定；所述第二固定片22的长度小于第一固定片32，两个第一垫板23通过第一固定片32、第二固定片22由螺栓固定于桌板13的底部。

[0045] 位于第一垫板23首部的第一固定片32的前侧设有两个平行的圆管19，两个圆管19之间的上部设有第三固定片20，第三固定片20通过螺栓固定于桌板13的底部，圆管19通过焊接的方式与第一固定片32、第三固定片20连接。

[0046] 所述圆管19为钢管。

[0047] 所述第一垫板23呈矩形，底部设有若干波浪形凸起，第一垫板23的侧面前段设有第一滑道21，期侧面后段设有若干间隔均匀的销轴孔18，根据实际情况，调整交叉升降机构2铰接于不同位置的销轴孔18中，以增加桌板13的稳定性。

[0048] 如图4所示，所述底座5包括横板28和两个第二垫板10，所述横板28固定于两个第二垫板10之间形成工字型结构。

[0049] 所述第二垫板10呈矩形，顶部设有若干波浪形凸起，第二垫板10的侧面前段设有第二滑道17，其侧面后段设有若干间隔均匀的销轴孔18。

[0050] 如图2所示，所述交叉升降机构2包括对称设置的两组升降组件，两组升降组件之间通过横撑杆4相连。所述升降组件包括两个交叉升降杆组29，上部的交叉升降杆组29与基

座12相连，下部的交叉升降杆组29与底座5相连。

[0051] 上部的交叉升降杆组29与下部的交叉升降杆组29铰接在一起。

[0052] 所述交叉升降杆组29包括呈X型交叉设置的第一支撑杆36和第二支撑杆11，如图7和图8所示，第一支撑杆36和第二支撑杆11的交叉点处与横撑杆4铰接。设于第一支撑杆36和第二支撑杆11之间的横撑杆4部分上设有套筒3。

[0053] 上部的交叉升降杆组29中第一支撑杆36的顶端设有第一滑块14，第二支撑杆11的顶端设有销轴9，第一滑块14设于外侧，销轴9设于内侧；所述销轴9上固定有弹簧16的一端，所述弹簧16的另一端固定于第一支撑杆36上靠近第一滑块14位置。弹簧36呈现水平状态，为交叉升降机构提升高度时提供辅助动力。

[0054] 所述第一滑块14设于基座12的第一滑道21中，第一滑块14可在第一滑道21内滑动；所述第一滑块14的端部设有垫圈42，垫圈42直径大于第一滑道21的高度，防止第一滑块14滑出第一滑道21。

[0055] 下部的交叉升降杆组29的第一支撑杆36的末端设有销轴9，第二支撑杆11的末端设有第二滑块40，所述第二滑块40设于底座5的第二滑道17中，第二滑块40可在第二滑道17内滑动；所述第二滑块40的端部设有垫圈42。

[0056] 如图12所示，所述第一滑块14和第二滑块40的内部设有用于与支撑杆相连的孔41。

[0057] 两组升降组件之间设有锁止机构，所述锁止机构包括前横撑板6、后横撑板7和螺纹杆8，前横撑板6和后横撑板7分别设于上部的交叉升降杆组与下部的交叉升降杆组的铰接点之间。

[0058] 如图9所示，所述前横撑板6的截面呈菱形，其中间设有通孔30，前横撑板6的两端设有第一变径杆31，所述第一变径杆31的最大直径小于前横撑板6的端部截面尺寸，以形成两层凸台结构，通过两层凸台结构，使前横撑板6与上部的交叉升降杆组、下部的交叉升降杆组之间的连接稳定，不会发生滑动。

[0059] 如图10所示，所述后横撑板7的截面呈菱形，其中间设有螺纹孔33，后横撑板7的两端设有第二变径杆34，所述第二变径杆34的最大直径小于后横撑板7的端部截面尺寸，以形成两层凸台结构，通过两层凸台结构，使后横撑板7与上部的交叉升降杆组、下部的交叉升降杆组之间的连接稳定，不会发生滑动。

[0060] 所述螺纹杆8穿过前横撑板6和后横撑板7，螺纹杆8与后横撑板7之间为螺纹连接，螺纹杆8的前端穿过前横撑板6的通孔30，通孔30对螺纹杆8起到导向作用。

[0061] 如图11所示，所述螺纹杆8的后端设有手轮39，所述手轮39与螺纹杆8之间依次设有第一限位凸台38和第二限位凸台37，所述第一限位凸台37的后部固定手轮39，所述第二限位凸台37的尺寸大于螺纹杆8的直径小于第一限位凸台37尺寸。

[0062] 所述手轮39可以为圆形、椭圆形或其他便于人手动操作的形状。

[0063] 如图5和图6所示，所述显示器托架15包括托架板27、固定架26和托架杆25，所述托架杆25由钢管折弯而成，中间折弯形成U型部，两端折弯形成水平部；托架杆25的U型部的顶端焊接有第四固定片24，第四固定片24通过螺栓紧固于托架板27的底部；托架杆25的水平部插入圆管19中，水平部的端部两侧设有凸点，通过抽拉托架杆25水平部使其在圆管19中移动以调节托架板27与桌板13之间的间距，进而调节人眼睛与显示器之间的距离，使其适

用于不同视力的人群。

[0064] 所述固定架26由钢管折弯而成，中间折弯形成U型部，两端折弯形成水平部；固定架26的U型部宽度大于托架杆的U型部宽度，固定架26的U型部用于支撑显示器；固定架26的U型部设于托架板27的上部，其水平部折弯至托架板27底部，使托架板27卡在固定架26的U型部下侧；固定架26的水平部与托架杆25的U型部的中部上侧通过第五固定片35紧固于托架板27的底部。

[0065] 所述托架板27可以为圆形、椭圆形，但不限于这两种形状。

[0066] 本申请在使用时，通过旋转螺纹杆8，缩短后横撑板7与前横撑板6之间的距离，交叉升降机构2的前后距离变短，高度增大，桌板13高度随之提升；反之操作，增大后横撑板7与前横撑板6之间的距离，桌板13高度降低，由于螺纹具有自锁功能，因此可以实现桌板13高度可调，并且能够稳定地固定在某个高度上。

[0067] 本申请的另一种实施方式中，单侧升降组件包括三个或三个以上交叉升降杆组，可以通过增加竖直方向上的升降杆组数量以增加交叉升降机构的提升高度，通过增加水平方向上的升降杆组数量以增加交叉升降机构的宽度与稳定性。交叉升降杆组的具体设置方式根据实际需要而定。

[0068] 本申请的又一种实施方式中，所述螺纹杆的尾部设有限位凸台，所述限位凸台固定于电机的电机轴上，通过电机控制螺纹杆的旋转。

[0069] 其他结构与上述实施方式相同，此处不再赘述。

[0070] 以上所述仅为本申请的优选实施例而已，并不用于限制本申请，对于本领域的技术人员来说，本申请可以有各种更改和变化。凡在本申请的精神和原则之内，所作的任何修改、等同替换、改进等，均应包含在本申请的保护范围之内。

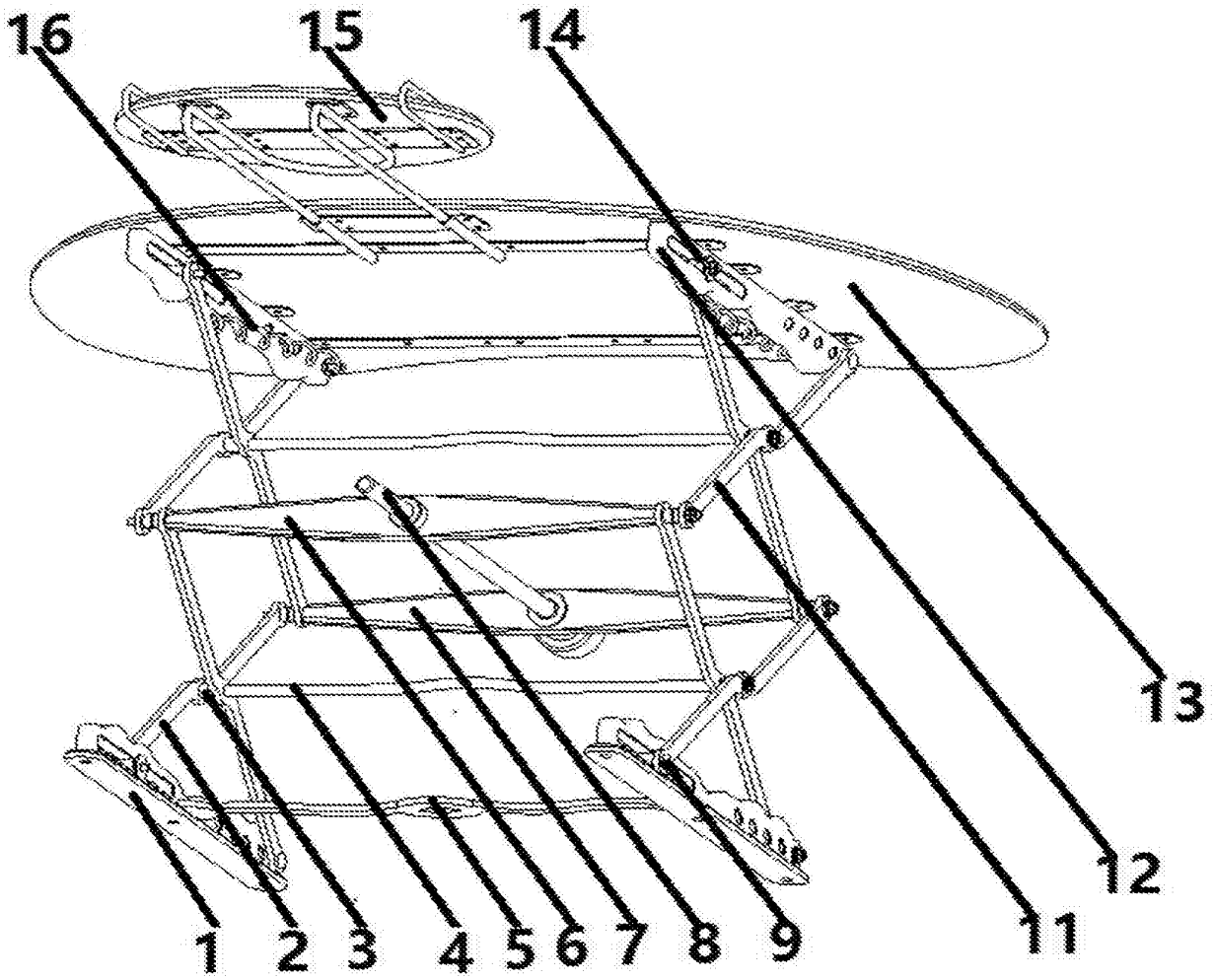


图1

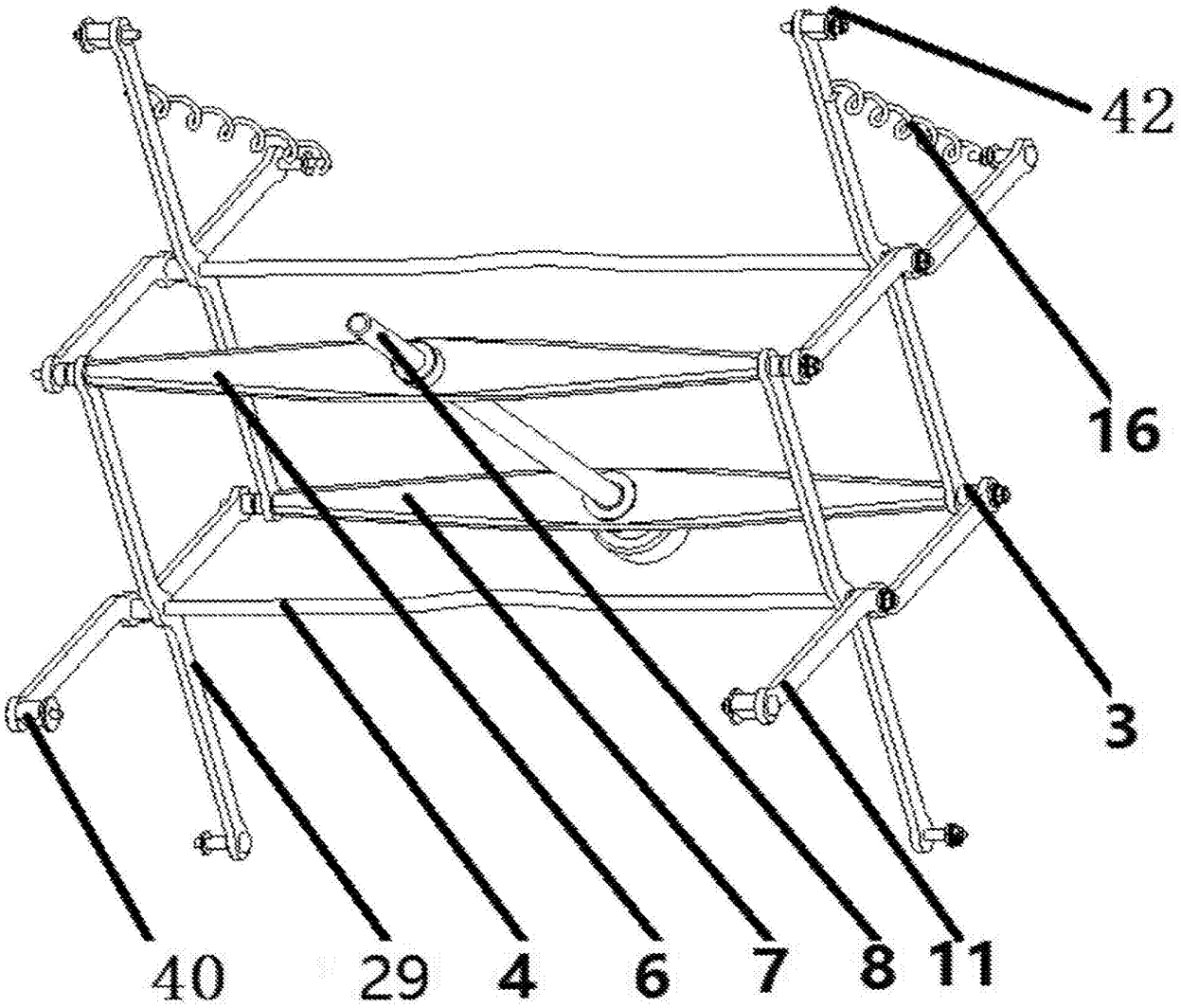


图2

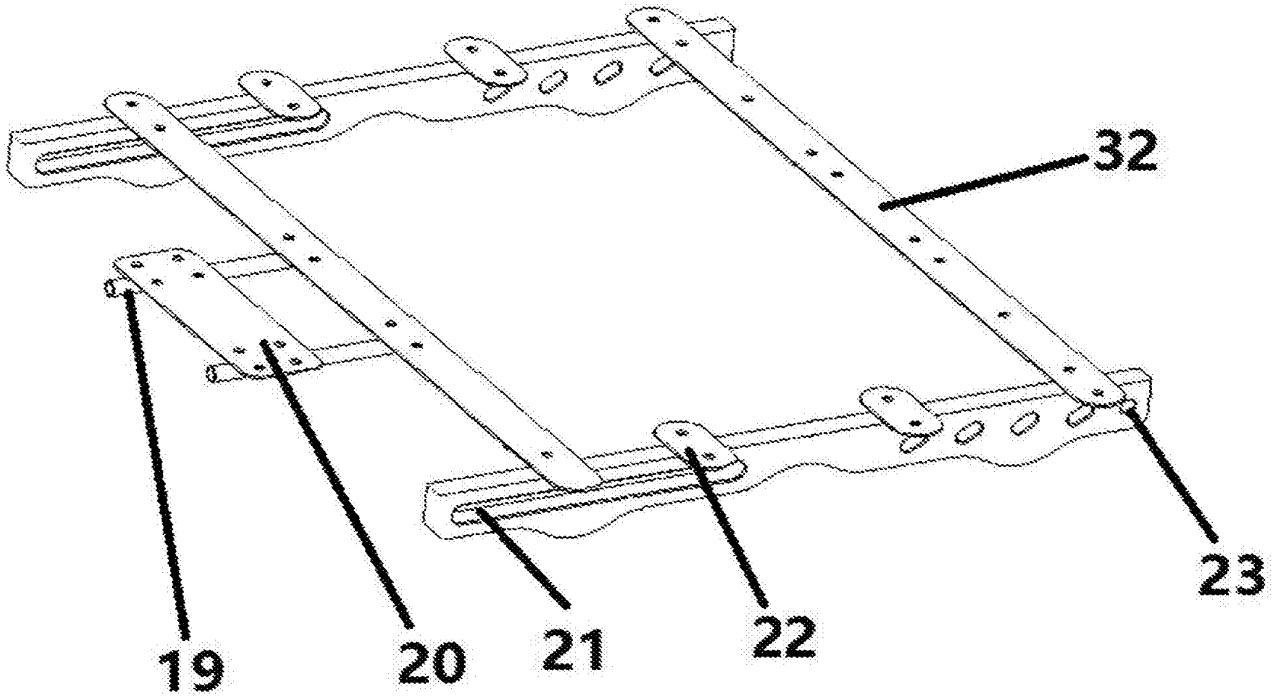


图3

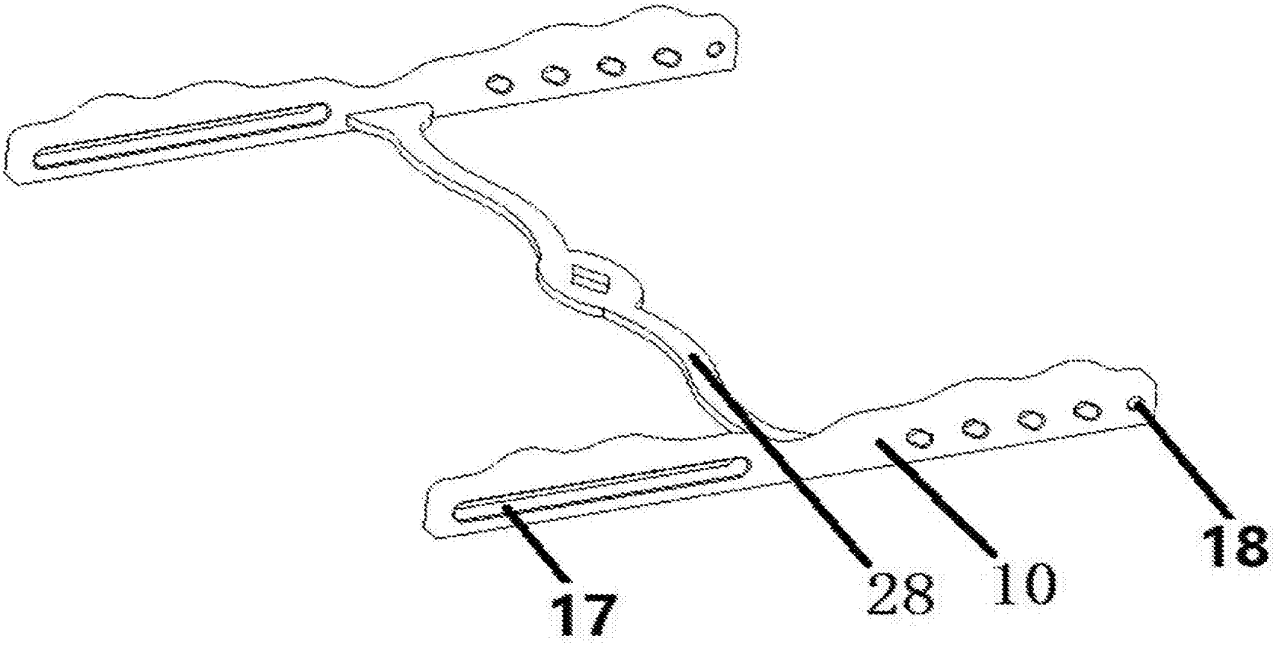


图4

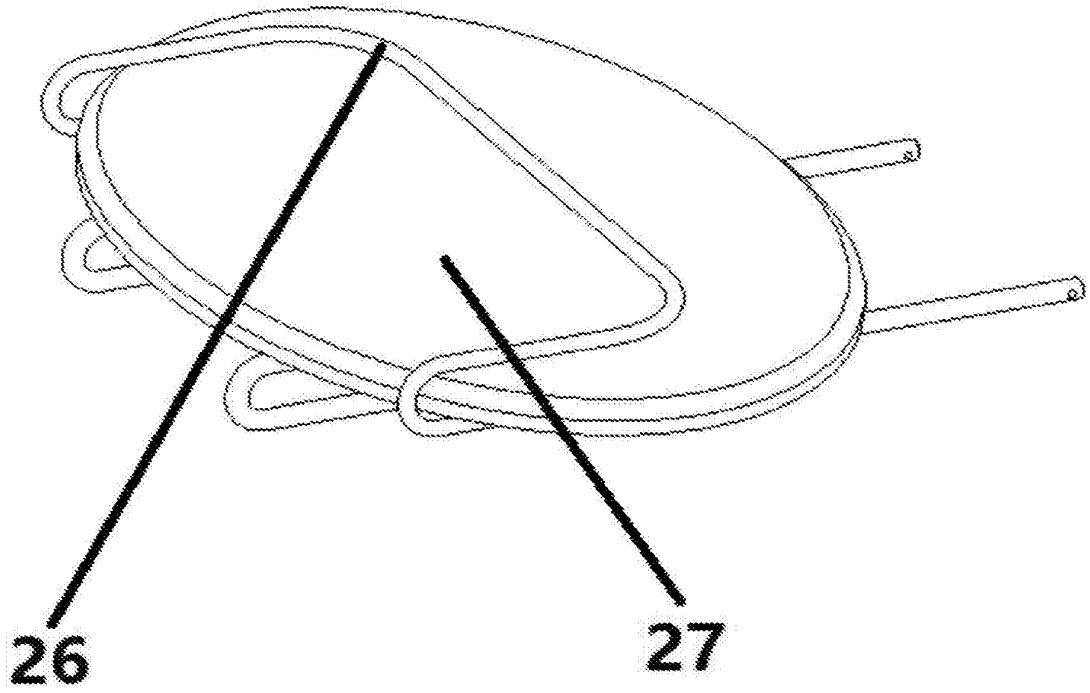


图5

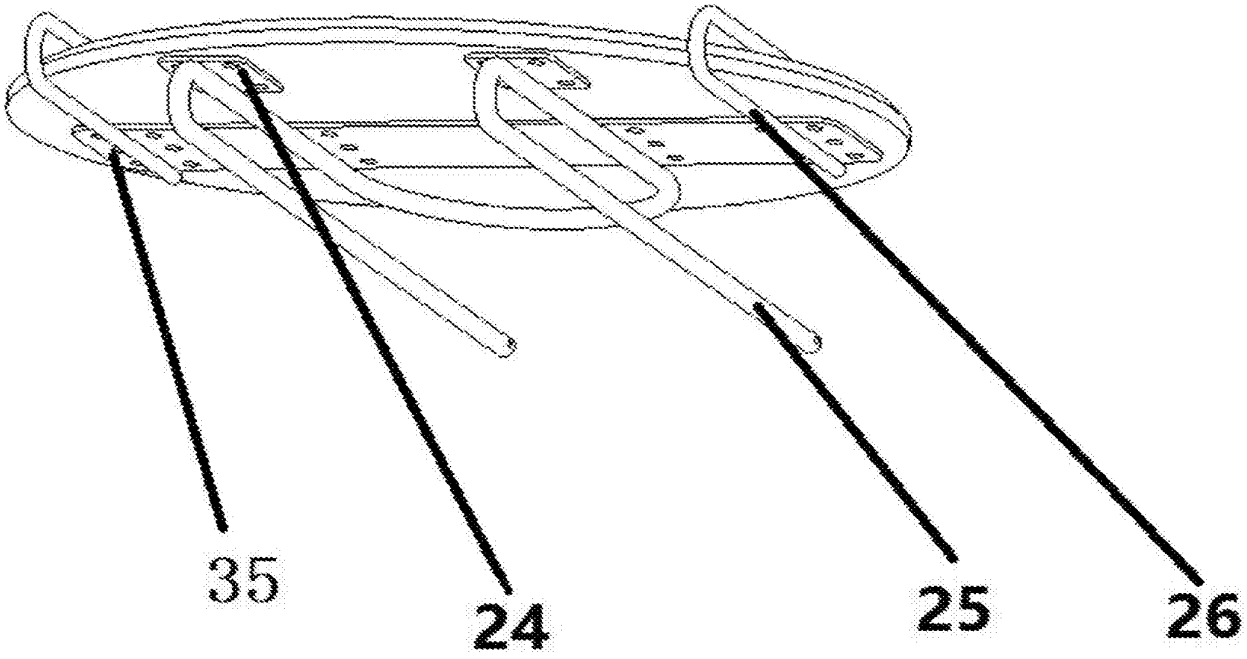


图6

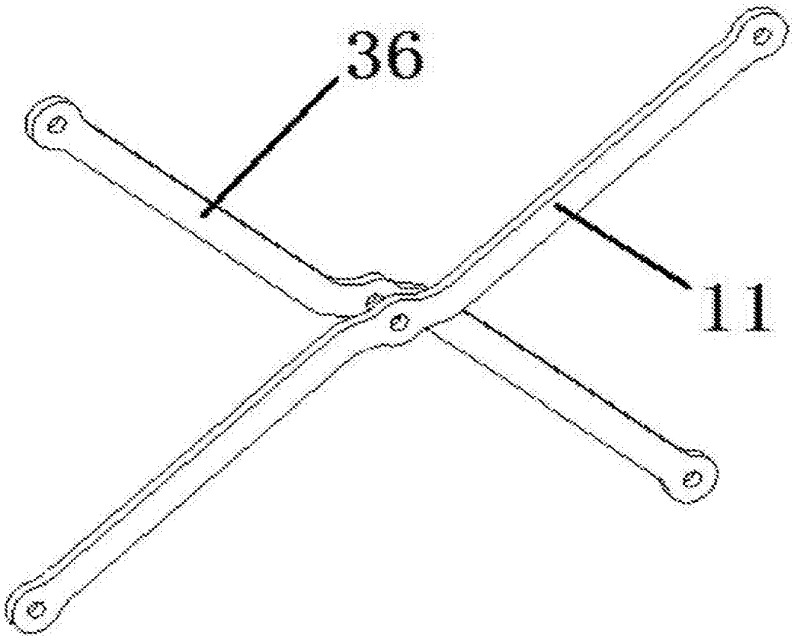


图7

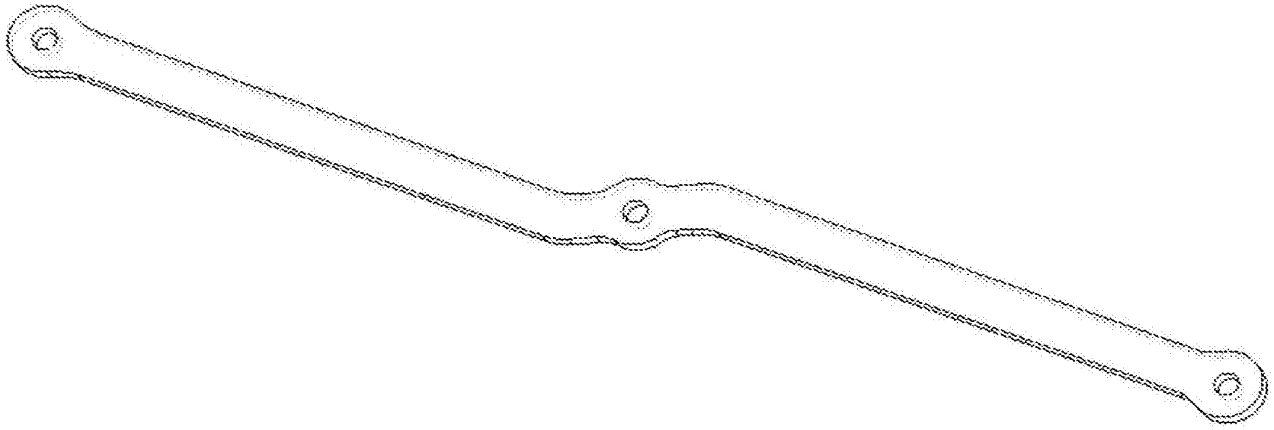


图8

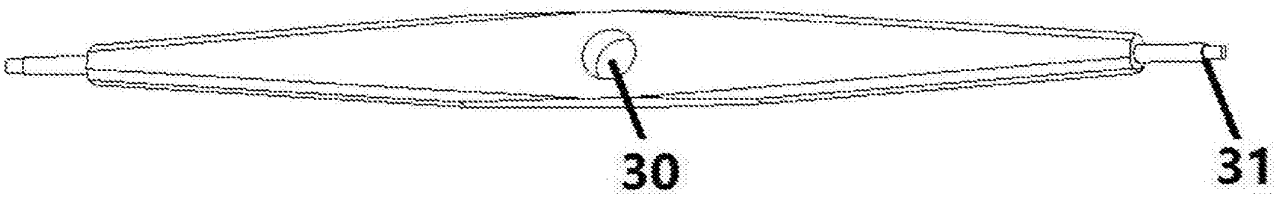


图9

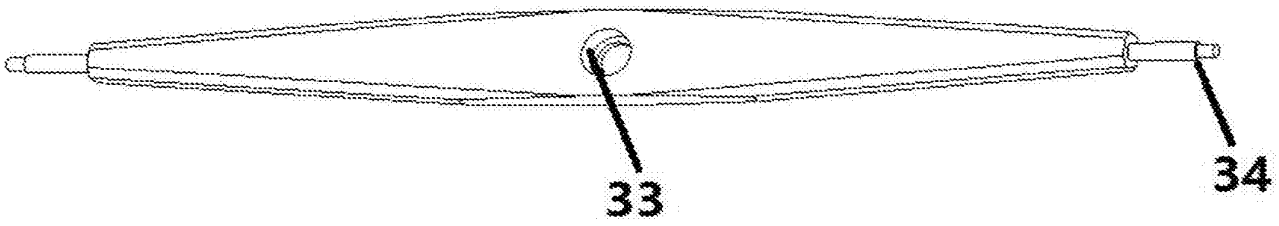


图10

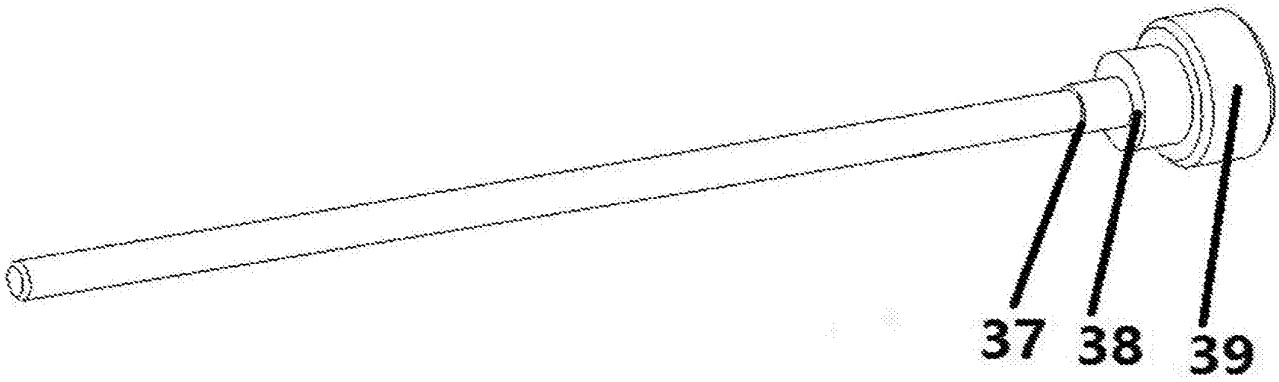


图11

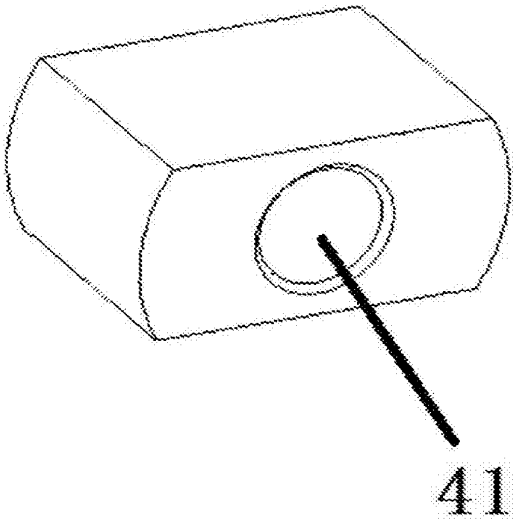


图12

Patents

Table whose height can be adjusted equally well by a mechanical system and an electrical system

Abstract

The present invention relates to a table whose height is variable, being adjustable equally well by a mechanical system and an electrical system. If either system fails the failed system can be replaced by the other system and the table can be used at the different heights set by the manufacturer, so maintaining its height adjustability. The table comprises a rack-type mechanical system 9 and a jack-type electrical system 6. Switching from one to the other is by means of a simple action on both systems.

Classifications

A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

View 3 more classifications

FR2637165A1

Paris

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Other languages: French

Inventor: José Thoreau

Current Assignee : SAMKO SARL

Worldwide applications

1988 FR

Application FR8812993A events

1988-09-30 Application filed by SAMKO SARL

1988-09-30 Priority to FR8812993A

1990-04-06 Publication of FR2637165A1

Status Withdrawn

Info: Patent citations (7), Cited by (7), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (5)

Hide Dependent translated from French

- CLAIMS 1 adjustable height table system characterized by a part mechanical operating with a locking system 20 (fig. to the other system. adjustable character, whatever the incident occurred to one or -th, allows continuity in the use of height at fig. 1,2,3,4) which, during the defection of one or the other sys and an electrical part operating using a jack 6 (12,13) snapping into racks 9 (fig. 9,10,11,12,13). 2 adjustable height table system according to claim 1 comprising a melanic restraint system 9,18,19,20,21,22,23, 24,27,31,32 (fig. 9,18, 11,1Z, 13,1t +, 15) allowing the locking of the mechanical system 20 (fig. 1Z, 13,15) engaging in the creat - mesh 9 (Fig. 9,10,12,13) thereby facilitating the blocking desired height of the top of the support 1 (fi9.1,2,3,4,6,16). common axis 7 (fig. 5). connecting rods 3 and 4 (fio.1,2,3,. 5,5,14,15,17) pivoting around a The top of the support (fig. 1,2,3,4,6,15) is connected by a system behind the guide basset slides 8 (fig. 9,15). 11,15) using the Sas 25 rollers (fig. 14,15), the latter rolling movable relative to the pivoting of the support 2 (fig. 1,2,3,4,9,1U, fig. 1,2,3,4,16), by the alignment axis 28 (fig. 1,2,3,4) and remain The outer connecting rods are secured from above the support 1 ((fig.16,17). these rolling in the high guide rails of the connecting rods 17 of the support 1 (fig1,2,3,4,15) by means of the high rollers 36 (fig.17) -lors 37 (fig. 1,2,3,4,9) and remain movable relative to the top (fig. 1,2,3,4,9,1,11,15) by the alignment axis of the inter connecting rods The internal connecting rods are integral with the base of the support 2 3 table system according to claim 2 characterized in that it includes a tension spring system 27 facilitating the ei- - elevation of the tray 1 and the opening of the lock 20 on the racks 9. 4 table system according to claim 1 characterized by the taking the cylinder out of service when it is offset 10 (fig. 5,6) by means of a handle 11 (fig. 5,6). When the mechanical restraint system is put into service (fig. of the mechanical system (fig. 12,14). - smoothing of electrical continuity by decommissioning of axis 18 (fig. 5,6,7) in the movable axis of the jack and the re- that it involves putting the actuator into service by repositioning - aerated and therefore causes the rupture of the electrical supply 5 Table system according to claim 1 characterized in 13), the safety switch 25 (fig.12,13,14) is free

Description

translated from French

-The present invention consists of a HEIGHT TABLE
ADJUSTABLE AT ONCE AND INDEPENDENTLY BY A SYSTEM
MECHANICAL AND ELECTRICAL SYSTEM.

The adjustable character allows the user to modify the height of the table and to put it at the desired height between the extreme positions given by the manufacturer.

The absence of electrical power either by default of connection, - by power failure, or by defection of the electrical mechanism, is compensated by the starting of the mechanical system. The defection of the mechanical system can likewise be remedied by the start-up of the electric height adjustment system.

The technical field of the invention relates to the paramedical, aesthetic, veterinary, fitness, bodybuilding.

Until then there were tables having a mechanical height adjustment system, or an electrical system, or a pneumatic system, or a hydraulic system, but the defection of the adjustment system used did not allow continuity in the modification of this height.

The proposed invention makes it possible to use, to modify the height of this table, either the electrical system or the mechanical system, allowing at all times to substitute one system for the other to vary the height of the table.

The table consists of a top Dartie TOP
SUPPORT 1 (fig 1,2,3,4,16) movable from bottom to top (fig 1,2,3,4), from a lower part BASE
SUPPORT 2 (fig 1,2,3,4,9,10,11,15) fixed resting on the ground, of an -intermediate part allowing the approach or the distance of (1) compared to (2) .

This intermediate part consists of four connecting rods 3,4 (fig 1,2,3,4,5,6,14,15,16,17) integral two by two. The outer connecting rods 3 (fig 1,2 3,4,14,15,16) have a horizontal sliding movement on the part -2 (fig 1,2,3,4,9 <10,11,15) and a axial rotational movement -on part 1 (fig 1,2,3,4,16,17). The internal connecting rods 4 (fig 1,2,3,4,5,6,16,17) have a horizontal sliding movement on the part 1 (fig 1,2,3,4,16,17) and a movement of axial rotation on part 2 (fig 1,2,3,4,9,10,11,15). The connecting rods connected by a common axis 7 (fig 1,2,3,4,5) have a rotational movement on this axis.

The movement of raising and lowering from 1 to 2 can be done in two ways:
* By an electrical mechanism (fig 1,2) comprising a jack 6 (fig 1,2,3,4). The 6 operated by a. bipolar switch is anchored by its fixed base 16 (fig 9,10). In the operating position the 6 is also attached by its movable part on 10 (fig 5,6,7) and exerts a push or a pull on 4. The push of 6 on 10 (therefore on 4 secured to 10) causes the sliding from 36 to 17 (fig 17). The pivoting of 4 with respect to 2 on axis 37 (fig 1,2,3,4,9) causes a push of 4 on 1 (fig 2) or a pull of 4 on 1 (fig 1). The thrust of 6 out of 10, therefore out of 4 in solidarity with 10, causes a displacement of 7.The 3 undergo a thrust causing a sliding of 25 into 8 (fig 15). The pivoting of 3 relative to 1 on the axis 28 (fig 1,2,3,4,16) causes a push of 3 on 1 (fig 2) or a pull of 3 on 1 (fig 1). The thrust of the axis of 6 out of 10 causes a circumferential displacement of 10 compared to 7, the result being a sliding from 36 to 28 and a sliding from 25 to 37. The traction of 6 added to the weight of the whole part outside base of the table causes a circumferential displacement of 10 with respect to 7. the resultant being a spacing both between 25 and 37 and between 36 and 28.

* By a mechanical mechanism (fig 3,4,9,10,11, 12,13,14,16) comprising two racks 9 and a locking system 20 (fig 9,10,11,12,13,14).

The 9 are fixed on 18 (fig 9,10,11) by 19 (fig 11). The 20 centered between the 24 (fig 14,15) is included in the holes of 9 (fig 13), pushed into these holes by the sliding of 25 into 8. The weight of the table causes a distance of 37 from to 25 and 28 compared to 36. Raising 1 is facilitated by pulling 27 which brings 35 closer to 33, which is itself integral with 1. A small additional manual pull up will suffice to open up 20 of 9 and do sliding 20 out of 9 thus changing the distance between 1 and 2. The relaxation of this traction causes the intromission of 20 into 9, and the stability of 1 compared to 2 in an additional push of 1 out of 2.

The approximation of 1 compared to 2 requires opening up 20 out of 9 first requiring a small rise of 1 and then maintaining 20 in the position fig (12). This support can be performed by pressing with the foot on 31.

The transition from one to the other of these two systems (electrical and mechanical) involves a certain number of operations:
* Switching from the electrical system to the mechanical system:
In the electrical operating position the 20 is held in the position fig (12) by 21 (fig 12,14). The push of 21 following the arrow fig (14) causes the release of 20 fig (13,14) and actuates the 26 fig (12,13,14). The 20 can then be locked in 9.

The transition from the electrical system to the mechanical system requires secondarily the release of 6 by pulling on 11 (fig 5,6). This traction causes the displacement of 10 (arrow fig 6) which comes entirely out of 15 (fig 5,6,8) and fully enters 14 (fig 5,6,7) then compressing the 13 (fig 6). This maneuver takes 10 out of 6 which can then be placed on the ground keeping its fixed point relative to the table at 16. The table can then be cut using the mechanical mechanism described above.

* Switching from the mechanical system to the electrical system: 1 being returned to its starting position, pull 11 which forces 10 to enter 14, present the movable end of 6 between 14 and 15 along the axis 10 and release 11 which leads to the intromission of 10 in 6 then in 15 by the push of 13.

The transition from the mechanical system to the electrical system requires, secondarily, the opening up of 20 with respect to 9 and the maintenance of 20 in position fig (12) by an operation on 21 opposite to the arrow fig (14). This maneuver causes the electrical tensioning of 6 using 26. The table can then be used according to the electrical mechanism.

PI? 1E: SNTATION DES DESS I NS =
PAGE N01
Fig 1
Side view of table in position
high, cylinder in operating position.

Fig 2
Side view of table in position
low, cylinder in operating position.

PAGE N02
Fig 3 Side view of the table, in position
high, cylinder in no position
operation.

Fig 4
Side view of table in position
low, cylinder in no position
operation.

PAGE N "3
Fig 5
Internal lifting rods of
Table.

Fig 6
Axial section (AA) of the chappe
high cylinder linking.

PAGE N04
Fig 7
Section (B8) of the axis guide barrel
cylinder top anchor.

Fig 8
Section of the introductory barrel of
the upper cylinder anchoring axis.

Fig 9
Support leg viewing
the racks and their fixings
on the base.

PAGE N °5
Fig 10
Axial section (DD) of the chappe
cylinder fixing base.

Fig 11
Axial bend (EE) of the rack.

Fig 12
Axial cross-section (FF) of the lock
in the non-operating position.

Fig 13
Axial section (FF) of the lock
in operating position.

PAGE N °6
Fig 14
3/4 view of the mechanical system
in the non-operating position.

Fig 15
Axial section (II) of the alignment ring
lock and roller.

PAGE N07
Fig 16
Top view of the top of the support.

Fig 17
Axial section (GG) of the alignment axis
interior connecting rods.

LEGENDS =
1 TOP OF THE SUPPORT
2 SUPPORT BASE
3 EXTERNAL CONNECTING ROD
4 INTERIOR CONNECTING ROD
5 HIGH INKING CAP OF THE JACK
6 CYLINDER
7 ROTATION AXIS OF CONNECTING RODS
8 LOWER GUIDE GUIDE FOR CONNECTING RODS
9 RACK RACK 10 TOP RACK INKING AXIS 11 RACK ESCAMOTTING HANDLE 12 TOP ROTOR AXIS GUIDE SCREW 13 PUSHING SPEED OF THE RACK INK AXIS 14 14 CANON TOP GUIDE OF THE JACK 15 INTRODUCTION CANON OF THE TOP OF THE JACK AXIS 16 LOCK-INK CAP OF THE JACK 17 HIGH ROD GUIDE SLIDE 18 RACK FIXING PLATES 19 RACK INK RACKS 20 MECHANICAL SYSTEM LOCKING 21 LOCK RETAINING AXIS 22 LOCK RETAINING AXIS GUIDE RING 23 LOCK GUIDING RING 23 ex LOCK AND ROLLER ALIGNMENT RING 25 LOWER ROLLER 26 SECURITY SWITCH 27 TRACTION SPRINGS 28 AXIS ALIGNMENT OF EXTERIOR CONNECTING RODS 29 SECURITY STOP 30 LOCKING LOCK RETAINING STOP 31 LOCKING CONTROL BALL 32 LOCKING RETAINING AXLE CONTROL BALL 33 INK FLAT OF TRACTION SPRINGS 34 it SPACES EXTERNAL CONNECTING RODS 35 ALIGNMENT AXIS E T OF BRACKET SUPPORT 36 HIGH ROLLERS 37 ALIGNMENT AXIS OF INTERIOR CONNECTING RODS

Patent Citations (7)

Publication number	Priority date	Publication date	Assignee	Title
CH389198A *	1960-09-15	1965-03-15	Egger Fridolin	Table with a height-adjustable table top supported by a frame that can be folded up like scissors and can be locked in various positions
FR1447701A *	1964-09-14	1966-07-29	Luedin & Cie Ag	Improvements to hospital beds and the like
FR1530387A *	1966-07-09	1968-06-21	Bremshey & Co	Motor-driven patient bed with tilt adjustment
DE3104182A1 *	1980-02-12	1981-12-24	Augusto Caravaggio Bergamo Capelli	Lifting device, in particular for moving top surfaces of furniture and the like
FR2513512A1 *	1981-09-25	1983-04-01	Peyrard Rene	Multi-position bed for handicapped patient - has fixed lower frame connected to movable upper frame via scissor linkage
GB2146240A *	1983-09-12	1985-04-17	Doherty & Sons Limited Edward	Hospital bed

EP0269540A1 *	1986-11-18	1988-06-01	Ronflet, René	Medical bed or table
Family To Family Citations				

* Cited by examiner, † Cited by third party

Cited By (7)

Publication number	Priority date	Publication date	Assignee	Title
WO1998047407A1 *	1997-04-10	1998-10-29	Inergo Produktion Ab	Apparatus at a vertically adjustable work bench for giving a linear vertical movement to the work plate
EP2638830A1 *	2012-03-14	2013-09-18	Somilar Sistemas de Descanso, S.L.	Mattress display rack with lift table
CN103462767A *	2013-09-28	2013-12-25	河南博爱科技有限公司	Anatomy bed for forensic mobile work handcart
EP2829196A1 *	2013-07-25	2015-01-28	Metacom S.A.S. Di Mucelli Angelo & C.	Device for supporting a height-adjustable surface, particularly for tables and other surfaces to be supported and tables or surfaces thus equipped
CN105686403A *	2016-02-05	2016-06-22	苏州圣艺文体用品有限公司	Bookshelf on desk top
WO2017184206A1 *	2016-04-20	2017-10-26	Henry Streicher	Height adjustable desktop assembly
US11113477481	2015-01-24	2021-10-05	Office Kick, Inc.	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
DE602220567T2	2008-05-21	elevation chair
FR2637165A1	1990-04-06	Table whose height can be adjusted equally well by a mechanical system and an electrical system
US5372560A	1994-12-13	Multi-functional sporting equipment
WO2004094216A3	2005-03-31	Adjustable bicycle seat post assembly
KR910000069A	1991-01-29	Chair back and seat connection suspension to pedestal
CA1081155A	1980-07-08	Apparatus for lifting disabled persons
MXPA04012124A	2005-04-28	Quick crank adjustable height table.
WO2009024972A2	2009-02-26	A continuously height adjustable baby mattress support and apparatus therefor
US5708992A	1998-01-20	Device for placement in a bathtub or similar structure as an entering and exiting aid
EP0006076B1	1984-04-04	Lifting device with independently moving cage for climbing a mast
US4660234A	1987-04-28	Bathtub insert for handicapped persons
US3982293A	1976-09-28	Foot rests for kayaks
FR2368892A1	1978-05-19	PERFECTED DEVICE FOR OPENING A LOCK AND MEANS FOR ACTING ON THIS DEVICE
CN210050525U	2020-02-11	Tripod for servo revolving stage
EP1386031A1	2004-02-04	Ironing board adjustable in height
DE2905924A1	1980-08-21	Transporter frame for glass panes - has automatic locking device between arm and upright supports joined to form frame
FR2667582A1	1992-04-10	Device for lifting and installing equipment at the top of a very tall construction
CN216281030U	2022-04-12	Lighting equipment for hydraulic engineering construction
US2651351A	1953-09-08	Control mechanism for motor operated chairs and the like
EP0269528A2	1988-06-01	Device for automatically lifting and lowering the movable parts of chairs and beds
KR0138502Y1	1999-04-01	Cradle Bed Variable Device

JPH04321445A	1992-11-11	Elevating/sinking device
FR2761969A1	1998-10-16	DEVICE FOR TELESCOPIC LADDERS AND MOBILE ELEMENT GUIDED ON THESE LADDERS, FOR A TOWER CRANE
CN212113196U	2020-12-08	Ready-package guide rail adjusting block
CN210148885U	2020-03-17	Limiting device and laminating machine

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
FR8812993A	1988-09-30	1988-09-30	Table whose height can be adjusted equally well by a mechanical system and an electrical system

Applications Claiming Priority (1)

Application	Filing date	Title
FR8812993A	1988-09-30	Table whose height can be adjusted equally well by a mechanical system and an electrical system

Legal Events

Date	Code	Title	Description
1991-07-26	ST	Notification of lapse	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
rolling process		claims	2	0.000
Andrographis paniculata		claims	1	0.000
blocking		claims	1	0.000
grossing		claims	1	0.000

Show all concepts from the description section

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(19) RÉPUBLIQUE FRANÇAISE

INSTITUT NATIONAL
DE LA PROPRIÉTÉ INDUSTRIELLE

PARIS

(11) N° de publication : **2 637 165**
(à n'utiliser que pour les commandes de reproduction)

(21) N° d'enregistrement national : **88 12993**

(51) Int Cl⁵ : A 47 B 9/16, 9/10; A 61 G 13/06.

(12) DEMANDE DE BREVET D'INVENTION A1

(22) Date de dépôt : 30 septembre 1988.

(30) Priorité :

(43) Date de la mise à disposition du public de la demande : BOPI « Brevets » n° 14 du 6 avril 1990.

(60) Références à d'autres documents nationaux apparentés :

(71) Demandeur(s) : *SAMKO SARL.* — FR.

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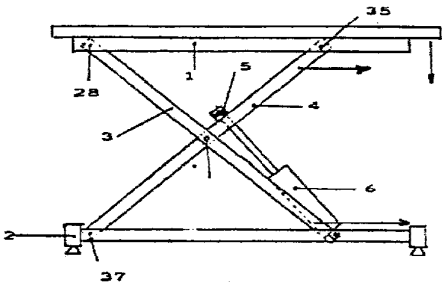
(74) Mandataire(s) :

(54) Table de hauteur réglable, à la fois et indifféremment, par un système mécanique et un système électrique.

(57) La présente invention consiste en une table de hauteur variable, réglable à la fois et indifféremment par un système mécanique et un système électrique.

Elle permet lors de la défection de l'un ou l'autre système un remplacement du système défectueux par l'autre système et une utilisation possible de la table aux différentes hauteurs données par le constructeur, gardant à celle-ci son caractère réglable quant à sa hauteur.

La table comporte un système mécanique à crémaillère 9, et un système électrique 6 à vérin, le passage de l'un à l'autre et vice versa se faisant par une manœuvre simple sur les deux systèmes.



FR 2 637 165 - A1

2637165

La présente invention consiste en une TABLE DE HAUTEUR REGLABLE A LA FOIS ET INDIFFEREMMENT PAR UN SYSTEME MECANIQUE ET UN SYSTEME ELECTRIQUE.

Le caractère réglable permet à l'utilisateur de modifier la hauteur de la table et de la mettre à la hauteur désirée entre les positions extrêmes données par le constructeur.

L'absence d'alimentation électrique soit par défaut de branchement, par panne d'alimentation, ou par défection du mécanisme électrique, est palliée par la mise en route du système mécanique. La défection du système mécanique peut de même être palliée par la mise en route du système électrique de réglage de la hauteur.

Le domaine technique de l'invention concerne le domaine médical, paramédical, esthétique, vétérinaire, de la remise en forme, de la musculation.

Jusqu'alors il existait des tables ayant un système mécanique de réglage de la hauteur, ou un système électrique, ou un système pneumatique, ou un système hydrolique, mais la défection du système de réglage employé ne permettait pas une continuité dans la modification de cette hauteur.

L'invention proposée permet d'utiliser, pour modifier la hauteur de cette table, soit le système électrique soit le système mécanique, permettant à tous moments de substituer un système à l'autre pour faire varier la hauteur de la table.

La table est constituée d'une partie supérieure DESSUS DU SUPPORT 1 (fig 1,2,3,4,16) mobile de bas en haut (fig 1,2,3,4), d'une partie inférieure PIETEMENT DU SUPPORT 2(fig 1,2,3,4,9,10,11,15) fixe reposant sur le sol, d'une partie intermédiaire permettant le rapprochement ou l'éloignement de (1) par rapport à (2).

Cette partie intermédiaire est constituée de quatre bielles 3,4 (fig 1,2,3,4,5,6,14,15,16,17) solidaires deux à deux. Les bielles extérieures 3 (fig 1,2 3,4,14,15,16) ont un mouvement de glissement horizontal sur la partie 2 (fig 1,2,3,4,9,10,11,15) et un mouvement de rotation axial sur la partie 1 (fig 1,2,3,4,16,17). Les bielles intérieures 4 (fig 1,2,3,4,5,6,16,17) ont un mouvement de glissement horizontal sur la partie 1 (fig 1,2,3,4,16,17) et un mouvement de rotation axial sur la partie 2 (fig 1,2,3,4,9,10,11,15). Les bielles reliées par un axe commun 7 (fig 1,2,3,4,5) ont un mouvement de rotation sur cet axe.

Le mouvement d'élévation et de descente de 1 par rapport à 2 peut se faire de deux façons:

* Par un mécanisme électrique (fig 1,2) comportant un vérin 6 (fig 1,2,3,4). Le 6 actionné par un interrupteur bipolaire est ancré par sa base fixe 16 (fig 9,10). En position de fonctionnement le 6 est également rattaché par sa partie mobile sur 10 (fig 5,6,7) et exerce une poussée ou une traction sur 4. La poussée de 6 sur 10 (donc sur 4 solidaire de 10) entraine le glissement de 36 dans 17 (fig 17). Le pivotement de 4 par rapport à 2 sur l'axe 37 (fig 1,2,3,4,9) entraine une poussée de 4 sur 1 (fig 2) ou une traction de 4 sur 1 (fig 1). La poussée de 6 sur 10 donc sur 4 solidaire de 10 entraine un déplacement de 7. Les 3 subissent une poussée entrainant un glissement de 25 dans 8 (fig 15). Le pivotement de 3 par rapport à 1 sur l'axe 28 (fig 1,2,3,4,16) entraine une poussée de 3 sur 1 (fig 2) ou une traction de 3 sur 1 (fig 1). La poussée de l'axe de 6 sur 10 provoque un déplacement circonférenciel de 10 par rapport à 7, la résultante étant un glissement de 36 vers 28 et un glissement de 25 vers 37. La traction

de 6 ajoutée au poids de toute la partie hors piètement de la table provoque un déplacement circonférenciel de 10 par rapport à 7. la résultante étant un écartement à la fois entre 25 et 37 et entre 36 et 28.

* Par un mécanisme mécanique (fig 3,4,9,10,11, 12,13,14,16) comportant deux cremaillères 9 et un système de verouillage 20 (fig 9,10,11,12,13,14). Les 9 sont fixées sur 18 (fig 9,10,11) par 19 (fig 11). Le 20 axé entre les 24 (fig 14,15) vient s'inclure dans les trous de 9 (fig 13), poussé dans ces trous par le glissement de 25 dans 8. Le poids de la table entraine un éloignement de 37 par rapport à 25 et de 28 par rapport à 36. L'élévation de 1 est facilité par la traction de 27 qui rapproche 35 de 33 lui même solidaire de 1. Une petite traction manuelle supplémentaire vers le haut suffira à désenclaver 20 de 9 et à faire glisser 20 sur 9 changeant ainsi la distance entre 1 et 2. Le relâchement de cette traction provoque l'intromission de 20 dans 9, et la stabilité de 1 par rapport à 2 dans une poussée supplémentaire de 1 sur 2. Le rapprochement de 1 par rapport à 2 passe par le désenclavement de 20 sur 9 nécéssitant dans un premier temps une petite élévation de 1 et dans un deuxième temps le maintien de 20 dans la position fig (12). Ce maintien peut être éffectué par pression avec le pied sur 31.

Le passage de l'un à l'autre de ces deux systèmes (électrique et mécanique) comporte un certain nombre de maneuvres:

* Passage du système électrique en système mécanique:

Dans la position de fonctionnement électrique le 20 est maintenu dans la position fig(12) par 21 (fig 12,14). La poussée de 21 suivant la flèche fig(14) entraine la libération de 20 fig(13,14) et actionne le 26 fig(12,13,14). Le 20 peut alors

s'enclaver dans 9.

Le passage du système électrique en système mécanique nécéssite secondairement la libération de 6 par une traction sur 11 (fig 5,6). Cette traction entraine le déplacement de 10 (flèche fig 6) qui sort entièrement de 15 (fig 5,6,8) et rentre entièrement dans 14 (fig 5,6,7) comprimant alors le 13 (fig 6). Cette maneuvre fait sortir 10 du 6 qui peut alors être déposé sur le sol gardant son point fixe par rapport à la table en 16. La table peut alors être utilisée suivant le mécanisme mécanique décrit précédement.

* Passage du système mécanique en système électrique:

1 étant remis à sa position de départ, il faut tirer sur 11 qui oblige 10 à rentrer dans 14, présenter l'extrémité mobile de 6 entre 14 et 15 suivant l'axe 10 et relâcher 11 ce qui entraine l'intromission de 10 dans 6 puis dans 15 par la poussée de 13.

Le passage du système mécanique en système électrique nécéssite secondairement le désenclavement de 20 par rapport à 9 et le maintien de 20 en position fig(12) par une maneuvre sur 21 inverse à la flèche fig(14). Cette maneuvre provoque la mise en tension électrique de 6 à l'aide de 26. La table peut alors être utilisée suivant le mécanisme électrique.

PRESENTATION DES DESSINS:

PAGE N°1

Fig 1

Vue latérale de la table en position haute, vérin en position de fonction.

Fig 2

Vue latérale de la table en position basse, vérin en position de fonction.

PAGE N°2

Fig 3

Vue latérale de la table en position haute, vérin en position de non fonctionnement.

Fig 4

Vue latérale de la table en position basse, vérin en position de non fonctionnement.

PAGE N°3

Fig 5

Bielles intérieures de levage de la table.

Fig 6

Coupe axiale (A-A) de la chappe haute d'encrage du vérin.

PAGE N°4

Fig 7

Coupe (B-B) du canon guide de l'axe haut d'encrage du vérin.

Fig 8

Coupe du canon d'introduction de l'axe haut d'encrage du vérin.

Fig 9

Piétement du support visualisant les crémaillères et leurs fixations sur le piétement.

PAGE N°5

Fig 10

Coupe axiale (D-D) de la chappe basse de fixation du vérin.

Fig 11

Coupe axiale (E-E) de la crémaillère.

Fig 12

Coupe axiale (F-F) du verrouillage en position de non fonctionnement.

Fig 13

Coupe axiale (F-F) du verrouillage en position de fonctionnement.

PAGE N°6

Fig 14

Vue de 3/4 du système mécanique en position de non fonctionnement.

Fig 15

Coupe axiale (I-I) de la bague d'alignement du verrouillage et du galet.

PAGE N°7

Fig 16

Vue supérieure du dessus du support.

Fig 17

Coupe axiale (G-G) de l'axe d'alignement des bielles intérieures.

LEGENDES :

1 DESSUS DU SUPPORT
2 PIETEMENT DU SUPPORT
3 BIELLE EXTERIEURE
4 BIELLE INTERIEURE
5 CHAPPE HAUTE D'ENCRAGE DU VERIN
6 VERIN
7 AXE DE ROTATION DES BIELLES
8 COULISSE BASSE DE GUIDAGE DES BIELLES
9 CREMAILLERE
10 AXE HAUT D'ENCRAGE DU VERIN
11 POIGNEE D'ESCAMOTAGE DU VERIN
12 VIS DE GUIDAGE DE L'AXE HAUT DU VERIN
13 RESSORT DE POUSSEE DE L'AXE D'ENCRAGE DU VERIN
14 CANON GUIDE DE L'AXE HAUT DU VERIN
15 CANON D'INTRODUCTION DE L'AXE HAUT DU VERIN
16 CHAPPE BASSE D'ENCRAGE DU VERIN
17 COULISSE HAUTE DE GUIDAGE DES BIELLES
18 PLAQUES DE FIXATION DE LA CREMAILLERE
19 BOULONS D'ENCRAGE DE LA CREMAILLERE
20 VERROUILLAGE DU SYSTEME MECANIQUE
21 AXE DE RETENUE DU VERROUILLAGE
22 BAGUE DE GUIDAGE DE L'AXE DE RETENUE DU VERROUILLAGE
23 BAGUE DE GUIDAGE DU VERROUILLAGE
24 BAGUE D'ALIGNEMENT DU VERROUILLAGE ET DU GALET
25 GALET BAS
26 INTERRUPTEUR DE SECURITE
27 RESSORTS DE TRACTION
28 AXE D'ALIGNEMENT DES BIELLES EXTERIEURES
29 BUTEE DE SECURITE
30 BUTEE DE RETENUE DE LA CHAPPE BASSE
31 BOULE DE COMMANDE DU VEROUILLAGE
32 BOULE DE COMMANDE DE L'AXE DE RETENUE DU VERROUILLAGE
33 FER PLAT D'ENCRAGE DES RESSORTS DE TRACTION
34 ENTRETOISE DES BIELLES EXTERIEURES
35 AXE D'ALIGNEMENT ET DE SUPPORT DES GALETS HAUTS
36 GALETS HAUTS
37 AXE D'ALIGNEMENT DES BIELLES INTERIEURES

- REVENDICATIONS -

1 Système de table de hauteur réglable caractérisé par une partie mécanique fonctionnant avec un système de verrouillage 20 (fig. 12,13) s'enclanchant dans des crémaillères 9 (fig.9,10,11,12,13), et d'une partie éléctrique fonctionnant à l'aide d'un vérin 6 (fig.1,2,3,4) qui,lors de la déféction de l'un ou de l'autre sys--ème,permet la continuité dans l'utilisation de la hauteur à caractère réglable,quelle que soit l'incident survenu à l'un ou à l'autre système.

2 Système de table de hauteur réglable suivant la revendication 1 comprenant un système mécanique de retenue 9,10,19,20,21,22,23, 24,27,31,32 (fig.9,10,11,12,13,14,15) permettant le verrouillage du système mécanique 20 (fig.12,13,15) s'enclanchant dans les cré--maillères 9 (fig.9,10,12,13)facilitant de ce fait,le blocage à hauteur désirée du dessus du support 1 (fig.1,2,3,4,6,16).
Le dessus du support (fig.1,2,3,4,6,16) est relié par un système de bielles 3 et 4 (fig.1,2,3,4,5,6,14,15,17) pivotant autour d'un axe commun 7 (fig.5).
Les bielles extérieures sont solidaires de dessus du support 1 (fig.1,2,3,4,16),par l'axe d'alignement 28 (fig.1,2,3,4) et restent mobiles par rapport au piètement du support 2 (fig.1,2,3,4,9,10, 11,15) à l'aide des galets bas 25 (fig.14,15),ces derniers roulant dans les coulisses basses de guidage 8 (fig.9,15).
Les bielles intérieures sont solidaires au piètement du support 2 (fig.1,2,3,4,9,10,11,15) par l'axe d'alignement des bielles intér--ieures 37 (fig.1,2,3,4,9) et restent mobiles par rapport au dessus du support 1 (fig1,2,3,4,16) au moyen des galets hauts 36 (fig.17) ceux-ci roulant dans les coulisses hautes de guidage des bielles 17 (fig.16,17).

3 Système de table suivant la revendication 2 caractérisé en ce qu' il comporte un système de ressorts de traction 27 facilitant l'él--évation du plateau 1 et le désenclavement du verrouillage 20 sur les crémaillères 9.

4 Système de table suivant la revendication 1 caractérisé par la mise hors service du vérin lors de la désaxation de celui-ci 10 (fig.5,6) au moyen d'une poignée 11 (fig.5,6).
Lors de la mise en service du système mécanique de retenue (fig. 13),l'intérrupteur de sécurité 26 (fig.12,13,14) se trouve lib--éré et entraine de ce fait,la rupture de l'alimentation électriq

5 Système de table suivant la revendication 1 caractérisé en ce qu'il comporte la mise en service du vérin par repositionnement de l'axe 10 (fig.5,6,7) dans l'axe mobile du vérin et le rétab--lissement de la continuité électrique par la mise hors service du système mécanique (fig.12,14).

2637165

FIG 1

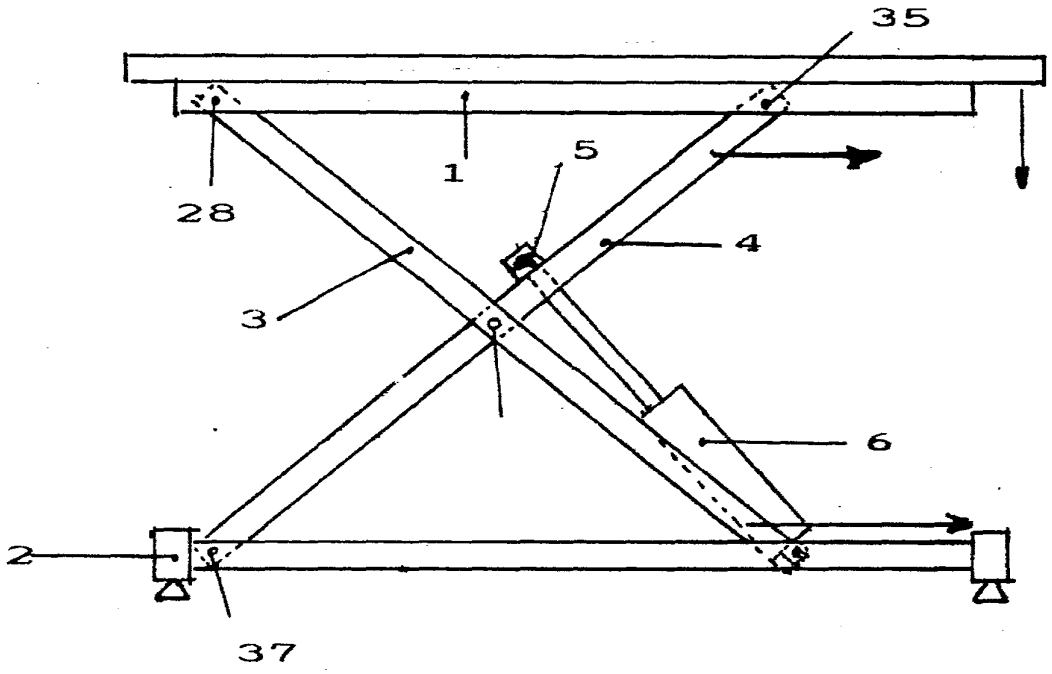


FIG 2

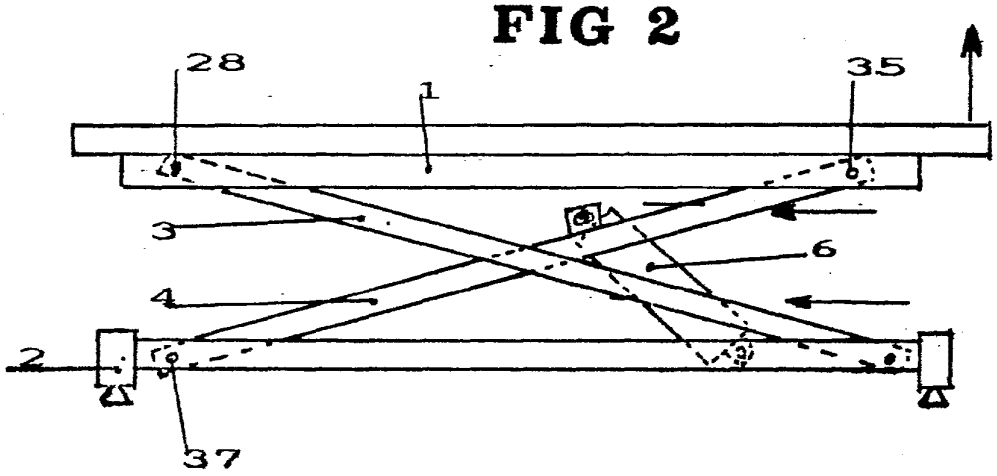


FIG 3

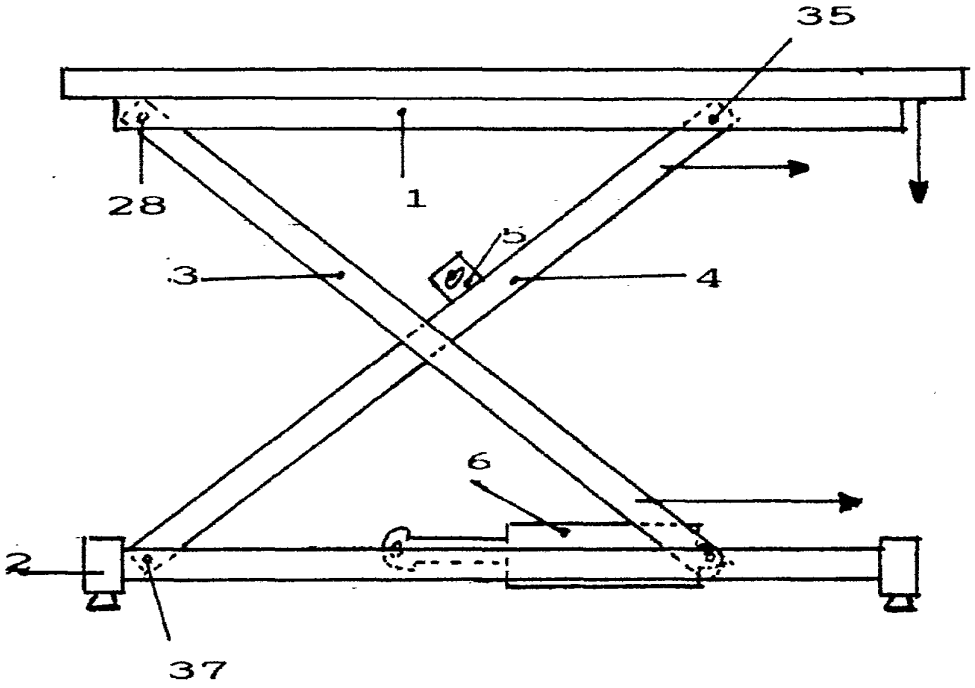
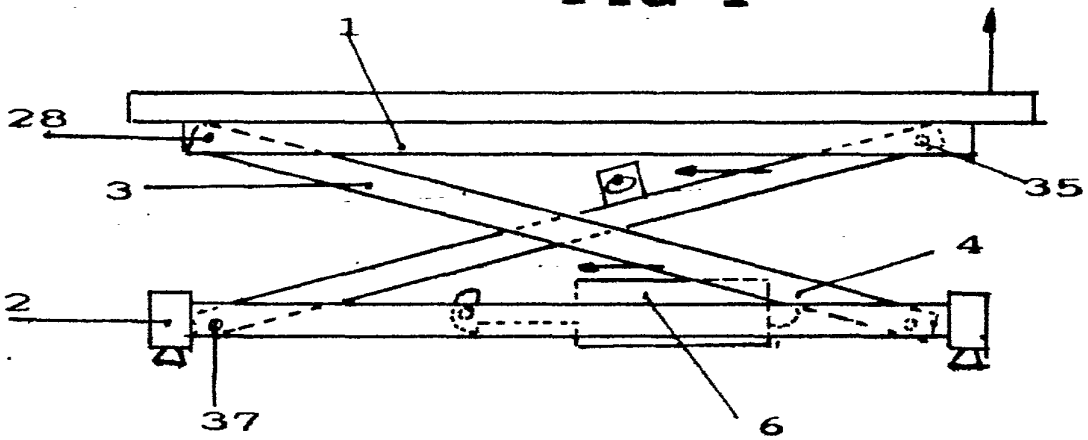


FIG 4



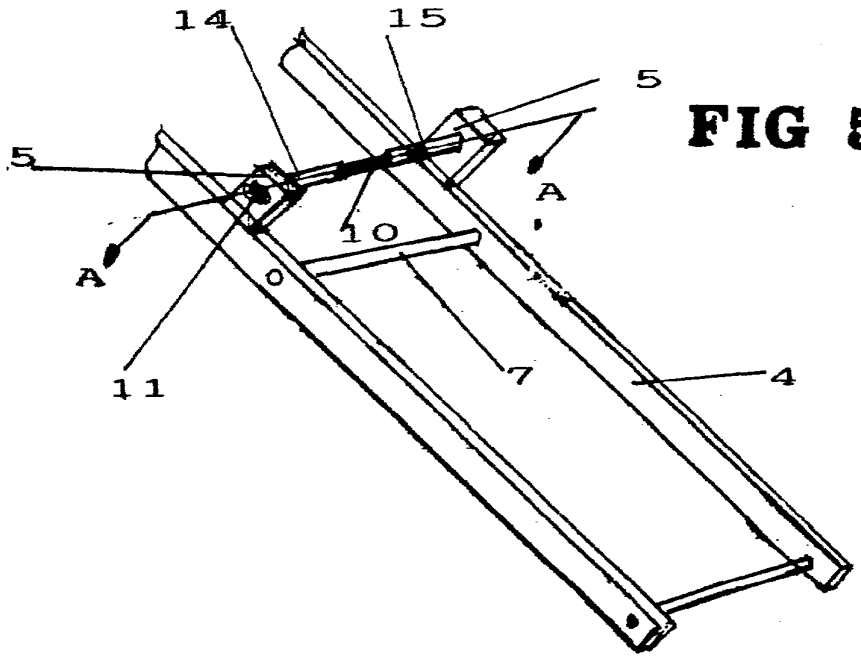
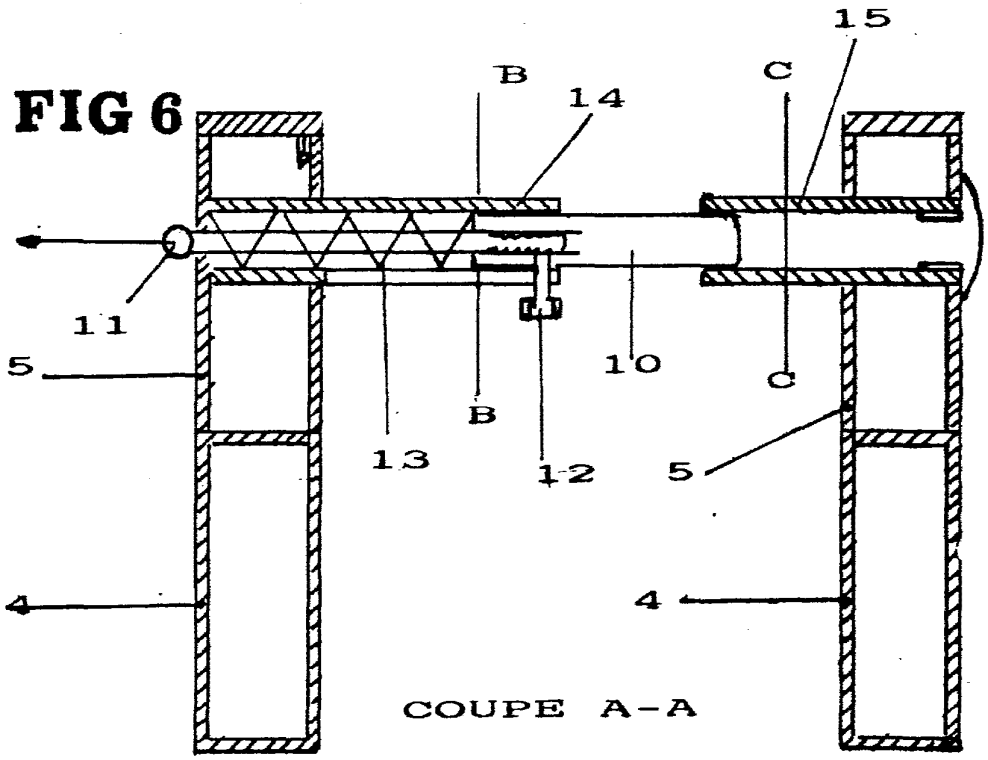


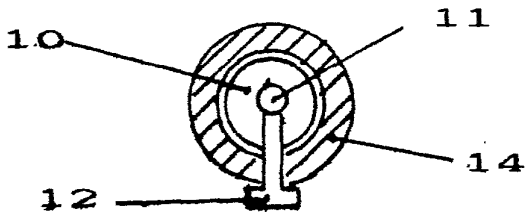
FIG 5

FIG 6



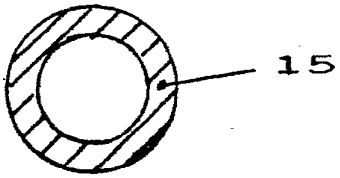
COUPE A-A

FIG 7



COUPE B-B

FIG 8



COUPE C-C

FIG 9

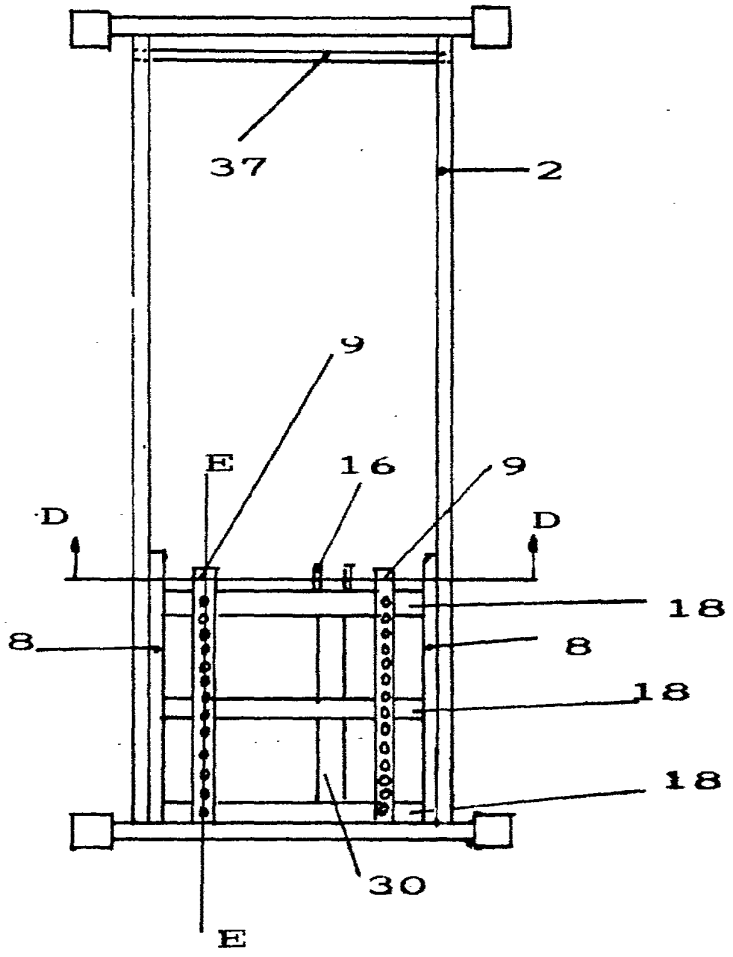
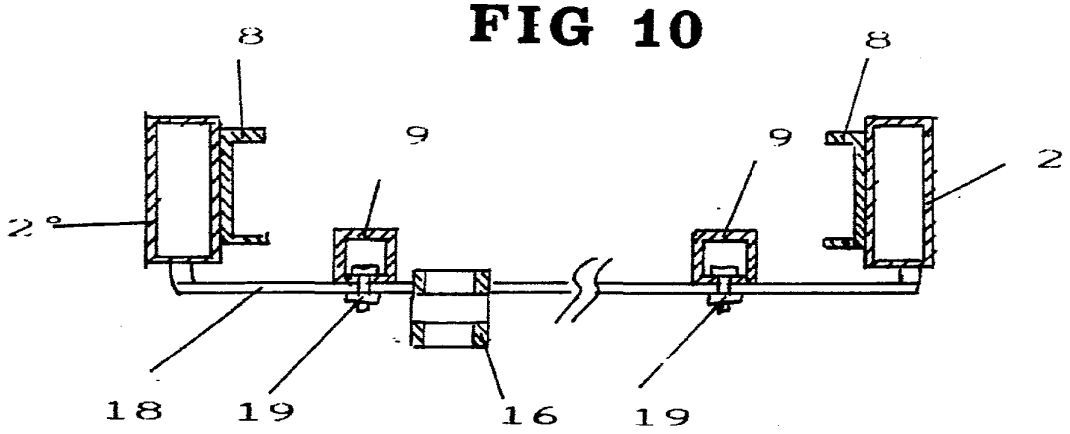
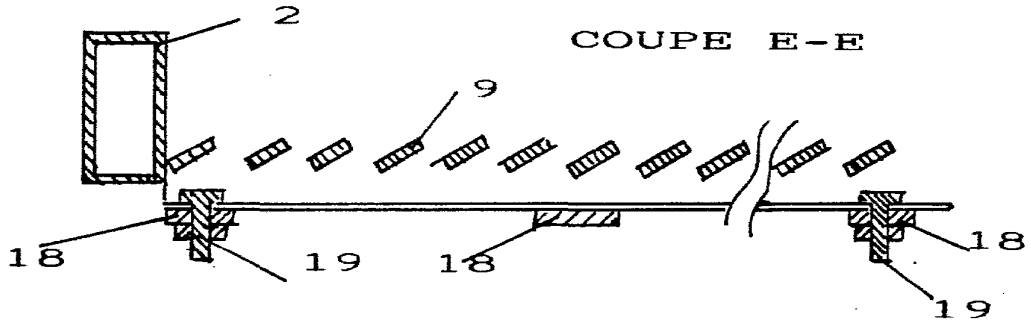


FIG 10



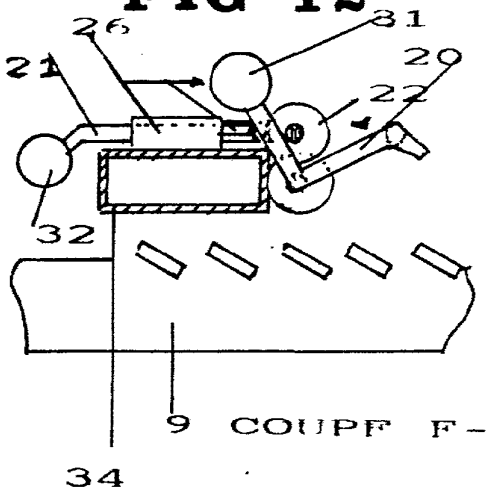
COUPE D-D

FIG 11



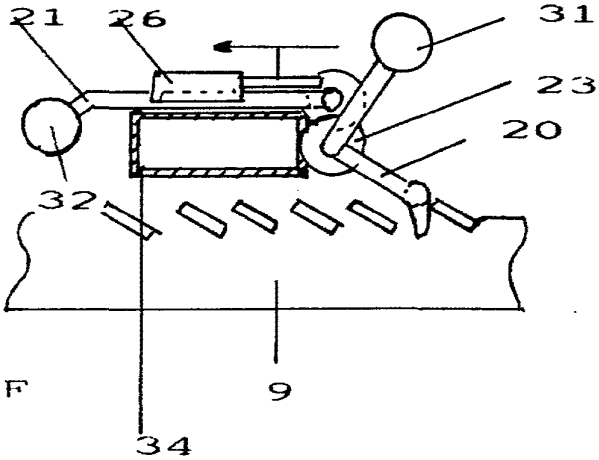
COUPE E-E

FIG 12



COUPE F-F

FIG 13



2637165

FIG 14

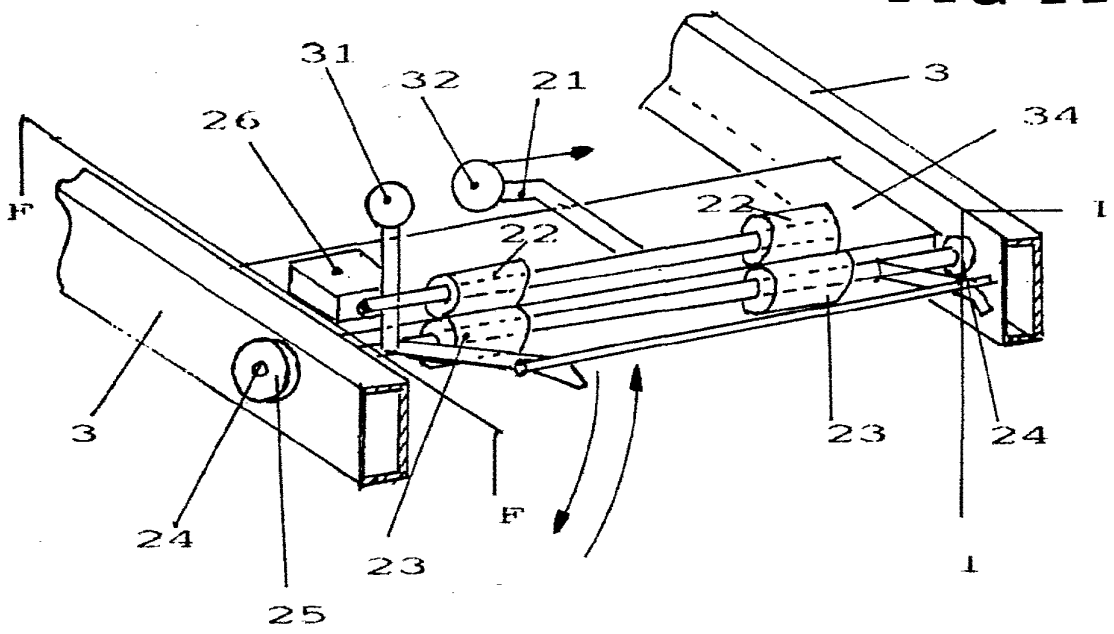
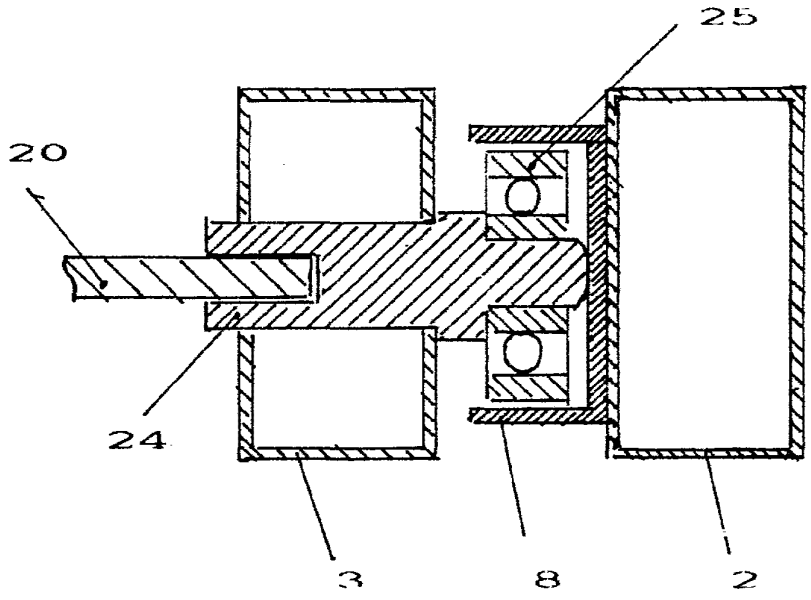


FIG 15



COUPE I-I

FIG 16

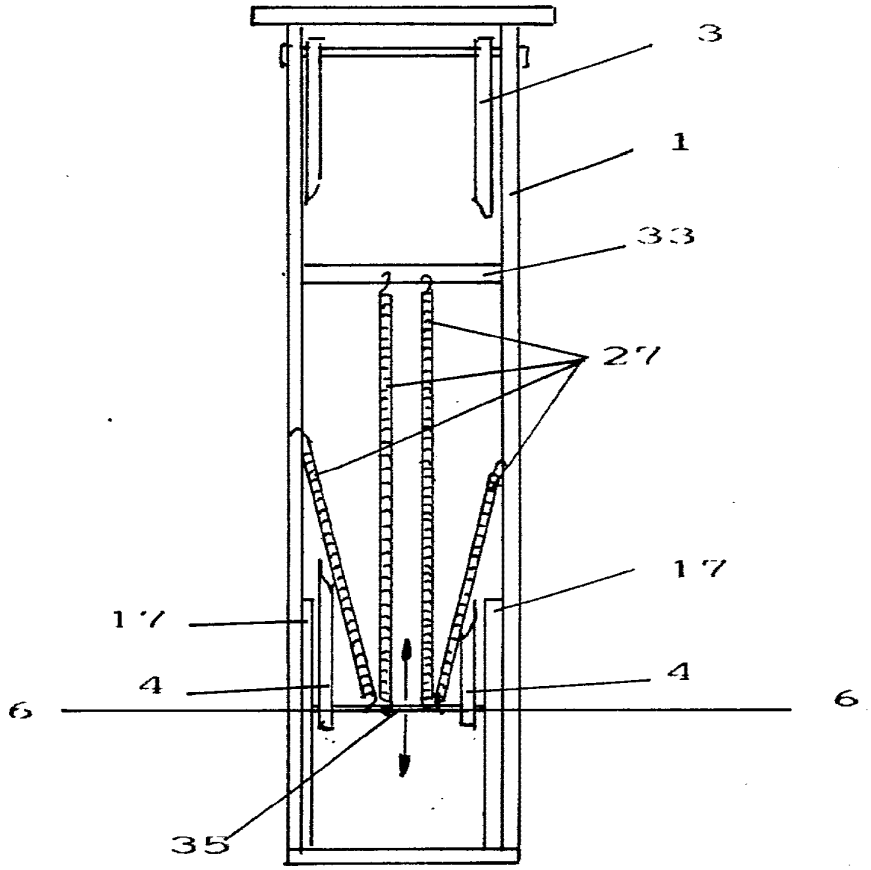
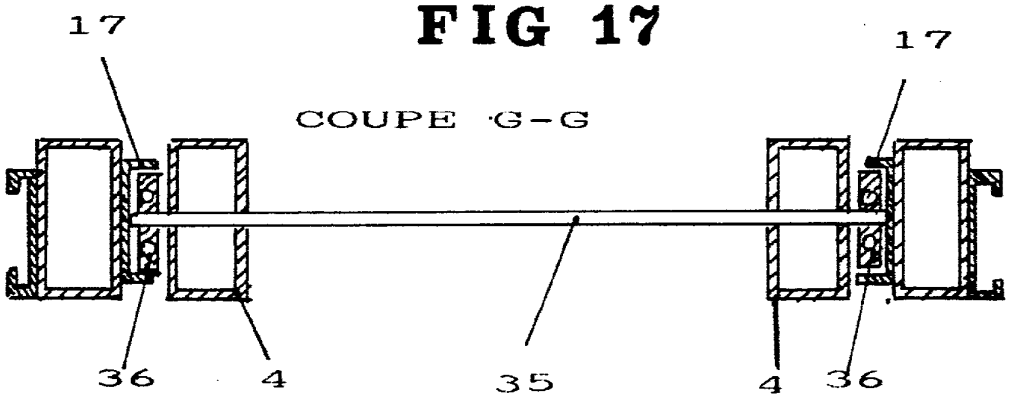


FIG 17



Patents

Folding table

Abstract

translated from German

A folding table comprising: a base (10), a lifting device (20) fixed to the base (10) and having a top, an adjustment assembly (30) pivotally connected to the lifting device (20), comprising An adjustment plate (32) pivotally connected to the top of the elevator (20), an adjustment rack (326) attached to the adjustment plate (32) and an engagement side formed with a plurality of teeth (328) and opposite to the engaging side has a smooth side, an adjusting slider (34) movably mounted on the adjusting plate (32) and a bottom, an engaging block (36) pivotally attached to the underside of the adjusting slider (34) and an engaging pin (362) formed on the engaging block (36) and selectively engaging one of the teeth (328) on the adjusting rack (326), two spring members (37) mounted on the underside of the adjusting slide (34), are mounted and in each case with two sides of the engagement block (36) in communication, and a connecting arm (38) having an upper end and a lower end, said lower end pivotally connected to the adjusting slide (36), a support plate (40) pivotally connected to the adjusting plate (32), pivotally connected to the upper end of the connecting arm (38), and a pivoting edge pivotally connected to the adjusting plate (32) and a supporting block (42) which is pivotally attached to the pivotal edge of the carrier plate (40).

DE202016101126U1

Germany

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Other languages: German

Worldwide applications

2016 DE

Application DE202016101126.4U events

2016-03-02	Application filed by Yao-Chuan Wu
2016-03-02	Priority to DE202016101126.4U
2016-06-21	Publication of DE202016101126U1
Status	Active
2026-03-03	Anticipated expiration

Info: Cited by (9), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, DPMA, Discuss

Images (15)



Classifications

- A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

View 4 more classifications

Claims (10)

Hide Dependent

translated from German

Folding table comprising: a base (10), a lifting device (20) at the base (10) and has an upper side, an adjustment assembly (30) pivoting with the lifting device (20), comprising an adjustment plate (32) pivotally connected to the top of the lifting device (20), an adjustment rack (326) attached to the adjustment plate (32) and an engaging side, which has a plurality of teeth (328) is formed, and opposite the engagement side has a smooth side, an adjusting slide (34), which is movable on the adjusting plate (32) and a bottom, an intervention block (36), which is pivotally mounted on the underside of the adjusting slide (34) and an engagement pin (362) attached to the engaging block (36) and selectively with one of the teeth (328) on the adjusting rack (326) interlocks, two spring elements (37) located at the bottom of the adjustment slide (34) and each with two sides of the engaging block (36) and a connection arm (38), which has an upper end and a lower end, wherein the lower end pivotally connected to the adjustment slide (36), a carrier plate (40) pivoting with the adjusting plate (32) is pivotally connected to the upper end of the connecting arm (38) and a pivoting edge which is pivotable with the adjusting plate (32), and a support block (42), which is pivotally mounted on the pivot edge of the carrier plate (40) is attached. Folding table according to claim 1, in which the lifting device (20) a drive device (22) at the base (10), a threaded rod (24), which rotates at the base (10) and with the drive device (22) is connected and driven by this, a movable lower part (26), which is movable at the base (10) and a threaded hole (262), which with the threaded rod (24) and several lifting rods (28), which are divided into several pairs, each pair of lifting rods (28) a first lifting bar (282) and a second lifting bar (284) pivoting with the first lifting bar (282), the first lifting bar (282) of each pair of lifting bars (28) pivotable with the base (10), and wherein the second lifting bar (284) of each pair of lifting bars (28) pivotable with the movable lower part (26), wherein the adjusting plate (32) pivotable with the upper ends of the lifting rods (28), and wherein the first lifting bar (282) of each pair of lifting bars (28) displaceable with the adjusting plate (32). Folding table according to claim 2, in which the base (10) a base well (12), which in an upper side of the base (10), wherein the movable lower part (26) movable in the base recess (12) and wherein the threaded rod (24) into the base well (12). Folding table according to claim 3, wherein the base recess (12) has two opposite sides, with two rails (14) in each case on the two opposite sides of the base depression (12) and are parallel to each other, the threaded rod (24) parallel to the rails (14), and the movable lower part (26) movable with the rails (14). Folding table according to claim 4, in which the adjusting plate (32) an upper side and a sliding recess (322), which in the top of the adjusting plate (32) is formed and has a bottom, a rack recess (324) in the bottom of the sliding recess (322) is provided, which has a bottom and two opposite sides, the Einstellzahnstange (326) at the bottom of the rack recess (324), and the engagement side and the smooth side of the adjustment rack (326) each from the opposite sides of the rack recess (324) are spaced, so that two sliding channels between the rack recess (324) and the Einstellzahnstange (326) are formed. Folding table according to claim 1, in which the lifting device (20A) several lifting racks (21) at the base (10A) and are parallel to each other, each lifting rack (21) an engagement side on which a plurality of teeth (212) are provided, and a smooth side, which the engaging side of the lifting rack (21), a plurality of lifting sliders (23), which are movable at the base (10A) and in each case with respect to the lifting racks (21) are movable, each lifting slider (23) an underside, an intervention block (25), which is pivotally mounted on the underside of the adjusting slide (23) and an engagement pin (252), which on the engagement block (25) of the lifting slider (23) and selectively with one of the teeth (212) on a corresponding lifting rack (21) and two spring elements (27), which at the bottom of the adjusting slide (23) and each with two sides of the engaging block (25) of the lifting slider (23) and several lifting bars (28A), which are divided into several pairs, each pair of lifting rods (28A) a first lifting bar (282A) and a second lifting bar (284A) pivoting with the first lifting bar (282A), wherein the first lifting bar (282A) of each pair of lifting bars (28A) pivotable with the base (10A), and wherein the second lifting bar (284A) of each pair of lifting bars (28A)

pivotable with one of the lifting sliders (23), wherein the adjustment plate (32) pivotable with the upper ends of the lifting rods (28A), and wherein the first lifting bar (282A) of each pair of lifting bars (28A) displaceable with the adjusting plate (32) connected is. Folding table according to claim 6, in which the base (10A) several slide recesses (12A), which in an upper side of the base (10A) are formed, wherein the lifting slide (23) in each case movable in the slide recesses (12A) are mounted, and wherein the lifting racks (21) in each case in the slide recesses (12A) are mounted. Folding table according to claim 7, wherein each slide recess (12A) has a bottom and a rack recess which in the bottom of the slide recess (122) and a bottom and two opposite sides, wherein the lifting racks (21) at the bottoms of the rack recesses (122) in the slide recesses (12A) and wherein the engaging side and the smooth side of each lifting rack (21) respectively from the opposite sides of the associated one of the rack recesses (122) are spaced around two sliding channels between the lifting rack (21) and the associated rack recess (122) define. Folding table according to claim 8, wherein each slide recess (12A) two opposite sides and two rails (14A), which each at the two opposite sides of the slide recess (12A) and are parallel to each other, each lifting rack (21) parallel to the rails (14A) in the respective associated slide recess (12A), and each lifting slider (23) movable with the rails (14A) in the respective associated slide recess (12A). Folding table according to claim 9, in which the adjusting plate (32) an upper side and a sliding recess (322), which in the top of the adjusting plate (32) is formed and has a bottom, a rack recess (324) in the bottom of the sliding recess (322) is provided, which has a bottom and two opposite sides, the Einstellzahnstange (326) at the bottom of the rack recess (324), and the engagement side and the smooth side of the adjustment rack (326) each from the opposite sides of the rack recess (324) are spaced around two sliding channels between the rack recess (324) and the Einstellzahnstange (326) define.

Description

translated from German

1. Area of utility model

The present utility model relates to a table, and in particular a folding table.

2. Description of the Related Art

A conventional office table always has a fixed height and is not adjustable in height for adaptation to different users. Therefore, a conventional office table for a tall or short-lived user is not comfortable and convenient in use. In addition, the conventional office table is not according to a portable device, which is stored on the table, such as a notebook or a tablet computer, adjustable to an inclined angle, so that the conventional office table is not convenient to use.

To remedy the deficiencies, the present utility aims to provide a folding table that can reduce or avoid the aforementioned problems.

The main purpose of the utility model is to provide a folding table that is adjustable so that it can be raised to different heights and stretched at different angles and is convenient and versatile in use.

The folding table has a base, a lifting device, an adjustment assembly and a support plate. The lifting device is mounted on the base and has a top. The adjustment assembly is pivotally connected to the elevator and includes an adjustment plate, an adjustment rack, an adjustment slider, and a linkage arm. The adjustment plate is pivotally connected to the top of the lifting device. The adjusting rack is attached to the adjusting plate and has an engaging side formed with a plurality of teeth and a smooth side opposite to the engaging side. The adjustment slide is movably mounted on the adjustment plate and has a bottom, an engagement block and two spring elements. The engagement block is pivotally mounted to the underside of the adjustment slide and includes an engagement pin formed on the engagement block and selectively engaged with one of the teeth on the adjustment rack. The two spring elements are attached to the underside of the adjusting slide and are each connected to two sides of the engaging block. The connecting arm has an upper end and a lower end, the lower end being pivotally connected to the adjusting slider. The support plate is pivotally connected to the adjustment plate, is pivotally connected to the upper end of the connecting arm and has a pivoting edge and a support block. The pivot edge is pivotally connected to the adjustment plate. The support block is pivotally attached to the pivotal edge of the support plate.

Other objects, advantages and novel features of the utility model will become more apparent from the following detailed description with reference to the accompanying drawings.

IN THE DRAWINGS

1 FIG. 15 is a perspective view of a first embodiment of a folding table according to the present invention in an unfolded state; FIG.

2 is a perspective view of the folding table 1 in a folded state,

3 is a perspective partially exploded view of the folding table 1 .

4 is another perspective partially exploded view of the folding table 1 .

5 is a plan view of the folding table 1 in cross section,

6 is another plan view of the folding table 1 in cross section,

7 is an enlarged perspective exploded view of the adjustment slide of the folding table 4 .

8th is a working side view of the folding table 1 in partial section,

9 is an enlarged operational plan view of the adjustment slide of the folding table 4 in partial section,

10 is another enlarged operational top view of the adjustment slide of the folding table 4 in partial section,

11 is a perspective view of a second embodiment of a folding table according to the present utility model in an unfolded state,

12 is a perspective partially exploded view of the folding table 11 .

13 is an enlarged exploded perspective view of the lifting slider of the folding table 12 .

14 is a working side view of the folding table 11 in partial section, and

15 is an operational top view of the folding table in partial section along the line 15-15 14 ,

Referring to 1 . 3 and 4 For example, a first embodiment of a folding table according to the present invention comprises a base 10 , a lifting device 20 , an adjustment assembly 30 and a carrier plate 40 , The base 10 may be a square plate and has a top and a base recess 12 which is formed in the top. The base well 12 has two opposite sides, with two rails 14 each on the two opposite sides of the base recess 12 are attached and parallel to each other.

Referring to 3 and 5 is the lifting device 20 at the base 10 mounted, has a top and includes a drive device 22 , a threaded rod 24 , a movable lower part 26 and several lifting rods 28 , The drive device 22 is at the base 10 mounted and may include an engine and a transmission. The threaded rod 24 is rotatable at the base 10 attached and is with the drive device 22 connected and is driven by this. Preferably, the threaded rod extends 24 into the base well 12 and is parallel to the rails 14 in the base recess 12 , The movable lower part 26 is movable at the base 10 attached and has a threaded hole 262 on, on the threaded rod 24 is screwed. Preferably, the movable lower part is in the base recess 12 movably mounted, with the two sides of the movable base 26 movable with the rails 14 keep in touch. Accordingly, the threaded rod 24 rotated and the movable lower part 26 will be in the base well 12 along the rails 14 moves when the drive device 22 is turned on. The lifting bars 28 are divided into several pairs, each pair of lifting rods 28 a first lifting bar 282 and a second lifting bar 284 includes, which pivotally with the first lifting bar 282 connected is. The first lifting bar 282 from each pair of lifting bars 28 is hinged to the base 10 connected and the second lifting bar 284 from each pair of lifting bars 28 is pivotable with the movable lower part 26 connected. In addition, the movable lower part has 26 Furthermore, several pivoting eyelets 264 on, on the movable lower part 26 are formed and projecting from this and pivotally connected to the second lifting rods 284 the pair of lifting bars 28 are connected. Preferably, the plurality of lifting rods 28 so realized that their number is four. In addition, the base points 10 further, a top cover 16 on top of the base 10 is attached and the base recess 12 closes to the threaded rod 24 and the movable lower part 26 cover.

Referring to 4 , 6 and 7 is the adjustment assembly 30 swiveling with the lifting device 20 Connected by the lifting device 20 driven to move up and down and includes an adjustment plate 32 , an adjustment rack 326 , an adjustment slide 34 and a connecting arm 38 , The adjustment plate 32 is pivotable with the top of the lifting device 20 connected and is preferably pivotally connected to the upper ends of the lifting rods 28 connected. The first lifting bar 282 from each pair of lifting bars 28 is displaceable with the adjustment plate 32 connected. The adjustment plate 32 has a top and a sliding recess 322 in the top of the adjustment plate 32 is formed and has a bottom. A rack recess 324 is in the bottom of the sliding recess 322 provided and has a bottom and two opposite sides. The adjustment rack 326 is on the adjustment plate 32 mounted and is preferably at the bottom of the rack recess 324 appropriate. The adjustment rack 326 has an engaging side, with several teeth 328 is formed, and a smooth side, which opposes the engagement side. The engaging side and the smooth side of the adjusting rack 326 are each from the two opposite sides of the rack recess 324 spaced, creating two sliding channels between the rack recess 324 and the adjustment rack 326 be formed. Preferably, the Einstellzahnstange 326 two curved ends.

The adjusting slide 34 is movable on the adjusting plate 32 attached and is preferably movable in the Gleitvertiefung 322 appropriate. The adjusting slide 34 has a bottom, an intervention block 36 and two spring elements 37 , The intervention block 36 is pivotable at the bottom of the adjustment slide 34 attached and has an engagement pin 362 on that at the engagement block 36 is formed and selectively with one of the teeth 328 at the adjusting rack 326 comes together. The spring elements 37 are at the bottom of the adjustment slide 34 attached and are each with two sides of the engaging block 36 connected. Preferably, each spring element 37 be a spring or an elastic block. The connecting arm 38 has an upper end and a lower end, the lower end pivotally with the adjustment slide 34 connected is.

The carrier plate 40 is pivotable with the adjustment plate 32 connected, is pivotally connected to the upper end of the connecting arm 38 connected and has a pivot edge and a support block 42 on. The swivel edge is pivotable with the adjustment plate 32 connected. The support block 42 is pivotable on the pivot edge of the carrier plate 40 attached.

Referring to 5 and 8th becomes the threaded rod 24 rotated and the movable lower part 26 will be in terms of the base 10 along the rail 14 moves when the engine of the drive device 22 is turned on. By the movement of the movable lower part 26 become the lifting rods 28 moved and pivoted so that the adjustment plate 32 and the carrier plate 40 be raised up to a desired height. When the engine is off, the adjustment plate can 32 be moved and positioned at the desired height. The carrier plate 40 is then in relation to the adjustment plate 32 pivoted. According to 9 becomes the adjustment slide 34 by means of the transmission through the connecting arm 38 with the pivoting movement of the support plate 40 along the adjustment rack 326 emotional. While the adjustment slide 34 along the adjustment rack 326 Moves, the engagement pin becomes 362 at the intervention block 36 with the through the spring elements 37 provided restoring force over the teeth 328 on the engagement side of the Einstellzahnstange 326 move. If the carrier plate 40 in terms of the adjustment plate 32 has been pivoted to a desired angle and the pivoting is completed, the engagement pin 362 at the intervention block 36 with the through the spring elements 37 provided restoring force with one of the teeth 328 engaged. Accordingly, the carrier plate 40 at the desired angle with respect to the adjustment plate 32 positioned. Because the support block 42 relative to the carrier plate 40 is pivoted, a portable device, such as a notebook or a tablet computer, on the inclined support plate 40 be turned off, thereby allowing the user, the portable device on the inclined support plate 40 to use and operate. By the arrangement of the support block 42 can be prevented that the portable device from the inclined support plate 40 falling.

When the table is not in use, the support plate becomes 40 according to 4 , 8th and 10 up to a maximum angle relative to the adjustment plate 32 swung upwards. At this time, the engagement pin 362 at the intervention block 36 over one of the curved ends of the adjustment rack 326 emotional. Thereafter, the carrier plate 40 pivoted down, with the engagement pin 362 along the smooth side of the adjustment rack 326 to the other end of the adjustment rack 326 and beyond this to the side of engagement with the teeth 328 is moved. At this time, the carrier plate 40 with the adjustment plate 32 stacked. The engine of the drive device 22 is then turned on to rotate in a reverse direction, the movable lower part 26 in the direction of the drive device 22 is moved. Through the movements and the pivoting movements of the lifting rods 28 , be the adjustment plate 32 and the carrier plate 40 flush with each other moves down to a stack with the base 10 to form, as in 2 is shown. As a result, the table can be folded to a minimum volume so that the folded table can be easily transported and stored.

By such an arrangement, the height of the adjustment plate 32 and the carrier plate 40 and the angle of the carrier plate 40 relative to the adjustment plate 32 adjusted to meet the different needs of different users. Accordingly, the folding table according to the present utility model is comfortable and convenient in use.

Referring to 11 to 13 includes the lifting device 20A in the second embodiment, several lifting racks 21 , several lifting sliders 23 and several lifting rods 28A , The base 10A has several slide recesses 12A on that in the top of the base 10A are formed. Each slide recess 12A has a bottom and a rack recess 122 which are in the bottom of the slide recess 12A is formed and has a bottom and two opposite sides.

The several lifting racks 21 are at the base 10A attached, are preferably in each case in the rack recesses 122 attached and are parallel to each other. Each lifting rack 21 has an engaging side on which several teeth 212 are provided, and a smooth side opposite the engagement side. The engaging side and the smooth side of each lifting rack 21 are each from the opposite sides of an associated rack recess 122 spaced to form two sliding channels between the lifting rack and the corresponding rack recess. Each lifting rack 21 has two curved ends. The lifting sliders 23 are movable at the base 10A attached, are respectively relative to the lifting racks 21 movable and are preferably each movable in the slide recesses 12A assembled. Every lift slider 23 has a bottom, an intervention block 25 and two spring elements 27 , The intervention block 25 is pivotable at the bottom of the adjustment slide 23 attached and has an engagement pin 252 which is attached to the engaging block 25 is formed and selectively with one of the teeth 212 at the corresponding lifting rack 21 engaged. The spring elements 27 are at the bottom of the adjustment slide 23 attached and each with two sides of the engaging block 25 in connection. In addition, each slide recess has 12A two opposite sides and two rails 14A on, each on the sides of the slide recess 12A are mounted and parallel to each other. Each lifting rack 21 is parallel to the rails 14A in an associated slide recess 12A , Every lift slider 23 is movable with the rails 14A in the associated slide recess 12A connected. The base 10A also includes a top cover 16A at the top of the base 10A is attached and the slide recesses 12A closes.

The lifting bars 28A are divided into several pairs. Every pair of lifting bars 28A includes a first lifting bar 282A and a second lifting bar 284A , which is pivotable with the first lifting bar 282A connected is. The first lifting bar 282A from each pair of lifting bars 28A is hinged to the base 10A connected and the second lifting bar 284A from each pair of lifting bars 28A is pivotable with one of the lifting sliders 23 connected. In addition, each lifting slider has 23 several swivel eyes 232 on that at the lift slider 23 are formed and pivotally connected to the second lifting rods 284A the pair of lifting bars 28A keep in touch.

To open the table, the adjustment plate 32 according to 12 . 14 and 15 moved upwards so that the lifting slide 23 by means of transmission through the lifting bars 28A along the rails 14A relative to the base 10A and the lifting racks 21 be moved. While the lifting sliders 23 along the lifting racks 21 be moved, the engagement pin 252 at the intervention block 25 from every lift slider 23 with the through the spring elements 27 provided restoring force over the teeth 212 on the engagement side of the corresponding lifting rack 21 emotional. If the carrier plate 32 has been brought to a desired height and the movement is completed, the engagement pin 252 at the intervention block 25 from every lift slider 23 through the by the spring elements 27 provided restoring force with one of the teeth 212 the associated lifting rack 21 engaged. Accordingly, the adjustment plate 32 and the carrier plate 40 positioned at the desired height. After the carrier plate 40 relative to the adjustment plate 32 pivoted, a user can a portable device on the inclined support plate 40 serve.

The procedure for unfolding and folding the lifting device 20A of the second embodiment is the same as that of the adjustment assembly 30 so that the details of the procedure for unfolding and folding the elevator of the second embodiment are omitted.

Cited By (9)

Publication number	Priority date	Publication date	Assignee	Title
CN106235631A *	2016-09-23	2016-12-21	麥食成	Electric lifting computer desk and desk thereof
WO2018057751A1 *	2016-09-23	2018-03-29	Varidesk, Llc	Electrically-lifted computer desk and office desk thereof
GB2554438A *	2016-09-28	2018-04-04	Jaguar Land Rover Ltd	Portable table
GB2554437A *	2016-09-28	2018-04-04	Jaguar Land Rover Ltd	Portable table
CN108851529A *	2018-07-26	2018-11-23	邵曙玲	A kind of new intelligent desk
US10244861B1	2015-01-24	2019-04-02	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
US10893748B1	2017-07-08	2021-01-19	Office Kick, Inc.	Height adjustable desktop
US10981482B2	2016-09-28	2021-04-20	Jaguar Land Rover Limited	Portable table attachable and detachable from the interior trim of a vehicle
US11019920B2	2016-09-23	2021-06-01	Varidesk, Llc	Electrically-lifted computer desk and office desk thereof

Family To Family Citations

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
DE202016101126U1	2016-06-21	Folding table
DE202016102015U1	2016-05-03	Lifting mechanism of a desk
EP2260229B1	2011-11-09	Height-adjustable equipment stand
DE202015100891U1	2015-03-26	Receiving device for fixing objects
DE3705330A1	1988-09-01	TABLE
DE202018002383U1	2018-05-23	folding table
AT503736B1	2008-07-15	TABLE WIRING DOOR
DE4021248A1	1992-01-09	KIT FOR THE PRODUCTION OF OFFICE WORK TABLES
DE202012004584U1	2012-05-29	Support for tablet display
DE202013002333U1	2013-04-15	Magnification mechanism for tables
DE818306C	1951-10-25	Sewing machine table
DE202008013987U1	2010-03-04	Table furniture with cable duct device
EP1580383B1	2008-07-02	Cabinet, especially safety cabinet, laboratory cabinet or the like
DE102011018212A1	2012-10-25	Desk, has tabletop connected with frame element by pivotal lever and connected with cross-member element by another pivotal lever, and another tabletop connected with cross-member element by third pivotal lever
EP2856915B1	2016-04-27	Folding mechanism with parallelogramm-type lifting arrangement for a folding bed
EP2215927B1	2012-10-31	Table furniture
DE2401839C3	1979-08-30	Extending table with a fixed central plate, at least one extending plate and two carriages
EP0270558B1	1990-07-25	Office desk

DE202009010646U1	2010-12-23	table furniture
DE2338158A1	1974-03-07	SEWING MACHINE FURNITURE
DE10120106B4	2004-11-04	worktable
DE102012000492A1	2013-07-18	Table has connector that is articulately connected with underside of second insert plate, and tabletop base over sliding guide
DE1963520		
DE102017122763A1	2019-04-04	Lift mechanism of a shelf
EP3586674A1	2020-01-01	Tabletop unit with folding insert of an extendable table

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
DE202016101126.4U	2016-03-02	2016-03-02	Folding table

Applications Claiming Priority (1)

Application	Filing date	Title
DE202016101126.4U	2016-03-02	Folding table

Legal Events

Date	Code	Title	Description
2016-07-28	R207	Utility model specification	
2019-03-22	R150	Utility model maintained after payment of first maintenance fee after three years	
2021-11-09	R151	Utility model maintained after payment of second maintenance fee after six years	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
carrier		claims,abstract,description	19	0.000
corresponding		claims,description	4	0.000

Show all concepts from the description section

Data provided by IFI CLAIMS Patent Services

(19) Deutsches Patent- und Markenamt

(10) **DE 20 2016 101 126 U1** 2016.07.28

(12) # Gebrauchsmusterschrift

(21) Aktenzeichen: **20 2016 101 126.4**
(22) Anmeldetag: **02.03.2016**
(47) Eintragungstag: **21.06.2016**
(45) Bekanntmachungstag im Patentblatt: **28.07.2016**

(51) Int Cl.: ***A47B 3/08*** (2006.01)

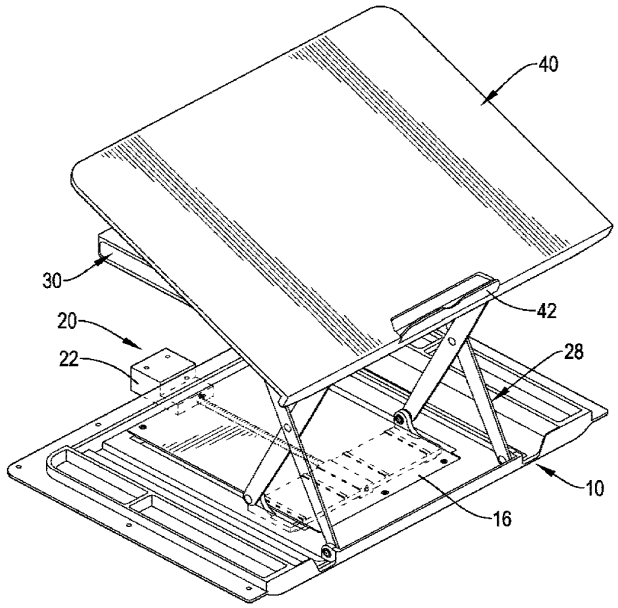
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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: **Klappbarer Tisch**

(57) Hauptanspruch: Klappbarer Tisch, umfassend:
eine Basis (10),
eine Hebevorrichtung (20), die an der Basis (10) befestigt ist und eine Oberseite hat,
eine Einstellbaugruppe (30), die schwenkbar mit der Hebevorrichtung (20) verbunden ist, umfassend
eine Einstellplatte (32), die schwenkbar mit der Oberseite der Hebevorrichtung (20) verbunden ist,
eine Einstellzahnstange (326), die an der Einstellplatte (32) angebracht ist und eine Eingriffsseite, die mit mehreren Zähnen (328) ausgebildet ist, und gegenüber von der Eingriffsseite eine glatte Seite aufweist,
einen Einstellschieber (34), der beweglich an der Einstellplatte (32) angebracht ist und
einen Boden,
einen Eingriffsblock (36), der schwenkbar an der Unterseite des Einstellschiebers (34) befestigt ist und einen Eingriffsstift (362) umfasst, der an dem Eingriffsblock (36) ausgebildet ist und selektiv mit einem der Zähne (328) an der Einstellzahnstange (326) ineinandergreift,
zwei Federelemente (37), die an der Unterseite des Einstellschiebers (34) angebracht sind und jeweils mit zwei Seiten des Eingriffsblocks (36) in Verbindung stehen, und
einen Verbindungsarm (38), der ein oberes Ende und ein unteres Ende aufweist, wobei das untere Ende schwenkbar mit dem Einstellschieber (36) in Verbindung steht,
eine Trägerplatte (40), die schwenkbar mit der Einstellplatte (32) verbunden ist, schwenkbar mit dem oberen Ende des Verbindungsarms (38) verbunden ist, und
einen Schwenkrand, der schwenkbar mit der Einstellplatte (32) verbunden ist, und
einen Stützblock (42) aufweist, der schwenkbar an dem Schwenkrand der Trägerplatte (40) befestigt ist.



Beschreibung

1. Gebiet des Gebrauchsmusters

[0001] Das vorliegende Gebrauchsmuster betrifft einen Tisch, und insbesondere einen klappbaren Tisch.

2. Beschreibung des Standes der Technik

[0002] Ein herkömmlicher Bürotisch hat immer eine feste Höhe und ist nicht zur Anpassung an verschiedene Benutzer höhenverstellbar. Deshalb ist ein herkömmlicher Bürotisch für einen großgewachsenen oder kleingewachsenen Anwender nicht komfortabel und bequem im Gebrauch. Außerdem ist der herkömmliche Bürotisch nicht entsprechend einer tragbaren Vorrichtung, die auf dem Tisch abgelegt ist, wie beispielsweise einem Notebook oder einem Tablet-Computer, in einen geneigten Winkel verstellbar, sodass der herkömmliche Bürotisch nicht bequem nutzbar ist.

[0003] Um die Mängel zu beseitigen, zielt das vorliegende Gebrauchsmuster darauf ab, einen klappbaren Tisch bereitzustellen, der die vorab genannten Probleme vermindern oder vermeiden kann.

[0004] Die Hauptaufgabe des Gebrauchsmusters besteht darin, einen klappbaren Tisch bereitzustellen, der verstellbar ist, sodass er in verschiedene Höhen angehoben werden und in verschiedene Winkel gestreckt werden kann und bequem und vielseitig im Gebrauch ist.

[0005] Der klappbare Tisch hat eine Basis, eine Hebevorrichtung, eine Einstellbaugruppe und eine Trägerplatte. Die Hebevorrichtung ist an der Basis montiert und hat eine Oberseite. Die Einstellbaugruppe ist schwenkbar mit der Hebevorrichtung verbunden und beinhaltet eine Einstellplatte, eine Einstellzahnstange, einen Einstellschieber und einen Verbindungsarm. Die Einstellplatte ist schwenkbar mit der Oberseite der Hebevorrichtung verbunden. Die Einstellzahnstange ist an der Einstellplatte angebracht und weist eine Eingriffsseite, die mit mehreren Zähnen ausgebildet ist, und gegenüber von der Eingriffsseite eine glatte Seite auf. Der Einstellschieber ist beweglich an der Einstellplatte angebracht und hat eine Unterseite, einen Eingriffsblock und zwei Federelemente. Der Eingriffsblock ist schwenkbar an der Unterseite des Einstellschiebers angebracht und umfasst einen Eingriffsstift, der an dem Eingriffsblock ausgebildet ist und selektiv mit einem der Zähne an der Einstellzahnstange in Eingriff steht. Die beiden Federelemente sind an der Unterseite des Einstellschiebers befestigt und sind jeweils mit zwei Seiten des Eingriffsblocks verbunden. Der Verbindungsarm hat ein oberes Ende und ein unteres Ende, wobei das untere Ende schwenkbar mit dem Einstellschieber verbunden ist. Die Trägerplatte steht schwenkbar mit der Einstellplatte in Verbindung, ist schwenkbar mit dem oberen Ende des Verbindungsarms verbunden und weist einen Schwenkrand und einen Stützblock auf. Der Schwenkrand ist schwenkbar mit der Einstellplatte verbunden. Der Stützblock ist schwenkbar an dem Schwenkrand der Trägerplatte befestigt.

[0006] Weitere Ziele, Vorteile und neuartige Merkmale des Gebrauchsmusters werden anhand der nachfolgenden ausführlichen Beschreibung unter Bezugnahme auf die beigefügten Zeichnungen besser ersichtlich.

IN DEN ZEICHNUNGEN

[0007] **Fig.** 1 ist eine perspektivische Ansicht eines ersten Ausführungsbeispiels eines klappbaren Tisches gemäß dem vorliegenden Gebrauchsmuster in einem aufgeklappten Zustand,

[0008] **Fig.** 2 ist eine perspektivische Ansicht des klappbaren Tisches aus **Fig.** 1 in einem zusammengeklappten Zustand,

[0009] **Fig.** 3 ist eine perspektivische teilweise Explosionsansicht des klappbaren Tisches aus **Fig.** 1,

[0010] **Fig.** 4 ist eine weitere perspektivische teilweise Explosionsansicht des klappbaren Tisches aus **Fig.** 1,

[0011] **Fig.** 5 ist eine Draufsicht des klappbaren Tisches aus **Fig.** 1 im Querschnitt,

[0012] **Fig.** 6 ist eine weitere Draufsicht des klappbaren Tisches aus **Fig.** 1 im Querschnitt,

[0013] **Fig.** 7 ist eine perspektivische vergrößerte Explosionsansicht des Einstellschiebers des klappbaren Tisches aus **Fig.** 4,

[0014] **Fig.** 8 ist eine Betriebsseitenansicht des klappbaren Tisches aus **Fig.** 1 im Teilschnitt,

[0015] **Fig.** 9 ist eine vergrößerte Betriebsdraufsicht des Einstellschiebers des klappbaren Tisches aus **Fig.** 4 im Teilschnitt,

[0016] **Fig.** 10 ist eine weitere vergrößerte Betriebsdraufsicht des Einstellschiebers des klappbaren Tisches aus **Fig.** 4 im Teilschnitt,

[0017] **Fig.** 11 ist eine perspektivische Ansicht eines zweiten Ausführungsbeispiels eines klappbaren Tisches gemäß dem vorliegenden Gebrauchsmuster in einem aufgeklappten Zustand,

[0018] **Fig.** 12 ist eine perspektivische teilweise Explosionsansicht des klappbaren Tisches aus **Fig.** 11,

[0019] **Fig.** 13 ist eine vergrößerte perspektivische Explosionsansicht des Anhebeschiebers des klappbaren Tisches aus **Fig.** 12,

[0020] **Fig.** 14 ist eine Betriebsseitenansicht des klappbaren Tisches aus **Fig.** 11 im Teilschnitt, und

[0021] **Fig.** 15 ist eine Betriebsdraufsicht des klappbaren Tisches im Teilschnitt entlang der Linie 15-15 aus **Fig.** 14.

[0022] Bezugnehmend auf **Fig.** 1, **Fig.** 3 und **Fig.** 4 umfasst ein erstes Ausführungsbeispiel für einen klappbaren Tisch gemäß dem vorliegenden Gebrauchsmuster eine Basis **10**, eine Hebevorrichtung **20**, eine Einstellbaugruppe **30** und eine Trägerplatte **40**. Die Basis **10** kann eine viereckige Platte sein und hat eine Oberseite und eine Basisvertiefung **12**, die in der Oberseite ausgebildet ist. Die Basisvertiefung **12** hat zwei gegenüberliegende Seiten, wobei zwei Schienen **14** jeweils an den beiden gegenüberliegenden Seiten der Basisvertiefung **12** angebracht sind und parallel zueinander sind.

[0023] Bezugnehmend auf **Fig.** 3 und **Fig.** 5 ist die Hebevorrichtung **20** an der Basis **10** montiert, hat eine Oberseite und umfasst eine Antriebsvorrichtung **22**, eine Gewindestange **24**, ein verfahrbares Unterteil **26** und mehrere Hebestangen **28**. Die Antriebsvorrichtung **22** ist an der Basis **10** montiert und kann einen Motor und ein Getriebe umfassen. Die Gewindestange **24** ist drehbar an der Basis **10** angebracht und ist mit der Antriebsvorrichtung **22** verbunden und wird durch diese angetrieben. Vorzugsweise erstreckt sich die Gewindestange **24** in die Basisvertiefung **12** und ist parallel zu den Schienen **14** in der Basisvertiefung **12**. Das verfahrbare Unterteil **26** ist beweglich an der Basis **10** angebracht und weist eine Gewindebohrung **262** auf, an der die Gewindestange **24** verschraubt ist. Vorzugsweise ist das verfahrbare Unterteil in der Basisvertiefung **12** beweglich angebracht, wobei die zwei Seiten des verfahrbaren Unterteils **26** beweglich mit den Schienen **14** in Verbindung stehen. Demgemäß wird die Gewindestange **24** gedreht und das verfahrbare Unterteil **26** wird in der Basisvertiefung **12** entlang der Schienen **14** bewegt, wenn die Antriebsvorrichtung **22** angeschaltet wird. Die Hebestangen **28** sind in mehrere Paare unterteilt, wobei jedes Paar von Hebestangen **28** eine erste Hebestange **282** und eine zweite Hebestange **284** umfasst, die schwenkbar mit der ersten Hebestange **282** verbunden ist. Die erste Hebestange **282** von jedem Paar von Hebestangen **28** ist schwenkbar mit der Basis **10** verbunden und die zweite Hebestange **284** von jedem Paar von Hebestangen **28** ist schwenkbar mit dem verfahrbaren Unterteil **26** verbunden. Zusätzlich weist das verfahrbare Unterteil **26** ferner mehrere Schwenkösen **264** auf, die an dem verfahrbaren Unterteil **26** ausgebildet sind und von diesem hervorstehen und schwenkbar mit den zweiten Hebestangen **284** der Paare von Hebestangen **28** verbunden sind. Vorzugsweise ist die Vielzahl an Hebestangen **28** so verwirklicht, dass deren Anzahl vier beträgt. Darüber hinaus weist die Basis **10** ferner eine Oberseitenabdeckung **16** auf, die an der Oberseite der Basis **10** befestigt ist und die Basisvertiefung **12** verschließt, um die Gewindestange **24** und das verfahrbare Unterteil **26** abzudecken.

[0024] Bezugnehmend auf **Fig.** 4, **Fig.** 6 und **Fig.** 7 ist die Einstellbaugruppe **30** schwenkbar mit der Hebevorrichtung **20** verbunden, wird durch die Hebevorrichtung **20** zum Bewegen nach oben und nach unten angetrieben und umfasst eine Einstellplatte **32**, eine Einstellzahnstange **326**, einen Einstellschieber **34** und einen Verbindungsarm **38**. Die Einstellplatte **32** ist schwenkbar mit der Oberseite der Hebevorrichtung **20** verbunden und ist vorzugsweise schwenkbar mit den oberen Enden der Hebestangen **28** verbunden. Die erste Hebestange **282** von jedem Paar von Hebestangen **28** ist verschiebbar mit der Einstellplatte **32** verbunden. Die Einstellplatte **32** hat eine Oberseite und eine Gleitvertiefung **322**, die in der Oberseite der Einstellplatte **32** ausgebildet ist und einen Boden aufweist. Eine Zahnstangenaussparung **324** ist in dem Boden der Gleitvertiefung **322** vorgesehen und hat einen Boden und zwei gegenüberliegende Seiten. Die Einstellzahnstange **326** ist an der Einstellplatte **32** montiert und ist vorzugsweise an dem Boden der Zahnstangenaussparung **324** angebracht. Die Einstellzahnstange **326** hat eine Eingriffsseite, die mit mehreren Zähnen **328** ausgebildet ist, und eine glatte Seite, die der Eingriffsseite gegenüberliegt. Die Eingriffsseite und die glatte Seite der Einstellzahnstange **326** sind jeweils von den beiden gegenüberliegenden Seiten der Zahnstangenaussparung **324** beabstandet, wodurch zwei Gleitkanäle zwischen der Zahnstangenaussparung **324** und der Einstellzahnstange **326** ausgebildet werden. Vorzugsweise weist die Einstellzahnstange **326** zwei gekrümmte Enden auf.

[0025] Der Einstellschieber **34** ist beweglich an der Einstellplatte **32** angebracht und ist vorzugsweise beweglich in der Gleitvertiefung **322** angebracht. Der Einstellschieber **34** hat eine Unterseite, einen Eingriffsblock **36** und zwei Federelemente **37**. Der Eingriffsblock **36** ist schwenkbar an der Unterseite des Einstellschiebers **34** angebracht und weist einen Eingriffsstift **362** auf, der an dem Eingriffsblock **36** ausgebildet ist und selektiv mit einem der Zähne **328** an der Einstellzahnstange **326** ineinandergreift. Die Federelemente **37** sind an der Unterseite des Einstellschiebers **34** befestigt und sind jeweils mit zwei Seiten des Eingriffsblocks **36** verbunden. Vorzugsweise kann jedes Federelement **37** eine Feder oder ein elastischer Klotz sein. Der Verbindungsarm **38** weist ein oberes Ende und ein unteres Ende auf, wobei das untere Ende schwenkbar mit dem Einstellschieber **34** verbunden ist.

[0026] Die Trägerplatte **40** ist schwenkbar mit der Einstellplatte **32** verbunden, ist schwenkbar mit dem oberen Ende des Verbindungsarms **38** verbunden und weist einen Schwenkrand und einen Stützblock **42** auf. Der Schwenkrand ist schwenkbar mit der Einstellplatte **32** verbunden. Der Stützblock **42** ist schwenkbar an dem Schwenkrand der Trägerplatte **40** befestigt.

[0027] Bezugnehmend auf **Fig.** 5 und **Fig.** 8 wird die Gewindestange **24** gedreht und das verfahrbare Unterteil **26** wird in Bezug auf die Basis **10** entlang der Schiene **14** bewegt, wenn der Motor der Antriebsvorrichtung **22** angeschaltet wird. Durch die Bewegung des verfahrbaren Unterteils **26** werden die Hebestangen **28** bewegt und so geschwenkt, dass die Einstellplatte **32** und die Trägerplatte **40** nach oben in eine gewünschte Höhe angehoben werden. Wenn der Motor ausgeschaltet ist, kann die Einstellplatte **32** in der gewünschten Höhe bewegt und positioniert werden. Die Trägerplatte **40** wird dann in Bezug auf die Einstellplatte **32** verschwenkt. Gemäß **Fig.** 9 wird der Einstellschieber **34** mittels der Übertragung durch den Verbindungsarm **38** mit der Schwenkdrehbewegung der Trägerplatte **40** entlang der Einstellzahnstange **326** bewegt. Während sich der Einstellschieber **34** entlang der Einstellzahnstange **326** bewegt, wird sich der Eingriffsstift **362** an dem Eingriffsblock **36** mit der durch die Federelemente **37** bereitgestellten Rückstellkraft über die Zähne **328** an der Eingriffsseite der Einstellzahnstange **326** bewegen. Wenn die Trägerplatte **40** in Bezug auf die Einstellplatte **32** in einen gewünschten Winkel geschwenkt wurde und das Schwenken beendet ist, wird der Eingriffsstift **362** an dem Eingriffsblock **36** mit der durch die Federelemente **37** bereitgestellten Rückstellkraft mit einem der Zähne **328** in Eingriff gebracht. Demgemäß wird die Trägerplatte **40** in dem gewünschten Winkel in Bezug auf die Einstellplatte **32** positioniert. Da der Stützblock **42** relativ zu der Trägerplatte **40** verschwenkt wurde, kann eine tragbare Vorrichtung, beispielsweise ein Notebook oder ein Tablet-Computer, auf der geneigten Trägerplatte **40** abgestellt werden, wodurch es dem Benutzer ermöglicht wird, die tragbare Vorrichtung auf der schrägen Trägerplatte **40** zu benutzen und zu bedienen. Durch die Anordnung des Stützblocks **42** kann verhindert werden, dass die tragbare Vorrichtung von der geneigten Trägerplatte **40** herunterfällt.

[0028] Wenn der Tisch nicht in Gebrauch ist, wird die Trägerplatte **40** gemäß **Fig.** 4, **Fig.** 8 und **Fig.** 10 bis zu einem maximalen Winkel relativ zur Einstellplatte **32** nach oben geschwenkt. Zu diesem Zeitpunkt wird der Eingriffsstift **362** an dem Eingriffsblock **36** über eines der gekrümmten Enden der Einstellzahnstange **326** bewegt. Danach wird die Trägerplatte **40** nach unten geschwenkt, wobei der Eingriffsstift **362** entlang der glatten Seite der Einstellzahnstange **326** zu dem anderen Ende der Einstellzahnstange **326** und über dieses hinaus zu der Eingriffsseite mit den Zähnen **328** bewegt wird. Zu diesem Zeitpunkt wird die Trägerplatte **40** mit der Einstellplatte **32** gestapelt. Der Motor der Antriebsvorrichtung **22** wird dann angeschaltet, um sich in eine umgekehrte Richtung zu drehen, wobei das verfahrbare Unterteil **26** in Richtung der Antriebsvorrichtung **22** bewegt wird. Durch die Bewegungen und die Schwenkdrehbewegungen der Hebestangen **28**, werden die Einstellplatte **32** und die Trägerplatte **40** bündig miteinander nach unten bewegt, um einen Stapel mit der Basis **10** zu bilden, wie in **Fig.** 2 gezeigt ist. Demzufolge kann der Tisch auf ein minimales Volumen zusammengefaltet werden, sodass der zusammengeklappte Tisch leicht transportiert und gelagert werden kann.

[0029] Durch eine solche Anordnung können die Höhe der Einstellplatte **32** und der Trägerplatte **40** und der Winkel der Trägerplatte **40** relativ zur Einstellplatte **32** eingestellt werden, um die unterschiedlichen Anforderungen von verschiedenen Anwendern zu erfüllen. Demzufolge ist der klappbare Tisch gemäß dem vorliegenden Gebrauchsmuster komfortabel und bequem im Gebrauch.

[0030] Bezugnehmend auf **Fig.** 11 bis **Fig.** 13 umfasst die Hebevorrichtung **20A** in dem zweiten Ausführungsbeispiel mehrere Anhebezahnstangen **21**, mehrere Anhebeschieber **23** und mehrere Hebestangen **28A**. Die Basis **10A** weist mehrere Schieberaussparungen **12A** auf, die in der Oberseite der Basis **10A** ausgebildet sind. Jede Schieberaussparung **12A** hat einen Boden und eine Zahnstangenaussparung **122**, die in dem Boden der Schieberaussparung **12A** ausgebildet ist und einen Boden und zwei gegenüberliegende Seiten aufweist.

[0031] Die mehreren Anhebezahnstangen **21** sind an der Basis **10A** befestigt, sind vorzugsweise jeweils in den Zahnstangenaussparungen **122** angebracht und sind parallel zueinander. Jede Anhebezahnstange **21** hat eine Eingriffsseite, an welcher mehrere Zähne **212** vorgesehen sind, und eine glatte Seite, die der Eingriffsseite gegenüberliegt. Die Eingriffsseite und die glatte Seite von jeder Anhebezahnstange **21** sind jeweils von den gegenüberliegenden Seiten einer zugehörigen Zahnstangenaussparung **122** beabstandet, um zwei Gleitkanäle zwischen der Anhebezahnstange und der entsprechenden Zahnstangenaussparung auszubilden. Jede Anhebezahnstange **21** hat zwei gekrümmte Enden. Die Anhebeschieber **23** sind beweglich an der Basis **10A** angebracht, sind jeweils relativ zu den Anhebezahnstangen **21** verfahrbar und sind vorzugsweise jeweils verfahrbar in den Schieberaussparungen **12A** montiert. Jeder Anhebeschieber **23** hat eine Unterseite, einen Eingriffsblock **25** und zwei Federelemente **27**. Der Eingriffsblock **25** ist schwenkbar an der Unterseite des Einstellschiebers **23** angebracht und hat einen Eingriffsstift **252**, der an dem Eingriffsblock **25** ausgebil-

det ist und selektiv mit einem der Zähne **212** an der korrespondierenden Anhebezahnstange **21** in Eingriff steht. Die Federelemente **27** sind an der Unterseite des Einstellschiebers **23** befestigt und stehen jeweils mit zwei Seiten des Eingriffsblocks **25** in Verbindung. Zusätzlich weist jede Schieberaussparung **12A** zwei gegenüberliegende Seiten und zwei Schienen **14A** auf, die jeweils an den Seiten der Schieberaussparung **12A** montiert sind und parallel zueinander sind. Jede Anhebezahnstange **21** ist parallel zu den Schienen **14A** in einer zugehörigen Schieberaussparung **12A**. Jeder Anhebeschieber **23** ist beweglich mit den Schienen **14A** in der zugehörigen Schieberaussparung **12A** verbunden. Die Basis **10A** umfasst außerdem eine Oberseitenabdeckung **16A**, die an der Oberseite der Basis **10A** befestigt ist und die Schieberaussparungen **12A** verschließt.

[0032] Die Hebestangen **28A** sind in mehrere Paare unterteilt. Jedes Paar von Hebestangen **28A** beinhaltet eine erste Hebestange **282A** und eine zweite Hebestange **284A**, welche schwenkbar mit der ersten Hebestange **282A** verbunden ist. Die erste Hebestange **282A** von jedem Paar von Hebestangen **28A** ist schwenkbar mit der Basis **10A** verbunden und die zweite Hebestange **284A** von jedem Paar von Hebestangen **28A** ist schwenkbar mit einem der Anhebeschieber **23** verbunden. Außerdem weist jeder Anhebeschieber **23** mehrere Schwenkösen **232** auf, die an dem Anhebeschieber **23** ausgebildet sind und schwenkbar mit den zweiten Hebestangen **284A** der Paare von Hebestangen **28A** in Verbindung stehen.

[0033] Zum Aufklappen des Tisches wird die Einstellplatte **32** gemäß **Fig.** 12, **Fig.** 14 und **Fig.** 15 nach oben bewegt, sodass die Anhebeschieber **23** mittels der Übertragung durch die Hebestangen **28A** entlang der Schienen **14A** relativ zur Basis **10A** und den Anhebezahnstangen **21** verschoben werden. Während die Anhebeschieber **23** entlang der Anhebezahnstangen **21** bewegt werden, wird der Eingriffsstift **252** an dem Eingriffsblock **25** von jedem Anhebeschieber **23** mit der durch die Federelemente **27** bereitgestellten Rückstellkraft über die Zähne **212** an der Eingriffsseite der korrespondierenden Anhebezahnstange **21** bewegt. Wenn die Trägerplatte **32** in eine gewünschte Höhe gebracht wurde und die Bewegung beendet ist, wird der Eingriffsstift **252** an dem Eingriffsblock **25** von jedem Anhebeschieber **23** durch die durch die Federelemente **27** bereitgestellte Rückstellkraft mit einem der Zähne **212** der zugehörigen Anhebezahnstange **21** in Eingriff gebracht. Demgemäß werden die Einstellplatte **32** und die Trägerplatte **40** in der gewünschten Höhe positioniert. Nachdem die Trägerplatte **40** relativ zur Einstellplatte **32** verschwenkt wurde, kann ein Benutzer eine tragbare Vorrichtung auf der schräggestellten Trägerplatte **40** bedienen.

[0034] Das Vorgehen zum Ausklappen und Zusammenfalten der Hebevorrichtung **20A** des zweiten Ausführungsbeispiels ist das Gleiche wie das bei der Einstellbaugruppe **30**, sodass die Einzelheiten zum Vorgehen zum Ausklappen und Zusammenfalten der Hebevorrichtung des zweiten Ausführungsbeispiels weggelassen werden.

Schutzansprüche

1. Klappbarer Tisch, umfassend:
eine Basis (**10**),
eine Hebevorrichtung (**20**), die an der Basis (**10**) befestigt ist und eine Oberseite hat,
eine Einstellbaugruppe (**30**), die schwenkbar mit der Hebevorrichtung (**20**) verbunden ist, umfassend
eine Einstellplatte (**32**), die schwenkbar mit der Oberseite der Hebevorrichtung (**20**) verbunden ist,
eine Einstellzahnstange (**326**), die an der Einstellplatte (**32**) angebracht ist und eine Eingriffsseite, die mit mehreren Zähnen (**328**) ausgebildet ist, und gegenüber von der Eingriffsseite eine glatte Seite aufweist,
einen Einstellschieber (**34**), der beweglich an der Einstellplatte (**32**) angebracht ist und
einen Boden,
einen Eingriffsblock (**36**), der schwenkbar an der Unterseite des Einstellschiebers (**34**) befestigt ist und einen Eingriffsstift (**362**) umfasst, der an dem Eingriffsblock (**36**) ausgebildet ist und selektiv mit einem der Zähne (**328**) an der Einstellzahnstange (**326**) ineinandergreift,
zwei Federelemente (**37**), die an der Unterseite des Einstellschiebers (**34**) angebracht sind und jeweils mit zwei Seiten des Eingriffsblocks (**36**) in Verbindung stehen, und
einen Verbindungsarm (**38**), der ein oberes Ende und ein unteres Ende aufweist, wobei das untere Ende schwenkbar mit dem Einstellschieber (**36**) in Verbindung steht,
eine Trägerplatte (**40**), die schwenkbar mit der Einstellplatte (**32**) verbunden ist, schwenkbar mit dem oberen Ende des Verbindungsarms (**38**) verbunden ist, und
einen Schwenkrand, der schwenkbar mit der Einstellplatte (**32**) verbunden ist, und
einen Stützblock (**42**) aufweist, der schwenkbar an dem Schwenkrand der Trägerplatte (**40**) befestigt ist.

2. Klappbarer Tisch nach Anspruch 1, bei welchem die Hebevorrichtung (**20**)
eine Antriebsvorrichtung (**22**), die an der Basis (**10**) angebracht ist,
eine Gewindestange (**24**), die drehbar an der Basis (**10**) angebracht ist und mit der Antriebsvorrichtung (**22**) verbunden ist und durch diese angetrieben wird,
ein verfahrbares Unterteil (**26**), das beweglich an der Basis (**10**) angebracht ist und eine Gewindebohrung (**262**) aufweist, die mit der Gewindestange (**24**) verschraubt ist, und
mehrere Hebestangen (**28**) umfasst, die in mehrere Paare unterteilt sind, wobei jedes Paar von Hebestangen (**28**) eine erste Hebestange (**282**) und ei-

ne zweite Hebestange (**284**), die schwenkbar mit der ersten Hebestange (**282**) in Verbindung steht, umfasst, wobei die erste Hebestange (**282**) von jedem Paar von Hebestangen (**28**) schwenkbar mit der Basis (**10**) verbunden ist, und wobei die zweite Hebestange (**284**) von jedem Paar von Hebestangen (**28**) schwenkbar mit dem verfahrbaren Unterteil (**26**) verbunden ist,
wobei die Einstellplatte (**32**) schwenkbar mit den oberen Enden der Hebestangen (**28**) verbunden ist, und wobei die erste Hebestange (**282**) von jedem Paar von Hebestangen (**28**) verschiebbar mit der Einstellplatte (**32**) in Verbindung steht.

3. Klappbarer Tisch nach Anspruch 2, bei welchem die Basis (**10**) eine Basisvertiefung (**12**) aufweist, die in einer Oberseite der Basis (**10**) ausgebildet ist,
wobei das verfahrbare Unterteil (**26**) beweglich in der Basisvertiefung (**12**) angebracht ist, und
wobei sich die Gewindestange (**24**) in die Basisvertiefung (**12**) erstreckt.

4. Klappbarer Tisch nach Anspruch 3, bei welchem die Basisvertiefung (**12**) zwei gegenüberliegende Seiten hat, wobei zwei Schienen (**14**) jeweils an den beiden gegenüberliegenden Seiten der Basisvertiefung (**12**) montiert sind und parallel zueinander sind, die Gewindestange (**24**) parallel zu den Schienen (**14**) ist, und
das verfahrbare Unterteil (**26**) beweglich mit den Schienen (**14**) in Verbindung steht.

5. Klappbarer Tisch nach Anspruch 4, bei welchem die Einstellplatte (**32**) eine Oberseite und eine Gleitvertiefung (**322**) aufweist, die in der Oberseite der Einstellplatte (**32**) ausgebildet ist und einen Boden hat,
eine Zahnstangenaussparung (**324**) in dem Boden der Gleitvertiefung (**322**) vorgesehen ist, die einen Boden und zwei gegenüberliegende Seiten hat,
die Einstellzahnstange (**326**) an dem Boden der Zahnstangenaussparung (**324**) befestigt ist, und
die Eingriffsseite und die glatte Seite der Einstellzahnstange (**326**) jeweils von den gegenüberliegenden Seiten der Zahnstangenaussparung (**324**) beabstandet sind, sodass zwei Gleitkanäle zwischen der Zahnstangenaussparung (**324**) und der Einstellzahnstange (**326**) ausgebildet sind.

6. Klappbarer Tisch nach Anspruch 1, bei welchem die Hebevorrichtung (**20A**)
mehrere Anhebezahnstangen (**21**), die an der Basis (**10A**) angebracht sind und parallel zueinander sind, wobei jede Anhebezahnstange (**21**) eine Eingriffsseite, an welcher mehrere Zähne (**212**) vorgesehen sind, und eine glatte Seite aufweist, die der Eingriffsseite der Anhebezahnstange (**21**) gegenüberliegt,
mehrere Anhebeschieber (**23**), die beweglich an der Basis (**10A**) angebracht sind und jeweils in Bezug auf die Anhebezahnstangen (**21**) beweglich sind, wobei jeder Anhebeschieber (**23**)
eine Unterseite,
einen Eingriffsblock (**25**), der schwenkbar an der Unterseite des Einstellschiebers (**23**) angebracht ist und einen Eingriffsstift (**252**) aufweist, der an dem Eingriffsblock (**25**) des Anhebeschiebers (**23**) ausgebildet ist und selektiv mit einem der Zähne (**212**) an einer korrespondierenden Anhebezahnstange (**21**) ineinandergreift, und
zwei Federelemente (**27**) aufweist, die an der Unterseite des Einstellschiebers (**23**) angebracht sind und jeweils mit zwei Seiten des Eingriffsblocks (**25**) des Anhebeschiebers (**23**) in Verbindung stehen, und
mehrere Hebestangen (**28A**) umfasst, die in mehrere Paare unterteilt sind, wobei jedes Paar von Hebestangen (**28A**) eine erste Hebestange (**282A**) und eine zweite Hebestange (**284A**), die schwenkbar mit der ersten Hebestange (**282A**) verbunden ist, umfasst, wobei die erste Hebestange (**282A**) von jedem Paar von Hebestangen (**28A**) schwenkbar mit der Basis (**10A**) in Verbindung steht, und wobei die zweite Hebestange (**284A**) von jedem Paar von Hebestangen (**28A**) schwenkbar mit einem der Anhebeschieber (**23**) in Verbindung steht,
wobei die Einstellplatte (**32**) schwenkbar mit den oberen Enden der Hebestangen (**28A**) verbunden ist, und wobei die erste Hebestange (**282A**) von jedem Paar von Hebestangen (**28A**) verschiebbar mit der Einstellplatte (**32**) verbunden ist.

7. Klappbarer Tisch nach Anspruch 6, bei welchem die Basis (**10A**) mehrere Schieberaussparungen (**12A**) aufweist, die in einer Oberseite der Basis (**10A**) ausgebildet sind,
wobei die Anhebeschieber (**23**) jeweils beweglich in den Schieberaussparungen (**12A**) montiert sind, und wobei die Anhebezahnstangen (**21**) jeweils in den Schieberaussparungen (**12A**) montiert sind.

8. Klappbarer Tisch nach Anspruch 7, bei welchem jede Schieberaussparung (**12A**) einen Boden und eine Zahnstangenaussparung aufweist, die in dem Boden der Schieberaussparung (**122**) ausgebildet ist und einen Boden und zwei gegenüberliegende Seiten umfasst,
wobei die Anhebezahnstangen (**21**) jeweils an den Böden der Zahnstangenaussparungen (**122**) in den Schieberaussparungen (**12A**) angebracht sind, und
wobei die Eingriffsseite und die glatte Seite von jeder Anhebezahnstange (**21**) jeweils von den gegenüberliegenden Seiten der zugehörigen der Zahnstangenaussparungen (**122**) beabstandet sind, um zwei Gleitkanäle zwischen der Anhebezahnstange (**21**) und der zugehörigen Zahnstangenaussparung (**122**) zu definieren.

9. Klappbarer Tisch nach Anspruch 8, bei welchem jede Schieberaussparung (**12A**) zwei gegenüberliegende Seiten und zwei Schienen (**14A**) aufweist, die

jeweils an den beiden gegenüberliegenden Seiten der Schieberaussparung (**12A**) angebracht sind und parallel zueinander sind,
jede Anhebezahnstange (**21**) parallel zu den Schienen (**14A**) in der jeweils zugehörigen Schieberaussparung (**12A**) ist, und
jeder Anhebeschieber (**23**) beweglich mit den Schienen (**14A**) in der jeweils zugehörigen Schieberaussparung (**12A**) in Verbindung steht.

10. Klappbarer Tisch nach Anspruch 9, bei welchem
die Einstellplatte (**32**) eine Oberseite und eine Gleitvertiefung (**322**) aufweist, die in der Oberseite der Einstellplatte (**32**) ausgebildet ist und einen Boden hat,
eine Zahnstangenaussparung (**324**) in dem Boden der Gleitvertiefung (**322**) vorgesehen ist, die einen Boden und zwei gegenüberliegende Seiten hat,
die Einstellzahnstange (**326**) an dem Boden der Zahnstangenaussparung (**324**) befestigt ist, und
die Eingriffsseite und die glatte Seite der Einstellzahnstange (**326**) jeweils von den gegenüberliegenden Seiten der Zahnstangenaussparung (**324**) beabstandet sind, um zwei Gleitkanäle zwischen der Zahnstangenaussparung (**324**) und der Einstellzahnstange (**326**) zu definieren.

Es folgen 15 Seiten Zeichnungen

Anhängende Zeichnungen

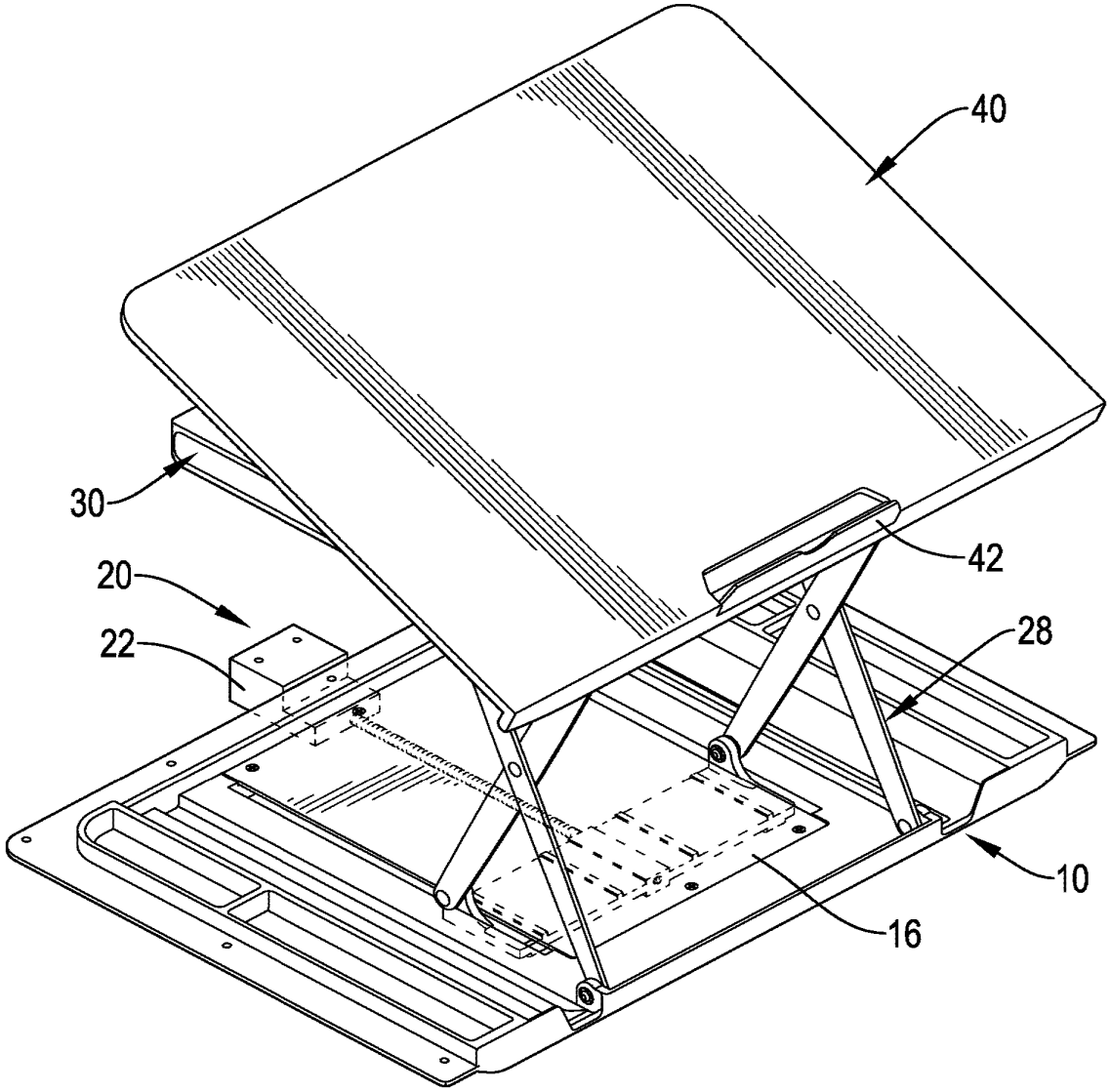


FIG.1

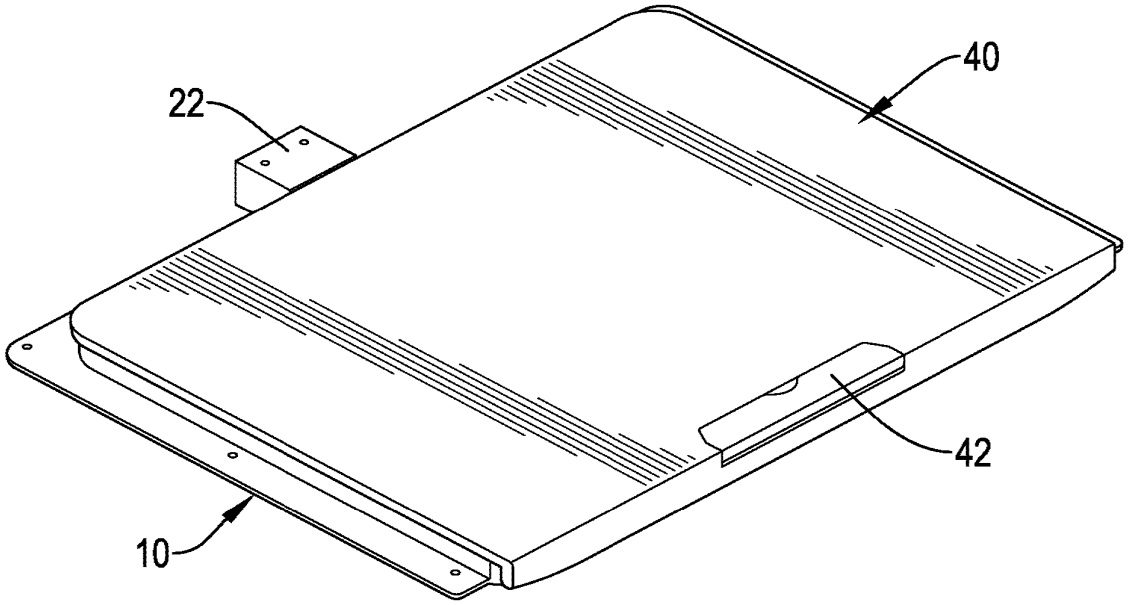


FIG.2

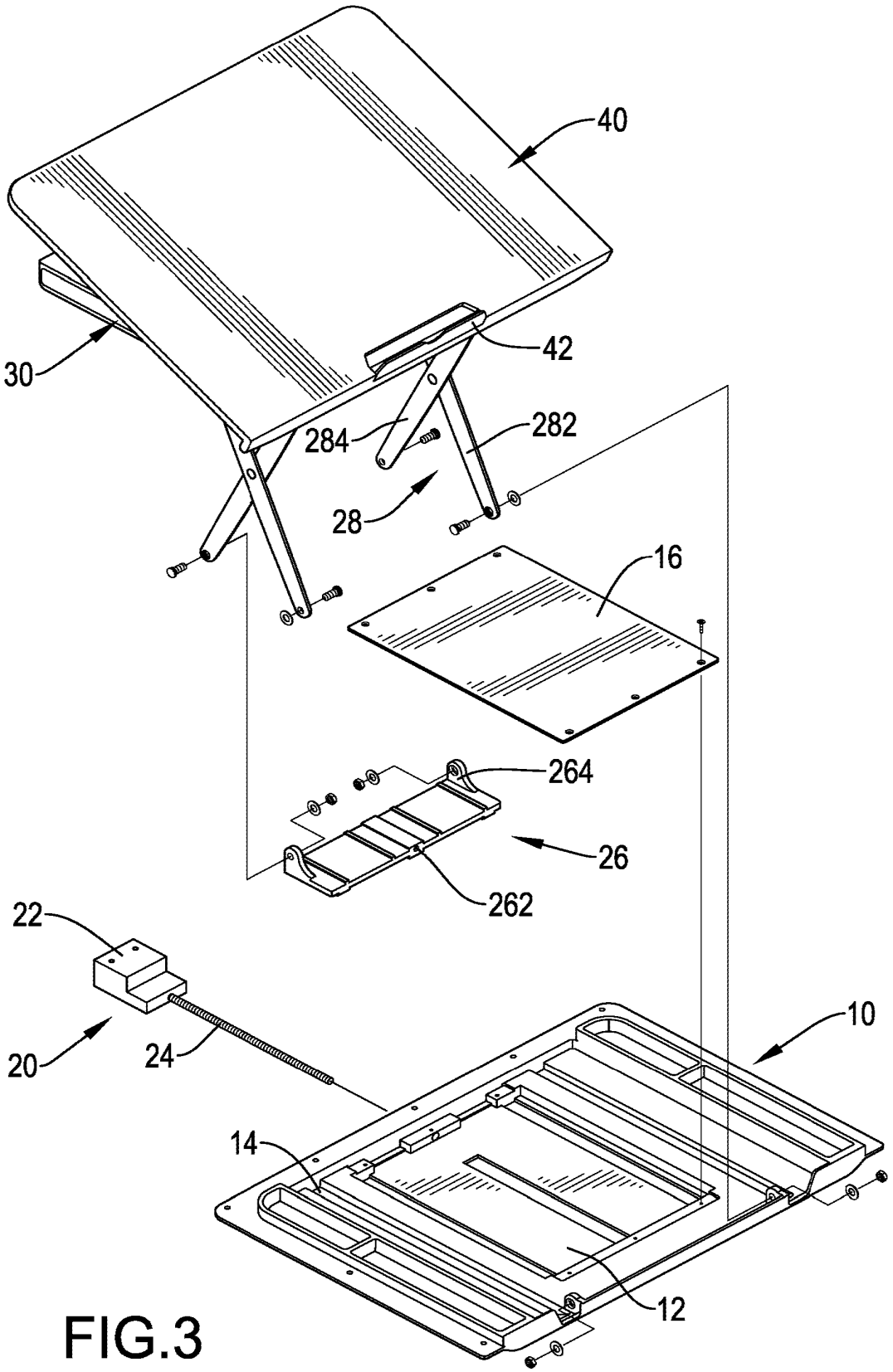


FIG.3

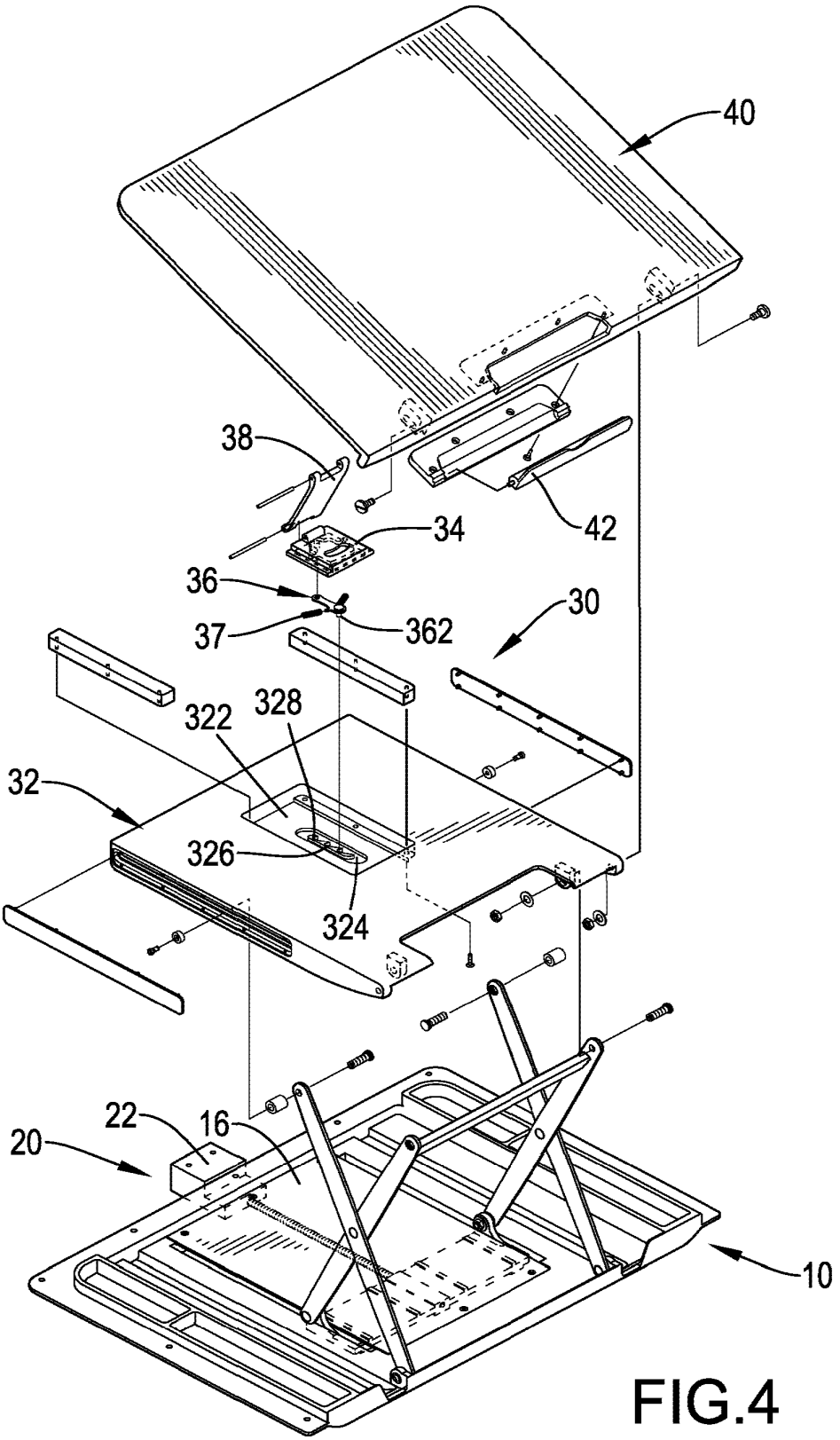


FIG.4

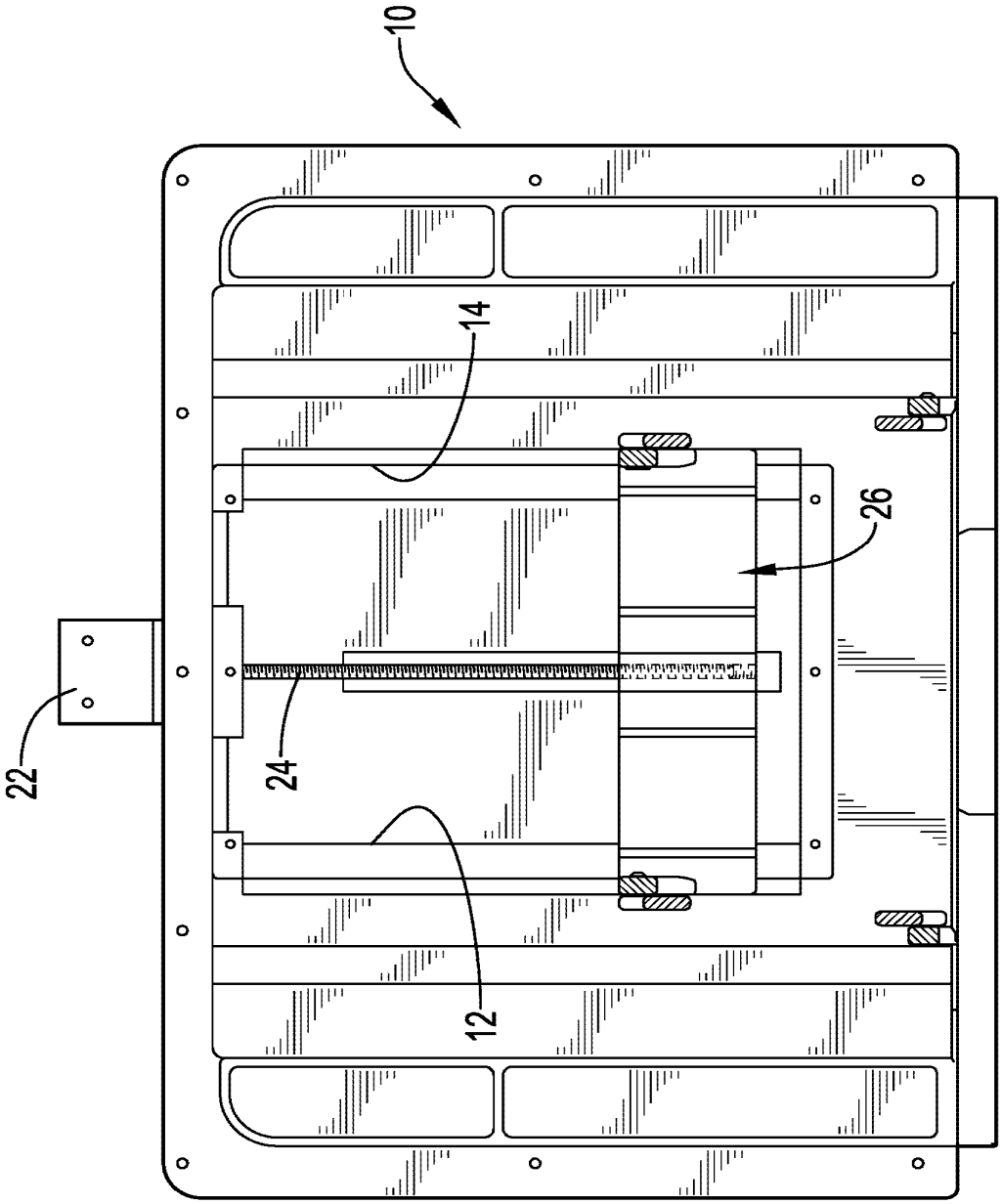


FIG.5

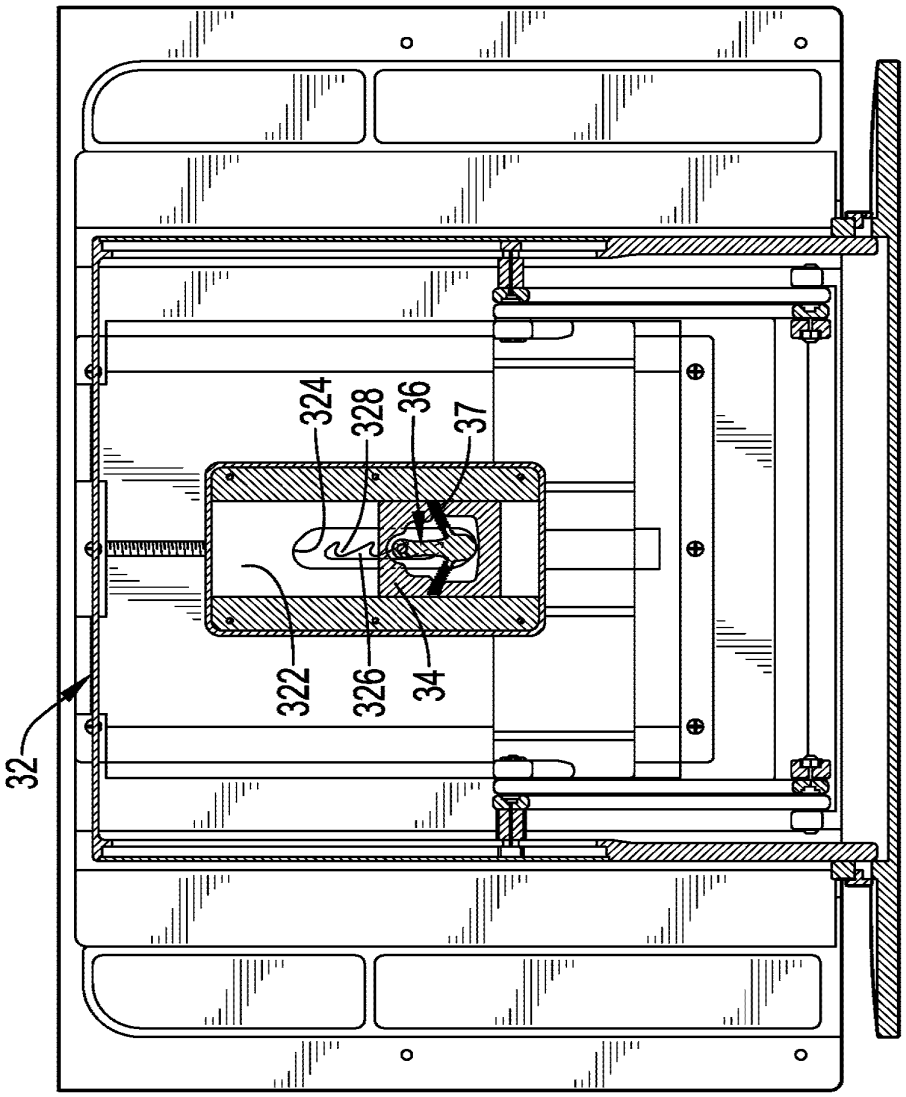


FIG.6

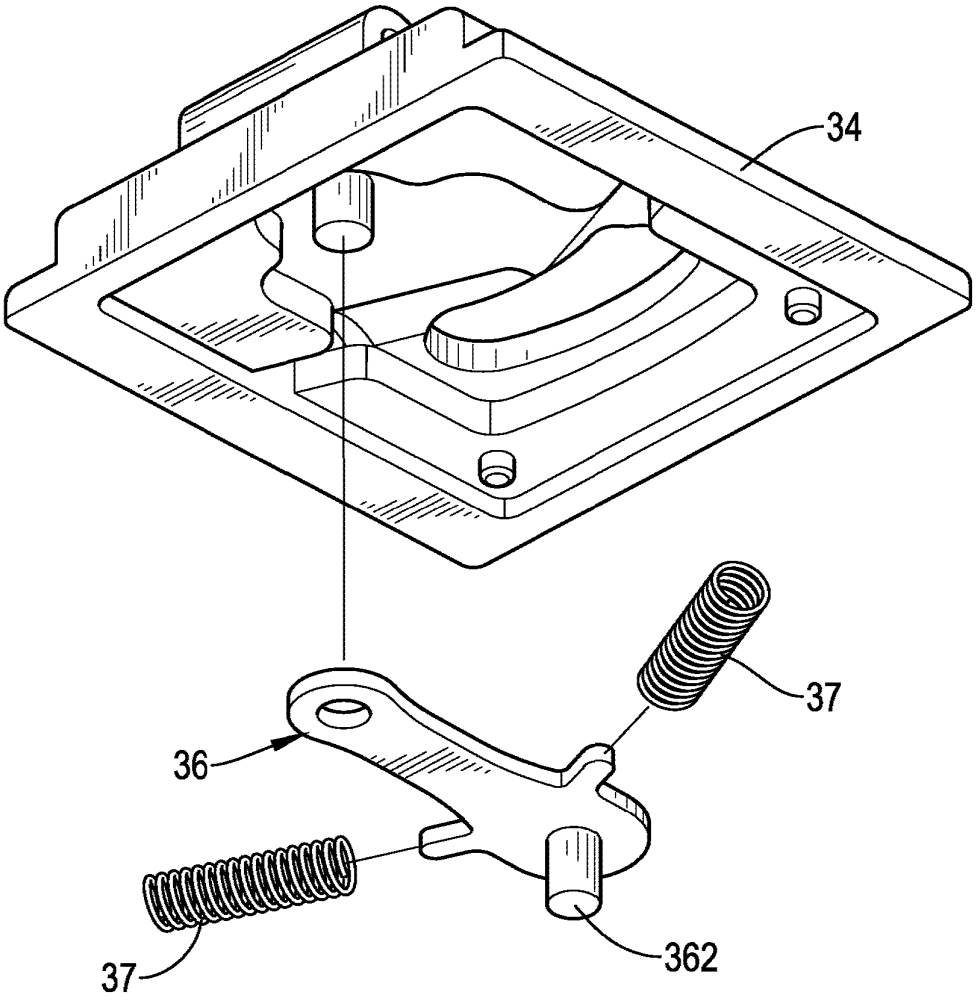


FIG.7

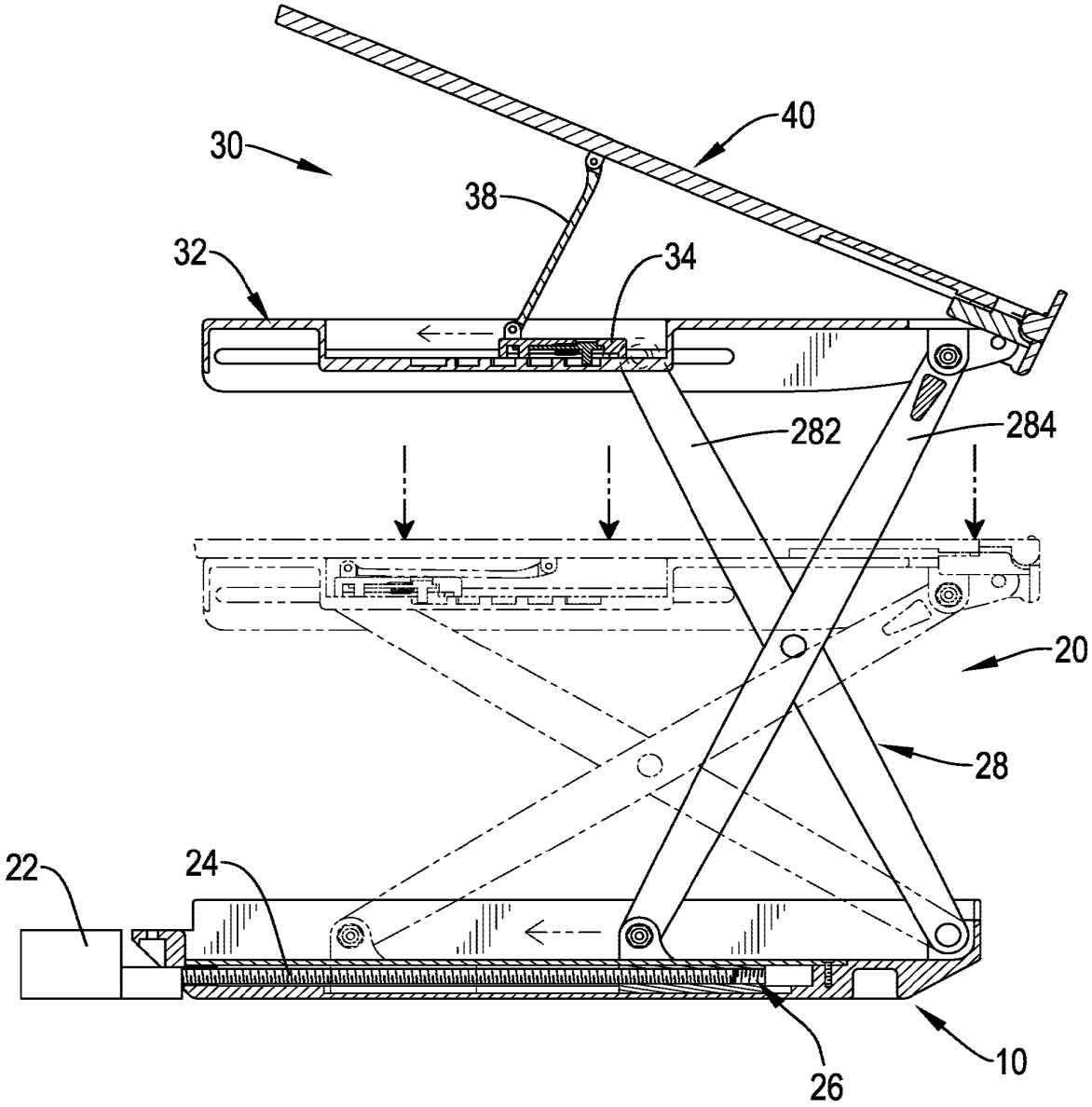


FIG.8

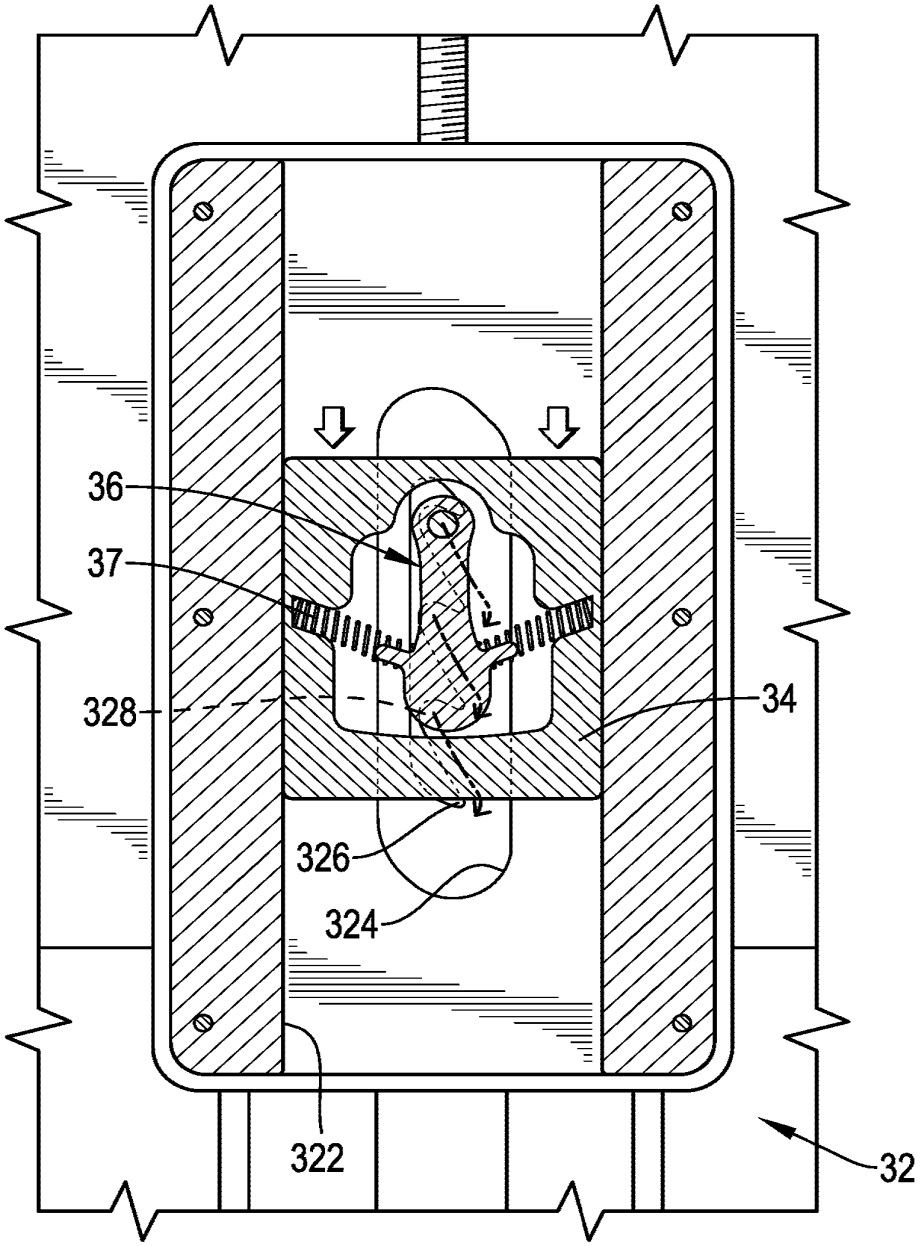


FIG.9

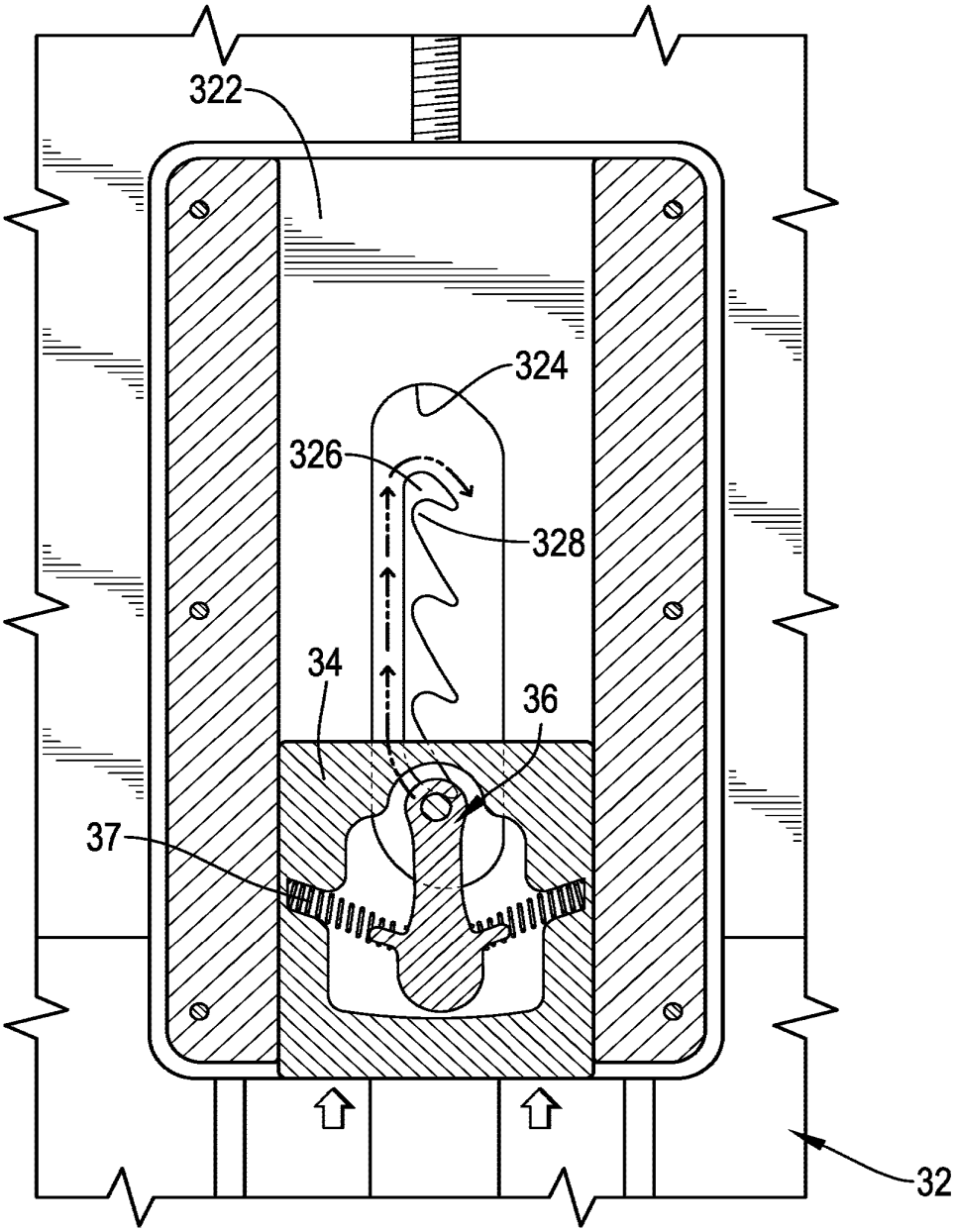


FIG.10

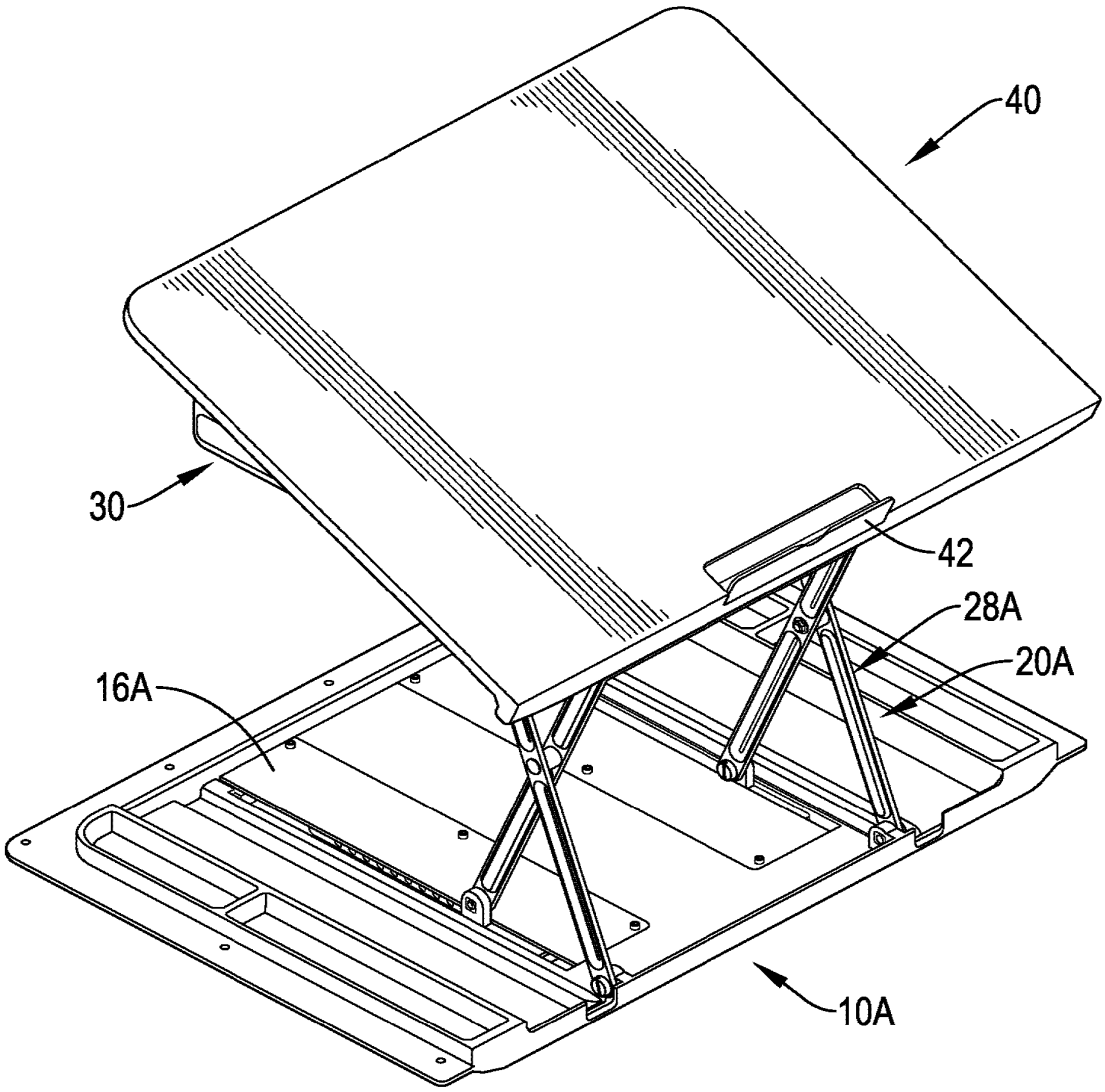


FIG.11

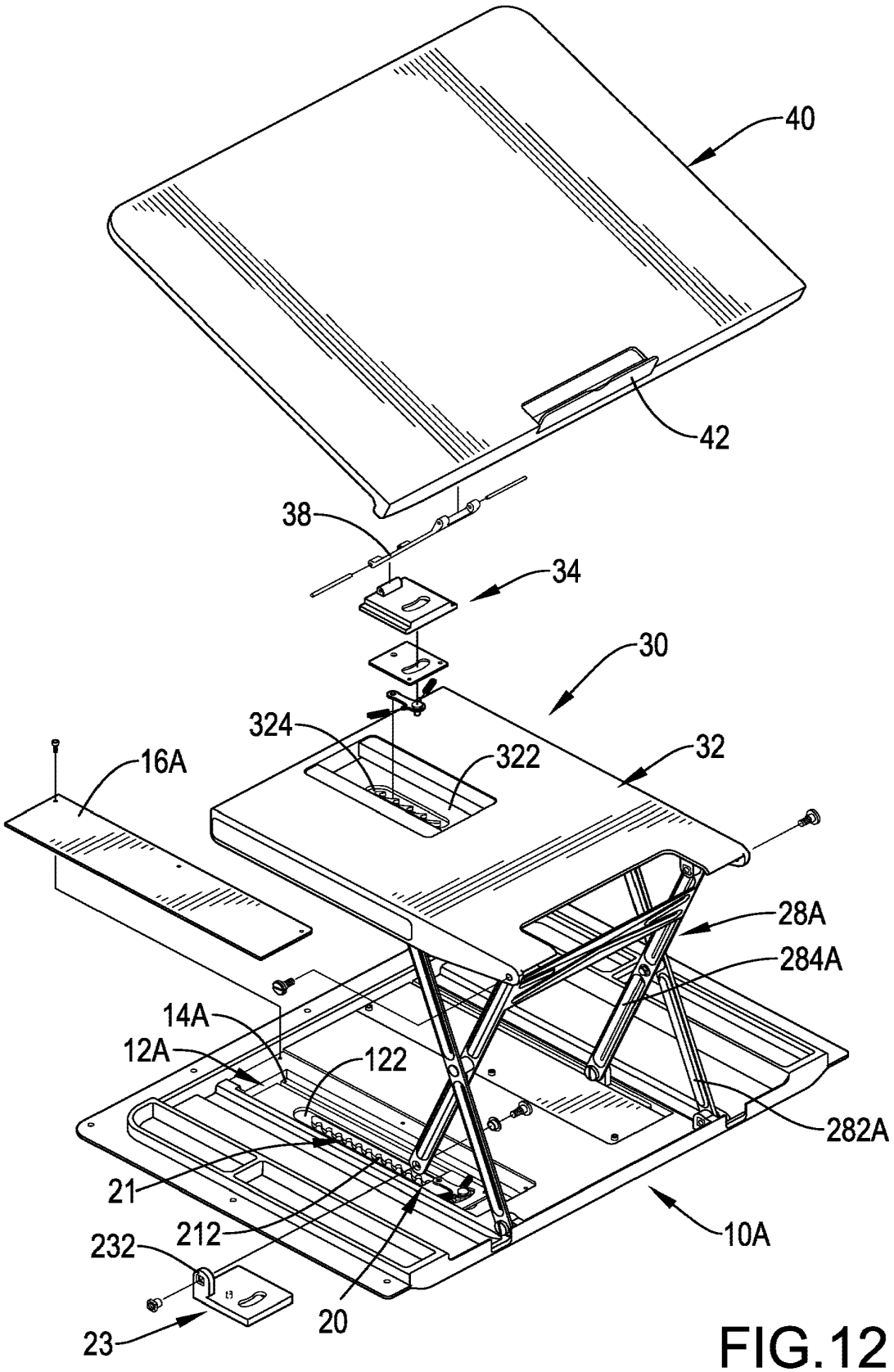

40
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16A
28A
284A
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12A
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282A
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10A
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FIG.12

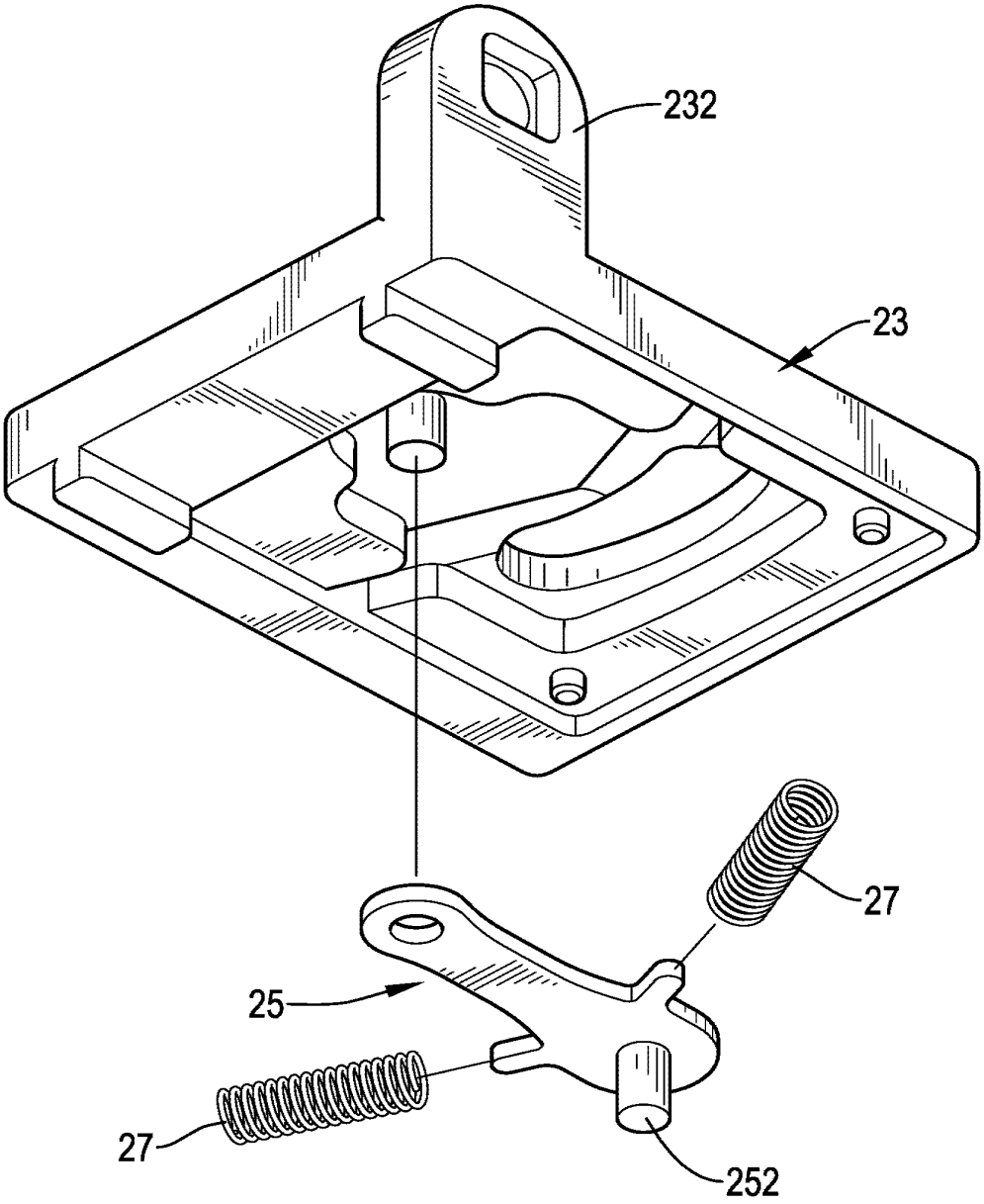


FIG.13

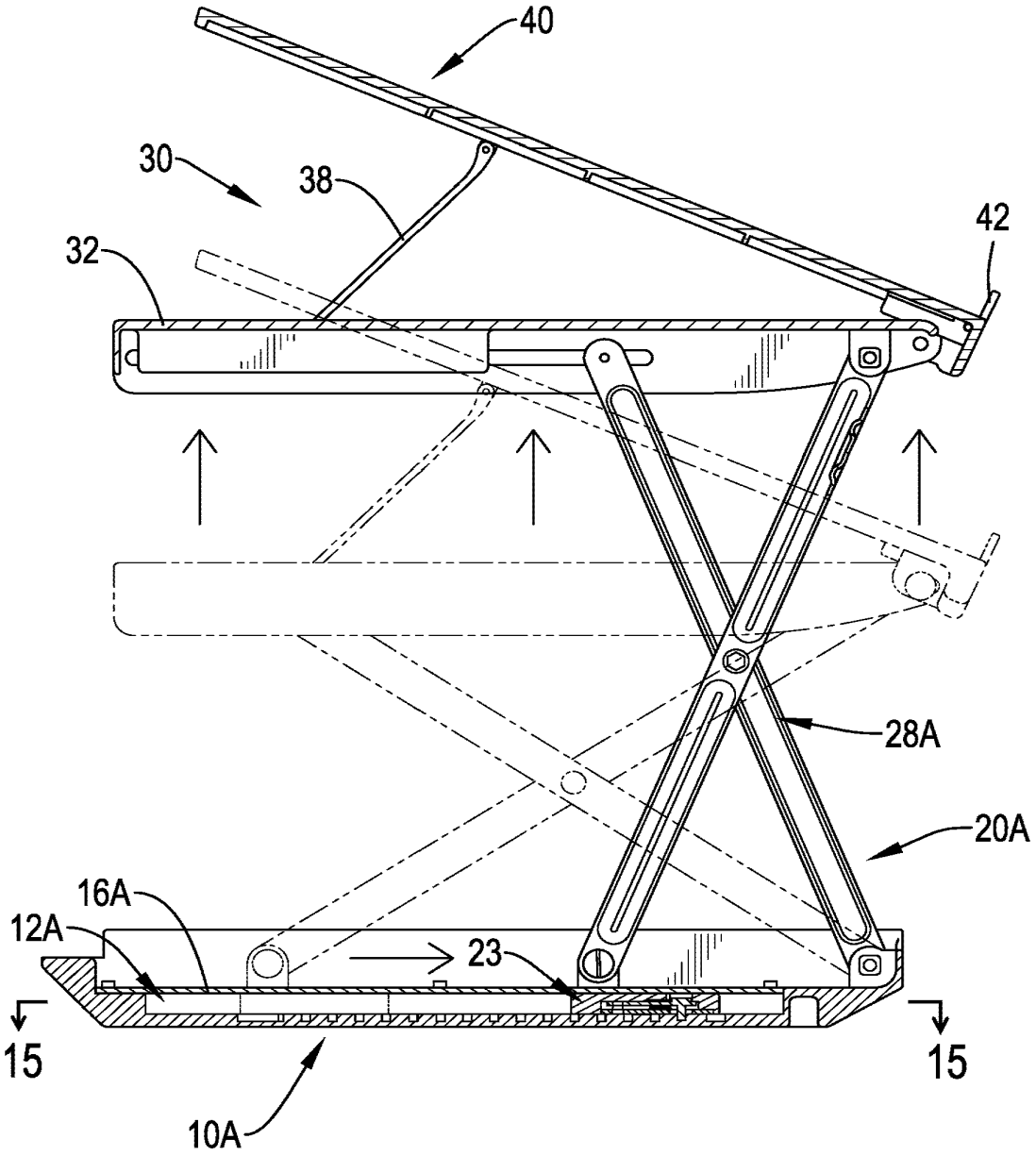


FIG.14

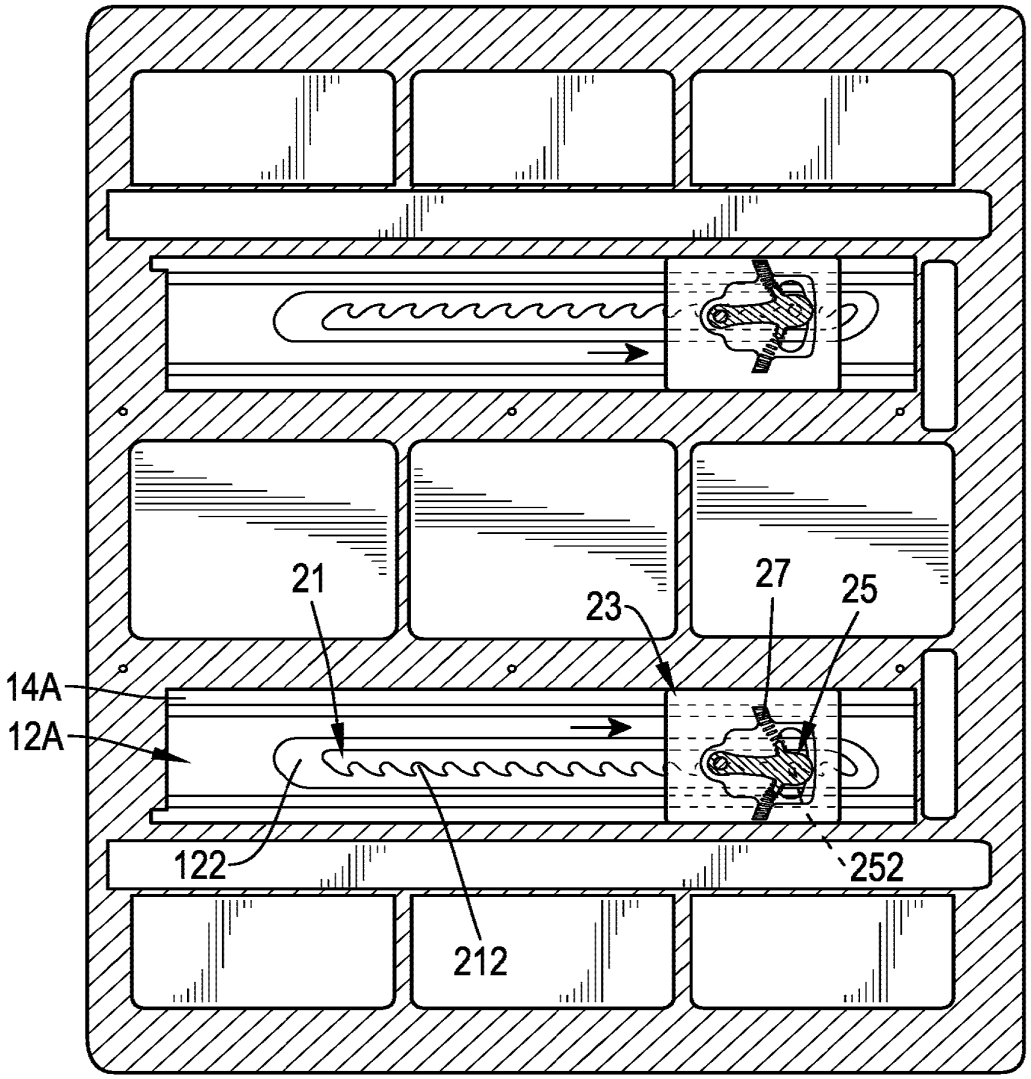


FIG.15

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DESCRIPTION CN203333240U

10 Automatic sliding desktop lifting platform

[0001]

14 technical field

[0002]

18 The utility model relates to a lifting platform, in particular to a hydraulically controlled automatic sliding desktop lifting platform.

[0003]

23 Background technique

[0004]

27 At present, the lifting platform is generally driven by an oil cylinder. The lifting platform uses a guide column to cooperate with the oil cylinder to keep the platform up and down smoothly. The current oil cylinder of the lifting platform is fixed, which cannot be folded and has a large volume and is inconvenient to transport.

[0005]

33 Utility model content

[0006]

37 The purpose of the utility model is to provide an automatic sliding table top lifting platform, the table top is

supported by the inner scissor arm and the outer scissor arm that are hinged with each other, the inner scissors arm and the outer scissor arm are arranged between the inner scissor arm and the outer scissor arm to drive the lift, the inner scissor arm and the outer scissor arm The lower part of the arm is connected to the bottom frame, and has the advantages of simple structure, convenient use, small volume after being folded, and easy to carry and transport.

[0007]

46 In order to achieve the above purpose, the following technical solutions are adopted:

[0008]

50 An automatic sliding desktop lifting platform, comprising a desktop and a bottom frame, characterized in that: an inner scissor arm and an outer scissor arm are arranged between the desktop and the bottom frame, and the middle of the inner scissor arm and the outer scissor arm is hinged through a shaft core, and the inner scissors The lower end of the arm is hinged on the left side of the bottom frame, and the lower end of the outer scissor arm is provided with a roller, which can roll left and right on the bottom frame. A spanner beam is welded on the middle or upper part of the inner scissor arm, and a spanner beam is welded on the spanner beam. wrench; the bottom or lower part of the outer scissor arm is welded with the bottom beam of the oil cylinder, and the bottom beam of the oil cylinder and the wrench are connected by the oil cylinder; the upper ends of the inner scissor arm and the outer scissor arm are provided with coaxial rollers and bearings , There is a guide groove matched with the bearing at the bottom of the desktop; the bearing can roll along the guide groove, and the roller rolls synchronously along the bearing.

[0009]

64 A guide rail is provided at the bottom of the table at the position corresponding to the movement track of the roller, a slot is formed between the guide rail and the starting position of the roller, a stopper is provided at the end of the guide rail, and a slot is also formed between the guide rail and the stopper. The guide rail is of a slope structure, and the slope is set high on the left and low on the right, so that the grooves at both ends of the guide rail have a structure of deep left and shallow right.

[0010]

72 When the platform of the utility model is in the lowest position, the roller on the upper end of the inner scissor arm under the tabletop is located in the clip groove on the right side of the guide rail, and the roller on the upper end of the outer scissor arm is located in the left clip slot; when the platform rises, due to the depth of the left clip slot is larger than the card slot on the right side, so the roller on the upper end of the inner scissor arm rolls on the guide rail, while the roller on the upper end of the outer scissor arm does not move, and the table top moves upward; when the roller on the upper end of the inner scissor arm moves to the card slot on the left When the roller is blocked by the stopper, if the platform continues to move, the roller on the upper end of the outer scissor arm will break away from the slot on the left and roll along the guide rail. At this time, the

platform will move to the left while rising; When the rollers move to the right slot, the front and rear rollers are blocked by the block, and the platform stops moving; when the platform descends, it runs in the opposite direction of the upward movement until it reaches the lowest position; Small, easy to carry and transport.

[0011]

86 Description of drawings

[0012]

90 Fig. 1 is the structural representation of the utility model;

[0013]

94 Fig. 2 is the internal structure schematic diagram of the utility model;

[0014]

98 3 is a schematic diagram of an internal therapy structure in another direction of the present invention;

[0015]

102 FIG. 4 is a schematic structural diagram of the utility model in a folded state;

[0016]

106 Fig. 5 is the structural representation of state 1 of the present utility model;

[0017]

110 6 is a schematic structural diagram of the utility model state 2;

[0018]

114 Fig. 7 is the structural schematic diagram of state 3 of the present utility model;

[0019]

118 FIG. 8 is a schematic structural diagram of state 4 of the present invention.

[0020]

122 Detailed ways

[0021]

126 As shown in Figure 1-8, an automatic sliding desktop lifting platform includes a desktop 1 and a bottom frame 2. Between the desktop 1 and the bottom frame 2, an inner scissor arm 3 and an outer scissor arm 4 are arranged. The inner scissor arm 3 and the outer scissor arm The middle of the scissor arm 4 is hinged through the shaft core 5, the lower end of the inner scissor arm 2 is hinged to the left side of the bottom frame 2, and the lower end of the outer scissor arm 4 is provided with a roller 6, which can roll left and right on the bottom frame 2, and is The middle or upper part of the described inner scissor arm 3 is welded with a spanner beam 7, and a spanner 8 is welded on the spanner beam 7; the bottom or the lower part of the described outer scissor arm 4 is welded with an oil cylinder bottom beam 9, an oil cylinder bottom beam 9 and a spanner 8 They are connected by an oil cylinder 10; the upper ends of the inner scissor arm 3 and the outer scissor arm 4 are provided with a coaxial roller 6 and a bearing 11, and the bottom of the desktop 1 is provided with a guide groove 12 that cooperates with the bearing 11; the bearing 11 can roll along the guide groove 12, and the roller 6 rolls synchronously along the bearing 11; a guide rail 13 is provided at the bottom of the table top 1 at the position corresponding to the movement track of the roller 6, and the guide rail 13 and the starting position of the roller 6 form a card Slot 14, a stopper 15 is provided at the end of the guide rail 13, and a slot 14 is also formed between the guide rail 13 and the stopper 15. The guide rail is of a slope structure, and the slope is set high on the left and low on the right, so that the slots at both ends of the guide rail are Left deep right shallow structure.

[0022]

146 The use process of the utility model is as follows: when the platform is at the lowest position, the roller 6 on the upper end of the inner scissor arm 3 under the desktop 1 is located in the slot 14 on the right side of the guide rail 13, and the roller 6 on the upper end of the outer scissor arm 4 is located on the left side Inside the card slot 14; when the platform rises, due to the slope structure of the guide rail, the depth of the left card slot 14 is greater than that of the right card slot 14, so the roller 6 on the upper end of the inner scissor arm 3 rolls on the guide rail, while the upper end of the outer scissor arm 4 The roller 6 does not move, and the desktop 1 moves upward; when the roller 6 on the upper end of the inner scissor arm 3 moves to the slot 14 on the left side, the roller 6 is blocked by the stopper 15. If the platform continues to move, the outer scissors The roller 6 on the upper end of the arm 4 will be separated from the card slot 14 on the left side and roll along the guide rail 13. At this time, the platform moves to the left while rising; when the roller 6 on the upper end of the outer scissor arm 4 moves to the card slot 14 on the right side, The front and rear rollers 6 are blocked by the stopper 15, and the platform stops moving; when the platform descends, it runs in the opposite direction of the upward movement until it reaches the lowest position.

[0023]

162 The utility model has the advantages of simple structure and convenient lifting and lowering. When not in use, the platform is lowered to the lowest position to form a folded structure, which is convenient for carrying and

transportation.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 203333240 U
(45)授权公告日 2013.12.11

(21)申请号 201320353521.6

(22)申请日 2013.06.20

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(51)Int.Cl.
B66F 7/08(2006.01)

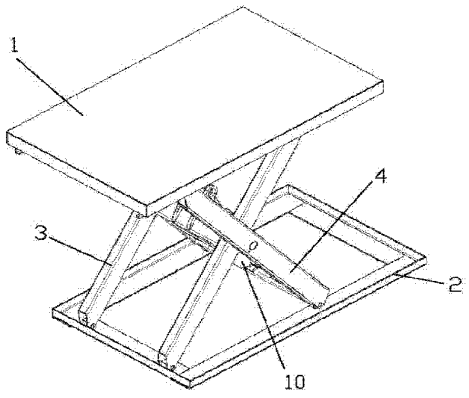
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(54)实用新型名称

自动滑动桌面升降平台

(57)摘要

本实用新型涉及一种自动滑动桌面升降平台，包括桌面和底框，桌面和底框之间设置有内剪刀臂和外剪刀臂，内剪刀臂和外剪刀臂的中间通过轴芯铰接，内剪刀臂的下端铰接在底框的左侧，外剪刀臂的下端设有滚轮，滚轮可在底框上左右滚动，在所述的内剪刀臂的中部或上部焊接有扳手横梁，扳手横梁上焊接有扳手；所述的外剪刀臂的底部或下部焊接有油缸底部横梁，油缸底部横梁与扳手之间通过油缸连接；在所述的内剪刀臂和外剪刀臂上端均设置有同轴的滚轮和轴承，在桌面的底部设有与轴承配合的导槽；轴承可沿着导槽滚动，滚轮顺着轴承同步滚动；本实用新型具有结构简单、使用方便，折叠后体积较小，便于携带和运输。



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1. 一种自动滑动桌面升降平台，包括桌面和底框，其特征在于：桌面和底框之间设置有内剪刀臂和外剪刀臂，内剪刀臂和外剪刀臂的中间通过轴芯铰接，内剪刀臂的下端铰接在底框的左侧，外剪刀臂的下端设有滚轮，滚轮可在底框上左右滚动，在所述的内剪刀臂的中部或上部焊接有扳手横梁，扳手横梁上焊接有扳手；所述的外剪刀臂的底部或下部焊接有油缸底部横梁，油缸底部横梁与扳手之间通过油缸连接；在所述的内剪刀臂和外剪刀臂上端均设置有同轴的滚轮和轴承，在桌面的底部设有与轴承配合的导槽；轴承可沿着导槽滚动，滚轮顺着轴承同步滚动。

2. 如权利要求 1 所述的一种自动滑动桌面升降平台，其特征在于：在所述的桌面底部对应滚轮运动轨迹的位置设有导轨，该导轨与滚轮起始位置之间形成卡槽，导轨的末端设有挡块，导轨与挡块之间也形成卡槽，所述的导轨为斜坡结构，斜坡呈左高右低设置，使得导轨两端的卡槽呈左深右浅结构。

自动滑动桌面升降平台

技术领域

[0001] 本实用新型涉及一种升降平台，具体是一种液压控制的自动滑动桌面升降平台。

背景技术

[0002] 目前升降平台一般由油缸来推动，升降平台通过导柱配合油缸保持平台升降的平稳，目前的这种升降平台油缸是固定的，无法折叠体积较大，运输不便。

实用新型内容

[0003] 本实用新型的目的在于提供一种自动滑动桌面升降平台，桌面通过相互交叉铰接的内剪刀臂和外剪刀臂支撑，内剪刀臂和外剪刀臂之间设置油缸驱动升降，内剪刀臂和外剪刀臂下部连接在底框上，具有结构简单、使用方便，折叠后体积较小，便于携带和运输。

[0004] 为实现上述目的采用以下技术方案：

[0005] 一种自动滑动桌面升降平台，包括桌面和底框，其特征在于：桌面和底框之间设置有内剪刀臂和外剪刀臂，内剪刀臂和外剪刀臂的中间通过轴芯铰接，内剪刀臂的下端铰接在底框的左侧，外剪刀臂的下端设有滚轮，滚轮可在底框上左右滚动，在所述的内剪刀臂的中部或上部焊接有扳手横梁，扳手横梁上焊接有扳手；所述的外剪刀臂的底部或下部焊接有油缸底部横梁，油缸底部横梁与扳手之间通过油缸连接；在所述的内剪刀臂和外剪刀臂上端均设置有同轴的滚轮和轴承，在桌面的底部设有与轴承配合的导槽；轴承可沿着导槽滚动，滚轮顺着轴承同步滚动。

[0006] 在所述的桌面底部对应滚轮运动轨迹的位置设有导轨，该导轨与滚轮起始位置之间形成卡槽，导轨的末端设有挡块，导轨与挡块之间也形成卡槽，所述的导轨为斜坡结构，斜坡呈左高右低设置，使得导轨两端的卡槽呈左深右浅结构。

[0007] 本实用新型平台在最低位时，桌面下方内剪刀臂上端的滚轮位于导轨右侧的卡槽内，而外剪刀臂上端的滚轮位于左侧卡槽内；平台上升时，由于左侧卡槽深度大于右侧的卡槽，所以内剪刀臂上端的滚轮在导轨上滚动，而外剪刀臂上端的滚轮不动，这时桌面呈上升运动；当内剪刀臂上端的滚轮运动至左侧的卡槽时，滚轮被挡块挡住，这时平台如果继续运动，外剪刀臂上端的滚轮就脱离左侧的卡槽，沿导轨滚动，这时平台呈一边上升一边向左移动；当外剪刀臂上端的滚轮运动至右侧卡槽时，前后滚轮都被挡块卡住，平台停止运动；平台下降时，沿上升运动相反方向运行，直到最低位置；本实用新型具有结构简单、使用方便，折叠后体积较小，便于携带和运输。

附图说明

[0008] 图 1 为本实用新型的结构示意图；

[0009] 图 2 为本实用新型的内部结构示意图；

[0010] 图 3 为本实用新型另一方向的内疗结构示意图；

[0011] 图 4 为本实用新型折叠状态结构示意图；

[0012] 图 5 为本实用新型状态 1 结构示意图；

[0013] 图 6 为本实用新型状态 2 结构示意图；

[0014] 图 7 为本实用新型状态 3 结构示意图；

[0015] 图 8 为本实用新型状态 4 结构示意图。

具体实施方式

[0016] 如图 1-8 所示，一种自动滑动桌面升降平台，包括桌面 1 和底框 2，桌面 1 和底框 2 之间设置有内剪刀臂 3 和外剪刀臂 4，内剪刀臂 3 和外剪刀臂 4 的中间通过轴芯 5 铰接，内剪刀臂 2 的下端铰接在底框 2 的左侧，外剪刀臂 4 的下端设有滚轮 6，滚轮 6 可在底框 2 上左右滚动，在所述的内剪刀臂 3 的中部或上部焊接有扳手横梁 7，扳手横梁 7 上焊接有扳手 8；所述的外剪刀臂 4 的底部或下部焊接有油缸底部横梁 9，油缸底部横梁 9 与扳手 8 之间通过油缸 10 连接；在所述的内剪刀臂 3 和外剪刀臂 4 上端均设置有同轴的滚轮 6 和轴承 11，在桌面 1 的底部设有与轴承 11 配合的导槽 12；轴承 11 可沿着导槽 12 滚动，滚轮 6 顺着轴承 11 同步滚动；在所述的桌面 1 底部对应滚轮 6 运动轨迹的位置设有导轨 13，该导轨 13 与滚轮 6 起始位置之间形成卡槽 14，导轨 13 的末端设有挡块 15，导轨 13 与挡块 15 之间也形成卡槽 14，所述的导轨为斜坡结构，斜坡呈左高右低设置，使得导轨两端的卡槽呈左深右浅结构。

[0017] 本实用新型使用过程是这样的：当平台在最低位时，桌面 1 下方内剪刀臂 3 上端的滚轮 6 位于导轨 13 右侧的卡槽 14 内，而外剪刀臂 4 上端的滚轮 6 位于左侧卡槽 14 内；平台上升时，由于导轨为斜坡结构，造成左侧卡槽 14 深度大于右侧的卡槽 14，所以内剪刀臂 3 上端的滚轮 6 在导轨上滚动，而外剪刀臂 4 上端的滚轮 6 不动，这时桌面 1 呈上升运动；当内剪刀臂 3 上端的滚轮 6 运动至左侧的卡槽 14 时，滚轮 6 被挡块 15 挡住，这时平台如果继续运动，外剪刀臂 4 上端的滚轮 6 就会脱离左侧的卡槽 14，沿导轨 13 滚动，这时平台呈一边上升一边向左移动；当外剪刀臂 4 上端的滚轮 6 运动至右侧卡槽 14 时，前后滚轮 6 都被挡块 15 卡住，平台停止运动；平台下降时，沿上升运动相反方向运行，直到最低位置。

[0018] 本实用新型结构简单、升降方便、不使用时平台降至最低位置呈折叠结构，便于携带和运输。

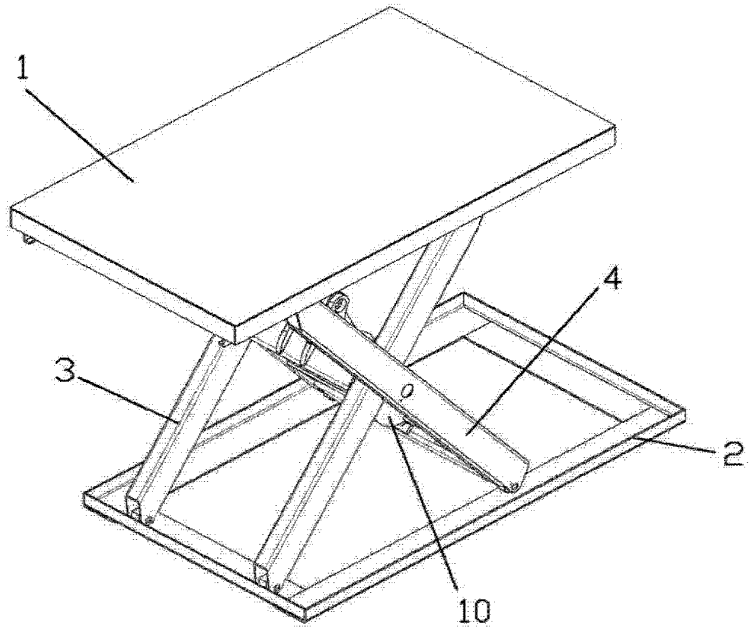


图 1

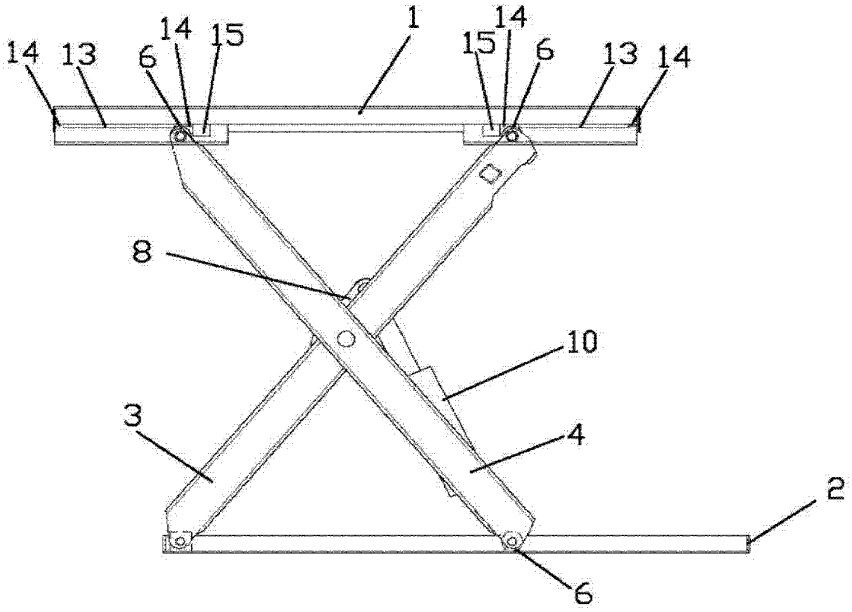


图 2

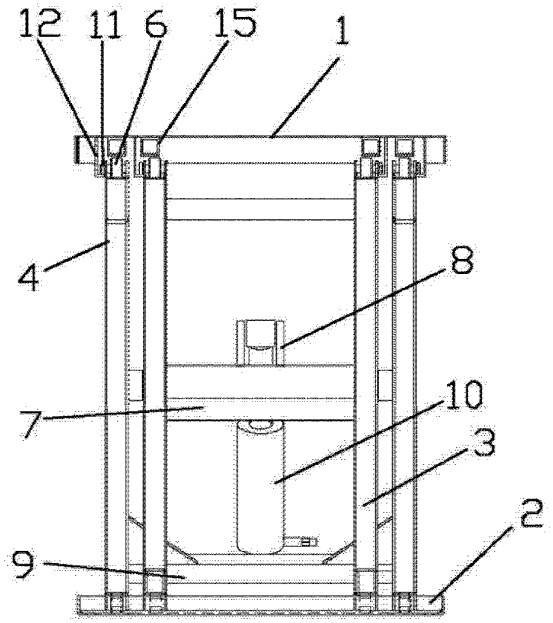


图 3

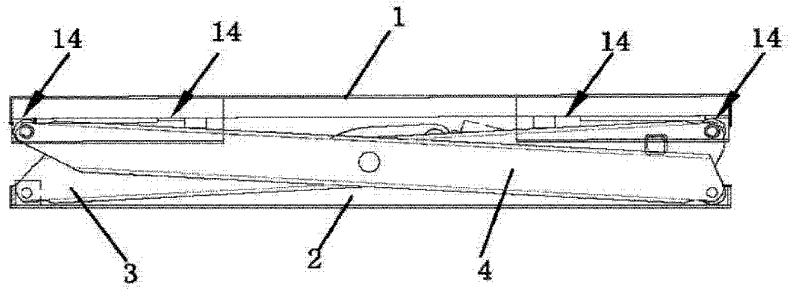


图 4

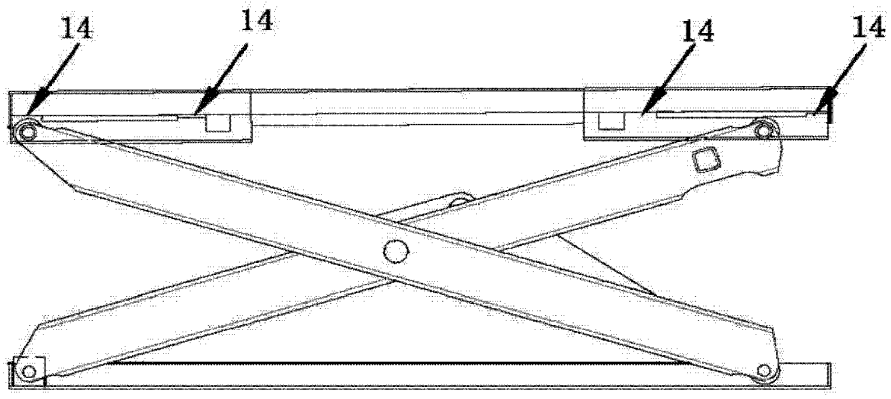


图 5

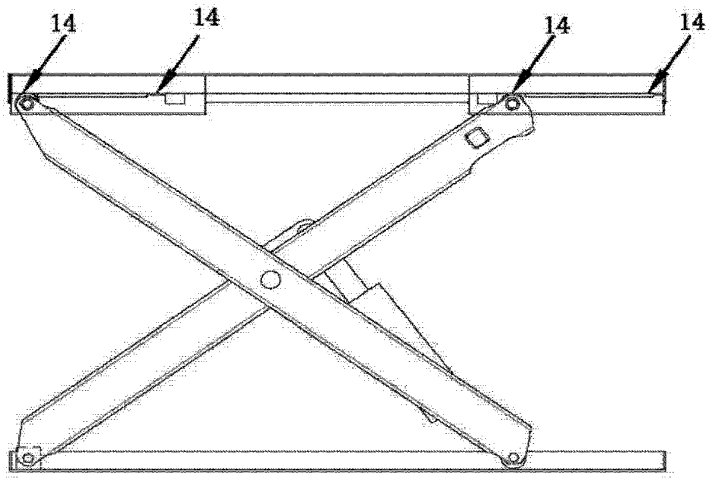


图 6

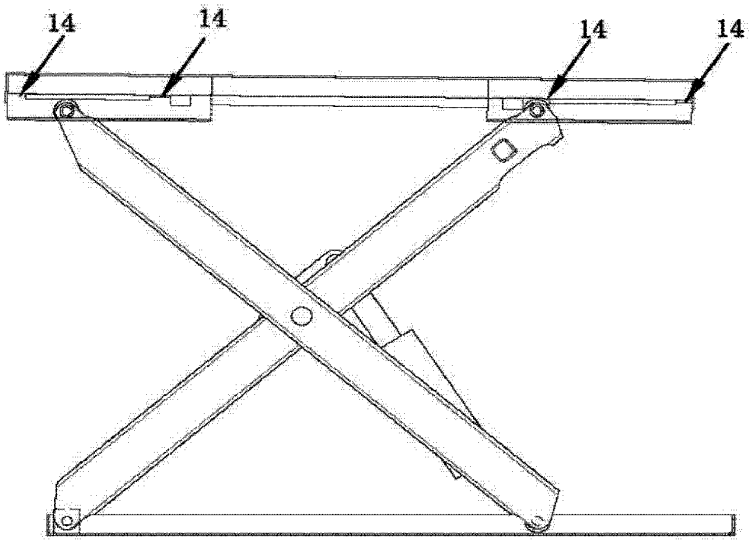


图 7

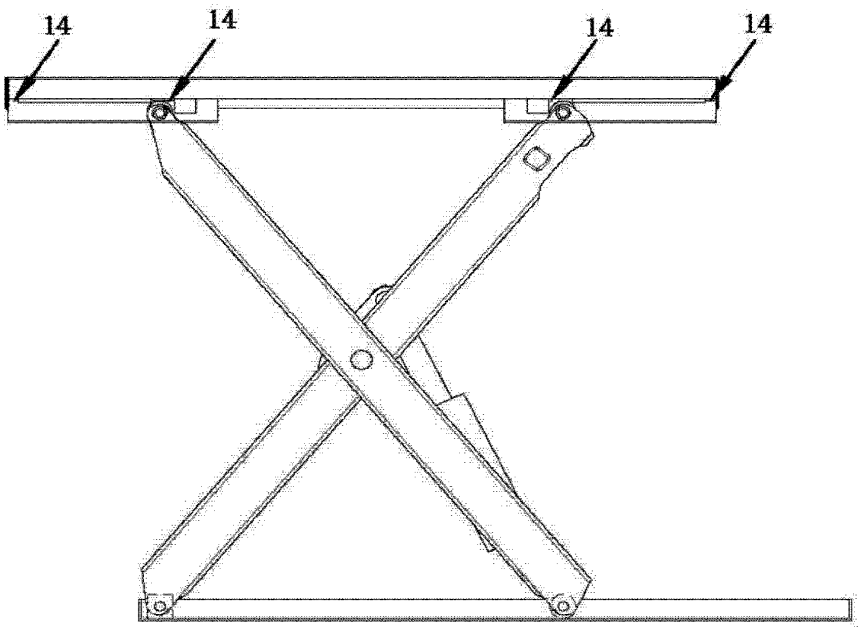


图 8

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DESCRIPTION CN202681005U

10 A lift table for use in an office

[0001]

14 technical field

[0002]

18 The utility model relates to the field of office supplies, in particular to a lift table used on a desk.

[0003]

22 Background technique

[0004]

26 With the development of society, office occupational diseases are on the rise.

27 Existing desks are either constant-height or can be manufactured with custom heights, but are difficult to change once delivered.

29 Office personnel work on desks at the same height for a long time, which can easily cause occupational diseases in the waist, back, neck or legs.

[0005]

34 Utility model content

[0006]

38 The purpose of the invention of the present invention is to overcome the above-mentioned problem that the existing desk top cannot be lifted and lowered, and to provide a lifting table with a novel structure that can adjust the height of the desktop without changing and destroying the original desktop, that is, a common desk.

[0007]

45 In order to realize the above-mentioned purpose of the invention, the utility model adopts the following technical solutions:

[0008]

50 A lift desktop used in an office, including a desktop cover, a telescopic curtain and two sets of support components, the desktop cover is installed on the two sets of support components; the support components include a base, a motor, a reducer, a screw, two The support rod and the torsion spring, the motor, the reducer and the lead screw are installed in the base, the reducer and the lead screw are connected, the motor is connected to the lower ends of the two support rods through the reducer and the lead screw, and the middle of the two support rods are connected by the connecting piece The utility model is hinged, and the two support rods are connected by a torsion spring, and the upper end of the support rod is connected with the desktop cover; the telescopic curtain is located between the desktop cover and the base.

[0009]

61 Preferably, a support plate is provided between the two groups of support assemblies, and both ends of the support plate are respectively connected to a support rod on the two groups of support assemblies.

[0010]

66 A lifting tabletop used in an office that adopts the above technical solution, the tabletop cover is installed on two sets of support components, that is, a lifting method of bilateral driving is adopted, which ensures the stability of lifting.

69 The motor connects two support rods through a reducer and a screw rod to prevent the start-up speed from being too fast and affecting the stability of the lift.

71 The two support rods are connected by a torsion spring, which solves the problem of insufficient motor power and insufficient torque.

73 The retractable curtain is located between the desktop cover and the base, which can block the line of sight and provide good privacy.

75 The advantages of the lifting desktop used in the office are novel and compact structure, good lifting stability, low motor power and high bearing capacity, no need to change and destroy the original desktop, especially suitable for office use.

[0011]

81 Description of drawings

[0012]

85 Figure 1: a schematic structural diagram of an embodiment of the present invention.

[0013]

89 Detailed ways

[0014]

93 The present utility model will be further described below in conjunction with accompanying drawing 1 .

[0015]

97 As shown in FIG. 1, a lift desktop used in an office includes a desktop cover 1, a telescopic curtain 2 and two sets of support components 3. The desktop cover 1 is installed on two sets of support components 3, and two sets of support components 3 The bottoms are arranged in parallel and are located on the left and right sides under the desktop cover 1 respectively.

[0016]

104 Each set of support assemblies 3 includes a base 31 , a motor 32 , a reducer 33 , a lead screw 34 , two support rods 35 and a torsion spring 36 .

106 The base 31 is in the shape of a square tube. The motor 32 , the reducer 33 and the screw rod 34 are installed in the base 31 , and the base 31 is small in size.

108 The reducer 33 is connected to the screw rod 34, the motor 31 is connected to the lower ends of the two support rods 35 through the reducer 33 and the screw rod 34, and the middle of the two support rods 35 is hinged through a connector, which can be a bolt, and the two support rods The rod 35 is also connected by a torsion spring 36. The position of the torsion spring 36 is on the outside of the connecting piece. , one on both sides of the connecting piece, so that it is evenly stressed.

113 The upper end of the support rod 35 is connected to the desktop cover 1 .

114 The reducer 33 and the screw rod 34 are used together to prevent the start-up speed from being too fast to affect the stability of the lift.

116 Because it is used in the office, the size of the base 31 and the motor 32 needs to be controlled, and the power of the motor needs to be controlled to prevent excessive noise. Therefore, the structure of the torsion spring 36 is adopted to solve the problem that the motor power is too small and the torque is insufficient.

119 The retractable curtain 2 is located between the table top cover 1 and the base 31 .

[0017]

123 A support plate 5 is arranged between the two groups of support assemblies 3 , and both ends of the support plate 5 are respectively connected to a support rod 35 on the two groups of support assemblies 3 .

125 When the two sets of support assemblies 3 are far apart, the table top cover 1 is prone to shaking during lifting, and the support plate 5 can solve the above problems. The front line of sight, because after the user's desktop rises, the height of the desktop of the colleague on the opposite side may still be in the original state, and the line of sight is just between the desktop cover 1 and the base 31, and the support plate 5 can block the line of sight. , ensuring some privacy.

[0018]

133 The retractable curtain 2 can be a soft roller blind made of cloth or silk. When the lift table is closed, it automatically closes, and when the lift table is opened, it automatically opens. When the retractable curtain 2 is opened, it not only looks beautiful, but also prevents pen, paper Wait for small items to fall into the lift table to prevent clothes from accidentally touching the support rod 35 from the side, especially to block a part of the line of sight around the lift table to protect privacy.

[0019]

141 When in use, this product is directly placed on the desktop of the existing ordinary desk, ensuring the integrity of the original desk, without changing and destroying the original desk, the cost is more economical than replacing the existing desk, and it is easy to promote.

144 The advantages of the lift table used in the above-mentioned offices are good lifting stability, small motor power and volume, high bearing capacity, no need to change and destroy the original desktop, especially suitable for office use, office staff often use desktops of different heights, which can be adjusted. The state of the legs, waist, back, neck and shoulders to prevent occupational diseases from being in an angle and state for a long time.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 202681005 U
(45)授权公告日 2013.01.23

(21)申请号 201220335465.9

(22)申请日 2012.07.11

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(51)Int.Cl.
A47B 9/16(2006.01)
A47B 13/00(2006.01)

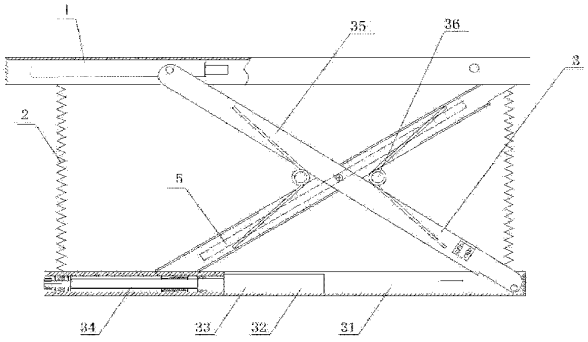
权利要求书 1 页 说明书 2 页 附图 1 页

(54)实用新型名称

一种办公室内使用的升降桌面

(57)摘要

本实用新型涉及办公用品领域。一种办公室内使用的升降桌面，包括桌面盖板、伸缩挡帘和两组支撑组件，桌面盖板安装在两组支撑组件上；支撑组件包括基座、电机、减速器、丝杆、两根支撑杆和扭簧，电机、减速器和丝杆安装在基座内，减速器和丝杆相连，电机通过减速器和丝杆连接两根支撑杆的下端，两根支撑杆的中部通过连接件铰接，并且两根支撑杆通过扭簧连接，支撑杆的上端连接桌面盖板；伸缩挡帘处于桌面盖板和基座之间。该办公室内使用的升降桌面的优点是结构新颖紧凑，升降平稳性好，电机功率小承载力高，无需改动与破坏原桌面。



CN 202681005 U

1. 一种办公室内使用的升降桌面，其特征在于包括桌面盖板、伸缩挡帘和两组支撑组件，桌面盖板安装在两组支撑组件上；支撑组件包括基座、电机、减速器、丝杆、两根支撑杆和扭簧，电机、减速器和丝杆安装在基座内，减速器和丝杆相连，电机通过减速器和丝杆连接两根支撑杆的下端，两根支撑杆的中部通过连接件铰接，并且两根支撑杆通过扭簧连接，支撑杆的上端连接桌面盖板；伸缩挡帘处于桌面盖板和基座之间。

2. 根据权利要求 1 所述的一种办公室内使用的升降桌面，其特征在于两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连。

一种办公室内使用的升降桌面

技术领域

[0001] 本实用新型涉及办公用品领域，尤其是办公桌上使用的升降桌面。

背景技术

[0002] 随着社会发展，办公室职业病呈上升趋势。现有的办公桌高度都是恒定的，或者制造时可以定制高度，但是一旦交付使用后其高度还是很难改变的。办公室人员长期处于同一高度的办公桌桌面上办公，极易产生腰部、背部、颈部或腿部的职业病。

实用新型内容

[0003] 本实用新型的发明目的是为了克服上述现有办公桌桌面无法升降的问题，提供一种结构新颖，无需改动与破坏原桌面即普通办公桌上使用的可以调节桌面高度的升降桌面。

[0004] 为了实现上述发明目的，本实用新型采用了以下技术方案：

[0005] 一种办公室内使用的升降桌面，包括桌面盖板、伸缩挡帘和两组支撑组件，桌面盖板安装在两组支撑组件上；支撑组件包括基座、电机、减速器、丝杆、两根支撑杆和扭簧，电机、减速器和丝杆安装在基座内，减速器和丝杆相连，电机通过减速器和丝杆连接两根支撑杆的下端，两根支撑杆的中部通过连接件铰接，并且两根支撑杆通过扭簧连接，支撑杆的上端连接桌面盖板；伸缩挡帘处于桌面盖板和基座之间。

[0006] 作为优选，两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连。

[0007] 采用了上述技术方案的一种办公室内使用的升降桌面，桌面盖板安装在两 组支撑组件上，即采用了双边驱动的升降方式，确保了升降的平稳性。电机通过减速器和丝杆连接两根支撑杆，防止启动时启动速度过快影响升降的稳定性。两根支撑杆通过扭簧连接，解决了电机功率过小扭力不足的问题。伸缩挡帘处于桌面盖板和基座之间，可以遮挡视线，私密性好。该办公室内使用的升降桌面的优点是结构新颖紧凑，升降平稳性好，电机功率小承载力高，无需改动与破坏原桌面尤其适合办公室使用。

附图说明

[0008] 图 1 ：本实用新型实施例的结构示意图。

具体实施方式

[0009] 下面结合附图 1 对本实用新型做进一步描述。

[0010] 如图 1 所示的一种办公室内使用的升降桌面，包括桌面盖板 1、伸缩挡帘 2 和两组支撑组件 3，桌面盖板 1 安装在两组支撑组件 3 上，两组支撑组件 3 底部平行排列，分别处于桌面盖板 1 下方的左右两侧。

[0011] 每组支撑组件 3 均包括基座 31、电机 32、减速器 33、丝杆 34、两根支撑杆 35 和扭

簧 36。基座 31 呈方管形，电机 32、减速器 33 和丝杆 34 安装在基座 31 内，基座 31 体积小。减速器 33 和丝杆 34 相连，电机 31 通过减速器 33 和丝杆 34 连接两根支撑杆 35 的下端，两根支撑杆 35 的中部通过连接件铰接，连接件可以是螺栓，并且两根支撑杆 35 还通过扭簧 36 连接，扭簧 36 的位置处于连接件的外侧，扭簧 36 上端固定在支撑杆 35 的上部，扭簧 36 下端固定在支撑杆 35 的下部，扭簧 36 是两个，连接件的两侧分别设置一个，使其均匀受力。支撑杆 35 的上端连接桌面盖板 1。减速器 33 和丝杆 34 配套使用，防止启动时启动速度过快影响升降的稳定性。因为是办公室使用，因此需要控制基座 31 和电机 32 的尺寸，而且需要控制电机的功率，防止噪音过大，因此采用了扭簧 36 的结 构，解决了电机功率过小扭力不足的问题。伸缩挡帘 2 处于桌面盖板 1 和基座 31 之间。

[0012] 两组支撑组件 3 之间设有支撑板 5，支撑板 5 两端分别与两组支撑组件 3 上的一根支撑杆 35 相连，支撑板 5 随支撑杆 35 的开合状态变换倾斜角度。当两组支撑组件 3 距离较远时，在升降时桌面盖板 1 容易发生晃动，支撑板 5 可以很好的解决上述问题，同时在上升到位后，支撑板 5 可以作为挡板使用，挡住正前方的视线，因为使用者的桌面上升后，其对面的同事的桌面高度可能还处于原有的状态，视线正好处于桌面盖板 1 与基座 31 之间，此时支撑板 5 可以挡住其视线，确保了一部分的隐私。

[0013] 伸缩挡帘 2 可以是布或丝制的柔软的卷帘，升降桌面处于闭合状态时自动收拢，升降桌面处于打开状态时自动打开，伸缩挡帘 2 打开后不仅造型美观，而且可以防止笔、纸等小物品落入升降桌面内，防止衣服从侧面不小心碰到支撑杆 35 等，尤其是可以挡住升降桌面四周一部分的视线，起到保护隐私的作用。

[0014] 使用时，本产品直接放置在现有的普通办公桌的桌面上，保证了原有办公桌面的完整性，无需改动与破坏原桌面，成本较之更替现有办公桌更为经济，便于推广。上述办公室内使用的升降桌面的优点是升降平稳性好，电机功率和体积小，承载力高，无需改动与破坏原有桌面，尤其适合办公室使用，办公室人员经常的使用不同高度的桌面，可以调节腿部、腰部、背部、颈部和肩部的状态，防止其长时间的处于一个角度和状态而产生职业病。

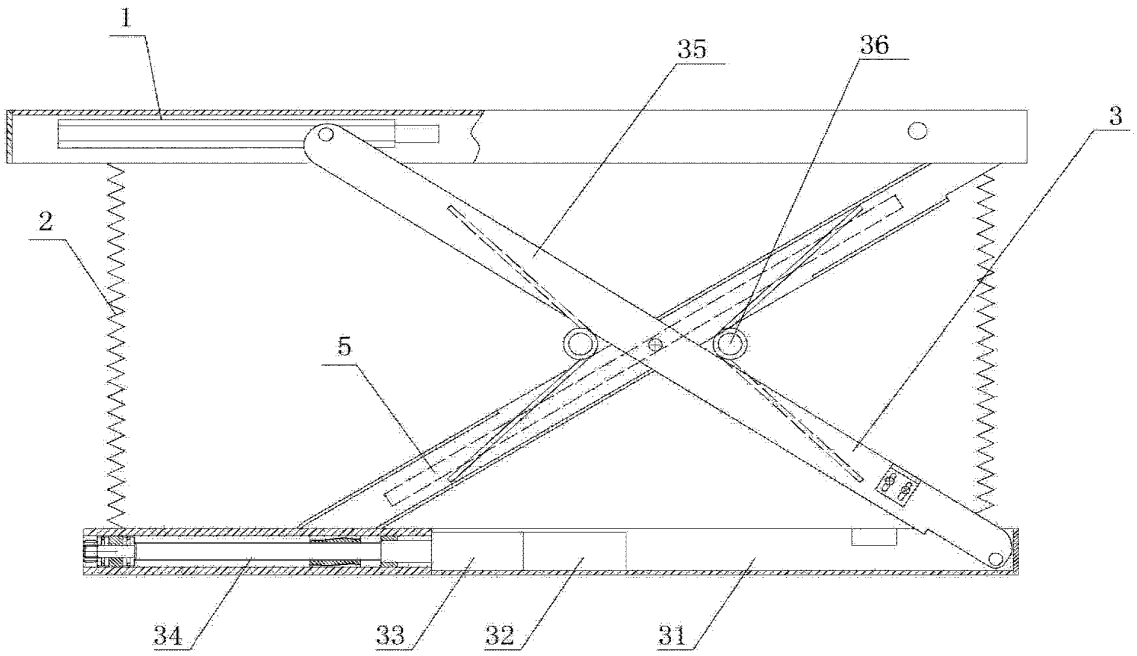


图 1

Patents

Table raising device for e.g. water sport, has lower and upper frames overlapped with respect to each other and articulated by two knuckles without axles permitting frames to pivot with respect to each other, and cord fixed on lower frame

Abstract

The device has a plate, and lower and upper frames (1, 2) overlapped with respect to each other. The two frames are articulated by two knuckles (3) without axles permitting the frames to pivot with respect to each other. The knuckles comprise two disks which are assembled by a squared section ring made of friction polymer, and a cord is fixed on the frame (1). One of the frames is fixed to the ground by two fixation plates (6) at its lower end and is in sliding connection with respect to the plate by its upper end.

Classifications

A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

FR2894794A1

France

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Other languages: French

Inventor: Christian Robert Roger Hoh

Worldwide applications

2005 FR

Application FR0512916A events

2005-12-20 Application filed by Christian Robert Roger Hoh

2005-12-20 Priority to FR0512916A

2007-06-22 Publication of FR2894794A1

Status Withdrawn

Info: Patent citations (3), Cited by (2), Legal events, Similar documents, Priority and Related Applications

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Claims (5)

Hide Dependent translated from French

claims 1) Device characterized by the fact that one can raise a table at any height, this device is constituted of a plate and 2 frames (1) and (2) imbrics run in ratite and articulated by 2 kneecaps without axes (3) allowing the 2 frames to rotate run relative to each other. 2) Device according to claim 1) characterized in that these 2 ball joints, have no axis and are each constituted by 2 disks with 2 half-hollow milling, the assembly of these two disks being made by a section ring square friction polymer, the two discs rotate run relative to each other. 3) Device according to claims 1) and 2) characterized in that a frame is fixed to the ground at its lower end and is slidably connected relative to the plate by its upper end, the second frame is slidably connected to the ground by its lower end and is fixed to the plate by its upper end, two wheels on each of the frames allowing the sliding of the parts not fixed. 4) Device according to claim 3) characterized by the fact that ('the lifting force is found halved by (' use of a pulley diverting 5) Device according to claim 4) characterized in that a cord allows positioning at any height of the table top, the cord being stopped by a fixed stop cleat on run frames. 2

Description

translated from French

The present invention relates to a device for raising a table a

several heights. the device according to the invention has several features for lifting a table. A cord through a pulley multiplying multiplier effort 2 allows at the same time a pull up the table to engage the lifting of the table. The table can thus be positioned from coffee table to high table with all possible intermediate positions. The lifting rope hangs in a jam cleat. A second safety cord 10 slides in a blocker to avoid a sudden descent. The accompanying drawings illustrate the invention, the plane 1 represents in section the device The plane 2 represents the top view, closed system, showing the 2 frames interlocking run in ratite Each frame being composed of four aluminum tubes of rectangular section, assembled by means of squares in aluminum foundry (planes 4 and 5) These squares by their design are reversible left right, two machining are necessary to accommodate a common axis to a roulette (8) or a mounting plate (8) With reference to these drawings the device comprises 2 frames (1) and (2) These 2 frames are connected by 2 ball joints (3) see details plan 3. These 2 ball joints, which make! The object of the invention does not have an axis and consist of each of two disks having two semi-hollow millings, the assembly of these two disks being made by a ring of square section made of friction polymer, with enough game so that both discs can rotate run in relation to each other. The frame is fixed on the ground by means of two plates (6) articulated at the end of the frame (1). The fixing under the table is done by two plates (6) articulated at the end of the frame (2). At the raising of the table (see plan 1), 30 I X of the mechanism is on the floor on two wheels fixed at the end of the frame (1) and under the table by two other wheels fixed at the end of the frame (2). To raise the table, a cord fixed on the frame (1) in the middle of the width of are located the plates (6) joins the deflection pulley (4) located on the frame (2) and then returns to the point of attachment passing in a camming cleat (9). An unrepresented safety cord doubles the safety of the jam cleat, fixing itself in a jam next to the jam cleat.

Patent Citations (3)

Publication number	Priority date	Publication date	Assignee	Title

FR2448572A1 *	1978-12-26	1980-07-25	Kobayashi Itaru	GUITARIST FOOTREST
US4585212A *	1984-12-07	1986-04-29	International Business Machines Corporation	Lift device of the scissor-jack type
DE10024075A1 *	2000-05-17	2001-11-29	Gotthard Heide	Lifting device for shear legs has traction member which can be drawn in by drive wheel of drive, round which traction member runs
Family To Family Citations				

* Cited by examiner, † Cited by third party

Cited By (2)

Publication number	Priority date	Publication date	Assignee	Title
US10244861B1	2015-01-24	2019-04-02	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
US10893748B1	2017-07-08	2021-01-19	Office Kick, Inc.	Height adjustable desktop
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
US20090078921A1	2009-03-26	Cable puller with pivot adjuster for converting between upward and downward cable pulling
US6004064A	1999-12-21	Retrofittable quick release mechanism
FR2894794A1	2007-06-22	Table raising device for e.g. water sport, has lower and upper frames overlapped with respect to each other and articulated by two knuckles without axles permitting frames to pivot with respect to each other, and cord fixed on lower frame
FR2767778A1	1999-03-05	Door system, especially for passenger aircraft
US10421653B2	2019-09-24	Portable manhole cover moving assembly and method for moving a manhole cover
EP1728962A3	2009-04-15	Fastening of a closure member of a roller shutter and roller shutter with such a fastening
CA2070786A1	1991-06-08	Trailer with combined towing and centering means
EP0856621B1	2001-10-10	Apparatus for positioning ceiling panels
FR2606361A1	1988-05-13	CURSOR SYSTEM WITH REMOVABLE PULLEY FOR SAILBOAT
EP2629993A1	2013-08-28	Load carrier
EP1883600A1	2008-02-06	Push bar for pushing a stuck vehicle
DE202008006887U1	2009-08-20	Heavy vehicle axle with integrated brake
CA2825614A1	2014-04-04	Towing system
US4268058A	1981-05-19	Coupler for snowplow
FR2464845A1	1981-03-20	VEHICLE COMPONENT, ESPECIALLY FOR COACHES
FR2607460A1	1988-06-03	BUS FORMED IN THE FORM OF AN ARTICULATED TRAIN WITH A TRACTOR VEHICLE
DE522459C	1931-04-09	Lever lock for lids, especially milk cans, blood cans and the like. like
EP0158833A1	1985-10-23	Device for retrieving balls or other round articles
DE2311111C		
EP1805008B1	2006-12-20	Refuse collecting container
FR2873093A1	2006-01-20	Direction and incidence controlling device for power kite, has outhaul lines passing in pulleys and pulled towards inhaul lines, where outhaul lines are fixed to inhaul lines at height equal to/greater than height at which bar is fixed
EP3230532B1	2019-07-03	Assembly for roadway manhole comprising a frame, a cover and a kit allowing the cover to be hingedly mounted on the frame
FR2764573A1	1998-12-18	TRANSITION HITCH FOR RAIL VEHICLES
FR2696147A1	1994-04-01	Articulation device at the bottom of a side panel of a vehicle tipper.
US274749A	1883-03-27	Car-coupling

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
FR0512916A	2005-12-20	2005-12-20	Table raising device for e.g. water sport, has lower and upper frames overlapped with respect to each other and articulated by two knuckles without axles permitting frames to pivot with respect to each other, and cord fixed on lower frame

Applications Claiming Priority (1)

Application	Filing date	Title
FR0512916A	2005-12-20	Table raising device for e.g. water sport, has lower and upper frames overlapped with respect to each other and articulated by two knuckles without axles permitting frames to pivot with respect to each other, and cord fixed on lower frame

Legal Events

Date	Code	Title	Description
2010-03-26	CA	Change of address	
2012-09-07	ST	Notification of lapse	**Effective date:** 20120831

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
water		title	1	0.000
polymer		claims,abstract,description	3	0.000
Joints		claims,description	3	0.000
Patella		claims	1	0.000
milling		claims	1	0.000

Show all concepts from the description section

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(19) RÉPUBLIQUE FRANÇAISE

INSTITUT NATIONAL
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PARIS

(11) **N° de publication :** **2 894 794**

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(21) **N° d'enregistrement national :** **05 12916**

(51) Int Cl[8] : **A 47 B 9/16** (2006.01)

(12) DEMANDE DE BREVET D'INVENTION A1

(22) **Date de dépôt :** 20.12.05.

(30) **Priorité :**

(43) **Date de mise à la disposition du public de la demande :** 22.06.07 Bulletin 07/25.

(56) **Liste des documents cités dans le rapport de recherche préliminaire :** *Se reporter à la fin du présent fascicule*

(60) **Références à d'autres documents nationaux apparentés :**

(71) **Demandeur(s) :** *HOH CHRISTIAN ROBERT ROGER* — FR.

(72) **Inventeur(s) :** HOH CHRISTIAN ROBERT ROGER.

(73) **Titulaire(s) :**

(74) **Mandataire(s) :** HOH CHRISTIAN.

(54) TABLE A PLUSIEURS HAUTEURS VARIABLES.

(57) Dispositif pour élever une table à plusieurs hauteurs (Fig 1).

Le système est constitué d'un plateau et de 2 cadres (1) et (2) articulés par 2 rotules sans axes (3).

Le cadre intérieur (1) est fixé sous la table par 2 pattes de fixation (6) à l'autre extrémité se trouvent 2 roulettes de glissement (8).

Le cadre extérieur (2) est fixé au sol par 2 pattes de fixation (6) à l'autre extrémité se trouvent les 2 roulettes de glissement (8).

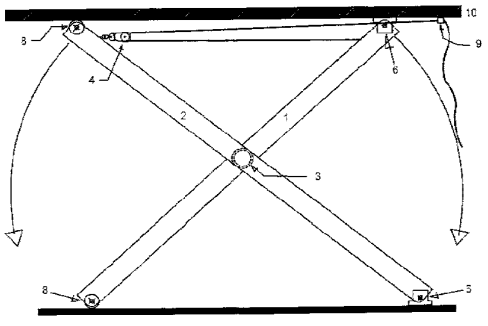
Une poulie de renvoi (4) est fixée au milieu de la largeur du coté des roulettes.

Une traction sur la corde permet d'élever la table (6), la corde est ensuite bloquée dans un taquet coinceur (9) après avoir réglé la table à n'importe quelle hauteur voulue.

Une cordelette fixée sur la cadre intérieur (1) est renvoyée par une poulie(4) fixée sur le cadre (2) et se bloque sous la table (10) par un taquet coinceur (9).

En référence au plan (Fig 3) les 2 rotules n'ont pas d'axes.

Ce dispositif est destiné au nautisme, au plein air, à tout milieu humide.



FR 2 894 794 - A1

1

La présente invention concerne un dispositif pour élever une table à plusieurs hauteurs.
le dispositif selon l'invention comporte plusieurs caractéristiques permettant le levage d'une table. Une cordelette par l'intermédiaire d'une poulie de renvoi démultipliant l'effort par 2 permet en même temps qu'une traction vers le haut de la table d'enclencher le levage de la table.
La table peut ainsi se positionner de table basse à table haute avec toutes positions intermédiaires possibles.
La cordelette de levage se bloque dans un taquet coinceur. Une deuxième cordelette de sécurité coulisse dans un bloqueur pour éviter une descente brutale.
Les dessins annexés illustrent l'invention, le plan 1 représente en coupe le dispositif. Le plan 2 représente la vue de dessus, système fermé, montrant les 2 cadres s'imbriquant l'un dans l'autre. Chaque cadre étant composé de quatre tubes en aluminium de section rectangulaire, assemblés par l'intermédiaire d'équerres en fonderie d'aluminium (plans 4 et 5). Ces équerres de part leur conception sont réversible gauche droite, deux usinages sont necessaires pour loger un axe commun à une roulette (8) ou une platine de fixation (6)
En référence à ces dessins le dispositif comporte 2 cadres (1) et (2). Ces 2 cadres sont reliés par 2 rotules (3) voir détails plan 3. Ces 2 rotules, qui font l'objet de l'invention ne comportent pas d'axe et sont constituées de chacune de 2 disques comportant 2 fraisages en demi-creux, l'assemblage de ces deux disques se faisant par un anneau de section carrée en polymère de friction, avec suffisament de jeu pour que les deux disques puissent pivoter l'un par rapport à l'autre.
Le cadre est fixé sur le sol par l'intermédiaire de deux platines (6) articulées en bout du cadre (1). La fixation sous la table se fait par deux platines (6) articulées en bout du cadre (2). Lors de l'élévation de la table (voir plan 1), l' »X » du mécanisme porte sur le sol sur deux roulettes fixées en bout du cadre (1) et sous la table par deux autres roulettes fixées en bout du cadre (2).
Pour élever la table , une cordelette fixée sur le cadre (1) au milieu de la largeur où se situent les platines (6) rejoint la poulie de renvoi (4) située sur le cadre (2) puis revient vers le point d'attache, passant dans un taquet coinceur (9). Une cordelette de sécurité non représentée double la sécurité du taquet coinceur, se fixant dans un coinceur à coté du taquet coinceur.

2

Revendication

1) Dispositif caractérisé par le fait que l'on peut élever une table à n'importe quelle hauteur, ce dispositif est constitué d'un plateau et de 2 cadres (1) et (2) imbriqués l'un dans l'autre et articulés par 2 rotules sans axes (3) permettant aux 2 cadres de pivoter l'un par rapport à l'autre.

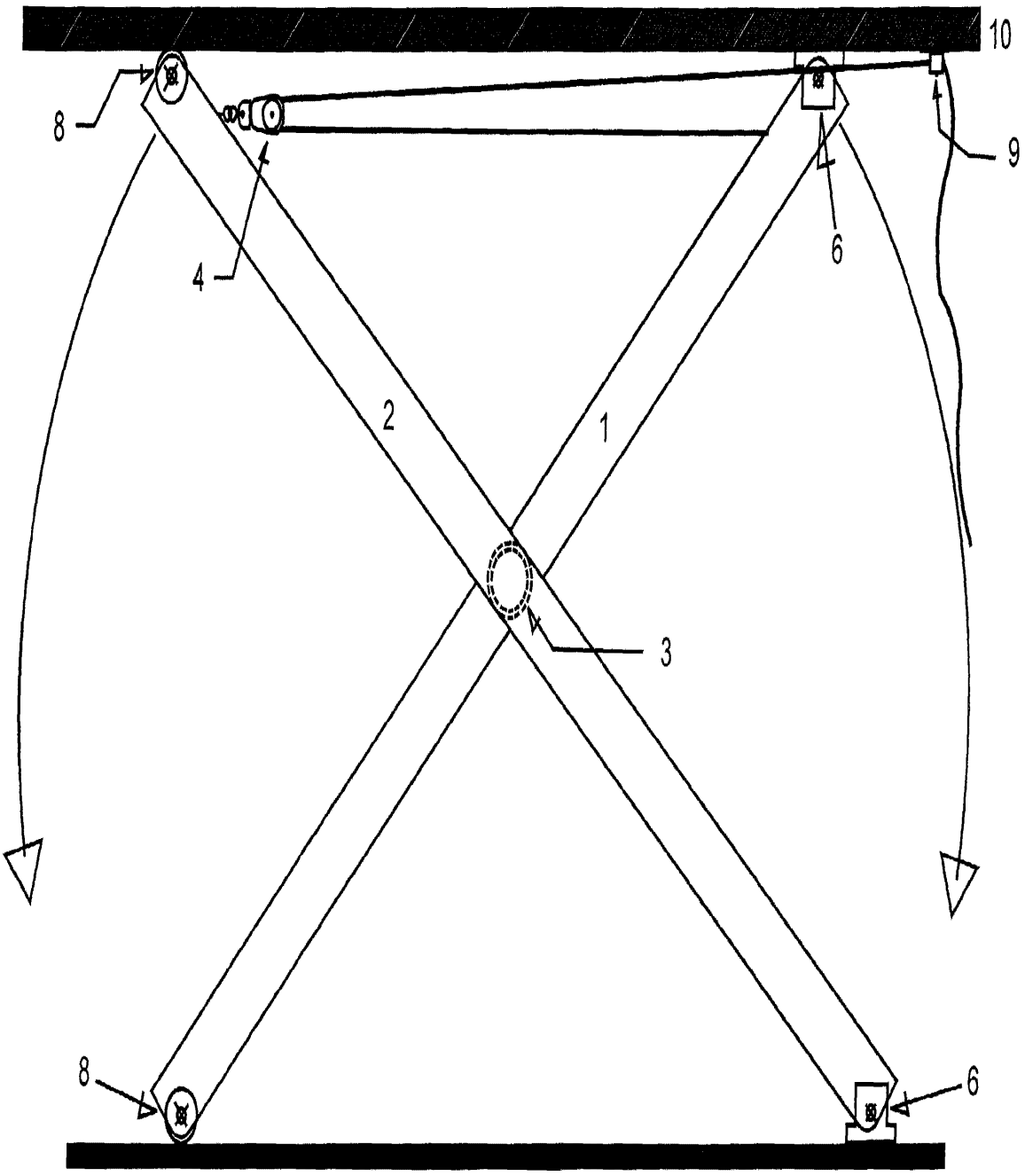
2) Dispositif selon la revendication 1) caractérisé en ce que ces 2 rotules, ne comportent pas d'axe et sont constituées chacune de 2 disques avec 2 fraisages en demi creux, l'assemblage de ces deux disques se faisant par une bague de section carrée en polymère de friction, les deux disques pivotent l'un par rapport à l'autre.

3) Dispositif selon les revendications 1) et 2) caractérisé en ce que un cadre est fixé au sol par son extrémité inférieure et est en liaison glissière par rapport au plateau par son extrémité supérieure, le second cadre est en liaison glissière par rapport au sol par son extrémité inférieure et est fixé au plateau par son extrémité supérieure, deux roulettes sur chacun des cadres permettant le glissement des parties non fixées.

4) Dispositif selon la revendication 3) caractérisée par le fait que l'effort de levage se trouve diminué de moitié par l'utilisation d'une poulie de renvoi

5) Dispositif selon la revendication 4) caractérisée en ce que une cordelette permet le positionnement à n'importe quelle hauteur du plateau de la table, la cordelette étant arrêtée par un taquet coinceur fixé sur l'un des cadres.

Fig 1 | 1/5



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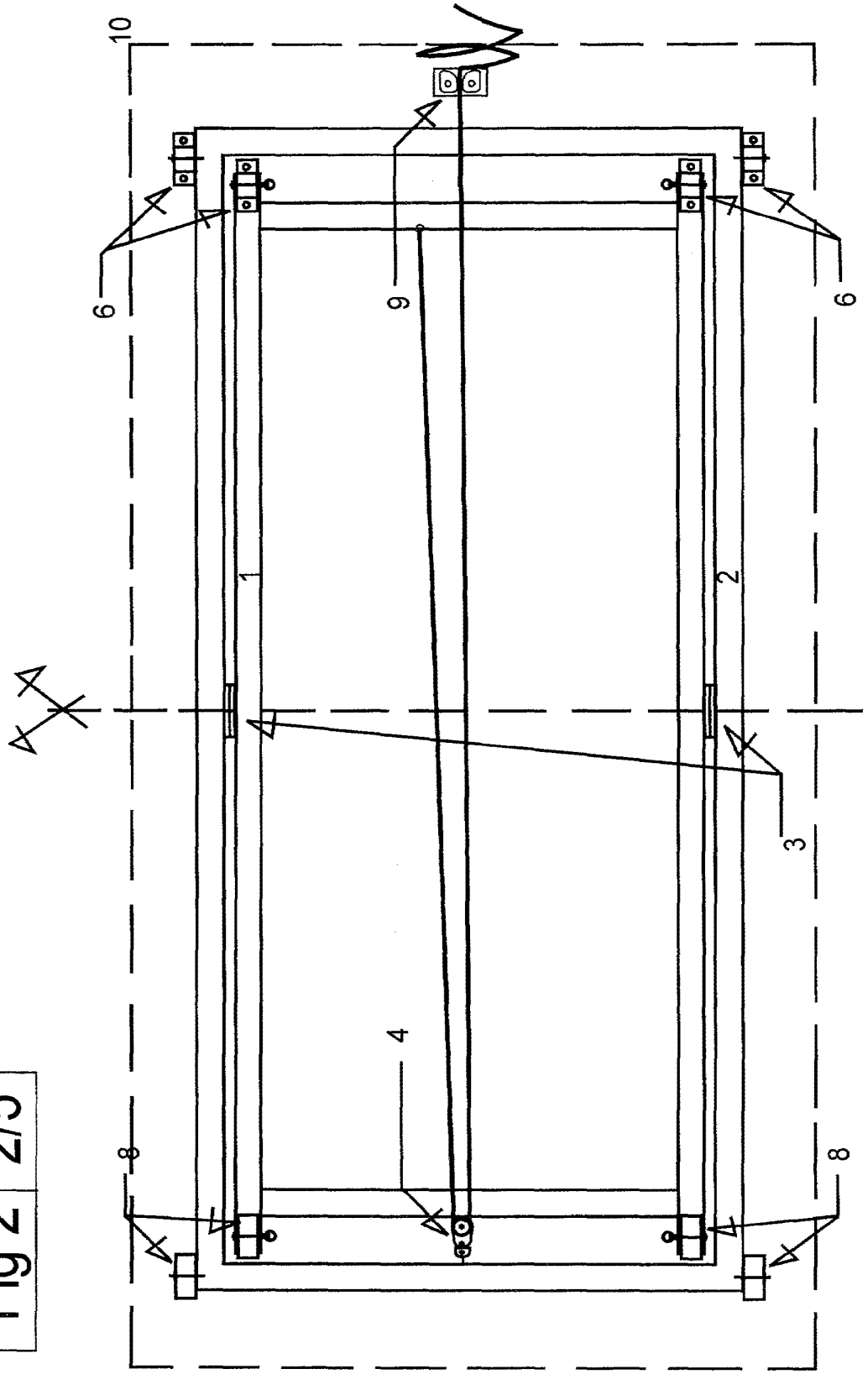


Fig 2 2/5

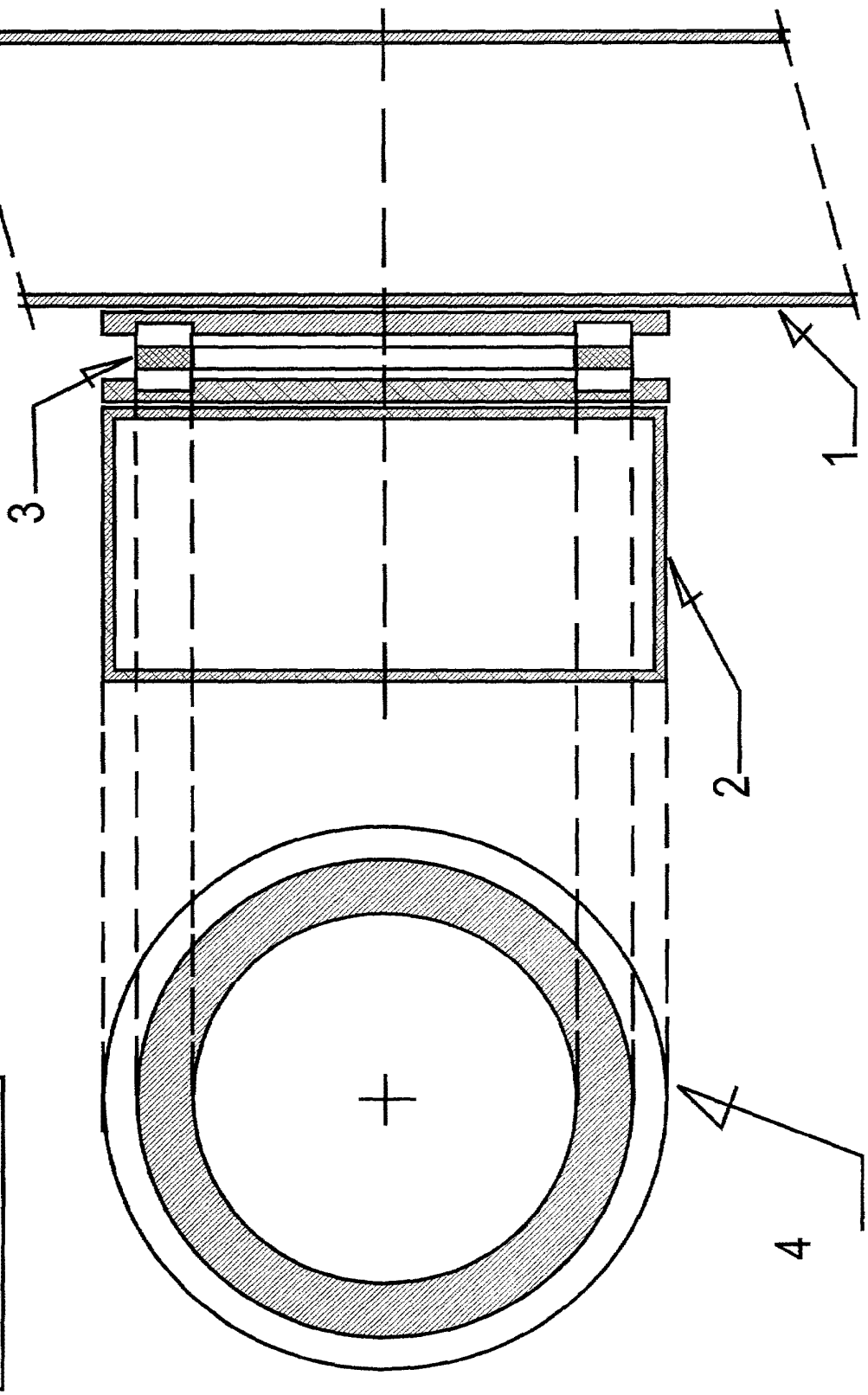
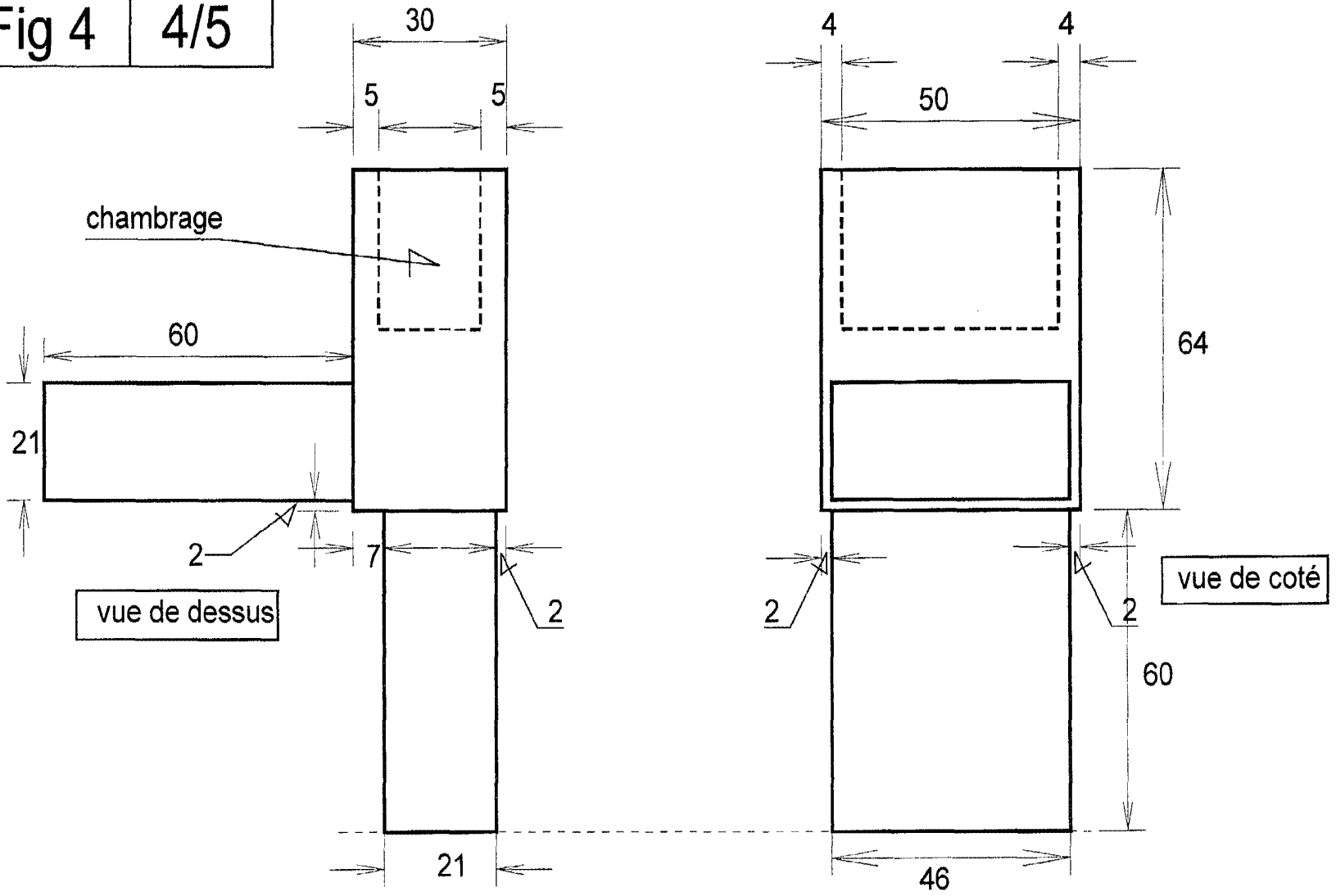


Fig 3 | 3/5

Fig 4 | 4/5



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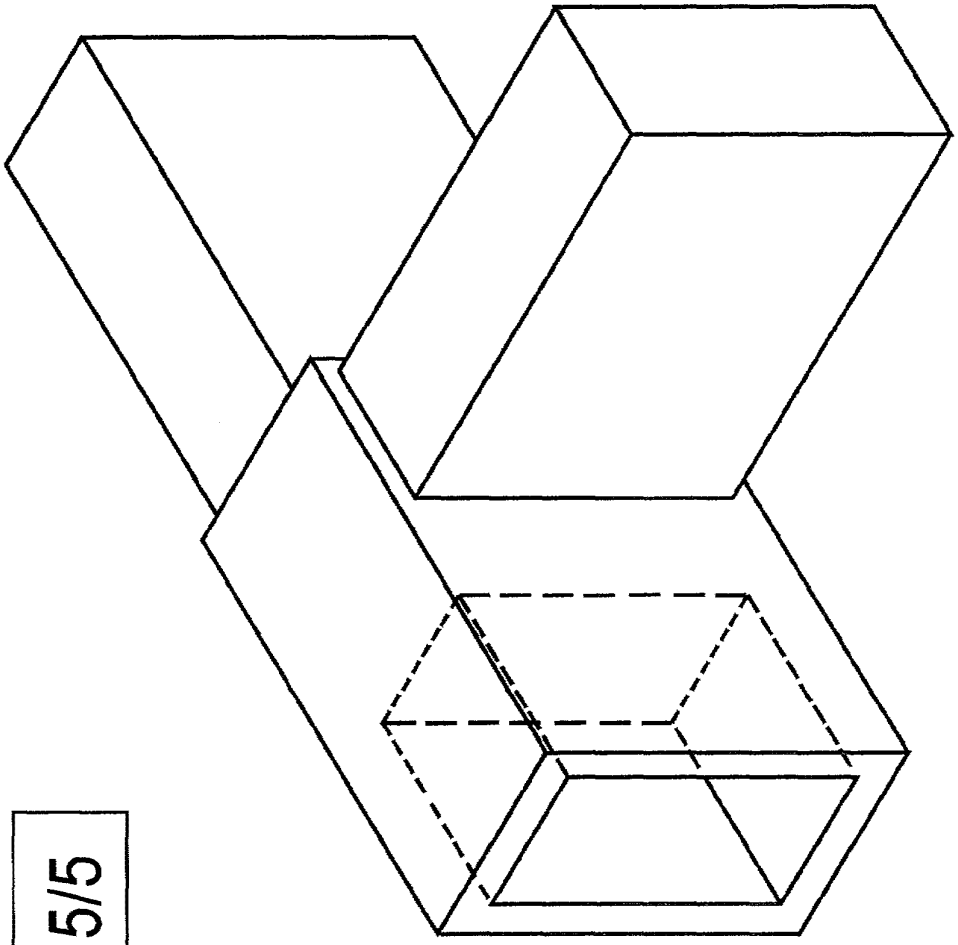


Fig 5 5/5

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RAPPORT DE RECHERCHE PRÉLIMINAIRE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

N° d'enregistrement national

FA 679196
FR 0512916

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
X	FR 2 445 572 A (KOBAYASHI ITARU) 25 juillet 1980 (1980-07-25)	1	A47B9/16
A	* page 2, ligne 20 - page 4, ligne 33; figures 1-6 *	2-5	

X	US 4 585 212 A (YANKER ET AL) 29 avril 1986 (1986-04-29)	1	
A	* colonne 2, ligne 52 - colonne 5, ligne 19; figures 1,2 *	2-5	

X	DE 100 24 075 A1 (HEIDE, GOTTHARD) 29 novembre 2001 (2001-11-29)	1	
A	* alinéa [0019] - alinéa [0025]; figure *	2-5	

			DOMAINES TECHNIQUES RECHERCHÉS (IPC)
			A47B

Date d'achèvement de la recherche: 8 septembre 2006

Examinateur: Klintebäck, Daniel

CATÉGORIE DES DOCUMENTS CITÉS

X : particulièrement pertinent à lui seul
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A : arrière-plan technologique
O : divulgation non-écrite
P : document intercalaire

T : théorie ou principe à la base de l'invention
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D : cité dans la demande
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2

EPO FORM 1503 12.99 (P04C14)

ANNEXE AU RAPPORT DE RECHERCHE PRÉLIMINAIRE RELATIF A LA DEMANDE DE BREVET FRANÇAIS NO. FR 0512916 FA 679196

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche préliminaire visé ci-dessus.
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Document brevet cité au rapport de recherche		Date de publication	Membre(s) de la famille de brevet(s)		Date de publication
FR 2445572	A	25-07-1980	JP	1300773 C	31-01-1986
			JP	55086410 A	30-06-1980
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EPO FORM P0465

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82

Patents 201657970

Magic pet grooming table

Abstract

The utility model discloses a magic pet grooming table which is characterized in that the table comprises a table top, an air pressure rod device, a sliding rail device and a plurality of table legs, wherein the air pressure rod device is arranged at the bottom of the table top and comprises an air pressure rod body and a control handle; the control handle is used for adjusting the length of the air pressure rod body and is fixedly arranged at the bottom surface edge of the table top; the sliding rail device is arranged at the bottom of the table top and comprises a first sliding rail rack, a second sliding rail rack and an X-shaped connecting rod; the first sliding rail rack is fixedly arranged at the bottom surface of the table top; two ends at the same side of the X-shaped connecting rod are respectively pivoted on the first sliding rail rack and the second sliding rail rack; the other two ends are respectively pivoted on the first sliding rail rack and the second sliding rail rack and slide on the first sliding rail rack and the second sliding rail rack; furthermore, the X-shaped connecting rod is connected with the air pressure rod body; and the table legs are fixedly arranged on the second sliding rail rack. In the utility model, the height of the table top is adjusted through the linkage of the air pressure rod device and the sliding rail device, and the height of the table top can be easily adjusted by only pushing the control handle of the air pressure rod device by the user, thereby being time and labor saving.

CN201657970U

China

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Other languages: Chinese

Inventor: [redacted]

Worldwide applications

2010 CN

Application CN2010201161652U events

2010-02-10	Application filed by [redacted]
2010-02-10	Priority to CN2010201161652U
2010-12-01	Application granted
2010-12-01	Publication of CN201657970U
2020-02-10	Anticipated expiration
Status	Expired - Fee Related

Info: Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (2)

Hide Dependent

1. magic pet grooming table is characterized in that comprising:

One desktop;

One air pressure rod device is located at the bottom of this desktop, comprises an air pressure rod body and a control handle, and this control handle is in order to adjusting the length of this air pressure rod body, and this control handle is fixedly arranged on the bottom edge of this desktop;

One railroad, be located at the bottom of this desktop, comprise first sliding rail frame, second sliding rail frame and an X-shaped connecting rod, this first sliding rail frame is fixedly arranged on the bottom surface of this desktop, the wherein homonymy two ends of this X-shaped connecting rod are hubbed at respectively on this first sliding rail frame and this second sliding rail frame, two ends then are hubbed on this first sliding rail frame and this second sliding rail frame respectively and are able to and slide on this first sliding rail frame and this second sliding rail frame in addition, and again, this X-shaped connecting rod is linked to this air pressure rod body; And most table pin, be fixedly arranged on this second sliding rail frame.

2. magic pet grooming table as claimed in claim 1 is characterized in that the gas of being filled in this air pressure rod body is high pressure nitrogen.

Description

Magic pet grooming table

Technical field

The utility model relates to a kind of pet supplies, refers to a kind of magic pet grooming table of adjusting height of table top especially.

Background technology

People often raise various pet and increase the joy of life, by the company of pet, also can give birth to a kind of spiritual consolation to raising main product, because the main moulding of more and more paying attention to pet is raised in the lifting of material life, therefore, the general mood of pet grooming is in vogue gradually; So, the build size of various pet is all slightly variant, when the beautician when pet is carried out shape-designing, need pet is placed on the height adjustable desk, and the position of pruning according to desire and desktop is adjusted to suitable height, could more efficiently carry out the pet grooming operation; The pet grooming table of general traditional habit formula, mainly formed by desktop and base, the outer bar that links a hollow on the base, the desktop bottom then links the interior bar of a hollow, the external diameter of bar is slightly less than the internal diameter of this outer bar in being somebody's turn to do, and bar in this is inserted in by the middle vacancy of this outer bar, and the bar upper end is provided with a fixed knob outside this, when the user is adjusted to desktop suitable height and screws this fixed knob, the fixing height of desktop.

The pet grooming table of above-mentioned traditional habit formula, the user must bend over according to actual operating position or squat down voluntarily, in manual mode desktop is adjusted to suitable height, screw fixed knob under the desktop again with the fixing height of desktop, if the build of pet is big and desire is pruned most positions, the adjustment height of table top that the pet grooming teacher must be repeatedly then, very inconvenience on using, and between desktop and the base, only reach and be somebody's turn to do interior binding that bar supports by this outer bar, desktop edge when carrying out pet grooming, will cause the puzzlement of desktop inclination shake more built on the sand.

The utility model content

The purpose of this utility model provides a kind of magic pet grooming table, must adjust the not convenient of the height of table top of habit formula pet grooming table and the manual mode of bending over the manual mode of bending over to solve the user.

The purpose of this utility model is achieved in that a kind of magic pet grooming table, it is characterized in that comprising: a desktop; One air pressure rod device is arranged at the bottom of this desktop, comprises an air pressure rod body and a control handle, and this control handle is in order to adjusting the length of this air pressure rod body, and this control handle is fixedly arranged on the bottom edge of this desktop; One railroad, be located at the bottom of this desktop, comprise first sliding rail frame, second sliding rail frame and an X-shaped connecting rod, this first sliding rail frame is fixedly arranged on the bottom surface of this desktop, the wherein homonymy two ends of this X-shaped connecting rod are hubbed at respectively on this first sliding rail frame and this second sliding rail frame, two ends then are hubbed on this first sliding rail frame and this second sliding rail frame respectively and are able to and slide on this first sliding rail frame and this second sliding rail frame in addition, and again, this X-shaped connecting rod is linked to this air pressure rod body; And most table pin, be fixedly arranged on this second sliding rail frame.

Above-described magic pet grooming table, when the user stirs this control handle, this air pressure rod body is promptly as the same gas spring, the power of desktop being executed by the user, this X-shaped connecting rod is slided on this first sliding rail frame and this second sliding rail frame, drive the length of adjusting this air pressure rod body, and then regulate height of table top, when the user decontrols this control handle, can fix the length and the height of table top of this air pressure rod body.

The utility model has the advantages that, utilize the interlock of this air pressure rod device and this railroad to adjust this height of table top, the user need only stir this control handle, can adjust height of table top easily, save time and laborsaving, must adjust height in the manual mode of bending over compared to known pet grooming table, the utility model has preferable convenience and practicality.

Description of drawings

Fig. 1 is the stereoscopic-state figure of the utility model desktop when higher.

Fig. 2 is a STRUCTURE DECOMPOSITION schematic diagram of the present utility model.

Fig. 3 is the stereoscopic-state figure of the utility model desktop when low.

Fig. 4 is an enforcement illustration of the present utility model ().

Fig. 5 is that the utility model is implemented illustration (two).

The diagrammatical symbol explanation

Desktop 1

Air pressure rod body 21

Control handle 22

First sliding rail frame 31

Second sliding rail frame 32

X-shaped connecting rod 33

Stiff end 34

Slide rail road 35

Table pin 4

The specific embodiment

Below sincerely with a specific embodiment, and assistant elaborates with graphic, understands so that the juror can have further for technical characterictic of the present utility model.

Please refer to Fig. 1 to Fig. 5, be a kind of magic pet grooming table, it is characterized in that comprising: a desktop 1, in order to carrying pet and relative article; One air pressure rod device, be located at the bottom of this desktop 1, comprise an air pressure rod body 21 and a control handle 22, this air pressure rod body 21 is to be formed by two steel pipe fits, inside is high pressure nitrogen abrim, just as a gas type spring, and nitrogen has more stable physical property with respect to air, more be not subjected to the influence of rising-heat contracting-cold, also there are not moisture contained in the air and impurity, have preferable security, this control handle 22 is in order to adjust the length of this air pressure rod body 21, controls the unlatching of these air pressure rod body 21 inner control valves and closes, when control valve is closed, this air pressure rod body 21 promptly can't start, and this control handle 22 is fixedly arranged on the bottom edge of this desktop, so that the user stirs;

One railroad, be located at the bottom of this desktop 1, comprise first sliding rail frame 31, second sliding rail frame 32 and an X-shaped connecting rod 33, this first sliding rail frame 31 and this second sliding rail frame 32 all are provided with stiff end 34 and slide rail road 35, this first sliding rail frame 31 is fixedly arranged on the bottom surface of this desktop 1, this X-shaped connecting rod 33 is formed the X-shaped shape by two supports intersection pivot, the wherein homonymy two ends of this X-shaped connecting rod 33 are hubbed at respectively on the stiff end 34 of this first slide rail 31 and this second sliding rail frame 32, two ends then are hubbed at respectively on the slide rail road 35 of this first sliding rail frame 31 and this second sliding rail frame 32 in addition, make it be able on this slide rail road 35, slide, again, this X-shaped connecting rod 33 is linked to this air pressure rod body 21;

Most table pin 4 are fixedly arranged on this second sliding rail frame 32, form firm table body structure.

By above-described magic pet grooming table, when pet places on this desktop 1, the user only must spread the edge that both hands are supporting this desktop 1 out, and stir this control handle 22, this air pressure rod body 21 is promptly spring-like as same gas type, can be according to stressed and variation that produce length, at this moment, the user adds a little strength that desktop 1 is executed by the weight of itself, and this X-shaped connecting rod 33 is slided on this slide rail road 35, drive the length of adjusting this air pressure rod body 21, and then regulating the height of this desktop 1, person to be used decontrols this control handle 22 after this desktop 1 is adjusted to suitable height, make this air pressure rod body 21 stop start, this moment, this first sliding rail frame 31 and this second sliding rail frame 32 can't slide, and can fix the height of this desktop 1, again, when the user stirs this control handle 22 and during not to this desktop 1 application of force, this air pressure rod body 21 automatically returns to the length of uncompressed just as no stressed spring-like, and this desktop 1 also rises to the highest height.

The foregoing description only is the principle and the effect thereof of this creation of explanation, and unrestricted creation.Therefore practise in the personage of this technology and the foregoing description is made amendment and change, still do not take off the spirit of this creation.This creation has possessed usability on the industry, novelty and progressive, and meets novel patent requirement, and application is mentioned in the whence in accordance with the law.

Similar Documents

Publication	Publication Date	Title
CN208766191U	2019-04-19	A kind of Biochemical Analyzer pedestal
CN201657970U	2010-12-01	Magic pet grooming table
CN202158321U	2012-03-07	Novel portable moving workbench
CN202211411U	2012-05-09	Novel stool
CN107348870A	2017-11-17	A kind of secondary same table
CN203853949U	2013-12-25	Pneumatic lifting desk
CN201836617U	2011-05-18	Foldable on-bed notebook computer tray
CN203074866U	2013-07-24	Leg support for lower extremity surgery
CN206079773U	2017-04-12	Liftable rotatory manual regulation table chair
CN2779981Y	2006-05-17	Manager chair
CN209370123U	2019-09-10	It blows height-adjustable vertical-column-type fan
CN2851044Y	2006-12-27	Foldable train desk
CN2783832Y	2006-05-31	Convenient desk
CN206560876U	2017-10-17	A kind of hand pounding medicine mortar
CN1582819A	2005-02-23	Pneumatic regulating bed
CN102269170A	2011-12-07	Foot-controlled electric fan for people with disabled hands
CN205086713U	2016-03-16	Locomotive, Vehicle operation seat elevation mechanism
CN201192186Y	2009-02-11	Bedside book support
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CN210611418U	2020-05-26	Multifunctional notebook support table with height-adjustable desktop
CN202184468U	2012-04-11	Folding bed
CN208403612U	2019-01-22	A kind of secondary lifting study table
CN206145380U	2017-05-03	Folding over -and -under type computer bracket

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN2010201161652U	2010-02-10	2010-02-10	Magic pet grooming table

Applications Claiming Priority (1)

Application	Filing date	Title
CN201020116165.2U	2010-02-10	Magic pet grooming table

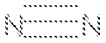
Legal Events

Date	Code	Title	Description
2010-12-01	C14	Grant of patent or utility model	
2010-12-01	GR01	Patent grant	
2013-04-03	C17	Cessation of patent right	
2013-04-03	CF01	Termination of patent right due to non-payment of annual fee	**Granted publication date**: 20101201 **Termination date**: 20120210

Concepts

machine-extracted

Download Filter table

Name	Image	Sections	Count	Query match
grooming		title,claims,abstract,description	19	0.000
nitrogen		claims,description	5	0.000
gas		claims,description	4	0.000
nitrogen		claims,description	3	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 201657970 U
(45)授权公告日 2010.12.01

(21)申请号 201020116165.2

(22)申请日 2010.02.10

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(51)Int.Cl.
A47B 9/16(2006.01)
A47B 37/00(2006.01)

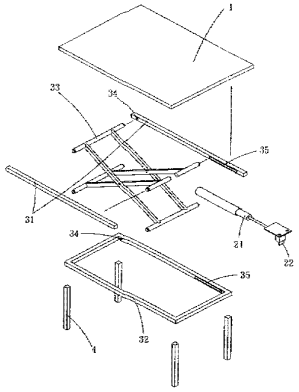
权利要求书 1 页 说明书 3 页 附图 5 页

(54)实用新型名称

魔术宠物美容桌

(57)摘要

一种魔术宠物美容桌，其特征在于包括一桌面；一气压棒装置，设于该桌面的底部，包含一气压棒本体及一控制柄，该控制柄用以调整该气压棒本体的长度，且该控制柄固设于该桌面的底面边缘；一滑轨装置，设于该桌面的底部，包含第一滑轨架、第二滑轨架及一X形连杆，该第一滑轨架固设于该桌面的底面，该X形连杆的其中同侧两端分别枢设于该第一滑轨架及该第二滑轨架上，另两端则分别枢设于该第一滑轨架及该第二滑轨架上并得以在该第一滑轨架及该第二滑轨架上滑动，又，该X形连杆连结至该气压棒本体；以及多数个桌脚，固设于该第二滑轨架。本创作藉由该气压棒装置及该滑轨装置的连动来调整该桌面高度，使用者只须拨动该气压棒装置的控制柄，即可轻易的调整该桌面高度，既省时又省力。



CN 201657970 U

1. 一种魔术宠物美容桌，其特征在于包括：

一桌面；

一气压棒装置，设于该桌面的底部，包含一气压棒本体及一控制柄，该控制柄用以调整该气压棒本体的长度，且该控制柄固设于该桌面的底面边缘；

一滑轨装置，设于该桌面的底部，包含第一滑轨架、第二滑轨架及一 X 形连杆，该第一滑轨架固设于该桌面的底面，该 X 形连杆的其中同侧两端分别枢设于该第一滑轨架及该第二滑轨架上，另两端则分别枢设于该第一滑轨架及该第二滑轨架上并得以在该第一滑轨架及该第二滑轨架上滑动，又，该 X 形连杆连结至该气压棒本体；以及多数个桌脚，固设于该第二滑轨架。

2. 如权利要求 1 所述的魔术宠物美容桌，其特征在于该气压棒本体内所填充的气体为高压氮气。

魔术宠物美容桌

技术领域

[0001] 本实用新型涉及一种宠物用品，尤指一种可调整桌面高度的魔术宠物美容桌。

背景技术

[0002] 人们经常饲养各式宠物来增添生活乐趣，藉由宠物的陪伴，亦能对饲主产生一种精神上的慰藉，由于物质生活的提升，饲主越来越重视宠物的造型，因此，宠物美容的风气逐渐盛行；然，各式宠物的体型大小皆略有差异，当美容师在对宠物进行造型设计的时候，需将宠物置于可调整高度的桌子上，并依照欲修剪的部位而将桌面调整至合适的高度，才能较有效率的进行宠物美容作业；一般传统习式的宠物美容桌，主要是由桌面及底座所组成，底座上连结一中空的外杆，桌面底部则连结一中空的内杆，该内杆的外径略小于该外杆的内径，将该内杆由该外杆的中空处套入，并于该外杆上端设置一固定旋钮，当使用者将桌面调整至适当的高度且旋紧该固定旋钮，即可固定桌面的高度。

[0003] 上述传统习式的宠物美容桌，使用者须依实际使用情况而自行弯腰或下蹲，以手动的方式将桌面调整至合适的高度，再旋紧桌面下的固定旋钮以固定桌面的高度，若宠物的体型较大且欲修剪多数个部位，则宠物美容师须反复的调整桌面高度，于使用上甚为不便，且桌面与底座之间，仅由该外杆及该内杆所支撑连结，桌面边缘处较不稳固，在进行宠物美容的时候，将造成桌面倾斜抖动的困扰。

实用新型内容

[0004] 本实用新型的目的是提供一种魔术宠物美容桌，以解决使用者须以弯腰手动方式来调整习式宠物美容桌的桌面高度以及弯腰手动方式的不便利。

[0005] 本实用新型的目的是这样实现的，一种魔术宠物美容桌，其特征在于包括：一桌面；一气压棒装置，设置于该桌面的底部，包含一气压棒本体及一控制柄，该控制柄是用以调整该气压棒本体的长度，且该控制柄固设于该桌面的底面边缘；一滑轨装置，设于该桌面的底部，包含第一滑轨架、第二滑轨架及一 X 形连杆，该第一滑轨架固设于该桌面的底面，该 X 形连杆的其中同侧两端分别枢设于该第一滑轨架及该第二滑轨架上，另两端则分别枢设于该第一滑轨架及该第二滑轨架上并得以在该第一滑轨架及该第二滑轨架上滑动，又，该 X 形连杆连结至该气压棒本体；以及多数个桌脚，固设于该第二滑轨架。

[0006] 以上所述的魔术宠物美容桌，当使用者拨动该控制柄时，该气压棒本体即如同一气体弹簧般，藉由使用者对桌面所施之力，使该 X 形连杆于该第一滑轨架及该第二滑轨架上滑动，带动调整该气压棒本体的长度，进而调节桌面高度，当使用者放开该控制柄，即可固定该气压棒本体的长度及桌面高度。

[0007] 本实用新型的优点是，利用该气压棒装置及该滑轨装置的连动来调整该桌面高度，使用者只须拨动该控制柄，即可轻易调整桌面高度，省时又省力，相较于习知宠物美容桌须以弯腰手动的方式来调整高度，本实用新型具有较佳的便利性及实用性。

附图说明

[0008] 图 1 是本实用新型桌面较高时的立体状态图。

[0009] 图 2 是本实用新型的结构分解示意图。

[0010] 图 3 是本实用新型桌面较低时的立体状态图。

[0011] 图 4 是本实用新型的实施例图（一）。

[0012] 图 5 是本实用新型实施例图（二）。

[0013] 图式符号说明

[0014] 桌面 1

[0015] 气压棒本体 21

[0016] 控制柄 22

[0017] 第一滑轨架 31

[0018] 第二滑轨架 32

[0019] X 形连杆 33

[0020] 固定端 34

[0021] 滑轨道 35

[0022] 桌脚 4

具体实施方式

[0023] 以下谨以一具体实施例，且佐以图式作详细说明，以使审查委员能对于本实用新型的技术特征有更进一步的了解。

[0024] 请参照图 1 至图 5，为一种魔术宠物美容桌，其特征在于包括：一桌面 1，用以承载宠物及相关物品；一气压棒装置，设于该桌面 1 的底部，包含一气压棒本体 21 及一控制柄 22，该气压棒本体 21 是由两支钢管套合而成，内部充满着高压氮气，犹如一气体式弹簧，而氮气相对于空气具有较稳定的物理性质，较不受热涨冷缩的影响，亦没有空气中所含的湿气及杂质，具有较佳的安全性，该控制柄 22 用以调整该气压棒本体 21 的长度，控制该气压棒本体 21 内控制阀的开启及关闭，当控制阀关闭时，该气压棒本体 21 即无法作动，而该控制柄 22 固设于该桌面的底面边缘，以便使用者拨动；

[0025] 一滑轨装置，设于该桌面 1 的底部，包含第一滑轨架 31、第二滑轨架 32 及一 X 形连杆 33，该第一滑轨架 31 及该第二滑轨架 32 皆设有固定端 34 及滑轨道 35，该第一滑轨架 31 固设于该桌面 1 的底面，该 X 形连杆 33 是由二支架交叉枢组成 X 形状，该 X 形连杆 33 的其中同侧两端分别枢设于该第一滑轨 31 及该第二滑轨架 32 的固定端 34 上，另两端则分别枢设于该第一滑轨架 31 及该第二滑轨架 32 的滑轨道 35 上，使其得以在该滑轨道 35 上滑动，又，该 X 形连杆 33 连结至该气压棒本体 21；

[0026] 多数个桌脚 4，固设于该第二滑轨架 32，形成稳固的桌体结构。

[0027] 藉由以上所述的魔术宠物美容桌，当宠物置于该桌面 1 上的时候，使用者仅须摊开双手撑着该桌面 1 的边缘，并且拨动该控制柄 22，该气压棒本体 21 即如同一气体式弹簧般，可依照受力而产生长度的变化，此时，使用者藉由本身的重量，加上对桌面 1 所施的少许力量，即可使该 X 形连杆 33 于该滑轨道 35 上滑动，带动调整该气压棒本体 21 的长度，进而调节该桌面 1 的高度，待使用者将该桌面 1 调整至合适的高度后，放开该控制柄 22，使该

气压棒本体 21 停止作动，此时该第一滑轨架 31 及该第二滑轨架 32 无法滑动，即可固定该桌面 1 的高度，又，当使用者拨动该控制柄 22 且未对该桌面 1 施力时，该气压棒本体 21 就如同无受力的弹簧般，自动回复至未经压缩的长度，该桌面 1 亦升至最高的高度。

[0028] 上述实施例仅为说明本创作的原理及其功效，并非限制本创作。因此习于此技术的人士对上述实施例进行修改及变化，仍不脱本创作的精神。本创作已具备产业上利用性、新颖性及进步性，并符合新型专利要件，爰依法提起申请。

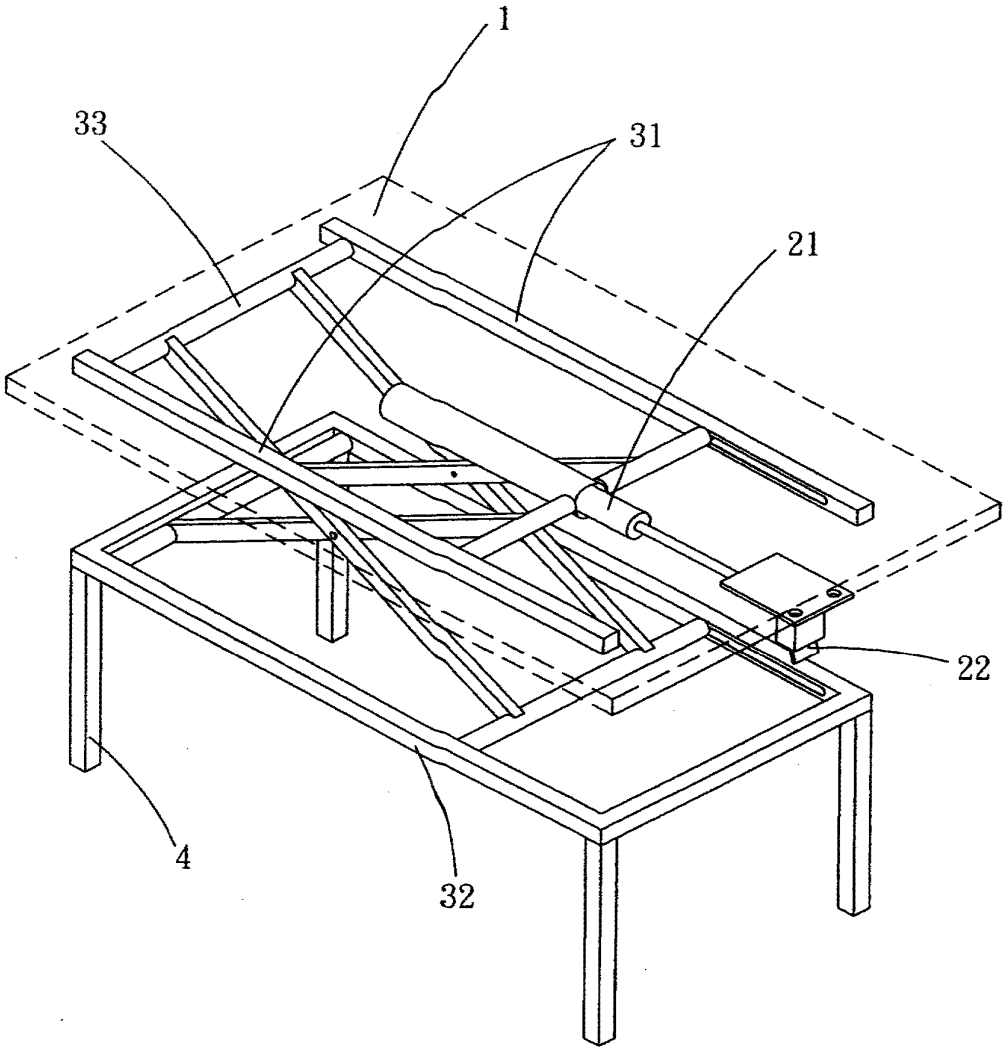


图 1

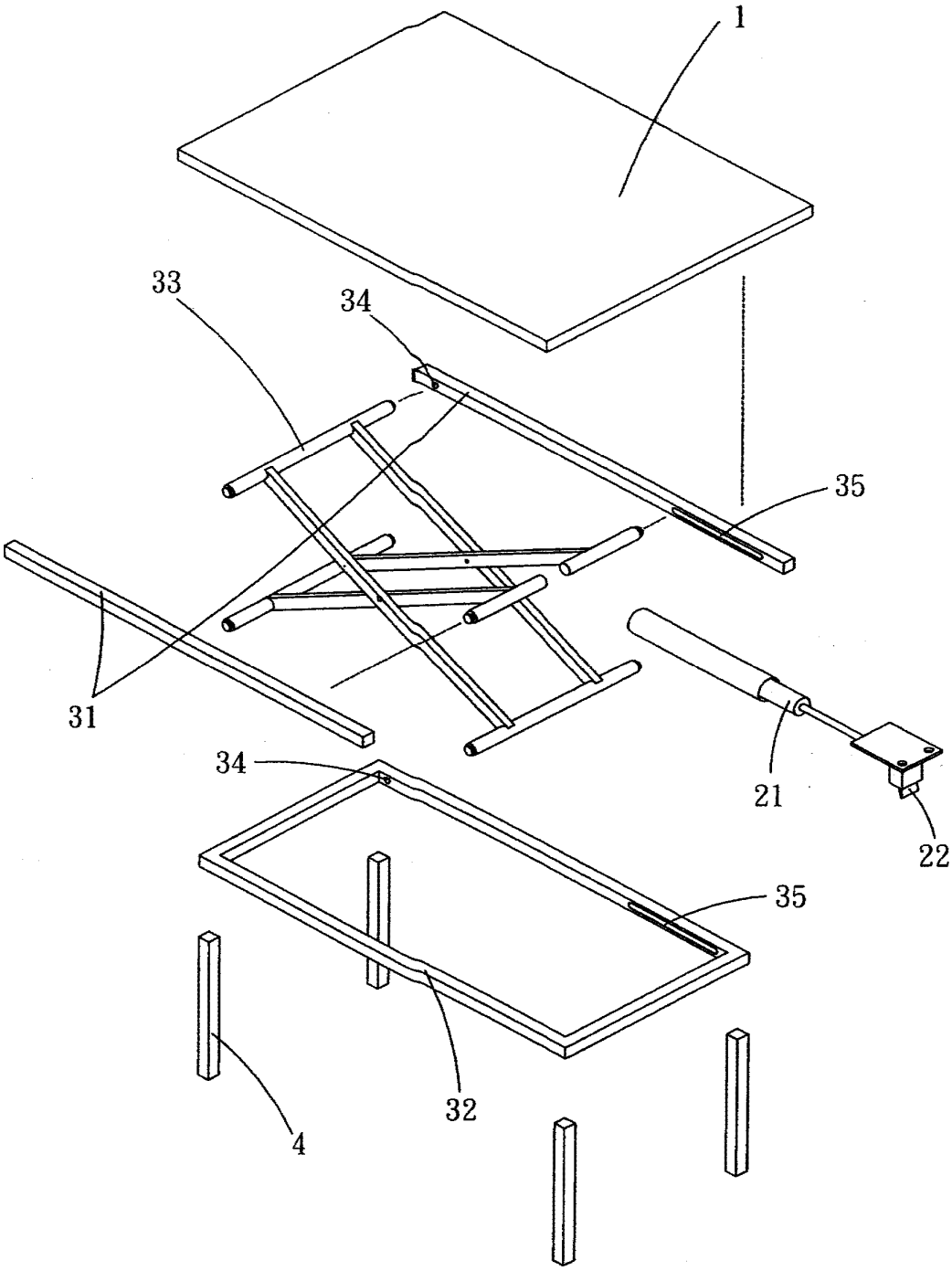


图 2

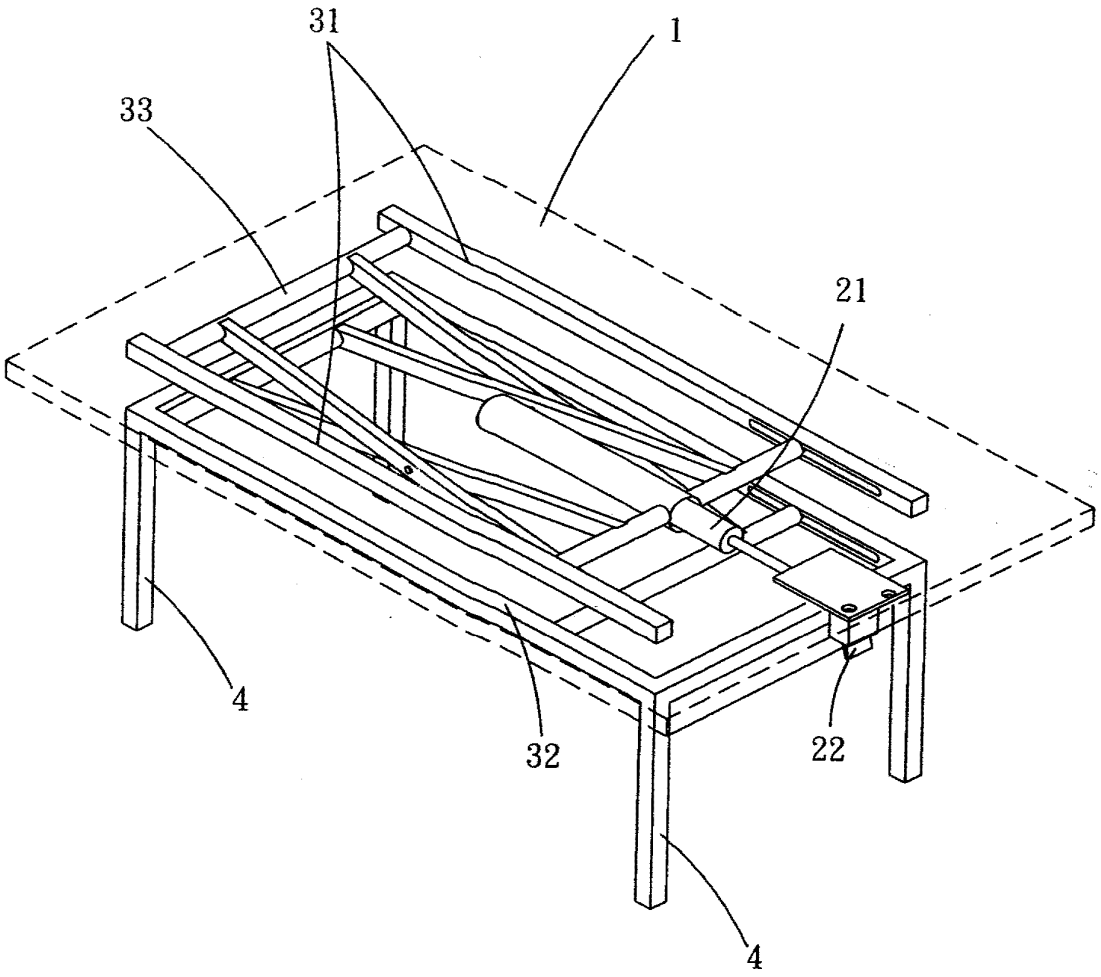


图 3

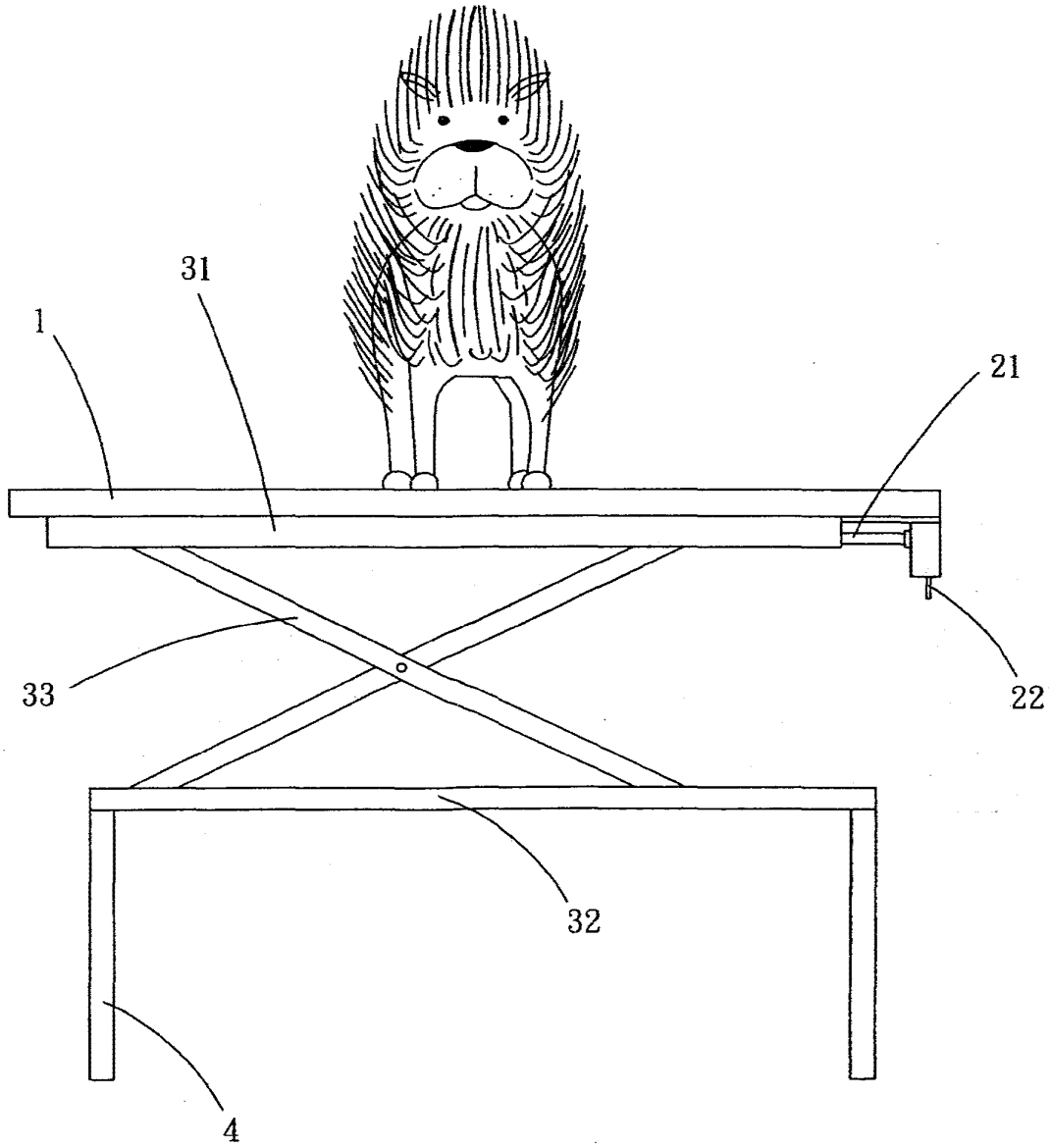


图 4

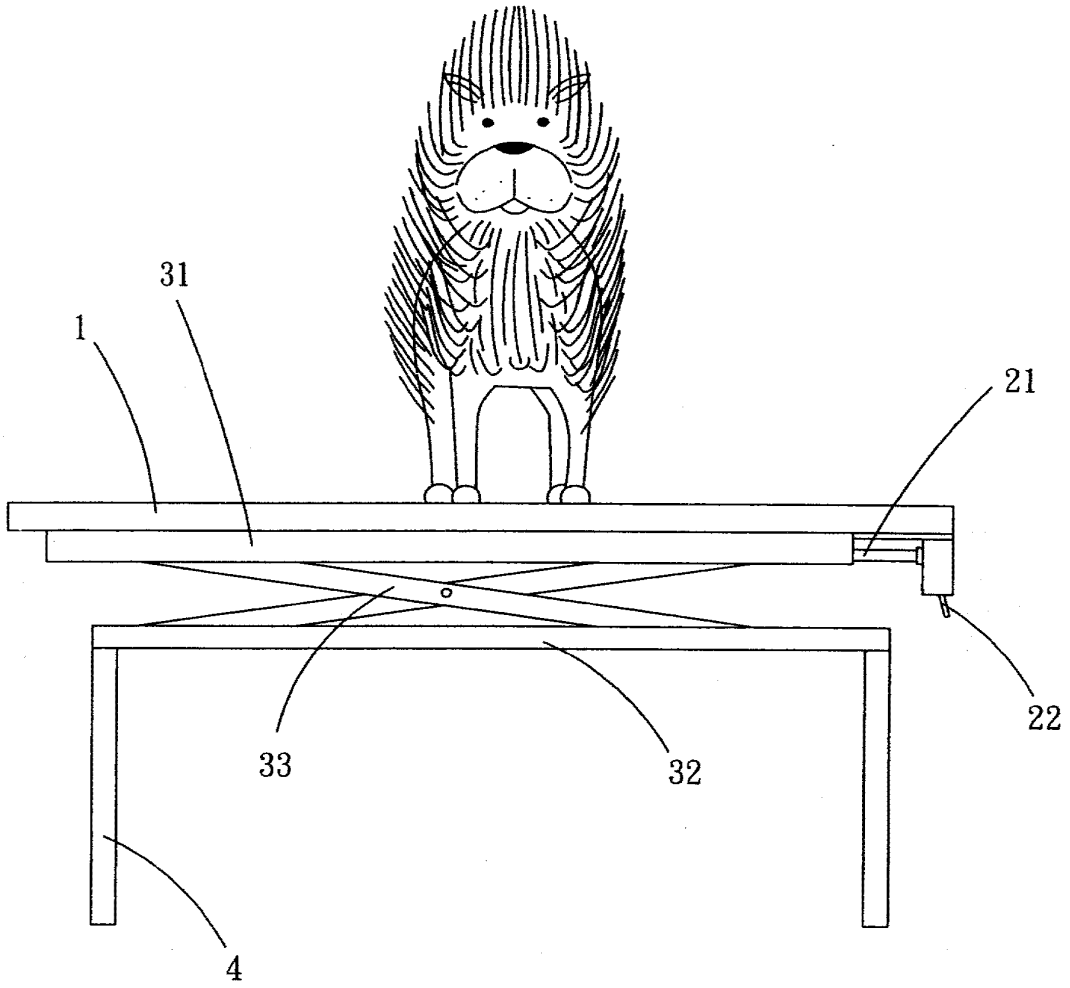


图 5

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DESCRIPTION DE8606822U1

[0001]

13 Gustav vVeritz Düsseldorf, 6.3.1986

[0002]

17 Quick seak and lifting device g

[0003]

21 for devices to be used in small furniture

[0004]

25 description

[0005]

29 Under a lifting device for equipment is known to mean a motor, hydraulic or counterweight mechanics, which is usually too expensive in relation to the task or too great a weight or weight.

31 Requires flat space and requires too much force to operate.

[0006]

35 The invention allows a piece of furniture to be placed in a piece of furniture, after the top sheet has been unfolded, to be lowered with a minimum of technical and spatial effort and without any particular force for setting it down.

38 The device can also be released from the lock in viewing or viewing mode after a short push down.

40 Possibly raise the working height slowed down by the pressure brake.

41 According to the invention, this object is achieved in that between the upper pairs of legs of the scissor-like rectangular tubes, an intermediate bracket is arranged so that it can rotate longitudinally and consists of 2 oval tubes, each with 5 double holes for 5 interchangeable tension springs, with which 9 different weight levels can be set according to the device to be set; the device is brought into balance with little buoyancy, which enables rapid lowering and lifting up to a lift difference of ^o-;+5 cm.

47 With a possibly built-in pressure compensation brake, the gluing process can be carried out almost automatically and at a slower rate.

[0007]

52 An embodiment of the innovation is shown in the drawings and is described in more detail below.

[0008]

57 It shows

[0009]

61 Fig. 1 is a view of a rapid lowering and lifting device in the highest position for the step weight with 3 tension springs.

[0010]

66 2 shows a partial view of an intermediate bracket.

[0011]

70 3 shows the three-dimensional view of a rapid lowering and lifting device in the lowest position.

[0012]

74 The rapid lowering and lifting device consists of 2 rectangular tubes ABCD1 mounted scissor-like in the middle g, which are connected in pairs to the traverses e, of which a buffer i is attached to the upper one, and at their ends on one side with V.'inkel b rotatable on the false bottom m and lower floor k are attached and on the other side with rollers a the floors m and k touch rollable and the upper pairs of legs are connected to each other via the intermediate bracket c with axis of rotation h and tension springs d.

80 When pressure is applied to the device set on the false bottom m, the pairs of legs of the rectangular tubes ABCD swing in the direction of the arrow, the tension springs d are tensioned and are intercepted in the dead center position by the buffer i in the lowest position.

83 After briefly pressing down on the device, the lock is released and the false floor m with the device can reliably move up.

85 If necessary, a pressure brake f between the lower pairs of legs can slow down the lifting process.

[0013]

90 Dusseldorf, March 6th1986

91 Rapid lowering and lifting device

[0014]

95 for devices for use in small furniture

[0015]

99 .1 View in Highest!

100 lung

[0016]

104 f. Step weight with 3 tension springs

[0017]

108 Fig.2 Partial view of an intermediate bracket

[0018]

112 Fig.3 Room view in the lowest position without weight load

[0019]

116 ABCD = rectangular tube a = rolls b = V. incl

[0020]

120 c = intermediate bracket d = tension springs e = traverses f = pressure break g = scissor pivot point h = axis of rotation of the intermediate bracket i = buffer k = base 1 = double perforation

m = false base

(19) BUNDESREPUBLIK DEUTSCHLAND
DEUTSCHES PATENTAMT

(12) Gebrauchsmuster U1

(11) Rollennummer G 86 06 822.9
(51) Hauptklasse A47B 9/16
(22) Anmeldetag 12.03.86
(47) Eintragungstag 14.08.91
(43) Bekanntmachung im Patentblatt 26.09.91

(54) Bezeichnung des Gegenstandes
Schnellsenk- und Hebevorrichtung zum Einsetzen in Kleinmöbel

(71) Name und Wohnsitz des Inhabers
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G 6253
3.82

Gustav Weritz Düsseldorf, den 6.3.1986

Schnellsenk- und Hebevorrichtung

für Geräte zum Einsetzen in Kleinmöbel

Beschreibung

Unter einer Hebevorrichtung für Geräte versteht man bekanntlich eine Motor-, Hydraulik- oder Gegengewichtsmechanik, die im Verhältnis zur Aufgabe meist zu kostenaufwendig ist oder zu großen Gewichts- bezw. Platzbedarf und beim Bedienen zu große Kraft erfordert.

Die Erfindung ermöglicht ein in ein Kleinmöbel zu stellendes Gerät nach Aufklappen des Oberblattes mit einem Minimum an technischem und räumlichen Aufwand ohne besondere Kraft zum Abstellen zu versenken. Ebenso läßt sich das Gerät nach kurzem Druck nach unten aus der Verriegelung in Betrachtungs- bezw. Arbeitshöhe evtl. durch Druckbremse verlangsamt heben. Diese Aufgabe wird erfindungsgemäß dadurch gelöst, daß zwischen den oberen Schenkelpaaren der scherenartig gelagerten Rechteckrohre eine Zwischenhalterung längs drehbar angeordnet ist, die aus 2 Ovalrohren mit jeweils 5 Doppellochungen für 5 auswechselbare Zugfedern besteht, womit 9 verschiedene Gewichtsstufen entsprechend dem einzustellenden Gerät eingestellt werden können; das Gerät wird mit geringem Kraftauftrieb in die Waage gebracht, womit das schnelle Senken und Heben bis zu einer Hubdifferenz von 4o-45 cm ermöglicht wird. Mit einer evtl. eingebauten Druckausgleichsbremse läßt sich der Hebevorgang fast automatisch verlangsamt durchführen.

Ein Ausführungsbeispiel der Neuerung ist auf den Zeichnungen dargestellt und wird im Folgenden näher beschrieben.

Es zeigt

Fig. 1 die Ansicht einer Schnellsenk- und Hebevorrichtung in Höchststellung für das Stufengewicht bei 3 Zugfedern.

Fig. 2 die Teilansicht einer Zwischenhalterung.

Fig. 3 die Raumansicht einer Schnellsenk- und Hebevorrichtung in Tiefststellung.

Die Schnellsenk- und Hebevorrichtung besteht aus 2 in der Mitte g scherenartig gelagerten Rechteckrohren ABCD, die paarweise mit denTraversen e, davon an der oberen ein Puffer i befestigt ist, verbunden sind und an deren Enden an einer Seite mit Winkel b drehbar am Senkboden m und unterem Boden k befestigt sind und an der anderen Seite mit Rollen a die Böden m und k abrollbar berühren und deren obere Schenkelpaare über die Zwischenhalterung c mit Drehachse h und Zugfedern d miteinander verbunden sind. Beim Druck auf das auf den Senkboden m eingestellte Gerät schwenken die Schenkelpaare der Rechteckrohre ABCD in Pfeilrichtung, dabei werden die Zugfedern d gespannt und werden in Totpunktlage vom Puffer i in Tiefststellung abgefangen. Nach kurzem Druck nach unten auf das Gerät wird die Verriegelung aufgehoben und der Senkboden m mit Gerät kann sich zuverlässig nach oben bewegen. Im Bedarfsfall kann zwischen den unteren Schenkelpaaren eine Druckbremse f den Hebevorgang verlangsamen.

Düsseldorf, den 6.3.1986

Schnellsenk- und Hebevorrichtung

für Geräte zum Einsetzen in Kleinmöbel

Fig.1 Ansicht in Höchststellung
f. Stufengewicht bei 3 Zugfedern

Fig.2 Teilansicht einer
Zwischenhalterung

Fig.3 Raumansicht in Tiefststellung
ohne Gewichtsbelastung

ABCD = Rechteckrohr
a = Rollen
b = Winkel
c = Zwischenhalterung
d = Zugfedern
e = Traversen
f = Druckbremse
g = Scherendrehpunkt
h = Drehachse der Zwischenhalterung
i = Puffer
k = Boden
l = Doppellochung
m = Senkboden

Gustav Weritz

Düsseldorf, den 6.3.1986

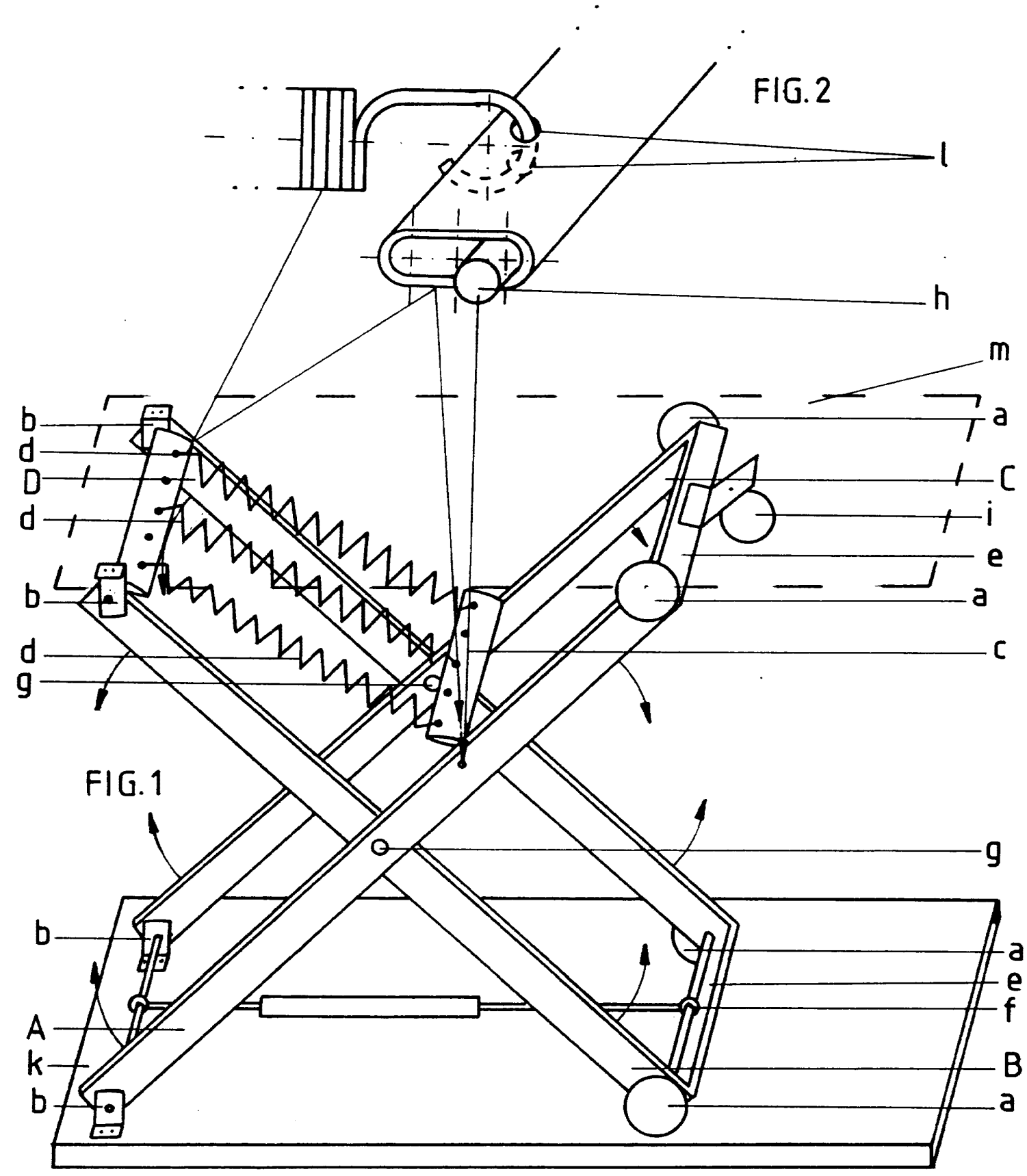
Schnellsenk- und Hebevorrichtung
für Geräte zum Einsetzen in Kleinmöbel

~~Patentan~~sprüche

1. Schnellsenk- und Hebevorrichtung, die aus 4 senkrechten in der Mitte scherenartig gelagerten und paarweise mit je einer Traverse, davon die obere mit Puffer, uförmig miteinander verbundenen Hochkantrechteckrohren besteht, deren Enden an einer Seite mit Winkel drehbar am Senk- und unteren Boden befestigt sind und an der anderen Seite mit Rollen den Senk- und unteren Boden abrollbar berühren und deren obere Schenkelpaare mittels drehbar angeordneter Zwischenhalterung für 1 - 4 Zugfedern und einer Zwischengewichtsfeder, verzugsfrei in Haltehaken durch Doppellochung miteinander verbunden sind d a d u r c h g e k e n n z e i c h n e t, daß sich bei entsprechender Gewichtseinstellung durch die Zugfedern der Senkboden m leicht nach Abfangen durch Puffer i in die Tiefststellung drücken läßt, dort verharrt und nach kurzem Wiederdruck des Gerätes die Verriegelung aufgehoben wird und der Senkboden m mit Gerät nach oben in Ausgangsstellung zurückgeht.

2. Senk- und Hebevorrichtung nach Anspruch 1. d a d u r c h g e k e n n z e i c h n e t, daß eine Druckbremse f den Hebevorgang verlangsamt.

3. Senk- und Hebevorrichtung nach Anspruch 1. d a d u r c h g e k e n n z e i c h n e t, daß ohne den unteren Boden k das Schenkelpaar der Rechteckrohre ABCD mit den Winkeln b unmittelbar am im Kleinmöbel befindlichen Boden montierbar ist.


FIG. 2
l
h
m
b
d
D
d
b
d
g
a
C
i
e
a
c
FIG. 1
g
b
A
k
b
a
e
f
B
a

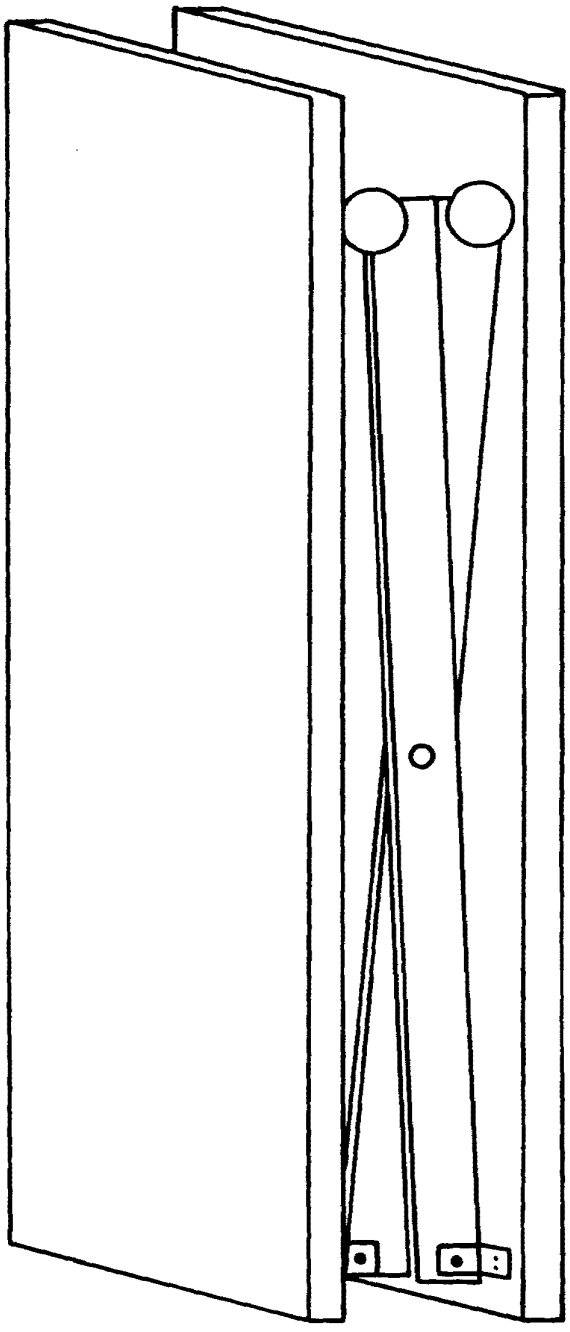


FIG. 3

Espacenet

EP0613852A1 Scissor type lifting table.

Applicants: HYDRAULIK TECHNIEK [NL]

Inventors: JANZEN HERMANN [DE]

Classifications:
IPC ***A47B9/16; B66F7/08;*** (IPC1-7): B66F7/08;

CPC **A47B9/16 (EP); B66F7/065 (EP); B66F7/08 (EP);**

Priorities: DE9302967U 1993-03-02

Application: EP94102702A 1994-02-23

Publication: EP0613852A1 1994-09-07

Published as: **AT159918T; DE9302967U1;** EP0613852A1;**EP0613852B1**

Scissor type lifting table.

Abstract

Between a floor-side underframe 2 and a top table platform 3, a scissor-type lifting table has at least one pair of scissor arms 5, 6; 7, 8 which are connected to one another in a cross joint 4. In opposite end areas 14, 15; 16, 17, the scissor arms 5, 6; 7, 8 are in each case supported at one end in a fixed position at a swivel bearing 18, 19 and at the other end via a loose bearing 20, 21 on the underframe 2 and the table platform 3 respectively. In an initial position close to the underframe 2, an expanding lever 40 located on the outer piston-rod end 39 of a piston/cylinder unit 23, 24 and having a pressure roller 44; 144 reaches in the area of at least one scissor arm 6, 8 under the table platform 3 in order to initiate an initial stroke. The expanding lever 40 is designed as a lifting rocker 42 located between respective inner legs 25', 26'; 27', 28' of at least one of the scissor-arm pairs 5, 6; 7, 8. The lifting rocker 42, at least at one end, has a connecting part 43; 43' coaxial to the cross joint 4 and has at the other end the pressure roller 44 and, axially parallel between the cross joint 4 and the pressure-roller axis 45, a piston-rod articulation 38 located in the initial position above the centre longitudinal plane 35 of the piston/cylinder unit 23; 24.

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DESCRIPTION EP0613852A1

[0001]

13 The invention relates to a scissor lifting table according to the preamble of claim 1.

[0002]

17 In the case of a scissor lifting table of the aforementioned type known from DE 39 30 529 A1, at least one of the scissor arms, which interact as a pair and are connected in the region of a crossing joint, is provided with an expansion lever which has a first piston/cylinder unit and by means of which the scissor arms, which are located in a starting position close to a lower frame, can be expanded out of a lowering position, on reaching an initial lifting position, can be further expanded via a second piston/cylinder unit and thus a table platform can be moved into a lifting end position.

24 With such an arrangement of two piston/cylinder units connected in parallel via a common control unit, both the technical outlay and the production and operating costs are disadvantageously increased.

[0003]

30 The invention is based on the object of further developing a scissor lifting table of the type mentioned at the beginning with a reduction of the technical outlay in such a way that, in the case of scissor arms which are in the lowering position, said scissor lifting table enables a flat and space-saving design and a large lifting travel of the table platform can be achieved via a uniform lifting movement.

[0004]

38 The invention achieves this object by means of a scissor lifting table having the features of claim 1.

40 With regard to further embodiments, reference is made to Claims 2 to 13.

[0005]

44 The scissor lifting table according to the invention has with the lifting rocker a stroke introduction member connected to the piston/cylinder unit, which forms an operative connection with a coaxial connection, provided on the one hand directly in the crossing joint, to the respective scissor arms, the articulation of the piston rod end arranged axially parallel thereto and the pressure roller supported on the other hand, which enables an advantageous flat construction of the scissor lifting table, the table platform of which can be moved without additional individual parts out of the lowering position close to the bottom up to the lifting end position by continuous utilization of the piston stroke of only one piston/cylinder unit.

[0006]

55 Starting from a parallel starting position of the scissor arms, a pulling movement, which is effective in a first lifting phase, is introduced via the pressure roller via the table platform as the immediate part of the force flow in the scissor lifting table onto the scissor arms to be spread apart in a first lifting phase and, in doing so, locks the lifting rocker against further pivoting from a certain lifting angle in such a way that, via the continued lifting movement of the piston/cylinder unit, a torque is imparted to the scissor arms via the lifting rocker and, with the scissor arms being spread apart, the table platform is raised up to the lifting end position.

[0007]

65 With the piston rod articulation at a distance from the central longitudinal plane of the piston/cylinder unit, which distance is substantially determined by the component height of the scissor arms in the lowering position, an asymmetrical articulation is formed with little outlay, which enables a pressure elevation of the table platform with few articulation points in the first lifting phase.

70 Via a corresponding connection of the table platform to the scissor arm ends, their mutual spreading is effected, wherein after a certain stroke travel a contact part at at least one scissor arm, which simultaneously enters into a connecting engagement at the lifting rocker, allows a continuous pressure input from the piston/cylinder unit, the further piston extension of which can be deflected via a constant lever arm formed at the lifting rocker and thus the table platform can be moved with a substantially constant internal cylinder pressure up to the stroke end position.

[0008]

79 With regard to significant further advantages and individual parts of the invention, reference is

made to the following description and the drawing, in which an exemplary embodiment of the subject matter of the invention is schematically illustrated in more detail.

82 The drawing shows:

83 FIG. 1

84 a perspective illustration of a scissor lifting table according to the invention in a first embodiment,

86 FIG. 2

87 a side view of the scissor lifting table similar to FIG. 1 with a table platform in a starting position close to the floor,

89 FIG. 3

90 a side view of the scissor lifting table according to FIG. 2 with the table platform at the end of a first lifting phase,

92 FIG. 4

93 a side view of the scissor lifting table according to FIG. 2 or 3 with the table platform in an upper end position,

95 FIG. 5

96 an enlargement of a section in the region of an intersection joint of the scissor arms of the scissor lift table according to FIG. 4,

98 FIG. 6

99 An enlarged sectional illustration similar to FIG. 5 with the scissor arms in a lifting phase according to FIG. 3,

101 FIGS. 7 and 8

102 In each case an individual representation of a lifting rocker according to the invention in different views,

104 FIG. 9

105 a side view in the region of the crossing joint according to FIG. 5,

106 FIG. 10

107 a side view of the scissor lifting table in the lifting end position in a second embodiment with a double lifting rocker in the region of the crossing joint of the scissor arms,

109 FIG. 11

110 a side view of the scissor lifting table similar to FIG. 10 with the table platform in a first lifting phase, and

112 FIG. 12

113 an individual representation of the double stroke rocker.

[0009]

117 FIG. 1 shows a perspective illustration of a scissor lifting table 1 designated overall by 1 and designed as a flat lifting table, which between a bottom lower frame 2 and an upper table platform 3 has scissor arms 5, 6 and 7, 8, respectively, arranged in pairs in each case on the longitudinal edge side and connected to one another in a crossing joint 4, 4'.

[0010]

124 The table platform 3 in this case is provided with an E-shaped plate contour having respective outer plate regions 9, 10 and a central region 11, by means of which a lifting tool (not shown) for example can engage beneath the objects located on the table platform 3 via respective mold recesses 12, 13.

128 It is likewise conceivable to configure the table platform 3 as a continuous plate or with a U-shaped plate contour for other applications requiring in particular a flat design.

[0011]

133 In FIG. 4, a side view of the scissor lifting table 1 illustrates a connection provided in respectively opposite end regions 14, 15 and 16, 17 of the scissor arms 5, 6, wherein said connection is formed fixedly at one end via in each case a pivot bearing 18, 19 and at the other end via a floating bearing 20, 21 on the underside of the table platform 3 or on the upper side of the lower frame 2 such that the table platform 3 is formed at different lifting heights H (FIG. 4.

2)

142 H' (Fig. 3) and H" (Fig. 4) are disposable.

[0012]

146 The pairs of scissor arms 5, 6 and 7, 8 are each provided in the region of the scissor arm 6 and 8 supported via the stationary pivot bearing 19, 19' with a piston/cylinder unit 23, 24 designed as a hydraulic cylinder which extends between respective limbs 25, 26 and 27, 28 of the scissor arms 6 and 8.

[0013]

153 The hydraulic cylinders 23, 24 are fixed at one end in the region of their cylinders 33, 34 to a lower crossmember 30 (FIG. 1) located between the respective pivot bearings 19, 19' of the scissor arms 6, 8 via respective support bearings 31, 32 and respective piston rods 36, 37 movable via fluid pressure in a central longitudinal plane 35 of the piston/cylinder unit 23, 24 are connected at the other end in the respective head region 39 via a piston rod linkage 38 to an expansion lever 40 (FIG. 1) or 40' (not visible).

[0014]

162 The enlarged illustrations according to FIGS. 5 and 6 make clear in connection with FIG. 9 that the spreading lever 40 is designed as a lifting rocker 42 which is located between the

respective inner limbs 25', 26' or 27', 28' of the respective pair of scissor arms 5, 6 or 7, 8 and which has at one end a connecting part 43, which is coaxial with the crossing joint 4 or 4', and at the other end a pressure roller 44 and axially parallel between the crossing joint 4 and the pressure roller axis 45 and which, in the lowering position of the table platform 3, advantageously has a piston rod articulation 38 which is located above the central longitudinal plane 35 of the piston/cylinder unit 23, 24 (FIG.
170 2).

[0015]

174 With such an articulation of the lifting rocker 42, it is possible via the respective cylinders 33, 34 of the piston/cylinder unit 23, 24 in the end region close to the pivot bearing 19, 19' of the support bearings 31, 8 fixing scissor arms 6, 8, 32 on the one hand, the piston rod linkage 38 on the other hand and the pressure roller 44 towards the table platform 3 are formed an operative connection and the scissor lifting table 1 which is formed in an advantageously space-saving flat construction is moved from the lowering position illustrated in FIG. 2 in a first lifting phase into the lifting position H shown in FIG. 3 by virtue of the movement of the piston rods 36, 37 with an overlaid lifting-pivoting movement in the region of the lifting rockers 42, 42' lifts the crossing joints 4, 4', The lifting rockers 42, 42' are simultaneously pivoted about the latter while supporting the rolling pressure roller 44 on the underside of the table platform 3 and the scissor arm pairs 5, 5 by means of the bearings 18 and 20 on the table platform 3, 6 is raised into the spreading position according to FIG. 3.

[0016]

189 In this movement phase, respective stop parts 46, 46', which delimit the pivot angle of the lifting rocker 42 in this first lifting phase with respect to the respective inner limbs 25', 26', are simultaneously pivoted into the region of shaped parts 47, 47', wherein the pressure roller 44 forms a supporting engagement on the underside of the table platform 3 in a supporting region 48 until a positive locking allowing the further introduction of force is formed with the pivoting of the stop part 46 into the shaped part 47.

195 For stabilizing the table platform 3, a stabilizing plate (not shown) can be provided in the support area 48.

[0017]

200 In this lifting phase illustrated in FIGS. 2 and 3, the scissor arm 6 connected to the table platform 3 via the floating bearing 20 is at the above-described pivot path or pivot path over a length 50 thereof.

203 Supporting region 48 of the lifting rocker 42 supports matched roller undergrip 51 on the table platform 3, so that the lifting forces introduced via the pressure roller 44 at the scissor arms 5, 6 and 7, 8 both in the bearing 20 and in the bearing 18 in each case form a vertical spreading

force component and thus a uniform component load is achieved.

[0018]

210 For the movement sequence described above, in particular for the movement of the flat scissor lift table 1 from the lowering position according to FIG. 2, the piston rod linkage 38 located above the central longitudinal plane 35 of the piston/cylinder unit 23, 24 forms an asymmetrical force application in the region of the respective piston rods 36, 37, the effectiveness of which can still be increased in that the respective cylinders 33, 34 in the region of their support bearings 31, 32 have a support 53 which is likewise asymmetrical with respect to the central longitudinal plane 35 and is offset downwards, and thus the scissor lift table 1 offers a pressure effect plane 52 represented as a connecting line between the linkage 38 and the support 53 on the respective lift rocker 42, 42' in the lowering position.

[0019]

222 In the region of the lifting rocker 42, the pressure action plane 52 forms, both between the respective piston rod linkage 38 and the crossing joint 4 and between the piston rod linkage 38 and the pressure roller 44, respective force application levers by means of which the scissor lifting table 1 can be designed in a particularly space-saving flat construction in such a way that the above-described expansion or expansion.

227 Lifting can be carried out with only one piston/cylinder unit 23, 24 in the respective pairs of scissor arms 5, 6 and 7, 8.

229 In this way, a high mechanical efficiency can be achieved at reduced technical outlay and, via a cylinder pressure which is substantially constant in all stroke positions H, H', H", a uniform stroke movement over a large stroke travel, for example.

232 B. to 1000 mm.

[0020]

236 In FIGS. 5 and 6, enlarged sectional illustrations in the region of the lifting rocker 42 illustrate a distance 54 which forms the effective lever length between the piston rod linkage 38 and the crossing joint 4 and which starting from the lowering position H (FIG. 2) to the position H' (FIG. 2).

3,

243 FIG. 6) changes and, with further increasing spread of the scissor arms 5, 6 over the contact of the stop parts 46 in the shaped part 47, 47', this distance 54 remains effective as a constant lever arm until the table platform 3 has the lifting position H" (FIG. 4).

4,
249 FIG. 5) has reached.

[0021]

253 In FIGS. 7 and 8, the lifting rocker 42 is illustrated in an individual representation illustrating its advantageous embodiment as a transversely stiffened double member 55, wherein between its pressure plates 56, 57 there is provided at one end a connecting sleeve 43' supported in the region of the crossing joint 4 between the connecting parts 43, at the other end the pressure roller 44 located on a supporting bolt 44' and between these the piston rod linkage 38.

[0022]

262 The installation position of the lifting rocker 42 according to FIG. 9 illustrates in connection with FIG. 8 that the pressure plates 56, 57 located between the respective pair of scissor arms 25', 26' each have a groove 58, 58' (FIG. 8) forming the shaped part 47, 47', into which a pin 59, 59' provided as the stop element 46, 46' and supported on the inner limbs 25', 26' of the pairs of scissor arms can be pivoted in each case.

[0023]

270 In an expedient embodiment, the piston/cylinder unit 23, 24 is provided in the region of the respective head region 39 with an inlet recess 60 (FIG. 6) so that in the lowering position according to FIG. 2 for the pressure roller 44 a free space is reached which enables the floor-parallel alignment of the piston/cylinder unit 23, 24 and thus the components of the scissor lifting table 1 can be lowered to a structural height forming the lifting height H without projecting length and, even in restricted space conditions, good handleability of the scissor lifting table 1 is made possible.

[0024]

280 FIG. 10 shows a second embodiment of a scissor lifting table 101 which has a double lifting rocker 142 (FIG. 12) in the region of the crossing joint 4 as the expansion lever 40 and whose scissor arms 5, 6 (or 7, 8) are expanded under the simultaneous action of two piston/cylinder pairs 23, 123 or 24, 124 (not visible).

[0025]

287 The stroke phase according to FIG. 11 illustrates that the double lifting rocker arm 142 or the scissor lifting table 101 can be moved into the illustrated stroke position H' in that, via a simultaneous working stroke of the two piston rods 36 of the piston-cylinder pair 23, 123 of the

double lifting rocker arm 142, which are effective in one direction of rotation, a superimposed lifting-pivoting movement is imparted in the region of the crossing joint 4, in order to carry out the double lifting rocker arm 142 with simultaneous support on the one hand of the rolling pressure roller 44 on the underside of the table platform 3 and on the other hand of the pressure roller 144 on the lower frame 2, and the scissor arm pairs 5, 6 are raised via the bearings 18 and 20 into the spreading position according to FIG. 10.

[0026]

299 The individual illustration of the double lifting rocker 142 according to FIG. 12 shows its design with the pressure rollers 44, 144 grouping in each case around the bore for the crossing joint 4, the two piston rod articulations 38, the spacings 54, 154 and the shaping grooves 58, via which, in the manner described above, the lifting force of the piston/cylinder units 23, 123 can be simultaneously transmitted to the scissor arms 5, 6 (FIG. 5.

304 10).

[0027]

308 In an advantageous embodiment, the scissor lifting table 101 having the double lifting rocker 142 can thus be provided for lifting larger weights, so that the possibilities of use of the lifting table as a whole are improved.

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CLAIMS EP0613852A1

1.

13 Scissor lift table, which between a bottom lower frame (2) and an upper table platform (3) at least one pair of scissor arms (5, 6; connected to one another in an articulated joint (4); 7.8) having opposite end regions (14, 15; 16, 17) are each supported at one end in a stationary manner on a pivot bearing (18, 19) and at the other end via a floating bearing (20, 21) on the lower frame (2) or on the table platform (3), wherein in a starting position located near the lower frame these are supported in the region of at least one scissor arm (6, 8) for initiating an initial stroke of the table platform (3) by an expansion lever (40) with a pressure roller (44; 24) located on the outer piston rod end (39) of a piston/cylinder unit (23, 24); 144), characterized in that the expansion lever (40) is engaged under as one between respective inner limbs (25', 26'; 27', 28') of at least one of the pairs of scissor arms (5, 6; 7.8) A lifting rocker (42) which is located at least at one end is formed by a connecting part (43; 43 coaxial with the crossing joint (4); 43'), on the other hand the pressure roller (44) and axially parallel between the crossing joint (4) and the pressure roller axis (45), one in the starting position above the central longitudinal plane (35) of the piston/cylinder unit (23; 24) has a piston rod linkage (38).

2.

30 Scissor lift table according to claim 1, characterised in that an operative connection to the table platform (3) is formed by means of a support (31, 32) which defines the cylinder (33, 34) of the piston/cylinder unit (23, 24) in the end region close to the pivot bearing (18, 19) of the scissor arm (6, 8), on the one hand, the piston rod linkage (38), on the other hand, and the pressure roller (44), and this can be moved into a lift end position (H") by means of in each case only one piston/cylinder unit (23, 24) which engages under each pair of scissor arms (5, 6; 7, 8) and has a substantially constant internal cylinder pressure in each lift phase (H; H'; H").

3.

40 Scissor-type lifting table according to Claim 1 or 2, characterized in that the lifting rocker (42) has a pivoting angle thereof in a first lifting phase (H') via a shaped part (47, 47') which delimits a stop member (46, 46') supported in the region of the respective inner limbs (25', 26').

4.

46 Scissor lift table according to one of Claims 1 to 3, characterized in that the table platform (3) having a support region (48) on the underside of the plate is penetrated by the pressure roller (44) located on the lift rocker (42) in such a way that a supporting engagement is formed in a first lifting phase (H') delimited by the pivoting of the stop member (46, 46') into the shaped part (47, 47').

5.

54 Scissor lift table according to one of Claims 1 to 4, characterized in that the scissor arm (6) which is connected to the table platform (3) via a floating bearing (20) is connected to the table platform (3) via a roller handle (51) which is matched in its length (50) to the pivoting path of the lift rocker (42).

6.

61 Scissor lift table according to one of Claims 1 to 5, characterized in that the cylinder (33; 34) of the piston/cylinder unit (23; 24) has a support (53; 53'), spaced apart from the central longitudinal plane (35, 35') thereof, in the region of the respective pivot bearing (19, 19').

7.

67 Scissor lift table according to one of Claims 1 to 6, characterized in that the lift rocker (42) is designed as a transversely stiffened double member (55), between the pressure plates (56, 57) of which the piston rod linkage (38), which interacts with the connecting part (43) in the region of the crossing joint (4) and the pressure roller (44), is provided.

8.

74 Scissor lift table according to one of Claims 1 to 7, characterized in that the pressure plates (56, 57) located between a respective pair of scissor arms (25', 26'; 27', 28') each have a groove (58) which forms the shaped part (47, 47') and into which a pin (59, 59') provided as a stop element (46, 46') and supported on the inner limbs (25', 26') of the pairs of scissor arms (5, 6) can be pivoted in each case.

9.

82 Scissor lift table according to one of Claims 1 to 8, characterized in that the pressure plates (56, 57) are provided with a coaxial connecting sleeve (43') in the region of the crossing joint (4).

10.

87 Scissor lift table according to one of Claims 1 to 9, characterized in that two pairs of scissor arms (5, 6 and 7, 8) are provided, each with a piston/cylinder unit (23, 24) and a respective lift rocker (42, 42').

11.

93 Scissor lift table according to one of Claims 1 to 10, characterized in that the table platform (3) is provided with a lower-sided stabilizing plate in the support region (48) for the support roller (44).

12.

98 Scissor lift table according to one of Claims 1 to 11, characterized in that the piston/cylinder unit (23, 24) is provided with an inlet trough (60) in the region of the piston rod end (39).

13.

103 Scissor lift table according to one of Claims 1 to 12, characterized in that the expansion lever (40) is designed as a double lift rocker (142) having two piston/cylinder units (23, 123), wherein in the starting position one (23) above and one (123) below the central longitudinal plane (35) are supported in each case via the piston rod articulations (38) assigned at the same radial distance from the crossing joint (4).

(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) Gebrauchsmuster U1

(11) Rollennummer G 93 02 967.5

(51) Hauptklasse A47B 9/16

(22) Anmeldetag 02.03.93

(47) Eintragungstag 22.04.93

(43) Bekanntmachung im Patentblatt 03.06.93

(54) Bezeichnung des Gegenstandes
Scherenhubtisch

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Rechercheantrag gemäß § 7 Abs. 1 GbmG gestellt

G 6253
3.82

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Scherenhubtisch

Die Erfindung betrifft einen Scherenhubtisch nach dem Oberbegriff des Anspruchs 1.

Bei einem Scherenhubtisch der vorstehend genannten, aus der DE 39 30 529 A1 bekannten Art ist zumindest einer der als ein Paar zusammenwirkenden und im Bereich eines Kreuzungsgelenks verbundenen Scherenarme mit einem eine erste Kolben/Zylinder-Einheit aufweisenden Spreizhebel versehen, mit dem die in einer Ausgangsstellung nahe einem Unterrahmen befindlichen Scherenarme aus einer Absenkstellung herausgespreizt, bei Erreichen einer Anfangshublage über eine zweite Kolben/Zylinder-Einheit weiter gespreizt und so eine Tischplattform bis in eine Hubendstellung verbracht werden kann. Mit einer derartigen Anordnung von zwei über eine gemeinsame Steuereinheit parallel geschalteten Kolben/Zylinder-Einheiten sind sowohl der technische Aufwand als auch die Gestehungs- und Betriebskosten nachteilig erhöht.

Der Erfindung liegt die Aufgabe zugrunde, einen Scherenhubtisch der eingangs genannten Art unter

Verringerung des technischen Aufwands so weiterzubilden, daß dieser bei in Absenkstellung befindlichen Scherenarmen eine flache und raumsparende Bauform ermöglicht und über eine gleichmäßige Hubbewegung ein großer Hubweg der Tischplattform erreichbar ist.

Die Erfindung löst diese Aufgabe durch einen Scherenhubtisch mit den Merkmalen des Anspruchs 1. Hinsichtlich weiterer Ausgestaltungen wird auf die Ansprüche 2 bis 12 verwiesen.

Der erfindungsgemäße Scherenhubtisch weist mit der Hubschwinge ein mit der Kolben/Zylinder-Einheit verbundenes Hubeinleitungsglied auf, das mit einer einerseits unmittelbar im Kreuzungsgelenk vorgesehenen koaxialen Verbindung zu den jeweiligen Scherenarmen, der dazu achsparallel angeordneten Anlenkung des Kolbenstangenendes und der andererseits abgestützten Druckrolle eine Wirkverbindung bildet, die eine vorteilhafte Flachbauweise des Scherenhubtisches ermöglicht, dessen Tischplattform ohne zusätzliche Einzelteile aus der bodennahen Absenkstellung bis in die Hubendstellung durch eine kontinuierliche Ausnutzung des Kolbenhubes nur einer Kolben/Zylinder-Einheit verbringbar ist.

Über die Tischplattform als unmittelbarer Teil des Kraftflusses im Scherenhubtisch wird dabei ausgehend von einer parallelen Ausgangsstellung der Scherenarme eine in einer ersten Hubphase wirksame Zugbewegung auf die zu spreizenden Scherenarme über die Druckrolle eingeleitet und dabei ab einem bestimmten Hubwinkel die Hubschwinge gegen weiteres Schwenken so arretiert, daß über die fortgesetzte Hubbewegung der Kolben/Zylinder-Einheit den Scherenarmen über die Hubschwinge ein Drehmoment vermittelt und unter

Spreizung der Scherenarme die Tischplattform bis in die Hubendstellung angehoben wird.

Mit der Kolbenstangenanlenkung in einem, im wesentlichen von der Bauteilhöhe der in Absenkstellung befindlichen Scherenarme bestimmten Abstand zur Mittellängsebene der Kolben/Zylinder-Einheit ist mit geringem Aufwand eine asymmetrische Anlenkung gebildet, die mit wenigen Gelenkpunkten in der ersten Hubphase eine Druckhebung der Tischplattform ermöglicht. Über eine entsprechende Verbindung der Tischplattform mit den Scherenarmenden wird deren gegenseitige Spreizung bewirkt, wobei daß nach einem bestimmten Hubweg ein gleichzeitig in einen Verbindungseingriff an der Hubschwinge einlaufender Anlageteil an zumindest einem Scherenarm einen kontinuierlichen Druckeintrag aus der Kolben/Zylinder-Einheit ermöglicht, deren weitere Kolbenausschiebung über einen an der Hubschwinge gebildeten, konstanten Hebelarm umgelenkt und so die Tischplattform mit weitgehend konstantem Zylinderinnendruck bis in die Hubendstellung bewegt werden kann.

Hinsichtlich wesentlicher weiterer Vorteile und Einzelteile der Erfindung wird auf die nachfolgende Beschreibung und die Zeichnung verwiesen, in der ein Ausführungsbeispiel des Gegenstands der Erfindung schematisch näher veranschaulicht ist. In der Zeichnung zeigen:

Fig. 1 eine Perspektivdarstellung eines erfindungsgemäßen Scherenhubtisches,

Fig. 2 eine Seitenansicht des Scherenhubtisches ähnlich Fig. 1 mit einer Tischplattform in einer bodennahen Ausgangsstellung,

Fig. 3 eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 mit der Tischplattform am Ende einer ersten Hubphase,

Fig. 4 eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 oder 3 mit der Tischplattform in einer oberen Endstellung,

Fig. 5 eine Ausschnittsvergrößerung im Bereich eines Kreuzungsgelenks der Scherenarme des Scherenhubtisches gemäß Fig. 4,

Fig. 6 eine vergrößerte Ausschnittsdarstellung ähnlich Fig. 5 mit den Scherenarmen in einer Hubphase gemäß Fig. 3,

Fig. 7 und 8 jeweils eine Einzeldarstellung einer Hubschwinge gemäß der Erfindung in verschiedenen Ansichten, und

Fig. 9 eine Seitenansicht im Bereich des Kreuzungsgelenks gemäß Fig. 5.

In Fig. 1 ist ein insgesamt mit 1 bezeichneter, als Flachhubtisch ausgebildeter Scherenhubtisch in einer Perspektivdarstellung veranschaulicht, der zwischen einem bodenseitigen Unterrahmen 2 und einer oberen Tischplattform 3 jeweils längsrandseitig angeordnete, in einem Kreuzungsgelenk 4,4' jeweils paarweise miteinander verbundene Scherenarme 5,6 bzw. 7,8 aufweist.

Die Tischplattform 3 ist dabei mit einer E-förmigen, jeweilige äußere Plattenbereiche 9,10 und einen Mittelbereich 11 aufweisenden Plattenkontur versehen, mit der über jeweilige Formaussparungen 12,13 bei-

spielsweise ein Hubwerkzeug (nicht dargestellt) die auf der Tischplattform 3 befindlichen Gegenstände untergreifen kann. Ebenso ist denkbar, die Tischplattform 3 für andere, insbesondere eine Flachbauweise erfordernde Anwendungsfälle als durchgehende Platte bzw. mit einer U-förmigen Plattenkontur auszubilden.

In Fig. 4 veranschaulicht eine Seitenansicht des Scherenhubtisches 1 eine in jeweils gegenüberliegenden Endbereichen 14,15 bzw. 16,17 der Scherenarme 5,6 vorgesehene Verbindung, wobei diese einenends ortsfest über jeweils ein Schwenklager 18,19 und anderenends über ein Loslager 20,21 an der Unterseite der Tischplattform 3 bzw. der Oberseite des Unterrahmens 2 so ausgebildet ist, daß die Tischplattform 3 in unterschiedliche Hubhöhen H (Fig. 2), H' (Fig. 3) und H'' (Fig. 4) verbringbar ist.

Die Scherenarmpaare 5,6 bzw. 7,8 sind dabei jeweils im Bereich des über das ortsfeste Schwenklager 19,19' abgestützten Scherenarmes 6 bzw. 8 mit einer als Hydraulikzylinder ausgebildeten Kolben/Zylinder-Einheit 23,24 versehen, die sich zwischen jeweiligen Schenkeln 25,26 bzw. 27,28 der Scherenarme 6 bzw. 8 erstreckt.

Die Hydraulikzylinder 23,24 sind dabei einenends im Bereich ihrer Zylinder 33,34 an einem unteren, zwischen den jeweiligen Schwenklagern 19,19' der Scherenarme 6,8 befindlichen Querträger 30 (Fig. 1) über jeweilige Stützlager 31,32 festgelegt und jeweilige, über Fluiddruck in einer Mittellängsebene 35 der Kolben/Zylinder-Einheit 23,24 bewegliche Kolbenstangen 36,37 sind anderenends im jeweiligen Kopfbereich 39 über eine Kolbenstangenanlenkung 38 mit einem Spreizhebel 40 (Fig. 1) bzw. 40' (nicht sicht-

bar) verbunden.

Die vergrößerten Darstellungen gemäß Fig. 5 und Fig. 6 machen im Zusammenhang mit Fig. 9 deutlich, daß der Spreizhebel 40 als eine zwischen den jeweiligen inneren Schenkeln 25',26' bzw. 27',28' des jeweiligen Scherenarmpaares 5,6 bzw. 7,8 befindliche Hubschwinge 42 ausgebildet ist, die einenends einen zum Kreuzungsgelenk 4 bzw. 4' koaxialen Verbindungsteil 43, anderenends eine Druckrolle 44 und achsparallel zwischen dem Kreuzungsgelenk 4 und der Druckrollenachse 45 die in der Absenkstellung der Tischplattform 3 vorteilhaft oberhalb der Mittellängsebene 35 der Kolben/Zylinder-Einheit 23,24 befindliche Kolbenstangenanlenkung 38 aufweist (Fig. 2).

Mit einer derartigen Anlenkung der Hubschwinge 42 kann über die, die jeweiligen Zylinder 33,34 der Kolben/Zylinder-Einheit 23,24 im Endbereich nahe dem Schwenklager 19,19' der Scherenarme 6,8 festlegenden Stützlager 31,32 einerseits, die Kolbenstangenanlenkung 38 andererseits und die Druckrolle 44 zur Tischplattform 3 hin eine Wirkverbindung gebildet werden und der in vorteilhafter raumsparender Flachbauweise ausgebildete Scherenhubtisch 1 aus der in Fig. 2 veranschaulichten Absenkstellung in einer ersten Hubphase in die in Fig. 3 dargestellte Hubstellung H'dadurch verbracht werden, daß die Bewegung der Kolbenstangen 36,37 mit einer überlagerten Hub-Schwenk-Bewegung im Bereich der Hubschwingen 42,42' der Kreuzungsgelenke 4,4' anhebt, um dieses gleichzeitig die Hubschwinge 42,42' unter Abstützung der abrollenden Druckrolle 44 an der Unterseite der Tischplattform 3 eine Schwenkung der Hubschwingen 42,42' ausführt und über die Lager 18 und 20 an der Tischplattform 3 die Scheren-

noch dadurch erhöht werden kann, daß die jeweiligen Zylinder 33,34 im Bereich ihrer Stützlager 31,32 eine ebenfalls zur Mittellängsebene 35 asymmetrische, nach unten versetzte Abstützung 53 aufweisen und damit der Scherenhubtisch 1 an der jeweiligen Hubschwinge 42,42' in der Absenkstellung eine als Verbindungslinie zwischen der Anlenkung 38 und der Abstützung 53 dargestellte Druckwirkungsebene 52 darbietet.

Im Bereich der Hubschwinge 42 sind mit der Druckwirkungsebene 52 sowohl zwischen der jeweiligen Kolbenstangenanlenkung 38 und dem Kreuzungsgelenk 4 als auch zwischen der Kolbenstangenanlenkung 38 und der Druckrolle 44 jeweilige Krafteinleitungshebel gebildet, mit denen der Scherenhubtisch 1 in besonders raumsparender Flachbauweise so ausgebildet sein kann, daß die vorbeschriebene Spreizung bzw. Hebung mit lediglich einer Kolben/Zylinder-Einheit 23,24 in den jeweiligen Scherenarmpaaren 5,6 bzw. 7,8 durchführbar ist. Damit ist bei vermindertem technischen Aufwand ein hoher mechanischer Wirkungsgrad erzielbar und über einen in allen Hubstellungen H,H',H'' weitgehend konstanten Zylinderdruck eine gleichmäßige Hubbewegung über einen großen Hubweg, z.B. bis 1000 mm, erreichbar.

In Fig. 5 und 6 veranschaulichen vergrößerte Ausschnittsdarstellungen im Bereich der Hubschwinge 42 einen die wirksame Hebellänge zwischen der Kolbenstangenanlenkung 38 und dem Kreuzungsgelenk 4 bildenden Abstand 54, der sich ausgehend von der Absenkstellung H (Fig. 2) bis zur Stellung H' (Fig. 3, Fig. 6) ändert und bei weiter zunehmender Spreizung der Scherenarme 5,6 über die Anlage der Anschlagteile 46 im Formteil 47,47' bleibt dieser Abstand 54 als konstanter Hebelarm wirksam, bis die Tischplatt-

form 3 die Hubstellung H'' (Fig. 4, Fig. 5) erreicht hat.

In Fig. 7 und 8 ist die Hubschwinge 42 in einer deren vorteilhafte Ausbildung als ein querversteiftes Doppelglied 55 verdeutlichenden Einzeldarstellung veranschaulicht, wobei zwischen dessen Druckplatten 56,57 einenends eine im Bereich des Kreuzungsgelenks 4 zwischen den Verbindungsteilen 43 abgestützte Verbindungshülse 43', anderenends die auf einem Tragbolzen 44' befindliche Druckrolle 44 und zwischen diesen die Kolbenstangenanlenkung 38 vorgesehen sind.

Die Einbaulage der Hubschwinge 42 gemäß Fig. 9 verdeutlicht im Zusammenhang mit Fig. 8, daß die zwischen dem jeweiligen Scherenarmpaar 25',26' befindlichen Druckplatten 56,57 jeweils eine den Formteil 47,47' bildende Nut 58,58' (Fig. 8) aufweisen, in die jeweils ein als das Anschlagglied 46,46' vorgesehener und an den inneren Schenkeln 25',26' der Scherenarmpaare abgestützter Stift 59,59' einschwenkbar ist.

In zweckmäßiger Ausführung ist die Kolben/Zylinder-Einheit 23,24 im Bereich des jeweiligen Kopfbereiches 39 mit einer Einlaufmulde 60 (Fig. 6) versehen, so daß in der Absenkstellung gemäß Fig. 2 für die Druckrolle 44 ein die bodenparallele Ausrichtung der Kolben/Zylinder-Einheit 23,24 ermöglichender Freiraum erreicht ist und damit die Bauteile des Scherenhubtisches 1 auf eine die Hubhöhe H bildende Bauhöhe ohne Überstand absenkbar sind und auch bei beengten Platzverhältnissen eine gute Handhabbarkeit des Scherenhubtisches 1 ermöglicht ist.

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IdS/Ko

Ansprüche

1. 1. Scherenhubtisch, der zwischen einem bodenseitigen Unterrahmen (2) und einer oberen Tischplattform (3) zumindest ein Paar in einem Kreuzungsgelenk (4) miteinander verbundene Scherenarme (5,6; 7,8) aufweist, die in gegenüberliegenden Endbereichen (14,15;16,17) jeweils einenends ortsfest an einem Schwenklager (18,19) und anderenends über ein Loslager (20,21) am Unterrahmen (2) bzw. an der Tischplattform (3) abgestützt sind, wobei diese in einer nahe dem Unterrahmen befindlichen Ausgangsstellung im Bereich zumindest eines Scherenarmes (6,8) zur Einleitung eines Anfangshubes der Tischplattform (3) von einem am äußeren Kolbenstangenende (39) einer Kolben/Zylinder-Einheit (23,24) befindlichen Spreizhebel (40) mit Druckrolle (44) untergriffen ist, **dadurch gekennzeichnet,** daß der Spreizhebel (40) als eine zwischen jeweiligen inneren Schenkeln (25',26';27',28') zumindest eines der Scherenarmpaare (5,6;7,8) befindliche Hubschwinge (42) ausgebildet ist, die einenends einen zum Kreuzungsgelenk (4) koaxialen Verbindungsteil (43; 43'), anderenends die Druckrolle (44) und achs-

parallel zwischen dem Kreuzungsgelenk (4) und der Druckrollenachse (45) eine in der Ausgangsstellung oberhalb der Mittellängsebene (35) der Kolben/Zylinder-Einheit (26;27) befindliche Kolbenstangenanlenkung (38) aufweist.

2. Scherenhubtisch nach Anspruch 1, dadurch gekennzeichnet, daß mit der Hubschwinge (42) über eine den Zylinder (33,34) der Kolben/Zylinder-Einheit (23,24) im Endbereich nahe dem Schwenklager (18,19) des Scherenarmes (6,8) festlegende Abstützung (31,32) einerseits, die Kolbenstangenanlenkung (38) andererseits und die Druckrolle (44) eine Wirkverbindung zur Tischplattform (3) hin gebildet und diese mit jeweils nur einer je Scherenarmpaar (5,6;7,8) die Tischplattform (3) untergreifenden, in jeder Hubphase (H;H';H'') einen weitgehend konstanten Zylinderinnendruck aufweisenden Kolben/Zylinder-Einheit (23,24) in eine Hubendstellung (H'') verbringbar ist.

3. Scherenhubtisch nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Hubschwinge (42) ein deren Schwenkwinkel in einer ersten Hubphase (H') über ein im Bereich der jeweiligen inneren Schenkel (25',26') abgestütztes Anschlagglied (46,46') begrenzendes Formteil (47,47') aufweist.

4. Scherenhubtisch nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die einen Stützbereich (48) an der Plattenunterseite aufweisende Tischplattform (3) von der an der Hubschwinge (42) befindlichen Druckrolle (44) derart untergriffen ist, daß in einer ersten, vom Einschwenken des Anschlaglieds (46,46') in das Formteil (47,47') begrenzten Hubphase (H') ein Abstützungseingriff gebildet ist.

5. Scherenhubtisch nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß der mit der Tischplattform (3) über ein Loslager (20) verbundene Scherenarm (6) über einen in seiner Länge (50) auf den Schwenkweg der Hubschwinge (42) abgestimmten Rollenuntergriff (51) mit der Tischplattform (3) verbunden ist.

6. Scherenhubtisch nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß der Zylinder (33;34) der Kolben/Zylinder-Einheit (23;24) eine zu deren Mittellängsebene (35,35') beabstandete Abstützung (53;53') im Bereich des jeweiligen Schwenklagers (19,19') aufweist.

7. Scherenhubtisch nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die Hubschwinge (42) als ein querversteiftes Doppelglied (55) ausgebildet ist, zwischen dessen Druckplatten (56,57) die mit dem Verbindungsteil (43) im Bereich des Kreuzungsgelenks (4) und der Druckrolle (44) zusammenwirkende Kolbenstangenanlenkung (38) vorgesehen ist.

8. Scherenhubtisch nach einem der Ansprüche 1 bis 7, dadurch gekennzeichnet, daß die zwischen einem jeweiligen Scherenarmpaar (25',26';27',28') befindlichen Druckplatten (56,57) jeweils eine den Formteil (47,47') bildende Nut (58) aufweisen, in die jeweils ein als Anschlagglied (46,46') vorgesehener und an den inneren Schenkeln (25',26') der Scherenarmpaare (5,6) abgestützter Stift (59,59') einschwenkbar ist.

9. Scherenhubtisch nach einem der Ansprüche 1 bis 8, dadurch gekennzeichnet, daß die Druckplat-

ten (56,57) im Bereich des Kreuzungsgelenks (4) mit einer koaxialen Verbindungshülse (43') versehen sind.

10. Scherenhubtisch nach einem der Ansprüche 1 bis 9, dadurch gekennzeichnet, daß zwei Scherenarmpaare (5,6 und 7,8) mit jeweils einer Kolben/Zylinder-Einheit (23,24) und jeweils einer Hubschwinge (42,42') vorgesehen sind.

11. Scherenhubtisch nach einem der Ansprüche 1 bis 10, dadurch gekennzeichnet, daß die Tischplattform (3) im Abstützungsbereich (48) für die Stützrolle (44) mit einer unterseitigen Stabilisierungsplatte versehen ist.

12. Scherenhubtisch nach einem der Ansprüche 1 bis 11, dadurch gekennzeichnet, daß die Kolben/Zylinder-Einheit (23,24) im Bereich des Kolbenstangenendes (39) mit einer Einlaufmulde (60) versehen ist.

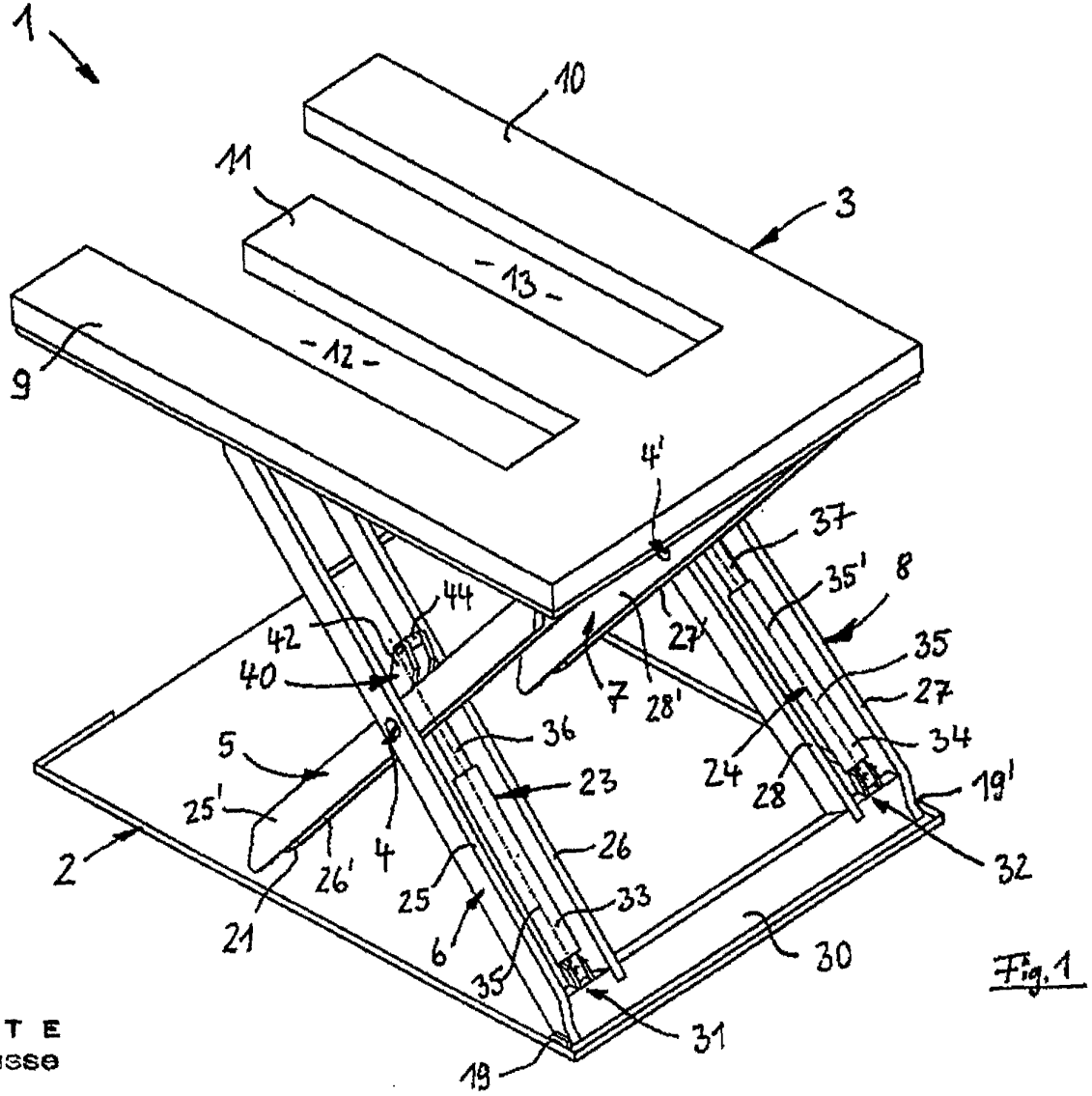


Fig. 1

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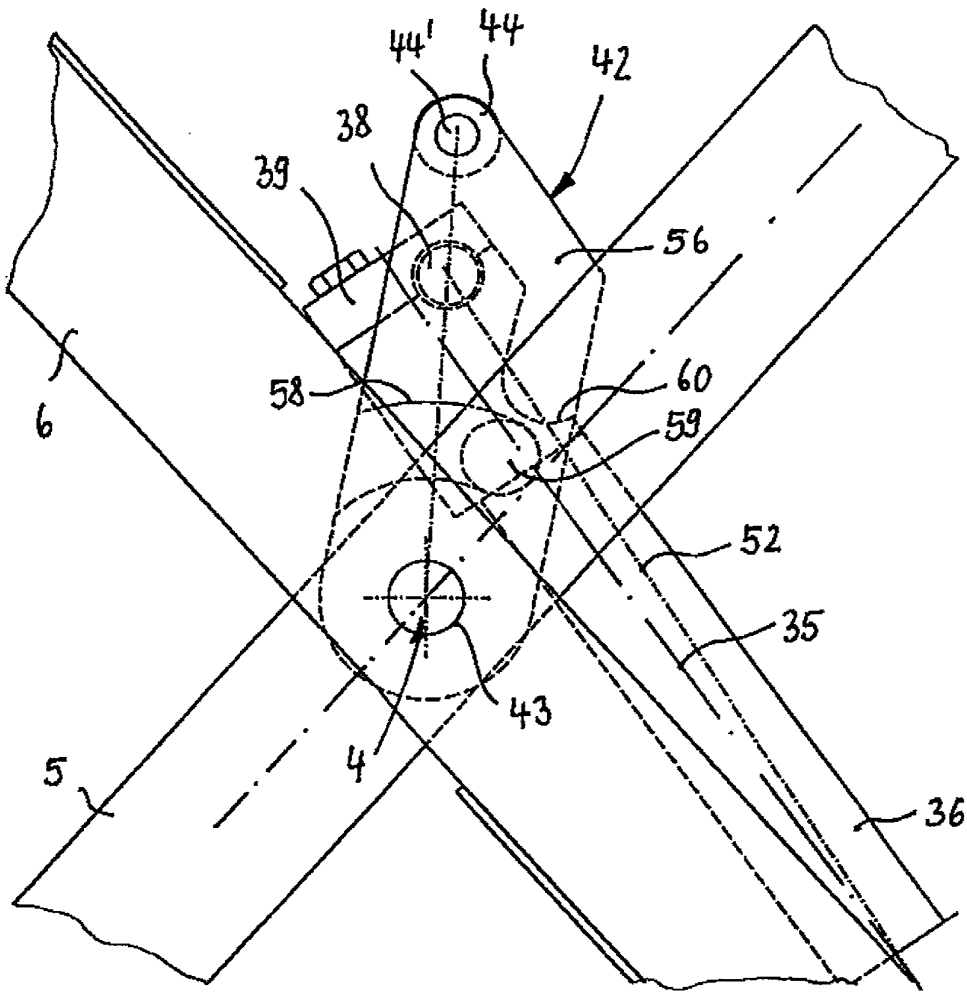


Fig. 5

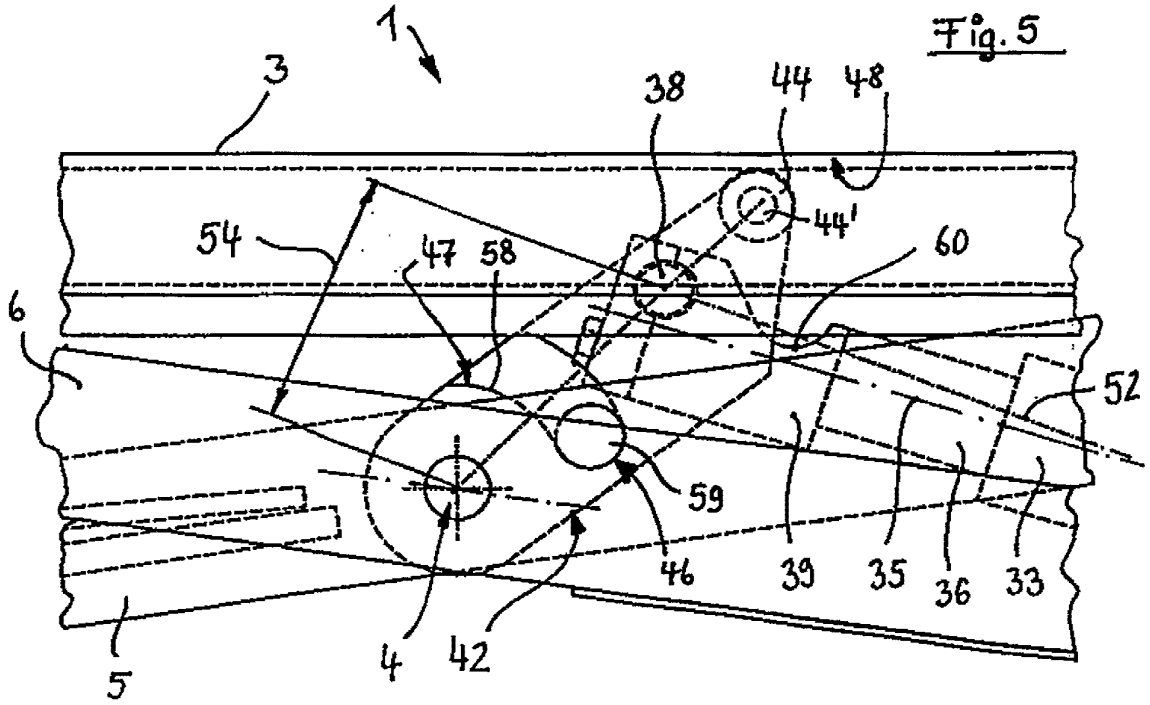


Fig. 6

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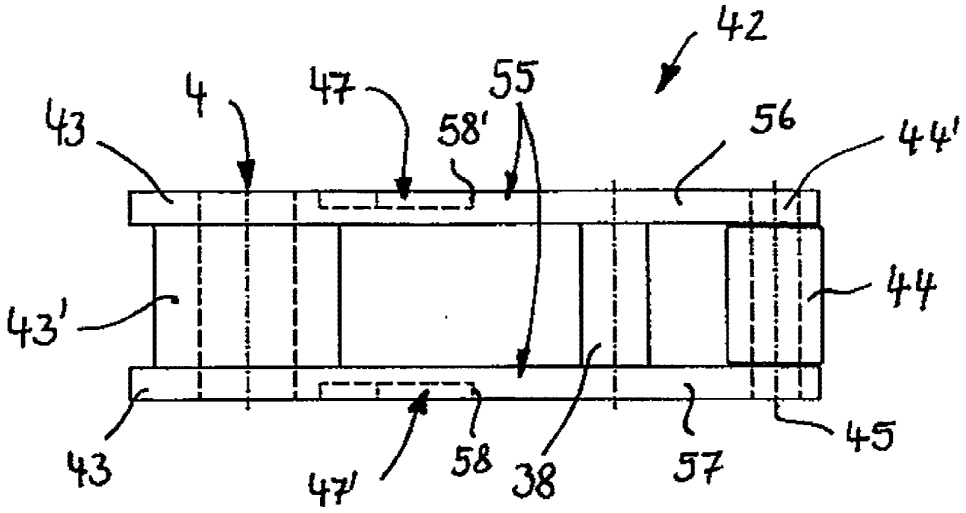


Fig. 7

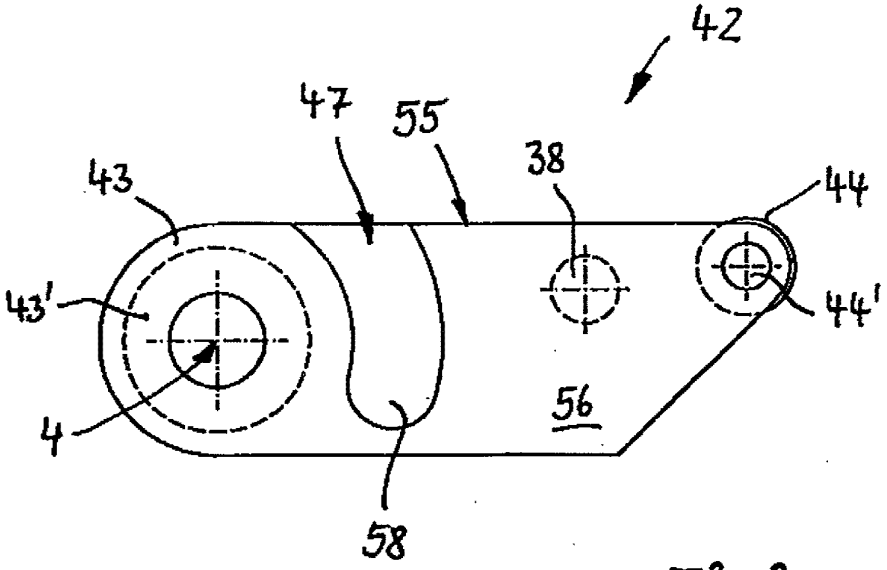


Fig. 8

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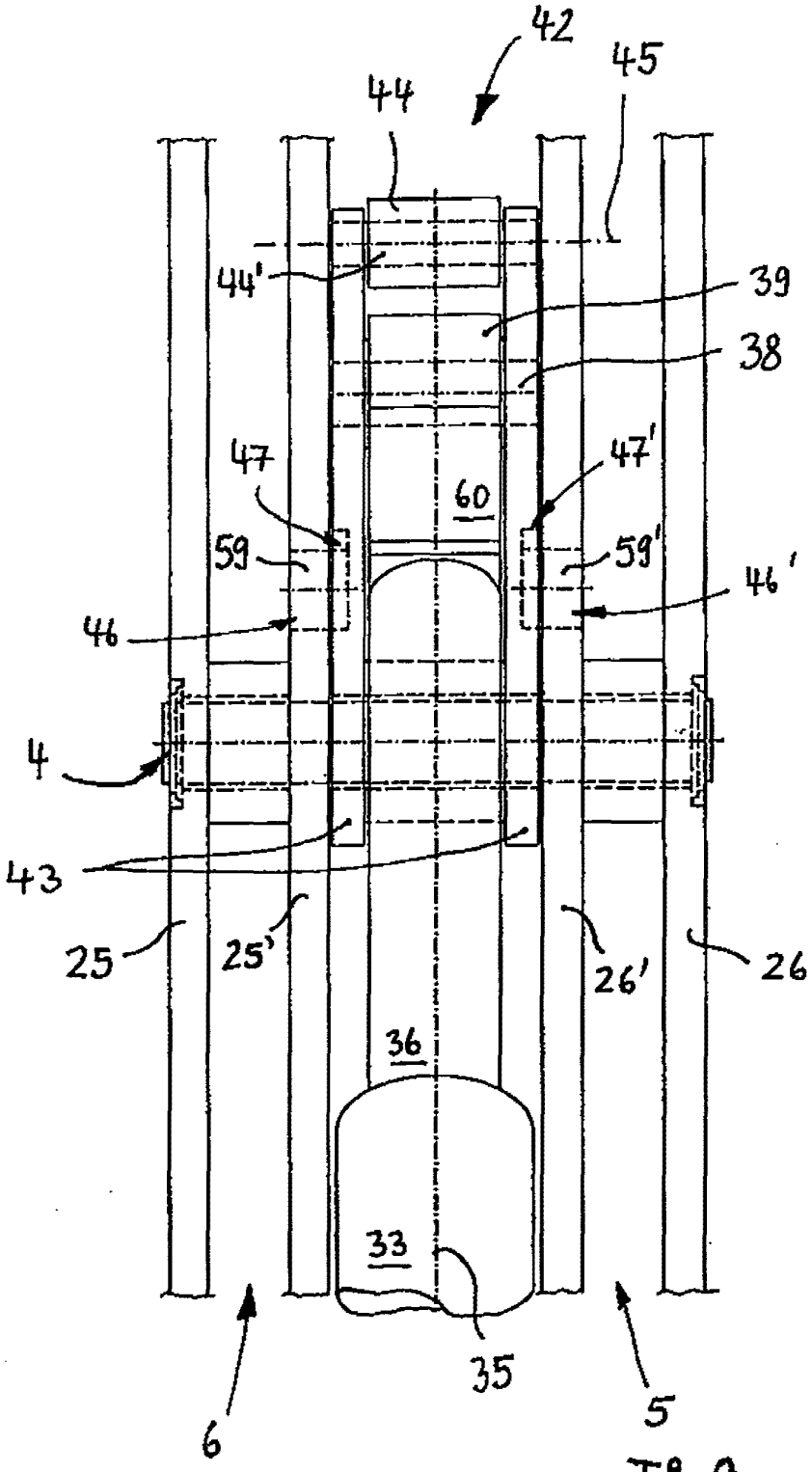


Fig. 9

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(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 531 385 B1**

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **02.08.95** (51) Int. Cl.[6]: **B60P 3/36**, A47B 9/16

(21) Application number: **91910139.4**

(22) Date of filing: **22.05.91**

(86) International application number:
PCT/SE91/00364

(87) International publication number:
WO 91/17906 (28.11.91 91/27)

(54) **STAND.**

(30) Priority: **22.05.90 SE 9001844**

(43) Date of publication of application:
17.03.93 Bulletin 93/11

(45) Publication of the grant of the patent:
02.08.95 Bulletin 95/31

(84) Designated Contracting States:
DE FR GB

(56) References cited:
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US-A- 4 558 648

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EP 0 531 385 B1

Description

The present invention relates to a table stand intended for use preferably in caravans and motorhomes, wherein the stand supports at the top thereof a frame-like part on which a tabletop is intended to be placed and which can be adjusted vertically so as to position the table-top in different height positions as specified in the preamble of claim 1 and as disclosed, for example, in US-A-4 558 648.

The tables provided in caravans/motorhomes normally have the form of a tabletop which is fitted to the top of a stand. This type of table is normally intended for two different purposes. Firstly, the table is intended for use as a conventional dining table, from which food and coffee can be partaken in the caravan/motorhome. Secondly, the table shall be capable of being raised and lowered, so as to enable the tabletop to be lowered to a position in which it will function as part of a bed in the caravan/motorhome. Lowering and raising of the table has hitherto been a complicated process, and consequently time-consuming.

The object of the present invention is to eliminate this problem and to provide a tabletop stand which can be readily handled and manoeuvred when lowering and raising the same. This object has been achieved with a stand of the aforesaid kind which is characterized by the features specified in the characterizing portion of claim 1.

A preferred embodiment of the invention will now be described in more detail with reference to the accompanying drawings, in which Figure 1 shows the inventive stand in a raised position and provided with a lockable gas-spring and a spring operating or activating means; Figure 2 illustrates the stand of Figure 1 in a lowered position; Figure 3 and Figure 4 show the attachment of the gas-spring to the upper part of the stand, wherein Figure 4 shows the attachment from beneath; and Figure 5 illustrates the construction of the operating means.

Figures 1 and 2 illustrate the inventive stand. The stand includes a frame-like part 1 which is carried by two leg members 2, 3. Each leg member 2, 3 includes two substantially parallel rods or bars 4, 5; 6, 7, wherein the two bars of each pair of bars are spaced from one another and are connected together at both ends thereof by means of a respective transverse rod 8, 9; 10, 11, wherein the lowermost transverse rods 8; 10 function to support the stand against the underlying support surface and wherein the upper, transverse rods 9; 11 are intended to coact with the frame-like part 1. The two leg members 2, 3, i.e. the pairs of bars 4, 5; 6, 7 are mutually connected by means of a hinge means or pivot in the form of a transverse rod 12, which extends through the bars approximately midway therealong the rods, preferably at a location which is slightly above centre. This enables the two ends of respective pairs of bars 4, 5; 6, 7 to be moved towards and away from each other in a scissor-like fashion and therewith move the frame-like part 1 vertically.

The frame-like part 1 and bars of the illustrated embodiment are made of varnished or lacquered steel plate and the frame-like part includes four bars 13-16 disposed in the form of a rectangle. The stand may, of course, be made of some other material and the frame-like part 1 may have the form of a square. At least two of the frame bars, the longitudinally extending bars 14, 15 of the illustrated embodiment have a substantially U-shaped cross-section with the legs of the U facing inwards. The upper transferse rods 9, 11 of the two leg members 2, 3 are intended for coaction with the frame bars 14, 15. The one rod 9 is pivotally mounted in the bars 14, 15, whereas the other transverse rod 11 is provided at both ends with suitable means for sliding in the U-shaped part of the bars in order to achieve the aforesaid scissor-like movement of the leg members.

An essential feature of the invention is that a blockable gas-spring 17, or piston-cylinder device, is provided for enabling the position of the frame-like part 1 to be adjusted vertically in a smooth continuous fashion, both in an upward and in a downward direction. The gas-spring includes a bottom part 18 which is pivotally connected to the leg member 3 beneath the pivot rod 12, and an upper part 19 which is pivotally connected to the transverse frame-bar 15 on the same side of a vertical plane passing through the rod 12 as the lower part 18 (see also Figures 3, 4).

The gas-spring 17 is provided with a centrally positioned pin 20 which protrudes slightly from the upper part 19 of the gas-spring in an axial direction. This pin 20 is intended to activate a release valve provided within the gas-spring.

The pin 20 is intended to coact with a cylindrical bushing 21 which is pivotally connected to a holder means 23, by means of screws 22 or the like, said holder means being mounted on the inside of the frame bar 15. The pin 20 thus extends straight through the bushing 21 in its transverse direction and protrudes slightly beyond the bushing for coaction with an operating means or activator 24 (see also Figure 5). Because the bushing 21 is pivotally connected to the holder means 23 and because the bottom part 18 of the gas-spring 17 is pivotally connected to the leg member 3, the gas-spring will take different angular positions in relation to the frame-like part 1 of the stand and the leg member 3. According to this embodiment, the leg member 3 includes two parallel bars or rods 6,

7. The bottom part 18 of the gas-spring 17 is therewith pivotally connected to a transverse rod 25, which mutually connects the bars or rod 6, 7 and which is positioned beneath the hinge or pivot rod 12.

The operating means 24 has an elongated shape and has a handle 26 provided on the rear thereof and a part 27 which functions to engage the end of the pin 20 on the front thereof. The part 27 is provided with a hole 28 by means of which the operating means is pivotally conencted to the holder means 23 substantially immediately above the pivot 22 for attachment of the bushing 21. The position of the pivot 22 has been referenced x in Figure 5. The forward part 27 of the operating means 24 is also provided with a concave recess 29 which is intended to abut the end of the pin 20 and which includes substantially 90° of a circle. The radii R of the recess 29 are therewith essentially the same, taken from the x. One important advantage afforded hereby is that the force exerted on the pin 20 by the operating means will act substantially in the longitudinal direction of the pin, irrespective of the height position of the stand, i.e. irrespective of the angle between the operating means 24 and the longitudinal axis line of the pin 20. This fact enables the gas-spring 17 to be operated effectively. When the pin 20 is pressed inwardly by means of the operating means 24, the release valve in the gas-spring will open. The gas-spring is thereby compressed with a force which is greater than the resistance exerted by the gas-spring, which takes place when the stand is to be pressed down to a low level. If it is wished to maintain the stand at this low level, the pressure on the pin is removed, thereby causing the pin to return to its starting position. This closes the release valve in the gas-spring and the spring will thereby be blocked and function as a rigid rod. When wishing to raise the stand, the pin 20 is pressed-in by means of the operating means 24, thereby raising the frame part of the stand to the desired position, whereafter the pressure on the pin 20 is removed.

It will be understood that the invention is not restricted to the described embodiment and that modifications can be made within the scope of the following Claims. For instance, each leg member may consist of a single rod instead of two mutually connected rods, as illustrated in the described embodiment.

Claims

1. A table stand preferably for use in caravans, motor homes and the like, comprising an upper frame-like part (1) on which a table top is intended to be placed, at least two leg members (2, 3) which are hinged or pivotally connected together by a hinge or pivot (12) so as to enable the parts of said leg members located on either side of the hinge or pivot to be moved towards and away from one another in a scissor-like fashion, thereby to adjust the height of the upper frame-like part (and the table top), a weight-equalizing means for compensating, among other things, the weight of the table top, and a locking means for locking the leg members in an angular position corresponding to the adjusted height, wherein said weight-equalizing means comprises a gas spring (17) which acts between one of the leg members and said upper frame-like part, **characterized** in that the locking means comprises a gas spring (17) which can be blocked by activation of a valve to a first position at an angular value of the leg members adjusted to a selected height position, so that the position of the upper frame-like part, and therewith the position of the table top, relative to an underlying support surface can be maintained, wherein the valve can be adjusted to a second position in which the gas spring is released for renewed adjustment of the height of the upper frame-like part (1); in that the valve can be switched between said first and said second positions by means of a pin (20) which extends through a bushing (21) connected to said gas spring and pivotally connected to a holder means (23) mounted in the upper frame-like part (1); and in that said pin (20) can be moved axially by means of an operating means (24) pivotally connected to the holder means (23) and having a concave recess (29) for actuable coaction with the pin (20).

2. A stand according to Claim 1, **characterized** in that the cylinder of the gas spring is attached to the upper frame-like part (1) through the intermediary of the bushing (21).

3. A stand according to Claim 1 or 2, **characterized** in that the gas spring cylinder (19) supports said centrally placed pin (20) which is intended to adjust the setting of the valve mounted within the gas spring to either the first valve setting or the second valve setting, in response to rotary movement generated by the operating means (24).

4. A stand according to Claim 1, **characterized** in that the gas spring (17) has an upper part (19) which is pivotally connected to the upper frame-like part (1) on one side of a vertical plane which passes through the pivot (12), and a lower part (18) which is pivotally connected

to the leg member (3) on the same side of said vertical plane as the upper part (19) and beneath the pivot (12).

5. A stand according to Claim 1, **characterized** in that a pivot for pivotal movement of the operating means (24) is mounted in the holder means (23) adjacent the bushing pivot (22).

6. A stand according to Claim 5, **characterized** in that the operating means (24) includes a rear part in the form of a handle (26) and a front part (27) which is intended for coaction with the pin (20) through the intermediary of the concave recess (29).

7. A stand according to Claim 1, **characterized** in that the recess (29) includes generally 90° of a circular arc.

8. A stand according to any one of the preceding Claims, **characterized** in that each of the two leg members (2, 3) includes two generally parallel bars (4, 5; 6, 7) which are mutually connected together at the bottoms thereof by a transverse first rod (8 or 10) and at the tops thereof by a transverse second bar (9 or 11), said second bars (9, 11) being intended to coact with the upper frame-like part (1).

9. A stand according to Claim 8, **characterized** in that the frame-like part (1) comprises four beams (13-16) which are arranged in the form of a rectangle or square, wherein two mutually opposite beams (14, 16) are intended to coact with the second bars (9, 11); and in that said two beams (14, 16) have a U-shaped cross-section, wherein the legs of the one beam are directed towards the legs of the other beam.

10. A stand according to Claim 9, **characterized** in that one of the second bars (9) is pivotally connected to said beams (14, 16) while the second bar (11) is provided with suitable means at its two ends to enable the U-shaped parts to slide in the two beams (14, 16).

11. A stand according to Claim 9, **characterized** in that a beam (15) is intended to connect parallel beams (14, 16) together at one of their two ends, so that the beam (15) extends generally perpendicular to these beams; and in that the holder means (23) is mounted generally opposite said beam (15) and has an extension which is directed inwardly towards the centre of the upper frame-like part.

Patentansprüche

1. Tischgestell, vorzugsweise zur Verwendung in Wohnwagen, Wohnmobilen und dergleichen, das folgendes umfaßt: ein oberes rahmenähnliches Teil (1), auf das eine Tischplatte plaziert werden soll, mindestens zwei Beinglieder (2, 3), die über ein Gelenk oder einen Drehzapfen (12) gelenkig oder schwenkbar miteinander verbunden sind, so daß sich die auf beiden Seiten des Gelenks oder Drehzapfens befindenden Teile der Beinglieder scherenartig aufeinander zu oder voneinander weg bewegen können, wodurch die Höhe des oberen rahmenartigen Teils (und der Tischplatte) eingestellt werden kann, ein Gewichtsausgleichsmittel zum Ausgleich u.a. des Gewichts der Tischplatte und ein Verriegelungsmittel zur Verriegelung der Beinglieder in einer der eingestellten Höhe entsprechenden Winkelposition, wobei das Gewichtsausgleichsmittel eine Gasdruckfeder (17) umfaßt, die zwischen einem der Beinglieder und dem oberen rahmenartigen Teil wirkt, dadurch gekennzeichnet, daß das Verriegelungsmittel eine Gasdruckfeder (17) umfaßt, die durch Betätigung eines Ventils in eine erste Position bei einem Winkelwert der auf eine ausgewählte Höhenposition eingestellten Beinglieder gesperrt werden kann, so daß die Position des oberen rahmenartigen Teils und damit die Position der Tischplatte gegenüber einer darunter liegenden Stützplatte aufrechterhalten werden kann, wobei das Ventil auf eine zweite Position eingestellt werden kann, in der die Gasdruckfeder zur erneuten Einstellung der Höhe des oberen rahmenartigen Teils (1) freigegeben wird; daß das Ventil über einen Stift (20), der sich durch eine mit der Gasdruckfeder verbundene und mit einem im oberen rahmenartigen Teil (1) angebrachten Haltemittel (23) schwenkbar verbundene Durchführung erstreckt, zwischen der ersten und der zweiten Position geschaltet werden kann; und daß der Stift (20) über ein schwenkbar mit dem Haltemittel (23) verbundenes Betätigungsmittel (24), das zur betätigbaren Zusammenwirkung mit dem Stift (20) eine konkave Ausnehmung (29) aufweist, in Längsrichtung bewegt werden kann.

2. Gestell nach Anspruch 1, dadurch gekennzeichnet, daß der Zylinder der Gasdruckfeder mittels der Durchführung (21) am oberen rahmenartigen Teil (1) befestigt ist.

3. Gestell nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß der Gasdruckfederzylinder (19) den mittig positionierten Stift (20) stützt,

der dazu bestimmt ist, das in der Gasdruckfeder angebrachte Ventil entweder auf die erste Ventileinstellung oder die zweite Ventileinstellung als Reaktion auf von dem Betätigungsmittel (24) erzeugte Drehbewegung zu verstellen.

4. Gestell nach Anspruch 1, dadurch gekennzeichnet, daß die Gasdruckfeder (17) ein oberes Teil (19), das auf einer Seite einer vertikalen Ebene, die durch den Drehzapfen (12) geht, schwenkbar mit dem oberen rahmenartigen Teil (1) verbunden ist, und ein unteres Teil (18), das auf der gleichen Seite der vertikalen Ebene wie das obere Teil (19) und unterhalb des Drehzapfens (12) schwenkbar mit dem Beinglied (3) verbunden ist, aufweist.

5. Gestell nach Anspruch 1, dadurch gekennzeichnet, daß ein Drehzapfen zur Schwenkbewegung des Betätigungsmittels (24) im Haltemittel (23) neben dem Durchführungsdrehzapfen (22) angebracht ist.

6. Gestell nach Anspruch 5, dadurch gekennzeichnet, daß das Betätigungsmittel (24) ein rückwärtiges Teil in Form eines Griffs (26) und ein vorderes Teil (27), das zur Zusammenwirkung mit dem Stift (20) über die konkave Ausnehmung (29) bestimmt ist, enthält.

7. Gestell nach Anspruch 1, dadurch gekennzeichnet, daß die Ausnehmung (29) allgemein 90° eines Kreisbogens einschließt.

8. Gestell nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß jedes der beiden Beinglieder (2, 3) zwei allgemein parallele Stäbe (4, 5; 6, 7) enthält, die beide an ihren unteren Teilen über eine erste Querstange (8 oder 10) und an ihren oberen Teilen über eine zweite Querstange (9 oder 11) miteinander verbunden sind, wobei die zweiten Stangen (9, 11) dazu bestimmt sind, mit dem oberen rahmenartigen Teil (1) zusammenzuwirken.

9. Gestell nach Anspruch 8, dadurch gekennzeichnet, daß das rahmenartige Teil (1) vier Balken (13 - 16) umfaßt, die in Form eines Rechtecks oder Quadrats angeordnet sind, wobei die einander gegenüberliegenden Balken (14, 16) dazu bestimmt sind, mit den zweiten Stangen (9, 11) zusammenzuwirken; und daß die beiden Balken (14, 16) einen U-förmigen Querschnitt aufweisen, wobei die Beine des einen Balkens zu den Beinen des anderen Balkens hin weisen.

10. Gestell nach Anspruch 9, dadurch gekennzeichnet, daß einer der zweiten Stäbe (9) schwenkbar mit den Balken (14, 16) verbunden ist, während der zweite Stab (11) an seinen beiden Enden mit einem geeigneten Mittel versehen ist, um zu ermöglichen, daß die U-förmigen Teile in den beiden Balken (14, 16) gleiten können.

11. Gestell nach Anspruch 9, dadurch gekennzeichnet, daß ein Balken (15) dazu bestimmt ist, parallele Balken (14, 16) an einem ihrer beiden Enden miteinander zu verbinden, so daß sich der Balken (15) allgemein senkrecht zu diesen Balken erstreckt; und daß das Haltemittel (23) allgemein gegenüber dem Balken (15) angebracht ist und eine Verlängerung aufweist, die nach innen zum Mittelpunkt des oberen rahmenartigen Teils weist.

Revendications

1. Support de table pour utilisation de préférence dans les caravanes, les camping-cars et similaire, comprenant une partie supérieure (1) en forme de cadre sur laquelle un dessus de table est destiné à être placé, au moins deux organes de pieds (2, 3) qui sont montés sur charnière ou reliés ensemble pour pivotement par une charnière ou un pivot (12) de manière à permettre aux parties desdits organes de pieds situées de part et d'autre de la charnière ou du pivot d'être approchées et éloignées l'une de l'autre à la manière de ciseaux, pour régler par ce moyen la hauteur de la partie supérieure en forme de cadre (et du dessus de table), un moyen d'égalisation de poids pour compenser, entre autres, le poids du dessus de table, et un moyen de verrouillage pour verrouiller les organes de pieds dans une position angulaire correspondant à la hauteur réglée, dans lequel ledit moyen d'égalisation de poids comprend un amortisseur à gaz (17) qui agit entre un des organes de pieds et ladite partie supérieure en forme de cadre, caractérisé en ce que le moyen de verrouillage comprend un amortisseur à gaz (17) qui peut être bloqué en actionnant un clapet dans une première position à une valeur angulaire des organes de pieds réglée pour une position de hauteur choisie, de sorte que la position de la partie supérieure en forme de cadre, et avec cette dernière la position du dessus de table, par rapport à une surface de support sous-jacente peut être conservée, où le clapet peut être réglé dans une deuxième position dans laquelle l'amortisseur à gaz est libéré pour un réglage renouvelé de la hauteur de la partie supérieure en

forme de cadre (1); en ce que le clapet peut avoir son réglage changé entre ladite première et ladite deuxième positions au moyen d'une goupille (20) qui s'étend à travers une bague (21) reliée audit amortisseur à gaz et reliée pour pivotement à un moyen de support (23) monté dans la partie supérieure en forme de cadre (1); et en ce que ladite goupille (20) peut être déplacée axialement au moyen d'un moyen de fonctionnement (24) relié pour pivotement au moyen de support (23) et comportant un évidement concave (29) pour action commune de mise en action avec la goupille (20).

2. Support selon la revendication 1, caractérisé en ce que le cylindre de l'amortisseur à gaz est fixé à la partie supérieure en forme de cadre (1) par l'intermédiaire de la bague (21).

3. Support selon la revendication 1 ou 2, caractérisé en ce que le cylindre (19) de l'amortisseur à gaz supporte ladite goupille (20) placée centralement qui est destinée à ajuster le réglage du clapet monté à l'intérieur de l'amortisseur à gaz sur le premier réglage du clapet ou le deuxième réglage du clapet, en réponse au mouvement rotatif engendré par le moyen de fonctionnement (24).

4. Support selon la revendication 1, caractérisé en ce que l'amortisseur à gaz (17) comporte une partie supérieure (19) qui est reliée pour pivotement à la partie supérieure en forme de cadre (1) d'un côté d'un plan vertical qui passe à travers le pivot (12), et une partie inférieure (18) qui est reliée pour pivotement à l'organe de pieds (3) du même côté dudit plan vertical que la partie supérieure (19) et en dessous du pivot (12).

5. Support selon la revendication 1, caractérisé en ce qu'un pivot pour le mouvement pivotant du moyen de fonctionnement (24) est monté dans le moyen de support (23) en position adjacente au pivot de bague (22).

6. Support selon la revendication 5, caractérisé en ce que le moyen de fonctionnement (24) inclut une partie arrière de la forme d'une poignée (26) et une partie avant (27) qui est destinée à agir en commun avec la goupille (20) par l'intermédiaire de l'évidement concave (29).

7. Support selon la revendication 1, caractérisé en ce que l'évidement (29) inclut généralement 90° d'un arc circulaire.

8. Support selon l'une quelconque des revendications précédentes, caractérisé en ce que chacun des deux organes de pieds (2, 3) inclut deux barres généralement parallèles (4, 5; 6, 7) qui sont reliées mutuellement ensemble à leurs parties inférieures par une première tige transversale (8 ou 10) et à leurs parties supérieures par une deuxième tige transversale (9 ou 11), lesdites deuxièmes tiges (9, 11) étant destinées à agir en commun avec la partie supérieure en forme de cadre (1).

9. Support selon la revendication 8, caractérisé en ce que la partie en forme de cadre (1) comprend quatre poutrelles (13-16) qui sont agencées sous la forme d'un rectangle ou d'un carré, dans lequel deux poutrelles mutuellement opposées (14, 16) sont destinées à agir en commun avec les deuxièmes tiges (9, 11); et en ce que lesdites deux poutrelles (14, 16) ont une coupe transversale en U, dans lequel les pieds d'une des poutrelles sont dirigés vers les pieds de l'autre poutrelle.

10. Support selon la revendication 9, caractérisé en ce que une des deuxièmes tiges (9) est reliée pour pivotement auxdites poutrelles (14, 16) alors que la deuxième tige (11) est fournie avec un moyen convenable à ses deux extrémités pour permettre aux parties en forme de U de coulisser dans les deux poutrelles (14, 16).

11. Support selon la revendication 9, caractérisé en ce que une poutrelle (15) est destinée à relier les poutrelles parallèles (14, 16) ensemble à l'une de leurs extrémités, de sorte que la poutrelle (15) s'étend généralement perpendiculairement à ces poutrelles; et en ce que le moyen de support (23) est monté généralement en vis-à-vis de ladite poutrelle (15) et comporte une extension qui est dirigée vers l'intérieur vers le centre de la partie supérieure en forme de cadre.

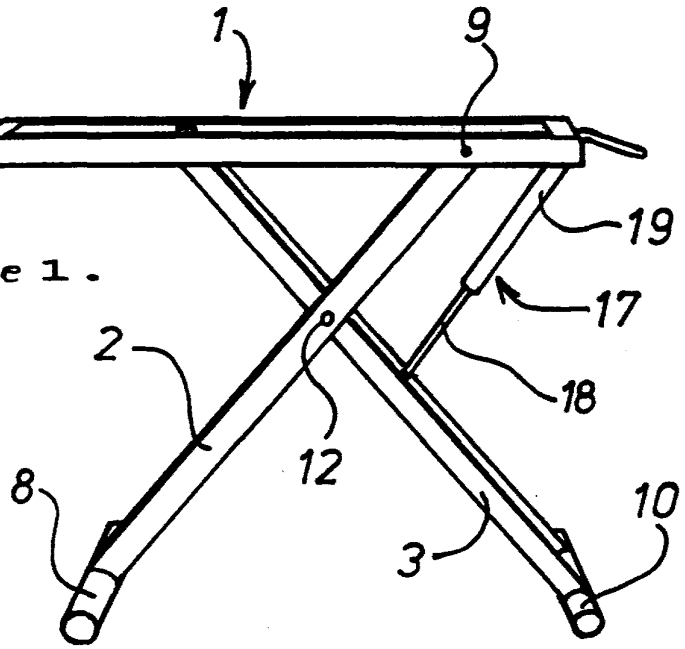
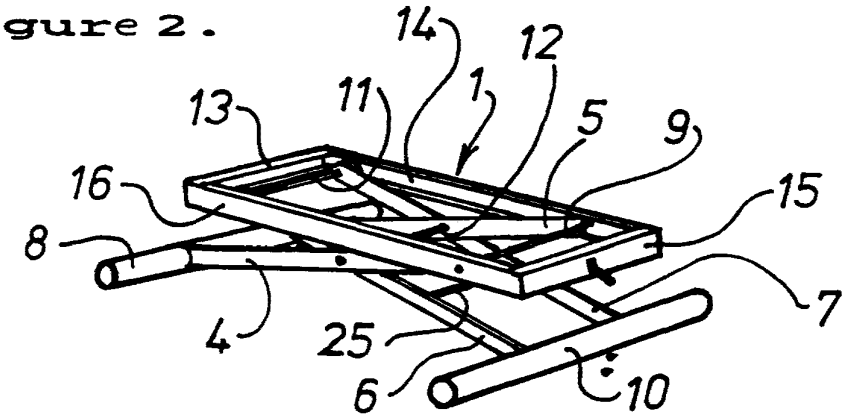


Figure 1.

Figure 2.



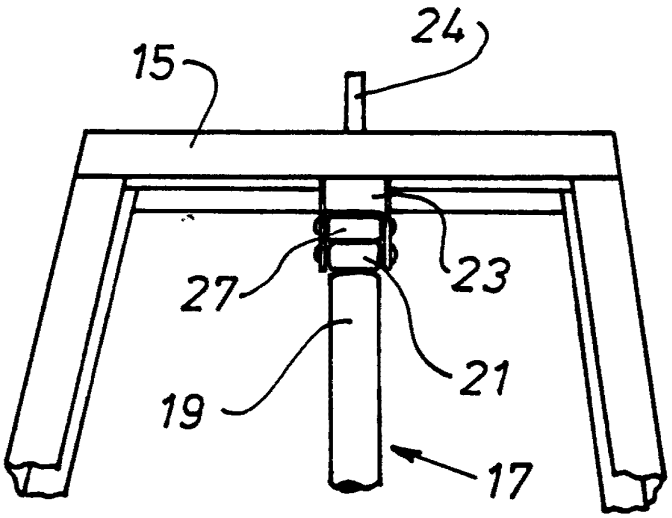
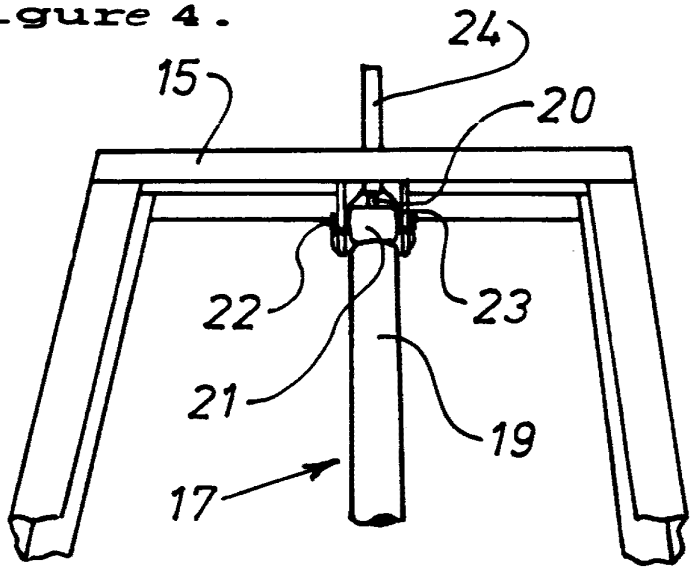


Figure 3.

Figure 4.



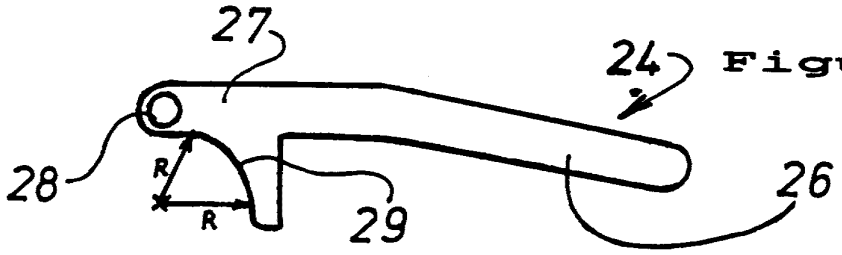


Figure 5.

Patents

Positioning mechanism, lifting-positioning device and lifting desk

Abstract

The utility model relates to positioning mechanism, lifting-positioning device and lifting desk, positioning mechanism has sliding panel, locating piece, and spaced apart location hole is equipped on sliding panel; Locating piece is hingedly arranged on guide bracket, and guide bracket is equipped with guide hole, and locating piece is equipped with fastening screw, and locating piece is grasped bar by hand and driven, and realizes that fastening screw passes through the location hole on guide hole guiding insertion sliding panel with this.Lifting-positioning device has bearing seat, and bearing seat is connected and fixed seat by crane, and crane drives the relatively fixed seat of bearing seat to rise or fall; The relatively fixed seat of bearing seat, which rises or introduce when falling above-mentioned positioning mechanism cooperation crane, realizes the above adjustable height positioning of two-stage; Lifting-positioning device can be used for computer desk, dining table, work top, article and bear the liftings such as face, keyboard support use.Lifting positioning is firm, realizes the multistage lifting positioning of both forward and reverse directions, meets the adaptive adjustment of user of different heights.Easy to operate and production cost is relatively low, long service life.

CN208403596U

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Dongguan City Dalingshan Kang Hui Hardware Products Factory

Worldwide applications

2017 CN

Application CN201721544282.7U events

2017-11-18	Application filed by Dongguan City Dalingshan Kang Hui Hardware Products Factory
2017-11-18	Priority to CN201721544282.7U
2019-01-22	Application granted
2019-01-22	Publication of CN208403596U
Status	Active
2027-11-18	Anticipated expiration

Info: Cited by (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (10)

Hide Dependent

1. positioning mechanism, it is characterised in that: the positioning mechanism (5) has sliding panel (51), locating piece (52), in sliding panel (51) it is equipped with spaced apart location hole (511); Locating piece (52) in respective carrier, is positioned by reciprocating hinged setting Block (52) is equipped with fastening screw (521), and locating piece (52) is driven by hand behaviour bar (53), realizes fastening screw (521) with this The location hole (511) for being inserted into or exiting on sliding panel (51).

2. positioning mechanism according to claim 1, it is characterised in that: the locating piece (52) is hingedly arranged in guide bracket (57) On, guide bracket (57) is equipped with guide hole (571), and fastening screw (521) passes through the positioning in guide hole (571) guiding insertion sliding panel (51) Hole (511).

3. positioning mechanism according to claim 1 or 2, it is characterised in that: the locating piece (52) and hand behaviour bar (53) it Between connected by connecting rod (54), hand grasps bar (53) and is equipped with eccentric block (55), the eccentric block (55) bias articulated linkage (54) One end, another end of connecting rod (54) are then articulated and connected locating piece (52); Locating piece (52) is stuck up in the case where connecting rod (54) drive One tilting end of seesaw type tectonic movement, locating piece (52) is fastening screw (521), and another tilting end of locating piece (52) is by compressing Spring (56) support top, compressed spring (56) support top locating piece (52) and realize locating piece (52) fastening screw (521) insertion slide Location hole (511) on movable plate (51).

4. lifting-positioning device, it is characterised in that: the device has bearing seat (1), and bearing seat (1) is connected by crane (2) Fixing seat (3), crane (2) drive bearing seat (1) relatively fixed seat (3) to rise or fall; The relatively fixed seat of bearing seat (1) (3) positioning mechanism (5) cooperation crane (2) is introduced when rising or fall realizes the above adjustable height positioning of two-stage; Whereby, it carries Seat (1) rises or falls and can be located in corresponding height by positioning mechanism (5) realization, reaches height adjustment use; This is fixed Position mechanism (5) has sliding panel (51), locating piece (52), is equipped with spaced apart location hole (511) on sliding panel (51), sliding Movable plate (51) connection crane (2) is simultaneously assembled on bearing seat (1) as slideable; Locating piece (52) hingedly setting with carrying On the connected guide bracket (57) of seat (1), locating piece (52) is equipped with fastening screw (521), and locating piece (52) grasps bar (53) by hand Driving realizes fastening screw (521) insertion with this or exits the location hole (511) on sliding panel (51); Guide bracket (57) is equipped with and leads Hole (571), fastening screw (521) pass through the location hole (511) in guide hole (571) guiding insertion sliding panel (51).

5. lifting-positioning device according to claim 4, it is characterised in that: the locating piece (52) and hand behaviour bar (53) it Between connected by connecting rod (54), hand grasps bar (53) and is equipped with eccentric block (55), the eccentric block (55) bias articulated linkage (54) One end, another end of connecting rod (54) are then articulated and connected locating piece (52); Locating piece (52) is stuck up in the case where connecting rod (54) drive One tilting end of seesaw type tectonic movement, locating piece (52) is fastening screw (521), and another tilting end of locating piece (52) is by compressing Spring (56) support top, compressed spring (56) support top locating piece (52) and realize locating piece (52) fastening screw (521) insertion slide Location hole (511) on movable plate (51).

6. lifting-positioning device according to claim 4 or 5, it is characterised in that: the crane (2) is intersected by two struts it is hinged to constitute, wherein the upper end and bearing seat (1) of the first strut (21) are articulated and connected, and the lower end of first strut (21) is then it is assembled on fixing seat (3) by slideable; Upper

end connection sliding panel (51) of second strut (22) is assembled in as slideable On bearing seat (1), and the lower end of second strut (22) and fixing seat (3) are articulated and connected; The lower end of first strut (21) it is pulled and supported by elastomer (4) and the lower extreme direction towards the second strut (22) is drawn close, fixing seat (3) is equipped with booster (6), the power-assisted Device (6) drives the hinge joint of the second strut (22) relative to its lower end to rotate.

7. lifting-positioning device according to claim 4 or 5, it is characterised in that: the crane (2) is by two parallel pendulum Bar (23) and upper connecting rod (24), lower pull rod (25) are constituted, and hingedly, and two is flat for the upper end and bearing seat (1) of two parallel swing rods (23) The lower end and fixing seat (3) of row swing rod (23) hingedly, are achieved in two parallel swing rods (23) and bearing seat (1), fixing seat (3) shape At movable quadrangle; The hinged one swing rod (23) in upper connecting rod (24) one end, the then tiltedly upper hinged sliding of the other end of upper connecting rod (24) Plate (51), sliding panel (51) are assembled on bearing seat (1) as slideable; The hinged another swing rod (23) in lower pull rod (25) one end, The lower end of lower pull rod (25) is then assembled on fixing seat (3) as slideable obliquely downward, and the lower end of lower pull rod (25) is by elastomer (4) It pulls and supports and is drawn close towards swing rod (23) direction hinged with fixing seat (3), fixing seat (3) is equipped with booster (6), the booster (6) driving one swing rod (23) is rotated relative to it with the hinged hinge joint of fixing seat (3).

8. lifting desk, it is characterised in that: the desk has desktop (100), is assembled with bearing seat in desktop (100) downside (1), bearing seat (1) is connected and fixed seat (3) by crane (2), and crane (2) drives bearing seat (1) relatively fixed seat (3) to rise It rises or falls, realize desktop (100) lifting; Bearing seat (1) relatively fixed seat (3) introduces positioning mechanism (5) when rising or falling Crane (2) are cooperated to realize the above adjustable height positioning of two-stage; Whereby, bearing seat (1), which rises or falls, can pass through localization machine Structure (5) realization is located in corresponding height, reaches height adjustment use; The positioning mechanism (5) has sliding panel (51), locating piece (52), spaced apart location hole (511) are equipped on sliding panel (51), sliding panel (51) connection crane (2) and by can slide Dynamic formula is assembled on bearing seat (1); Hingedly setting is on the guide bracket (57) being connected with bearing seat (1) for locating piece (52), locating piece (52) fastening screw (521) are equipped with, locating piece (52) is driven by hand behaviour bar (53), realizes that fastening screw (521) are inserted with this Enter or exit the location hole (511) on sliding panel (51); Guide bracket (57) Is equipped with guide hole (571), and fastening screw (521) passes through guide hole (571) location hole (511) in guiding insertion sliding panel (51); Whereby, bearing seat (1), which rises or falls, can pass through localization machine Structure (5) realization is located in corresponding height, reaches the use of desktop (100) height adjustment.

9. lifting desk according to claim 8, it is characterised in that: desktop (100) downside is assembled with left and right pair The crane (2) of title has support beam (8) connection between left and right crane (2); Crane (2) is by two strut cross-articulation structures At, wherein the upper end and bearing seat (1) of the first strut (21) are articulated and connected, and the lower end of first strut (21) is then pressed and can be slided Dynamic formula is assembled on fixing seat (3); Upper end connection sliding panel (51) of second strut (22) is assembled in bearing seat by slideable (1) on, and the lower end of second strut (22) and fixing seat (3) are articulated and connected; The lower end of first strut (21) is by elasticity Body (4) pulls and supports and the lower extreme direction towards the second strut (22) is drawn close, and fixing seat (3) is equipped with booster (6), the booster (6) Hinge joint of the second strut (22) relative to its lower end is driven to rotate.

10. lifting desk according to claim 8, it is characterised in that: desktop (100) downside is assembled with left and right pair The crane (2) of title has support beam (8) connection between left and right crane (2); Crane (2) is by two parallel swing rods (23) And upper connecting rod (24), lower pull rod (25) are constituted, the upper ends of two parallel swing rods (23) and bearing seat (1) hingedly, and two parallel swing rods (23) lower end and fixing seat (3) hingedly, is achieved in two parallel swing rods (23) and bearing seat (1), fixing seat (3) formation activity Quadrangle; The hinged one swing rod (23) in upper connecting rod (24) one end, the other end of upper connecting rod (24) then tiltedly go up hinged sliding panel (51), Sliding panel (51) is assembled on bearing seat (1) as slideable; The hinged another swing rod (23) in lower pull rod (25) one end, lower pull rod (25) lower end is then assembled on fixing seat (3) as slideable obliquely downward, the lower end of lower pull rod (25) pulled and supported by elastomer (4) and The direction hinged with fixing seat (3) towards swing rod (23) is drawn close, and fixing seat (3) is equipped with booster (6), the booster (6) driving One swing rod (23) is rotated relative to it with the hinged hinge joint of fixing seat (3).

Description

Positioning mechanism, lifting-positioning device and lifting desk

Technical field

The utility model relates to elevating mechanism technical fields, more particularly, to the mechanism for realizing loading end lifting.

Background technique

Loading end is the commonly-used area of user's life, work and study, such as desktop, work top, article bear face, But the height of existing this kind of loading end is mostly fixed, and different user's height is variant, and fixed height can be to practical The user of different heights makes troubles.Therefore it is required that loading end has elevating function, current existing loading end lifting structure one As a lifting heights can only be provided, straight up and down, height adjustment is insufficient, and the user for not still being able to satisfy different heights is adaptive Adjustment.All it is unidirectionally to position although some obtains multilevel by pawl mode and adjusts, realizes and rise direction positioning, and Descent direction cannot position, and rise again after needing to be returned to minimum point, operate relatively complicated.

Summary of the invention

The purpose of the utility model is to overcome prior art defects, provide positioning mechanism, lifting-positioning device and utilization The lifting desk of the lifting-positioning device, structure is simple, and cost of investment is low, easy to operate, realizes the multistage lifting of both forward and reverse directions Positioning, meets the adaptive adjustment of user of different heights.

In order to achieve the above objectives, the utility model adopts the following technical solution:

Positioning mechanism, the positioning mechanism have sliding panel, locating piece, and spaced apart location hole is equipped on sliding panel; For locating piece by reciprocating hinged setting in respective carrier, locating piece is equipped with fastening screw, and locating piece passes through hand and grasps Bar driving realizes fastening screw insertion with this or exits the location hole on sliding panel.

Above scheme is further, and the locating piece is hingedly arranged on guide bracket, and guide bracket is equipped with guide hole, and fastening screw passes through Location hole on guide hole guiding insertion sliding panel.

Above scheme is further, is connected between the locating piece and hand behaviour's bar by connecting rod, hand grasps bar and is equipped with bias Block, an end of the eccentric block bias articulated linkage, another end of connecting rod are then articulated and connected locating piece; Locating piece is in connecting rod band Make seesaw-type movement under dynamic, wherein a tilting end of locating piece is fastening screw, and another tilting end of locating piece is by compressing Spring support top, compressed spring support top locating piece and realize locating piece fastening screw insertion sliding panel on location hole.

Lifting-positioning device, the device have bearing seat, and bearing seat is connected and fixed seat by crane, and crane drive is held The relatively fixed seat of seat is carried to rise or fall; It is real that bearing seat relatively fixed seat introduces positioning mechanism cooperation crane when rising or falling The existing above adjustable height positioning of two-stage; Whereby, bearing seat, which rises or falls, can be located in corresponding height by positioning mechanism realization On degree, reach height adjustment use; The positioning mechanism has sliding panel, locating piece, and it is spaced apart fixed to be equipped on sliding panel Position hole, sliding panel connection crane are simultaneously assembled on bearing seat as slideable; Locating piece is hingedly arranged in be connected with bearing seat Guide bracket on, locating piece be equipped with fastening screw, locating piece by hand grasp bar driving, with this realize fastening screw be inserted into or exit Location hole on sliding panel; Guide bracket is equipped with guide hole, and fastening screw is oriented to the location hole on insertion sliding panel by guide hole.

Above scheme is further, is connected between the locating piece and hand behaviour's bar by connecting rod, hand grasps bar and is equipped with bias Block, an end of the eccentric block bias articulated linkage, another end of connecting rod are then articulated and connected locating piece; Locating piece is in connecting rod band Make seesaw-type movement under dynamic, wherein a tilting end of locating piece is fastening screw, and another tilting end of locating piece is by compressing Spring support top, compressed spring support top locating piece and realize locating piece fastening screw insertion sliding panel on location hole; It is described inclined Heart block is equipped with hook, hook safety pin when bearing seat falls gathering, and safety pin is arranged in crane or fixing seat On.

Above scheme is further, and the crane is made of two strut cross-articulations, wherein the upper end of the first strut with Bearing seat articulated connection, and the lower end of first strut is then assembled in fixing seat as slideable; The upper end of second strut connects Sliding panel is connect to be assembled on bearing seat by slideable, and the lower end of second strut and fixing seat are articulated and connected; Described first The lower end of strut is pulled and supported by elastomer and the lower extreme direction towards the second strut is drawn close, and fixing seat is equipped with booster, the booster Hinge joint of second strut relative to its lower end is driven to rotate.

Above scheme is further, and the crane is made of two parallel swing rods and upper connecting rod, lower pull rod, two parallel pendulum The upper end of bar and bearing seat are hinged, and the lower end of two parallel swing rods and fixing seat are hinged, are achieved in two parallel swing rods and carrying Seat, fixing seat form movable quadrangle; The hinged one swing rod in upper connecting rod one end, the then tiltedly upper hinged sliding of the other end of upper connecting rod Plate, sliding panel are assembled on bearing seat as slideable; Hingedly another swing rod, the lower end of lower pull rod are then pressed obliquely downward for lower pull rod one end Slideable to be assembled in fixing seat, the lower end of lower pull rod is pulled and supported by elastomer and is leaned on towards the swing rod direction hinged with fixing seat Hold together, fixing seat is equipped with booster, which drives one swing rod to rotate relative to it with the hinged hinge joint of fixing seat.

Lifting desk, the desk have desktop, are assembled with bearing seat in desktop downside, bearing seat is connected by crane Fixing seat, crane drive the relatively fixed seat of bearing seat to rise or fall, realize desktop lifting; The relatively fixed seat of bearing seat rises Or positioning mechanism cooperation crane is introduced when falling and realizes the above adjustable height positioning of two-stage; Whereby, bearing seat rises or falls it can be realized and be located in corresponding height by positioning mechanism, reach height adjustment use; The positioning mechanism has sliding panel, determines Position block, is equipped with spaced apart location hole on sliding panel, and sliding panel connection crane is simultaneously assembled in bearing seat by slideable On; Locating piece is hingedly arranged on the guide bracket being connected with bearing seat, and locating piece is equipped with fastening screw, and locating piece grasps bar by hand Driving realizes fastening screw insertion with this or exits the location hole on sliding panel; Guide bracket is equipped with guide hole, and fastening screw passes through guide hole Location hole on guiding insertion sliding panel; Whereby, bearing seat rises or falls and can be located in accordingly by positioning mechanism realization in height, reach the use of desktop height adjustment.

Above scheme is further, and the desktop downside is assembled with symmetrical crane, between the crane of left and right There is support beam connection; Crane is made of two strut cross-articulations, wherein the upper end of the first strut hingedly connects with bearing seat It connects, and the lower end of first strut is then assembled in fixing seat as slideable; The upper end connection sliding panel of second strut is pressed can Slidingtype is assembled on bearing seat, and the lower end of second strut and fixing seat are articulated and connected; The lower end of first strut by Elastomer pulls and supports and the lower extreme direction towards the second strut is drawn close, and fixing seat is equipped with booster, which drives the second strut Hinge joint relative to its lower end rotates.

Above scheme is further, and the desktop downside is assembled with symmetrical crane, between the crane of left and right There is support beam connection; Crane is made of two parallel swing rods and upper connecting rod, lower pull rod, the upper end of two parallel swing rods and carrying Seat is hinged, and the lower end of two parallel swing rods and fixing seat are hinged, is achieved in two parallel swing rods and bearing seat, fixing seat form work Dynamic quadrangle; The hinged one swing rod in upper connecting rod one end, the other end of upper connecting rod then tiltedly press slidably by upper hinged sliding panel, sliding panel Formula is assembled on bearing seat; Hingedly another swing rod, the lower end of lower pull rod are then assembled in admittedly as slideable obliquely downward for lower pull rod one end In reservation, the lower end of lower pull rod is pulled and supported by elastomer and is drawn close towards the swing rod direction hinged with fixing seat, and fixing seat is equipped with and helps Power device, the booster drive one swing rod to rotate relative to it with the hinged hinge joint of fixing seat.
It is compared with the prior art, the utility model has the advantage that

1, lifting positioning is firm, realizes the multistage lifting positioning of both forward and reverse directions, meets the adaptive tune of user of different heights it is whole.

2, pure mechanic structure can realize the height adjustment of loading end, and structure designs advantages of simple, easy to operate and raw Advantage of lower cost is produced, long service life is easy to maintain.

Detailed description of the invention:

Attached drawing 1 is the positioning mechanism schematic diagram of the utility model one embodiment;

Attached drawing 2 is the lifting desk one example structure schematic diagram of the utility model;

Attached drawing 3 is the lifting-positioning device structural schematic diagram of another form of the utility model;

Attached drawing 4 is that the unilateral crane of Fig. 3 embodiment falls structural schematic diagram;

Attached drawing 5 is the lifting-positioning device structural schematic diagram of the another form of the utility model;

Attached drawing 6 is that the unilateral crane of Fig. 5 embodiment falls structural schematic diagram.

Specific embodiment:

Make furtherly below with reference to technical effect of the attached drawing to the design of the utility model, specific structure and generation it is bright, to be fully understood from the purpose of this utility model, feature and effect.

As shown in fig.1, positioning mechanism 5 provided by the utility model has sliding panel 51, locating piece 52, in sliding panel 51 It is equipped with spaced apart location hole 511; Locating piece 52 is hingedly arranged in respective carrier, and locating piece 52 is equipped with fastening screw 521, locating piece 52 is grasped

bar 53 by hand and is driven, and realizes the insertion of fastening screw 521 with this or exits the location hole on sliding panel 51 511.Shown in Fig. 1, in the present embodiment, by reciprocating hinged setting on guide bracket 57, guide bracket 57 is equipped with and leads locating piece 52 Hole 571, fastening screw 521 pass through the location hole 511 on the guiding insertion sliding panel 51 of guide hole 571.In figure, guide bracket 57 is horizontal cloth The U-shaped body set, locating piece 52 is located at 57 upside of guide bracket, and sliding panel 51 moves in the U slot of guide bracket 57, and fastening screw 521 is logical The location hole 511 on the guiding insertion sliding panel 51 of guide hole 571 is crossed, realizes accurate grafting positioning.The locating piece 52 grasps bar with hand it being connected between 53 by connecting rod 54, hand grasps bar 53 and is equipped with eccentric block 55, an end of the eccentric articulated linkage 54 of the eccentric block 55, Another end of connecting rod 54 is then articulated and connected locating piece 52.Locating piece 52 makees seesaw-type movement under the drive of connecting rod 54, wherein One tilting end of locating piece 52 is fastening screw 521, and bullet is compressed by 56 support top of compressed spring in another tilting end of locating piece 52 56 support top locating piece 52 of spring and realize locating piece 52 fastening screw 521 be inserted into sliding panel 51 on location hole 511.Structure letter Single, easy to operate, fastening screw 521 is inserted into location hole 511, and positioning stability is not easy positioning.

Shown in Fig. 1,2,3,4, lifting-positioning device provided by the utility model, the device has bearing seat 1, bearing seat 1 it is connected and fixed seat 3 by crane 2, crane 2 drives the relatively fixed seat 3 of bearing seat 1 to rise or fall.Bearing seat 1 is relatively solid Positioning mechanism 5 is introduced when reservation 3 is risen or fallen cooperates crane 2 to realize the above adjustable height positioning of two-stage, whereby, bearing seat 1 rise or fall can by positioning mechanism 5 realize be located in corresponding height, reach height adjustment use.The positioning mechanism 5 With sliding panel 51, locating piece 52, spaced apart location hole 511 is equipped on sliding panel 51, sliding panel 51 connects crane 2 And it is assembled on bearing seat 1 by slideable; Locating piece 52 is hingedly arranged on the guide bracket 57 being connected with bearing seat 1, locating piece 52 are equipped with fastening screw 521, and locating piece 52 is grasped bar 53 by hand and driven, and realize the insertion of fastening screw 521 with this or exit cunning Location hole 511 on movable plate 51.Guide bracket 57 is equipped with guide hole 571, and fastening screw 521 passes through the guiding insertion sliding panel 51 of guide hole 571 On location hole 511.It is connected between the locating piece 52 and hand behaviour's bar 53 by connecting rod 54, hand grasps bar 53 and is equipped with eccentric block 55, an end of the eccentric articulated linkage 54 of the eccentric block 55, another end of connecting rod 54 is then articulated and connected locating piece 52.Locating piece 52 make seesaw-type movement under the drive of connecting rod 54, and wherein a tilting end of locating piece 52 is fastening screw 521, and locating piece 52 Another tilting end by 56 support top of compressed spring, 56 support top locating piece 52 of compressed spring and the fastening screw for realizing locating piece 52 Location hole 511 on 521 insertion sliding panels 51, cooperation

crane 2 realize the above adjustable height positioning of two-stage.Whereby, bearing seat 1 Rising or falling can be located in corresponding height by the realization of positioning mechanism 5, reach height adjustment use.

In the present embodiment, it is additionally provided with hook 551 on the eccentric block 55, the hook 551 extension when bearing seat 1 falls gathering Safety pin 7 is connect, safety pin 7 is arranged on crane 2 or fixing seat 3.Shown in Fig. 2, safety pin 7 is arranged on crane 2, carrying When seat 1 declines, eccentric block 55 follows decline, and when bearing seat 1 declines completely, the hook 551 on eccentric block 55 can mount peace Full pin 7, reaching prevents bearing seat 1 from bouncing automatically, further promotes safety in utilization; And when unlocking, it need to only rotate hand behaviour's bar 53, it is easy to operate.

Shown in Fig. 2, the crane 2 is made of two strut cross-articulations, wherein the upper end of the first strut 21 and bearing seat 1 articulated connection, and the lower end of first strut 21 is then assembled in fixing seat 3 as slideable; The upper end of second strut 22 connects Sliding panel 51 is connect to be assembled on bearing seat 1 by slideable, and the lower end of second strut 22 and fixing seat 3 are articulated and connected.Institute The lower end for stating the first strut 21 is pulled and supported by elastomer 4 and the lower extreme direction towards the second strut 22 is drawn close, and fixing seat 3 is equipped with power-assisted Device 6, the booster 6 drive hinge joint of second strut 22 relative to its lower end to rotate.In figure, elastomer 4 is extension spring, power-assisted Device 6 is torsional spring.When specifically used, the lower extreme direction that elastomer 4 pulls and supports lower end towards the second strut 22 of the first strut 21 is drawn close, and is helped Power device 6 drives hinge joint of second strut 22 relative to its lower end to rotate, and is achieved in the phase of the first strut 21 and the second strut 22 Sliding should be held, support bearing seat 1 is opposite to be risen, and is at this moment inserted on sliding panel 51 and is determined by the fastening screw 521 of locating piece 52 again Position hole 511, that is, can reach bearing seat 1 and be located in corresponding height, realize that height adjustment uses.Structure designs advantages of simple, behaviour Facilitate.And when needing to rise or fall bearing seat 1 again, releasing fastening screw 521 positions, and elastomer 4 and the effect of booster 6 make Bearing seat 1 rises, or firmly pushes bearing seat 1, overcomes the active force of elastomer 4 and booster 6, can decline bearing seat 1, lifting positioning is firm, realizes the multistage lifting positioning of both forward and reverse directions.

Fig. 3, shown in 4, the crane 2 can also be made of two parallel swing rods 23 and upper connecting rod 24, lower pull rod 25, two The upper end of parallel swing rod 23 and bearing seat 1 are hinged, and the lower end of two parallel swing rods 23 and fixing seat 3 are hinged, and it is flat to be achieved in two Row swing rod 23 and bearing seat 1,3 formation activity quadrangle of fixing seat.The hinged one swing rod 23 in 24 one end of upper connecting rod, upper connecting rod 24 Then tiltedly upper hinged sliding panel 51, sliding panel 51 are assembled on bearing seat 1 other end as slideable.Lower 25 one end of pull rod is hingedly another One swing rod 23, the lower end of lower pull rod 25 are then assembled in fixing seat 3 as slideable obliquely downward, and the lower end of lower pull rod 25 is by elastomer 4 pull and support and draw close towards the direction hinged with fixing seat 3 of swing rod 23, and fixing seat 3 is equipped with booster 6, which drives one Swing rod 23 is rotated relative to it with the hinged hinge joint of fixing seat 3.Upper connecting rod 24 and swing rod 23, bearing seat 1 constitute moving trihedral; Lower pull rod 25 constitutes moving trihedral with swing rod 23, fixing seat 3.Above structure equally reaches: pulling and supporting lower pull rod using elastomer 4 25 lower end is drawn close towards the direction hinged with fixing seat 3 of swing rod 23, and booster 6 drives the hinged of its opposite lower end of corresponding swing rod 23 Point rotation is achieved in the two parallel swings of swing rods 23 and the respective end sliding of upper connecting rod 24, lower pull rod 25, realizes support bearing Seat 1 is opposite to be risen, and is at this moment inserted into the location hole 511 on sliding panel 51 by the fastening screw 521 of locating piece 52 again, that is, be can reach and hold it carries seat 1 to be located in corresponding height, realizes that height adjustment uses.Structure designs advantages of simple, easy to operate.And it needs to rise again Or when decline bearing seat 1, release fastening screw 521 and position, elastomer 4 and the effect of booster 6 rise bearing seat 1, either Bearing seat 1 is firmly pushed, the active force of elastomer 4 and booster 6 is overcome, bearing seat 1 can be declined, lifting positioning is firm, real The multistage lifting positioning of existing both forward and reverse directions.

Shown in Fig. 2, lifting desk provided by the utility model has desktop 100, is assembled with carrying in 100 downside of desktop Seat 1, bearing seat 1 are connected and fixed seat 3 by crane 2, and crane 2 drives the relatively fixed seat 3 of bearing seat 1 to rise or fall, real Existing desktop 100 is gone up and down; The relatively fixed seat 3 of bearing seat 1 introduces positioning mechanism 5 when rising or falling and crane 2 is cooperated to realize two-stage The above adjustable height positioning.Whereby, bearing seat 1 rises or falls and can be located in corresponding height by the realization of positioning mechanism 5, Reach the use of 100 height adjustment of desktop.Shown in Fig. 1, which has sliding panel 51, locating piece 52, on sliding panel 51 Equipped with spaced apart location hole 511, sliding panel 51 connects crane 2 and is assembled on bearing seat 1 by slideable; Locating piece 52 hinged settings are on bearing seat 1, and locating piece 52 is equipped with fastening screw 521, and locating piece 52 is grasped bar 53 by hand and driven, with this it realizes the insertion of fastening screw 521 or exits the location hole 511 on sliding panel 51; Whereby, bearing seat 1 rises or falls and can pass through The realization of positioning mechanism 5 is located in corresponding height, reaches the use of 100 height adjustment of desktop.Show described in Fig. 2, under the desktop 100 Side assembling has symmetrical crane 2, there is the connection of support beam 8 between left and right crane 2; Crane 2 is handed over by two struts Fork is hinged to be constituted, wherein the upper end of the first strut 21 and bearing seat 1 are articulated and connected, and then press can for the lower end of first strut 21 Slidingtype is assembled in fixing seat 3.Bearing seat 1 is assembled in by slideable after the upper end connection sliding panel 51 of second strut 22 On, and the lower end of second strut 22 and fixing seat 3 are articulated and connected; The lower end of first strut 21 pulled and supported by elastomer 4 and Lower extreme direction towards the second strut 22 is drawn close, and fixing seat 3 is equipped with

booster 6, and the booster 6 driving the second strut 22 is with respect to it The hinge joint of lower end rotates.Specific movement such as above-mentioned lifting-positioning device.

As shown in Figure 3,4,100 downside of desktop of the utility model is composable symmetrical crane 2, and left and right rises There is the connection of support beam 8 between drop frame 2.The crane 2 is made of two parallel swing rods 23 and upper connecting rod 24, lower pull rod 25, and two The upper end of parallel swing rod 23 and bearing seat 1 are hinged, and the lower end of two parallel swing rods 23 and fixing seat 3 are hinged, and it is flat to be achieved in two Row swing rod 23 and bearing seat 1,3 formation activity quadrangle of fixing seat; The hinged one swing rod 23 in 24 one end of upper connecting rod, upper connecting rod 24 Then tiltedly upper hinged sliding panel 51, sliding panel 51 are assembled on bearing seat 1 other end as slideable.Lower 25 one end of pull rod is hingedly another One swing rod 23, the lower end of lower pull rod 25 are then assembled in fixing seat 3 as slideable obliquely downward, and the lower end of lower pull rod 25 is by elastomer 4 pull and support and draw close towards the direction hinged with fixing seat 3 of swing rod 23, and fixing seat 3 is equipped with booster 6, which drives one Swing rod 23 is rotated relative to it with the hinged hinge joint of fixing seat 3.Specific movement such as above-mentioned lifting-positioning device.

Fig. 5, be another embodiment of the utility model shown in 6, under embodiment basis shown in Fig. 3, crane 2 by Two parallel swing rods 23 and upper connecting rod 24, lower pull rod 25 are constituted, and the upper end of two parallel swing rods 23 and bearing seat 1 are hinged, and two is flat The lower end of row swing rod 23 and fixing seat 3 are hinged, are achieved in two parallel swing rods 23 and bearing seat 1,3 formation activity of fixing seat, four side Shape; The hinged one swing rod 23 in 24 one end of upper connecting rod, the other end of upper connecting rod 24 then tiltedly go up hinged sliding panel 51, and sliding panel 51 is pressed can Slidingtype is assembled on bearing seat 1.Hingedly another swing rod 23, the lower end of lower pull rod 25 are then pressed slidably obliquely downward for lower 25 one end of pull rod Formula is assembled in fixing seat 3, and the lower end of lower pull rod 25 is pulled and supported by elastomer 4 and leaned on towards the direction hinged with fixing seat 3 of swing rod 23 Hold together, fixing seat 3 is equipped with booster 6, which is an extension spring, and 6 one end of booster is connected in fixing seat 3, power-assisted 6 other end of device is connected to one swing rod 23, realizes and the swing rod 23 is driven to rotate relative to it with the hinged hinge joint of fixing seat 3, real Existing crane 2 rises power-assisted.

Lifting-positioning device provided by the utility model can also be used in computer desk, dining table, work top, article bear face, The liftings such as keyboard support use.

Certainly, the figures above only depicts the preferred embodiments of the present invention, to the technology of the art For personnel, pass through logical analysis, reasoning, or a limited experiment without departing from the utility model conception and scope Can also to above-described embodiment number of improvements could be made and variation, such modifications and variations all should belong to the requires of the utility model protection Range.

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
US10575630B1 *	2015-01-24	2020-03-03	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN208403596U	2019-01-22	Positioning mechanism, lifting-positioning device and lifting desk
CN207492332U	2018-06-15	Lifting-positioning device and lifting desk
CN2882450Y	2007-03-28	Clothes hanger
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CN208957121U	2019-06-11	A kind of lifting desk table leg and desktop are stably connected with framework
CN209185957U	2019-08-02	Anion plate multifunctional movable wardrobe
CN208658151U	2019-03-29	A kind of electric foldable table
CN215015381U	2021-12-07	Novel chair

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201721544282.7U	2017-11-18	2017-11-18	Positioning mechanism, lifting-positioning device and lifting desk

Applications Claiming Priority (1)

Application	Filing date	Title
CN201721544282.7U	2017-11-18	Positioning mechanism, lifting-positioning device and lifting desk

Legal Events

Date	Code	Title	Description
2019-01-22	GR01	Patent grant	
2019-01-22	GR01	Patent grant	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
insertion		claims,abstract,description	21	0.000
elastomer		claims,description	19	0.000
elastomer		claims,description	19	0.000
corresponding		claims,description	12	0.000
effects		claims,description	8	0.000
rising		claims,description	5	0.000
biosynthetic process		claims,description	4	0.000
formation reaction		claims,description	4	0.000
carrier		claims,description	3	0.000
localization		claims	2	0.000
adaptive		abstract,description	4	0.000
manufacturing process		abstract	1	0.000

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(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 208403596 U
(45)授权公告日 2019.01.22

(21)申请号 201721544282.7

(22)申请日 2017.11.18

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(51)Int.Cl.
A47B 9/16(2006.01)
A47B 13/02(2006.01)

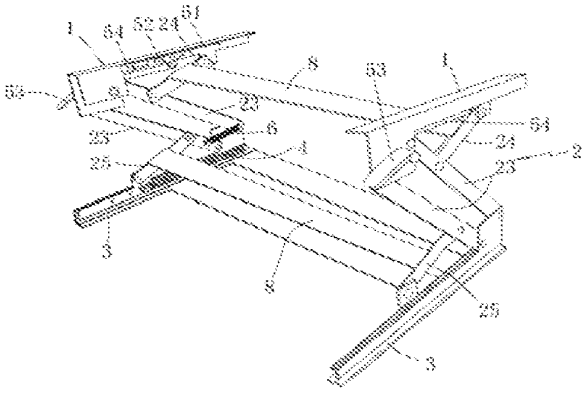
权利要求书2页 说明书5页 附图4页

(54)实用新型名称

定位机构、升降定位装置及升降桌子

(57)摘要

本实用新型涉及定位机构、升降定位装置及升降桌子，定位机构具有滑动板、定位块，在滑动板上设有间隔布置的定位孔；定位块铰接设置在导座上，导座设有导孔，定位块上设有定位插销，定位块通过手操杆驱动，以此实现定位插销通过导孔导向插入滑动板上的定位孔。升降定位装置具有承载座，承载座通过升降架连接固定座，升降架带动承载座相对固定座升起或降下；承载座相对固定座升起或降下时引入上述定位机构配合升降架实现两级以上升降高度定位；升降定位装置可用于电脑桌、餐桌、工作台面、物品承放面、键盘托等升降使用。升降定位牢靠，实现正反方向的多级升降定位，满足不同身高的使用者自适调整。操作方便且生产成本相对较低，使用寿命长。



CN 208403596 U

1.定位机构，其特征在于：该定位机构(5)具有滑动板(51)、定位块(52)，在滑动板(51)上设有间隔布置的定位孔(511)；定位块(52)按可往复运动的铰接设置在相应载体上，定位块(52)上设有定位插销(521)，定位块(52)通过手操杆(53)驱动，以此实现定位插销(521)插入或退出滑动板(51)上的定位孔(511)。

2.根据权利要求1所述的定位机构，其特征在于：所述定位块(52)铰接设置在导座(57)上，导座(57)设有导孔(571)，定位插销(521)通过导孔(571)导向插入滑动板(51)上的定位孔(511)。

3.根据权利要求1或2所述的定位机构，其特征在于：所述定位块(52)与手操杆(53)之间通过连杆(54)连接，手操杆(53)上设有偏心块(55)，该偏心块(55)偏心铰接连杆(54)的一端头，连杆(54)的另一端头则铰接连接定位块(52)；定位块(52)在连杆(54)带动下作翘翘板式运动，定位块(52)的一翘动端为定位插销(521)，而定位块(52)的另一翘动端由压缩弹簧(56)支顶，压缩弹簧(56)支顶定位块(52)而实现定位块(52)的定位插销(521)插入滑动板(51)上的定位孔(511)。

4.升降定位装置，其特征在于：该装置具有承载座(1)，承载座(1)通过升降架(2)连接固定座(3)，升降架(2)带动承载座(1)相对固定座(3)升起或降下；承载座(1)相对固定座(3)升起或降下时引入定位机构(5)配合升降架(2)实现两级以上升降高度定位；藉此，承载座(1)升起或降下均可通过定位机构(5)实现定位在相应高度上，达成高度调节使用；该定位机构(5)具有滑动板(51)、定位块(52)，在滑动板(51)上设有间隔布置的定位孔(511)，滑动板(51)连接升降架(2)并按可滑动式组装在承载座(1)上；定位块(52)铰接设置在与承载座(1)固连的导座(57)上，定位块(52)上设有定位插销(521)，定位块(52)通过手操杆(53)驱动，以此实现定位插销(521)插入或退出滑动板(51)上的定位孔(511)；导座(57)设有导孔(571)，定位插销(521)通过导孔(571)导向插入滑动板(51)上的定位孔(511)。

5.根据权利要求4所述的升降定位装置，其特征在于：所述定位块(52)与手操杆(53)之间通过连杆(54)连接，手操杆(53)上设有偏心块(55)，该偏心块(55)偏心铰接连杆(54)的一端头，连杆(54)的另一端头则铰接连接定位块(52)；定位块(52)在连杆(54)带动下作翘翘板式运动，定位块(52)的一翘动端为定位插销(521)，而定位块(52)的另一翘动端由压缩弹簧(56)支顶，压缩弹簧(56)支顶定位块(52)而实现定位块(52)的定位插销(521)插入滑动板(51)上的定位孔(511)。

6.根据权利要求4或5所述的升降定位装置，其特征在于：所述升降架(2)由两支杆交叉铰接构成，其中，第一支杆(21)的上端与承载座(1)铰接连接，而该第一支杆(21)的下端则按可滑动式组装在固定座(3)上；第二支杆(22)的上端连接滑动板(51)按可滑动式组装在承载座(1)上，而该第二支杆(22)的下端与固定座(3)铰接连接；所述第一支杆(21)的下端由弹性体(4)拉持而朝第二支杆(22)的下端方向靠拢，固定座(3)上设有助力器(6)，该助力器(6)驱动第二支杆(22)相对其下端的铰接点转动。

7.根据权利要求4或5所述的升降定位装置，其特征在于：所述升降架(2)由两平行的摆杆(23)及上拉杆(24)、下拉杆(25)构成，两平行摆杆(23)的上端与承载座(1)铰接，而两平行摆杆(23)的下端与固定座(3)铰接，由此实现两平行摆杆(23)与承载座(1)、固定座(3)形成活动四边形；上拉杆(24)一端铰接其一摆杆(23)，上拉杆(24)的另一端则斜上铰接滑动板(51)，滑动板(51)按可滑动式组装在承载座(1)上；下拉杆(25)一端铰接另一摆杆(23)，

下拉杆(25)的下端则斜下按可滑动式组装在固定座(3)上，下拉杆(25)的下端由弹性体(4)拉持而朝摆杆(23)与固定座(3)铰接的方向靠拢，固定座(3)上设有助力器(6)，该助力器(6)驱动其一摆杆(23)相对其与固定座(3)铰接的铰接点转动。

8.升降桌子，其特征在于：该桌子具有桌板(100)，在桌板(100)下侧面组装有承载座(1)，承载座(1)通过升降架(2)连接固定座(3)，升降架(2)带动承载座(1)相对固定座(3)升起或降下，实现桌板(100)升降；承载座(1)相对固定座(3)升起或降下时引入定位机构(5)配合升降架(2)实现两级以上升降高度定位；藉此，承载座(1)升起或降下均可通过定位机构(5)实现定位在相应高度上，达成高度调节使用；该定位机构(5)具有滑动板(51)、定位块(52)，在滑动板(51)上设有间隔布置的定位孔(511)，滑动板(51)连接升降架(2)并按可滑动式组装在承载座(1)上；定位块(52)铰接设置在与承载座(1)固连的导座(57)上，定位块(52)上设有定位插销(521)，定位块(52)通过手操杆(53)驱动，以此实现定位插销(521)插入或退出滑动板(51)上的定位孔(511)；导座(57)设有导孔(571)，定位插销(521)通过导孔(571)导向插入滑动板(51)上的定位孔(511)；藉此，承载座(1)升起或降下均可通过定位机构(5)实现定位在相应高度上，达成桌板(100)高度调节使用。

9.根据权利要求8所述的升降桌子，其特征在于：所述桌板(100)下侧面组装有左右对称的升降架(2)，左右升降架(2)之间有支撑横梁(8)连接；升降架(2)由两支杆交叉铰接构成，其中，第一支杆(21)的上端与承载座(1)铰接连接，而该第一支杆(21)的下端则按可滑动式组装在固定座(3)上；第二支杆(22)的上端连接滑动板(51)按可滑动式组装在承载座(1)上，而该第二支杆(22)的下端与固定座(3)铰接连接；所述第一支杆(21)的下端由弹性体(4)拉持而朝第二支杆(22)的下端方向靠拢，固定座(3)上设有助力器(6)，该助力器(6)驱动第二支杆(22)相对其下端的铰接点转动。

10.根据权利要求8所述的升降桌子，其特征在于：所述桌板(100)下侧面组装有左右对称的升降架(2)，左右升降架(2)之间有支撑横梁(8)连接；升降架(2)由两平行的摆杆(23)及上拉杆(24)、下拉杆(25)构成，两平行摆杆(23)的上端与承载座(1)铰接，而两平行摆杆(23)的下端与固定座(3)铰接，由此实现两平行摆杆(23)与承载座(1)、固定座(3)形成活动四边形；上拉杆(24)一端铰接其一摆杆(23)，上拉杆(24)的另一端则斜上铰接滑动板(51)，滑动板(51)按可滑动式组装在承载座(1)上；下拉杆(25)一端铰接另一摆杆(23)，下拉杆(25)的下端则斜下按可滑动式组装在固定座(3)上，下拉杆(25)的下端由弹性体(4)拉持而朝摆杆(23)与固定座(3)铰接的方向靠拢，固定座(3)上设有助力器(6)，该助力器(6)驱动其一摆杆(23)相对其与固定座(3)铰接的铰接点转动。

定位机构、升降定位装置及升降桌子

技术领域

[0001] 本实用新型涉及升降机构技术领域，尤其是涉及实现承载面升降的机构。

背景技术

[0002] 承载面，是使用者生活、工作及学习的常用区，如桌面、工作台面、物品承放面等，但现有的这类承载面的高度大都是固定，而不同的使用者身高有差异，固定高度会给实际不同身高的使用者带来不便。因此要求承载面具有升降功能，目前现有承载面升降结构一般只能提供一升起高度，直上直下，高度调整性不足，还是不能满足不同身高的使用者自适调整。虽然有的通过棘爪方式获得多级高度调整，但都是单向定位，实现升起方向定位，而下降方向不能定位，需要回位到最低点后再升起，操作较为繁琐。

发明内容

[0003] 本实用新型的目的在于克服现有技术缺陷，提供定位机构、升降定位装置及利用该升降定位装置的升降桌子，结构简单，投资成本低，操作简便，实现正反方向的多级升降定位，满足不同身高的使用者自适调整。

[0004] 为达到上述目的，本实用新型采用如下技术方案：

[0005] 定位机构，该定位机构具有滑动板、定位块，在滑动板上设有间隔布置的定位孔；定位块按可往复运动的铰接设置在相应载体上，定位块上设有定位插销，定位块通过手操杆驱动，以此实现定位插销插入或退出滑动板上的定位孔。

[0006] 上述方案进一步的，所述定位块铰接设置在导座上，导座设有导孔，定位插销通过导孔导向插入滑动板上的定位孔。

[0007] 上述方案进一步的，所述定位块与手操杆之间通过连杆连接，手操杆上设有偏心块，该偏心块偏心铰接连杆的一端头，连杆的另一端头则铰接连接定位块；定位块在连杆带动下作翘翘板式运动，其中定位块的一翘动端为定位插销，而定位块的另一翘动端由压缩弹簧支顶，压缩弹簧支顶定位块而实现定位块的定位插销插入滑动板上的定位孔。

[0008] 升降定位装置，该装置具有承载座，承载座通过升降架连接固定座，升降架带动承载座相对固定座升起或降下；承载座相对固定座升起或降下时引入定位机构配合升降架实现两级以上升降高度定位；藉此，承载座升起或降下均可通过定位机构实现定位在相应高度上，达成高度调节使用；该定位机构具有滑动板、定位块，在滑动板上设有间隔布置的定位孔，滑动板连接升降架并按可滑动式组装在承载座上；定位块铰接设置在与承载座固连的导座上，定位块上设有定位插销，定位块通过手操杆驱动，以此实现定位插销插入或退出滑动板上的定位孔；导座设有导孔，定位插销通过导孔导向插入滑动板上的定位孔。

[0009] 上述方案进一步的，所述定位块与手操杆之间通过连杆连接，手操杆上设有偏心块，该偏心块偏心铰接连杆的一端头，连杆的另一端头则铰接连接定位块；定位块在连杆带动下作翘翘板式运动，其中定位块的一翘动端为定位插销，而定位块的另一翘动端由压缩弹簧支顶，压缩弹簧支顶定位块而实现定位块的定位插销插入滑动板上的定位孔；所述偏

心块上设有挂钩，该挂钩在承载座降下收拢时挂接安全销，安全销设置在升降架或固定座上。

[0010] 上述方案进一步的，所述升降架由两支杆交叉铰接构成，其中，第一支杆的上端与承载座铰接连接，而该第一支杆的下端则按可滑动式组装在固定座上；第二支杆的上端连接滑动板按可滑动式组装在承载座上，而该第二支杆的下端与固定座铰接连接；所述第一支杆的下端由弹性体拉持而朝第二支杆的下端方向靠拢，固定座上设有助力器，该助力器驱动第二支杆相对其下端的铰接点转动。

[0011] 上述方案进一步的，所述升降架由两平行的摆杆及上拉杆、下拉杆构成，两平行摆杆的上端与承载座铰接，而两平行摆杆的下端与固定座铰接，由此实现两平行摆杆与承载座、固定座形成活动四边形；上拉杆一端铰接其一摆杆，上拉杆的另一端则斜上铰接滑动板，滑动板按可滑动式组装在承载座上；下拉杆一端铰接另一摆杆，下拉杆的下端则斜下按可滑动式组装在固定座上，下拉杆的下端由弹性体拉持而朝摆杆与固定座铰接的方向靠拢，固定座上设有助力器，该助力器驱动其一摆杆相对其与固定座铰接的铰接点转动。

[0012] 升降桌子，该桌子具有桌板，在桌板下侧面组装有承载座，承载座通过升降架连接固定座，升降架带动承载座相对固定座升起或降下，实现桌板升降；承载座相对固定座升起或降下时引入定位机构配合升降架实现两级以上升降高度定位；藉此，承载座升起或降下均可通过定位机构实现定位在相应高度上，达成高度调节使用；该定位机构具有滑动板、定位块，在滑动板上设有间隔布置的定位孔，滑动板连接升降架并按可滑动式组装在承载座上；定位块铰接设置在与承载座固连的导座上，定位块上设有定位插销，定位块通过手操杆驱动，以此实现定位插销插入或退出滑动板上的定位孔；导座设有导孔，定位插销通过导孔导向插入滑动板上的定位孔；藉此，承载座升起或降下均可通过定位机构实现定位在相应高度上，达成桌板高度调节使用。

[0013] 上述方案进一步的，所述桌板下侧面组装有左右对称的升降架，左右升降架之间有支撑横梁连接；升降架由两支杆交叉铰接构成，其中，第一支杆的上端与承载座铰接连接，而该第一支杆的下端则按可滑动式组装在固定座上；第二支杆的上端连接滑动板按可滑动式组装在承载座上，而该第二支杆的下端与固定座铰接连接；所述第一支杆的下端由弹性体拉持而朝第二支杆的下端方向靠拢，固定座上设有助力器，该助力器驱动第二支杆相对其下端的铰接点转动。

[0014] 上述方案进一步的，所述桌板下侧面组装有左右对称的升降架，左右升降架之间有支撑横梁连接；升降架由两平行的摆杆及上拉杆、下拉杆构成，两平行摆杆的上端与承载座铰接，而两平行摆杆的下端与固定座铰接，由此实现两平行摆杆与承载座、固定座形成活动四边形；上拉杆一端铰接其一摆杆，上拉杆的另一端则斜上铰接滑动板，滑动板按可滑动式组装在承载座上；下拉杆一端铰接另一摆杆，下拉杆的下端则斜下按可滑动式组装在固定座上，下拉杆的下端由弹性体拉持而朝摆杆与固定座铰接的方向靠拢，固定座上设有助力器，该助力器驱动其一摆杆相对其与固定座铰接的铰接点转动。

[0015] 与现有技术对比，本实用新型具有如下的优点：

[0016] 1、升降定位牢靠，实现正反方向的多级升降定位，满足不同身高的使用者自适调整。

[0017] 2、纯机械结构就可以实现承载面的高度调节，结构设计简单合理，操作方便且生

产成本相对较低，使用寿命长，易维护。

[0018] 附图说明：

[0019] 附图1为本实用新型其一实施例的定位机构示意图；

[0020] 附图2为本实用新型的升降桌子其一实施例结构示意图；

[0021] 附图3为本实用新型另一形态的升降定位装置结构示意图；

[0022] 附图4为图3实施例的单边升降架的降下结构示意图；

[0023] 附图5为本实用新型再一形态的升降定位装置结构示意图；

[0024] 附图6为图5实施例的单边升降架的降下结构示意图。

[0025] 具体实施方式：

[0026] 以下将结合附图对本实用新型的构思、具体结构及产生的技术效果作进一步说明，以充分地了解本实用新型的目的、特征和效果。

[0027] 参阅图1所示，本实用新型提供的定位机构5具有滑动板51、定位块52，在滑动板51上设有间隔布置的定位孔511；定位块52铰接设置在相应载体上，定位块52上设有定位插销521，定位块52通过手操杆53驱动，以此实现定位插销521插入或退出滑动板51上的定位孔511。图1所示，本实施例中，定位块52按可往复运动的铰接设置在导座57上，导座57设有导孔571，定位插销521通过导孔571导向插入滑动板51上的定位孔511。图中，导座57为卧式布置的U形体，定位块52位于导座57上侧，而滑动板51在导座57的U槽中移动，定位插销521通过导孔571导向插入滑动板51上的定位孔511，实现准确插接定位。所述定位块52与手操杆53之间通过连杆54连接，手操杆53上设有偏心块55，该偏心块55偏心铰接连杆54的一端头，连杆54的另一端头则铰接连接定位块52。定位块52在连杆54带动下作翘翘板式运动，其中定位块52的一翘动端为定位插销521，而定位块52的另一翘动端由压缩弹簧56支顶，压缩弹簧56支顶定位块52而实现定位块52的定位插销521插入滑动板51上的定位孔511。结构简单，操作简便，定位插销521插入定位孔511，定位稳定，不易跑位。

[0028] 图1、2、3、4所示，本实用新型提供的升降定位装置，该装置具有承载座1，承载座1通过升降架2连接固定座3，升降架2带动承载座1相对固定座3升起或降下。承载座1相对固定座3升起或降下时引入定位机构5配合升降架2实现两级以上升降高度定位，藉此，承载座1升起或降下均可通过定位机构5实现定位在相应高度上，达成高度调节使用。该定位机构5具有滑动板51、定位块52，在滑动板51上设有间隔布置的定位孔511，滑动板51连接升降架2并按可滑动式组装在承载座1上；定位块52铰接设置在与承载座1固连的导座57上，定位块52上设有定位插销521，定位块52通过手操杆53驱动，以此实现定位插销521插入或退出滑动板51上的定位孔511。导座57设有导孔571，定位插销521通过导孔571导向插入滑动板51上的定位孔511。所述定位块52与手操杆53之间通过连杆54连接，手操杆53上设有偏心块55，该偏心块55偏心铰接连杆54的一端头，连杆54的另一端头则铰接连接定位块52。定位块52在连杆54带动下作翘翘板式运动，其中定位块52的一翘动端为定位插销521，而定位块52的另一翘动端由压缩弹簧56支顶，压缩弹簧56支顶定位块52而实现定位块52的定位插销521插入滑动板51上的定位孔511，配合升降架2实现两级以上升降高度定位。藉此，承载座1升起或降下均可通过定位机构5实现定位在相应高度上，达成高度调节使用。

[0029] 本实施例中，所述偏心块55上还设有挂钩551，该挂钩551在承载座1降下收拢时挂接安全销7，安全销7设置在升降架2或固定座3上。图2所示，安全销7设置在升降架2上，承载

座1下降时，偏心块55跟随下降，当承载座1完全下降时，偏心块55上的挂钩551即可挂接安全销7，达到防止承载座1自动弹起，进一步提升使用安全性；而要解开时，只需转动手操杆53即可，操作方便。

[0030] 图2所示，所述升降架2由两支杆交叉铰接构成，其中，第一支杆21的上端与承载座1铰接连接，而该第一支杆21的下端则按可滑动式组装在固定座3上；第二支杆22的上端连接滑动板51按可滑动式组装在承载座1上，而该第二支杆22的下端与固定座3铰接连接。所述第一支杆21的下端由弹性体4拉持而朝第二支杆22的下端方向靠拢，固定座3上设有助力器6，该助力器6驱动第二支杆22相对其下端的铰接点转动。图中，弹性体4是拉伸弹簧，助力器6是扭簧。具体使用时，弹性体4拉持第一支杆21的下端朝第二支杆22的下端方向靠拢，助力器6驱动第二支杆22相对其下端的铰接点转动，由此实现第一支杆21和第二支杆22的相应端滑动，支撑承载座1相对上升，这时再由定位块52的定位插销521插入滑动板51上的定位孔511，即可达到承载座1定位在相应高度上，实现高度调节使用。结构设计简单合理，操作方便。而需要再上升或下降承载座1时，解除定位插销521定位，弹性体4和助力器6作用使承载座1上升，或者是用力下压承载座1，克服弹性体4和助力器6的作用力，即可下降承载座1，升降定位牢靠，实现正反方向的多级升降定位。

[0031] 图3、4所示，所述升降架2也可以由两平行的摆杆23及上拉杆24、下拉杆25构成，两平行摆杆23的上端与承载座1铰接，而两平行摆杆23的下端与固定座3铰接，由此实现两平行摆杆23与承载座1、固定座3形成活动四边形。上拉杆24一端铰接其一摆杆23，上拉杆24的另一端则斜上铰接滑动板51，滑动板51按可滑动式组装在承载座1上。下拉杆25一端铰接另一摆杆23，下拉杆25的下端则斜下按可滑动式组装在固定座3上，下拉杆25的下端由弹性体4拉持而朝摆杆23与固定座3铰接的方向靠拢，固定座3上设有助力器6，该助力器6驱动其一摆杆23相对其与固定座3铰接的铰接点转动。上拉杆24与摆杆23、承载座1构成活动三角形；下拉杆25与摆杆23、固定座3构成活动三角形。上述结构同样达到：利用弹性体4拉持下拉杆25的下端朝摆杆23与固定座3铰接的方向靠拢，助力器6驱动相应摆杆23相对其下端的铰接点转动，由此实现两平行摆杆23摆动以及上拉杆24、下拉杆25的相应端滑动，实现支撑承载座1相对上升，这时再由定位块52的定位插销521插入滑动板51上的定位孔511，即可达到承载座1定位在相应高度上，实现高度调节使用。结构设计简单合理，操作方便。而需要再上升或下降承载座1时，解除定位插销521定位，弹性体4和助力器6作用使承载座1上升，或者是用力下压承载座1，克服弹性体4和助力器6的作用力，即可下降承载座1，升降定位牢靠，实现正反方向的多级升降定位。

[0032] 图2所示，本实用新型提供的升降桌子具有桌板100，在桌板100下侧面组装有承载座1，承载座1通过升降架2连接固定座3，升降架2带动承载座1相对固定座3升起或降下，实现桌板100升降；承载座1相对固定座3升起或降下时引入定位机构5配合升降架2实现两级以上升降高度定位。藉此，承载座1升起或降下均可通过定位机构5实现定位在相应高度上，达成桌板100高度调节使用。图1所示，该定位机构5具有滑动板51、定位块52，在滑动板51上设有间隔布置的定位孔511，滑动板51连接升降架2并按可滑动式组装在承载座1上；定位块52铰接设置在承载座1上，定位块52上设有定位插销521，定位块52通过手操杆53驱动，以此实现定位插销521插入或退出滑动板51上的定位孔511；藉此，承载座1升起或降下均可通过定位机构5实现定位在相应高度上，达成桌板100高度调节使用。图2所述示，所述桌板100下

侧面组装有左右对称的升降架2，左右升降架2之间有支撑横梁8连接；升降架2由两支杆交叉铰接构成，其中，第一支杆21的上端与承载座1铰接连接，而该第一支杆21的下端则按可滑动式组装在固定座3上。第二支杆22的上端连接滑动板51后按可滑动式组装在承载座1上，而该第二支杆22的下端与固定座3铰接连接；所述第一支杆21的下端由弹性体4拉持而朝第二支杆22的下端方向靠拢，固定座3上设有助力器6，该助力器6驱动第二支杆22相对其下端的铰接点转动。具体动作如上述的升降定位装置。

[0033] 如图3、4所示，本实用新型的桌板100下侧面可组装有左右对称的升降架2，左右升降架2之间有支撑横梁8连接。该升降架2由两平行的摆杆23及上拉杆24、下拉杆25构成，两平行摆杆23的上端与承载座1铰接，而两平行摆杆23的下端与固定座3铰接，由此实现两平行摆杆23与承载座1、固定座3形成活动四边形；上拉杆24一端铰接其一摆杆23，上拉杆24的另一端则斜上铰接滑动板51，滑动板51按可滑动式组装在承载座1上。下拉杆25一端铰接另一摆杆23，下拉杆25的下端则斜下按可滑动式组装在固定座3上，下拉杆25的下端由弹性体4拉持而朝摆杆23与固定座3铰接的方向靠拢，固定座3上设有助力器6，该助力器6驱动其一摆杆23相对其与固定座3铰接的铰接点转动。具体动作如上述的升降定位装置。

[0034] 图5、6所示，为本实用新型另一实施方式，在图3所示的实施例基础下，升降架2由两平行的摆杆23及上拉杆24、下拉杆25构成，两平行摆杆23的上端与承载座1铰接，而两平行摆杆23的下端与固定座3铰接，由此实现两平行摆杆23与承载座1、固定座3形成活动四边形；上拉杆24一端铰接其一摆杆23，上拉杆24的另一端则斜上铰接滑动板51，滑动板51按可滑动式组装在承载座1上。下拉杆25一端铰接另一摆杆23，下拉杆25的下端则斜下按可滑动式组装在固定座3上，下拉杆25的下端由弹性体4拉持而朝摆杆23与固定座3铰接的方向靠拢，固定座3上设有助力器6，该助力器6是一拉伸弹簧，助力器6一端连接在固定座3上，助力器6另一端连接在其一摆杆23，实现驱动该摆杆23相对其与固定座3铰接的铰接点转动，实现升降架2升起助力。

[0035] 本实用新型提供的升降定位装置还可用于电脑桌、餐桌、工作台面、物品承放面、键盘托等升降使用。

[0036] 当然，以上附图仅是描述了本实用新型的较佳具体实施例，对本技术领域的技术人员来说，在不超出本实用新型构思和范围的情况下通过逻辑分析、推理或者有限的实验还可对上述实施例作出许多改进和变化，这些改进和变化都应属于本实用新型要求保护的范围。

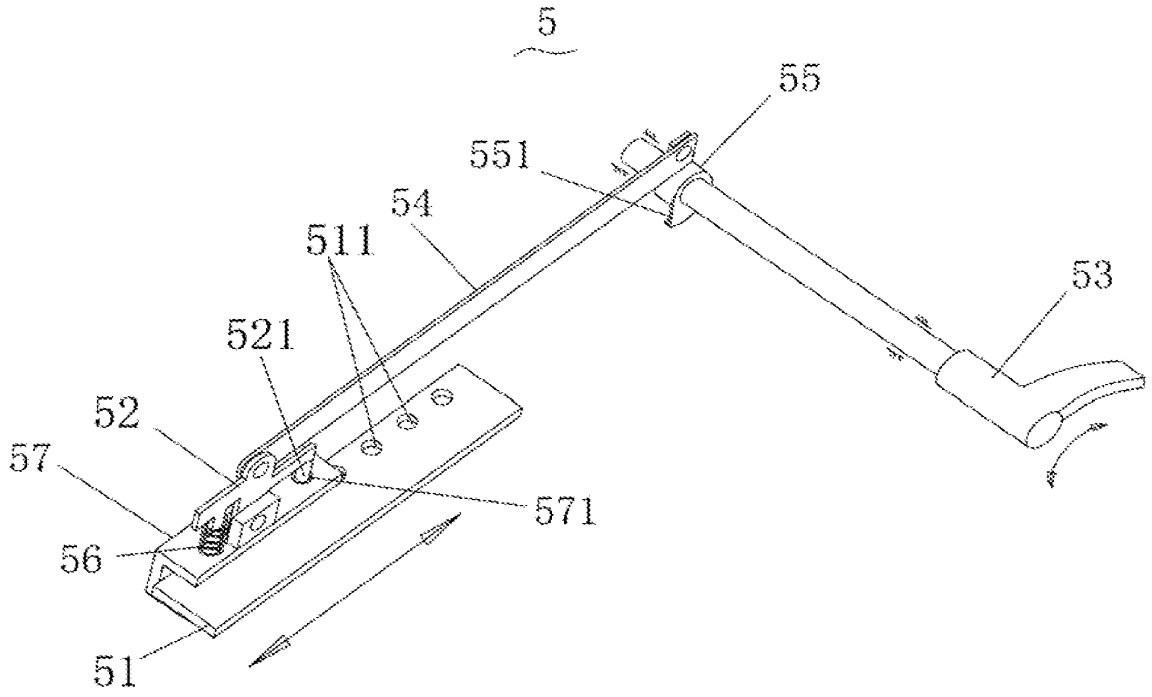


图1

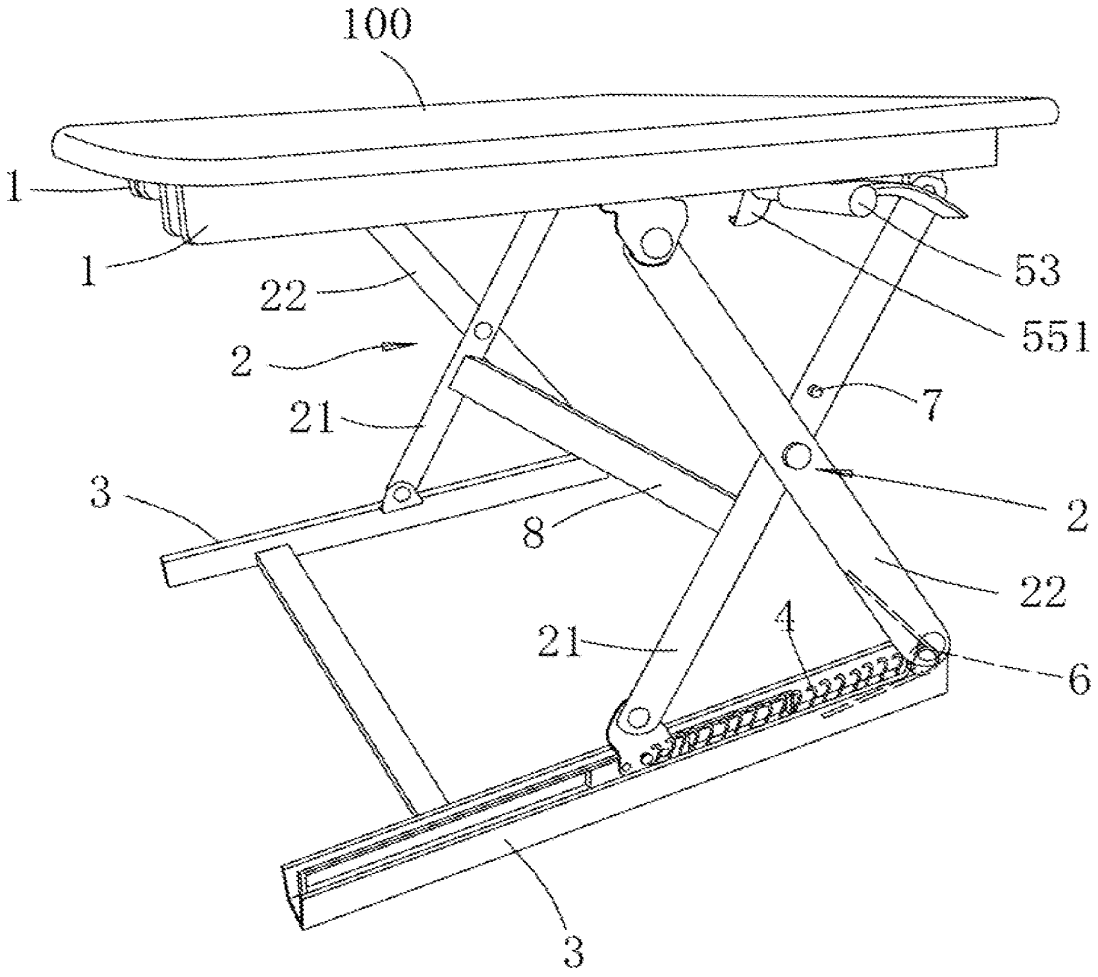


图2

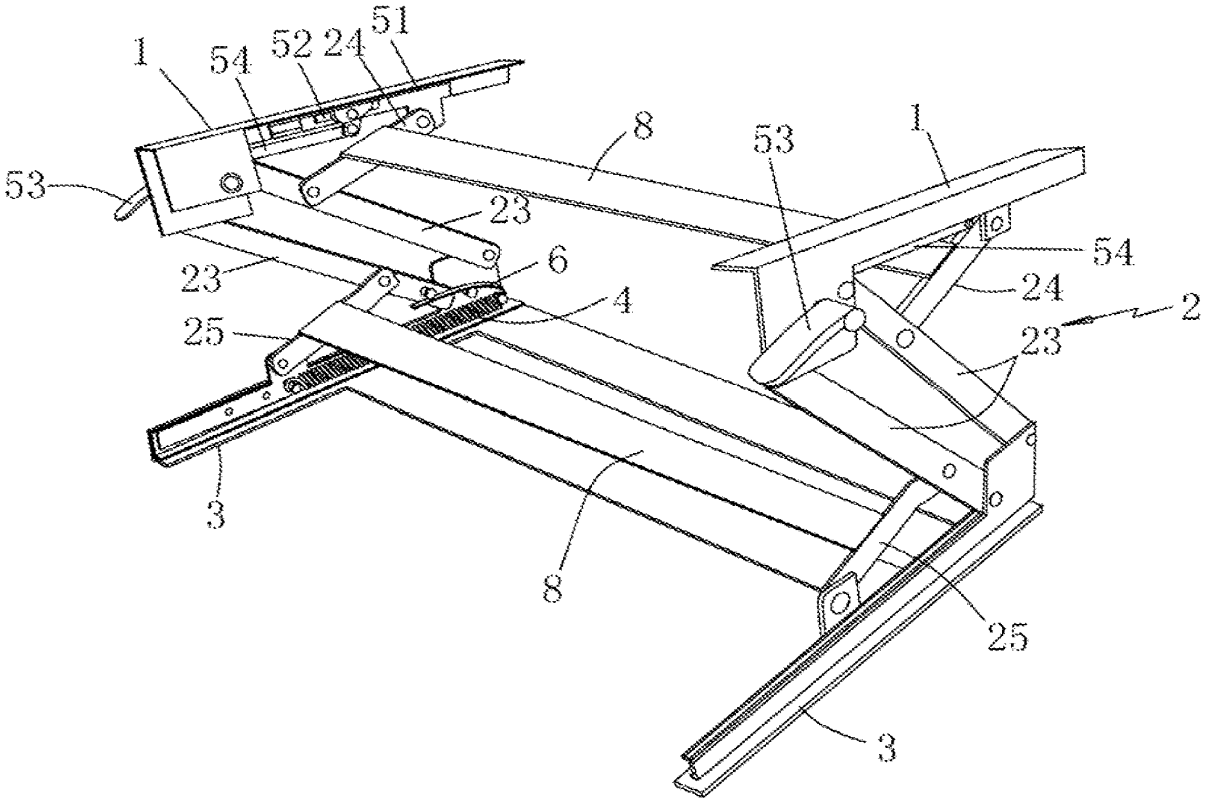

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图3

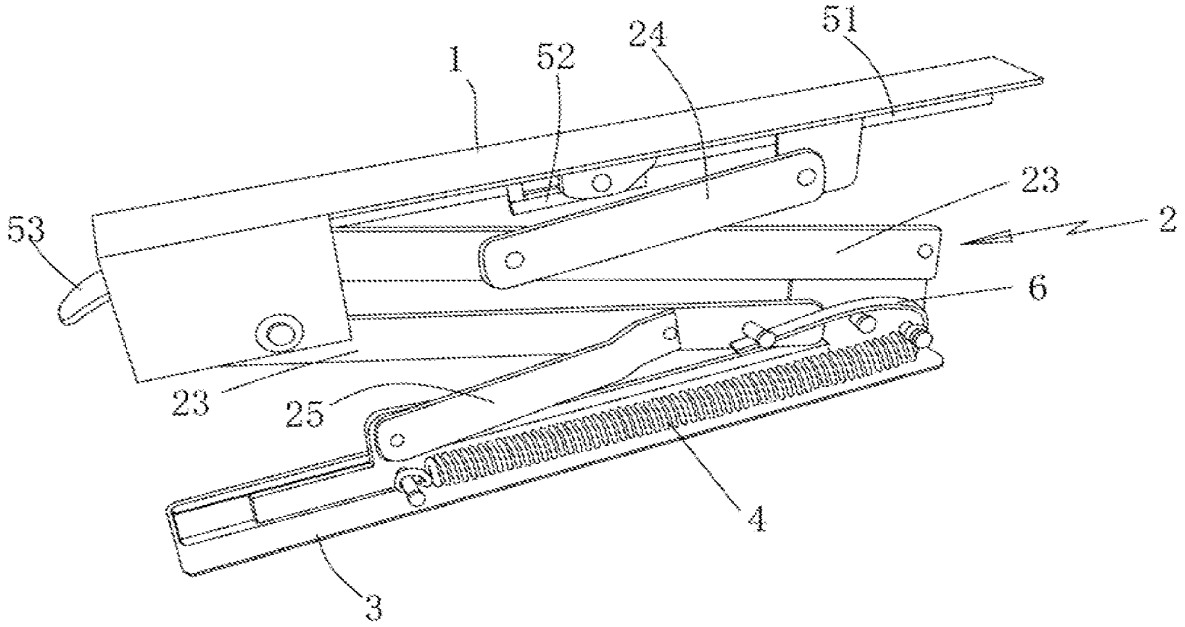

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图4

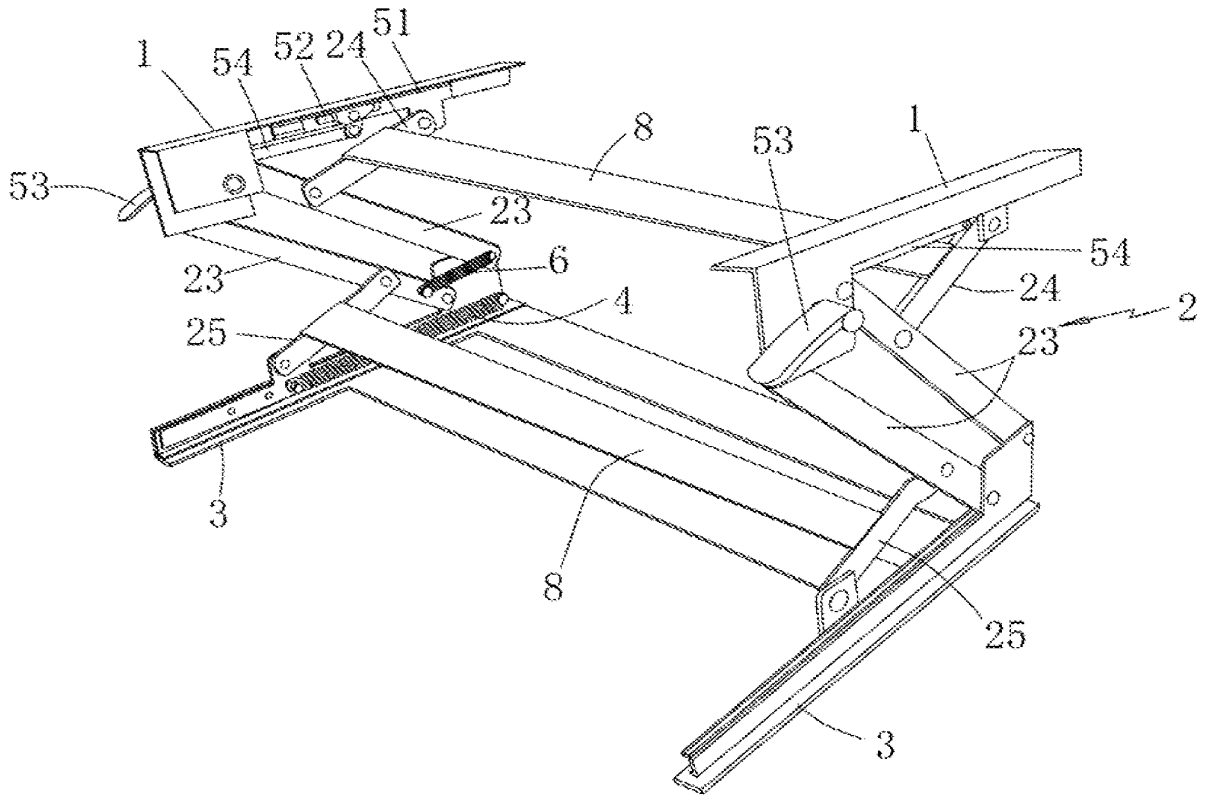

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图5

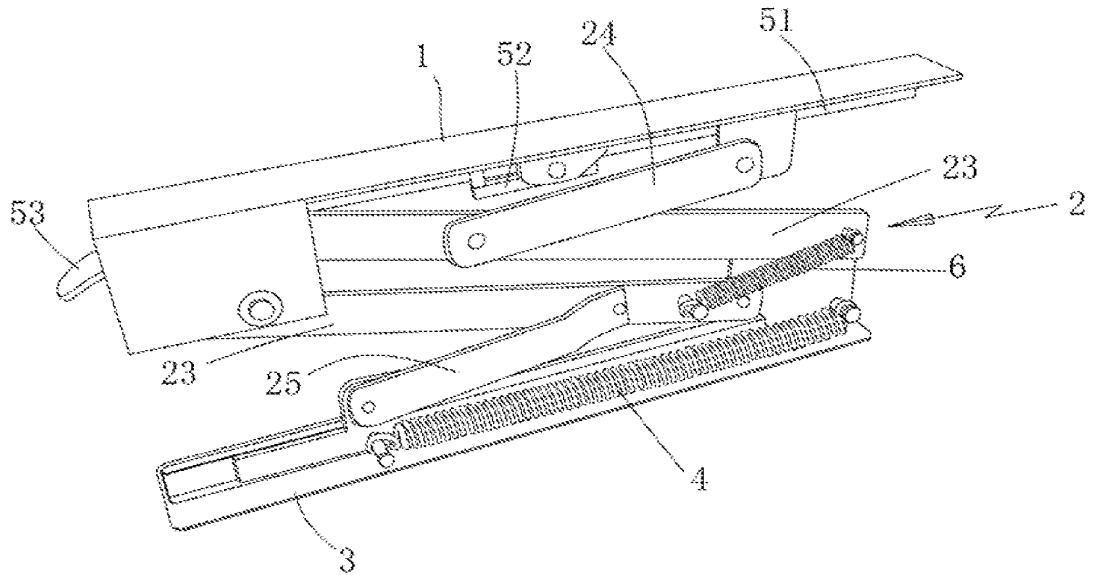

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图6

Patents

Height adjustable table

Classifications

⊛ A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

DE29515642U1
Germany

Find Prior Art Similar

Other languages: German

Current Assignee : OTM MOEBELWERKE HELMUT SEIDEL

Worldwide applications

1995 DE

Application DE29515642U events

1995-09-26	Priority to DE29515371
1995-09-30	Application filed by OTM MOEBELWERKE HELMUT SEIDEL
1995-09-30	Priority to DE29515642U
1996-01-18	Publication of DE29515642U1
2005-10-01	Anticipated expiration
Status	Expired - Lifetime

Info: Cited by (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, DPMA, Discuss

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
US11134773B1 *	2015-01-24	2021-10-05	Office Kick, Inc.	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
NO950772D0	1995-02-28	Height adjustable work table
DE59310013D1	2000-05-25	Height adjustable table
DE59205403D1	1996-03-28	Height adjustable table
DE59101138D1	1994-04-14	Height adjustable table
DE29614295U1	1996-09-26	Height adjustable table
DE29711040U1	1997-08-28	Height adjustable table
DE29520182U1	1996-02-08	Height adjustable table
DE9310664U1	1993-09-16	Height adjustable table
DE29513770U1	1995-10-12	Variable table
DE29515642U1	1996-01-18	Height adjustable table
ATA7096A	2000-12-15	TABLE

DE29503917U1	1995-07-27	Multifunctional table
DE69608815D1	2000-07-13	TABLE TOP
DE29623210U1	1997-12-18	Height adjustable table
DE59501344D1	1998-03-05	Height adjustable work table
DE9406773U1	1994-09-08	Height adjustable table
DE9404622U1	1994-05-19	Height adjustable table
DE9416693U1	1994-12-08	Height adjustable table
DE29509834U1	1995-08-24	Height adjustable table base
DE29501401U1	1995-06-01	Extendable table
DE29516061U1	1995-12-14	Table / table frame
DE29710565U1	1997-08-14	Height adjustable table
KR970011969U	1997-04-25	Table height adjuster
DE29907619U1	1999-07-29	Height adjustable table
DE9407987U1	1994-07-21	Height adjustable table base

Priority And Related Applications

Priority Applications (2)

Application	Priority date	Filing date	Title
DE29515371		1995-09-26	
DE29515642U	1995-09-26	1995-09-30	Height adjustable table

Applications Claiming Priority (1)

Application	Filing date	Title
DE29515642U	1995-09-30	Height adjustable table

Legal Events

Date	Code	Title	Description
1996-02-29	R207	Utility model specification	~~Effective date:~~ 19960229
1999-11-11	R156	Lapse of ip right after 3 years	~~Effective date:~~ 19990701

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) **Gebrauchsmuster**

(10) **DE 295 15 642 U 1**

(51) Int. Cl.[6]: **A 47 B 9/16**

(11) Aktenzeichen: 295 15 642.2
(22) Anmeldetag: 30. 9. 95
(47) Eintragungstag: 18. 1. 96
(43) Bekanntmachung im Patentblatt: 29. 2. 96

(30) Innere Priorität: (32) (33) (31)
26.09.95 DE 295153717

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(54) Höhenverstellbarer Tisch

DE 295 15 642 U 1

DE 295 15 642 U 1

BUNDESDRUCKEREI 01. 96 509 969/135 7/3

Perforationsdatum eingefügt,
Übernahmebericht, Perforationsdatum

Tisch

Die Neuerung bezieht sich auf einen Tisch mit Tischplatte und höhenverstellbarem Fußteil gemäß Oberbegriff Schutzanspruch 1.

Höhenverstellbare Tische sind in unterschiedlichsten Ausführungen bekannt, insbesondere auch als Couch- und Beistelltisch.

In der Regel verwenden derartige Tische eine aufwendige Mechanik für die Höhenverstellung.

Aufgabe der Neuerung ist es, einen Tisch aufzuzeigen, der sich durch eine besonders einfache konstruktive Ausbildung der Höhenverstellung auszeichnet.

Zur Lösung dieser Aufgabe ist ein Tisch entsprechend dem kennzeichnenden Teil des Schutzanspruches 1 ausgeführt.

Der neuerungsgemäße Tisch gestattet bei einfacher konstruktiver Ausbildung eine einfache und dem Benutzer auch verständliche Bedienung.

Weiterbildungen der Neuerung sind Gegenstand der Unteransprüche.

Die Neuerung wird im Folgenden anhand der Figuren an einem Ausführungsbeispiel näher erläutert. Es zeigen:

Fig. 1 einen höhenverstellbaren Tisch gemäß der Neuerung in perspektivischer Darstellung und in Unteransicht;

Fig. 2 in vereinfachter schematischer Darstellung ein Führungs- und Rastelement in Einzeldarstellung und in Seitenansicht;

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Patentansprüche ungültig
s. Bericht. Patentamt

Fig. 3 einen Schnitt entsprechend der Linie I - I der Fig. 2.

Der in der Fig. 1 dargestellte höhenverstellbare Tisch besteht im wesentlichen aus einer oberen Tischplatte 1 und aus einem Fußteil 2, welch letzteres höhenverstellbar ausgeführt ist und insgesamt vier langgestreckte Fußelemente 3 und 4 aufweist, von denen jeweils ein Fußelement 3 und ein Fußelement 4 ein Paar von zwei sich scherenartig kreuzenden und etwa in der Mitte gelenkig miteinander verbundenen Fußelementen bildet. Mit 5 ist das Gelenk bzw. der Gelenkbolzen bezeichnet, der die beiden Fußelemente jedes Paares gelenkig miteinander verbindet. Die im Gebrauchszustand des Tisches horizontalen Achsen der Gelenkbolzen 5 der beiden Fußelementpaare sind achsgleich zueinander vorgesehen. Die beiden parallel zueinander und im Abstand voneinander angeordneten und im Gebrauchszustand des Tisches jeweils in einer horizontalen Ebene liegenden Fußelementpaare sind im Bereich der Gelenkbolzen 5 durch eine mittlere Strebe 6 in einem vorgegebenen Abstand gehalten. Weiterhin sind die beiden unteren, der Tischplatte entfernt liegenden Enden der Fußelemente 3 über eine Strebe 7, die beiden oberen, der Unterseite der Tischplatte 1 benachbarten Enden der Fußelemente 4 über eine Strebe 8 und die beiden unteren, der Tischplatte 1 entfernt liegenden Enden der Fußelemente 4 über eine Strebe 9 miteinander verbunden. Über diese Streben 7 - 9, die mit ihren Achsen parallel zu den Achsen der Gelenke bzw. Gelenkbolzen 5 liegen, sind die Fußelemente 3 und 4 der unterschiedlichen Paare ebenfalls auf den geforderten Abstand gehalten.

An den unteren Enden der Fußelemente 4 ist jeweils ein Rad 10 frei drehbar gelagert, und zwar um eine Achse parallel zur Achse des Gelenkes 5 des Fußteils 2 bzw. parallel zu den Achsen der Gelenkbolzen 5. Mit diesen Rollen 10 ist der Tisch am Boden fahrbar. Das obere Ende jedes Fußelementes 3 ist an der Unterseite der Tischplatte 1 mittels eines Gelenkes 11 um eine Achse parallel zur Achse der Gelenkbolzen 5 schwenkbar gelagert. Die die oberen Enden der Fußelemente 4 miteinander verbindende Strebe 8 ist so ausgeführt, daß sie jeweils mit einer Länge zapfenartig über die dem jeweiligen anderen Fußelement 4 abgewandte Seite eines Fußelementes wegsteht und ist mit dieser zapfenartigen Verlängerung 8' in einer Führungsnut 12 geführt, die jeweils in einem von

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zwei an der Unterseite der Tischplatte vorgesehenen Führungs- und Rastelementen 13 vorgesehen ist. Jedes Führungs- und Rastelement 13 ist bei der dargestellten Ausführungsform von einer Platte gebildet, die hochkant an der Unterseite der Tischplatte 1 befestigt ist, d.h. mit ihren größeren Oberflächenseiten senkrecht zur Ebene der Unterseite der Tischplatte 1. Die beiden Führungs- und Rastelemente 13 sind dabei parallel zueinander und in einem Abstand voneinander angeordnet, der gleich oder geringfügig größer ist als der Abstand, den die beiden außenliegenden Seiten der Fußelemente 4 besitzen. An den einander zugewandten Flächen weist jedes Führungs- und Rastelement die sich parallel zur Unterseite der Tischplatte 1 sowie senkrecht zur Achse der Strebe 8 erstreckende Führungsnut 12 auf, die nur an der dem benachbarten Fußelement 4 zugewandten Seite des Führungs- und Rastelementes 13 offen ist, ansonsten einen geschlossenen Boden sowie eine geschlossene Randlinie besitzt und die an ihren beiden Enden sowie dazwischenliegend mit als Rasten wirkenden Erweiterungen versehen ist, und zwar an ihrem der Tischplatte 1 näherliegenden oberen Rand.

Für die Höhenverstellung des Tisches sind die zapfenartigen Verlängerungen 8' jeweils in einer Führungsnut 12 beweglich, so daß durch die hierbei auftretende scherenartige Bewegung zwischen den Fußelementen 3 und 4 eine unterschiedliche Höhe für das Fußteil 2 in Schritten möglich ist. Die jeweilige Einstellung wird durch Einrasten der Verlängerungen 8' in jeweils eine Erweiterung 14 eines Führungs- und Rastelementes arretiert.

Um das Verstellen der Tischhöhe durch einfaches Anheben der Tischplatte 1 an ihrer den beiden Gelenken 11 entfernt liegenden bzw. den Führungs- und Rastelementen 13 benachbart liegenden Seite an dem dort vorgesehenen Griff 15 zu ermöglichen sowie ein zuverlässiges Einrasten der Verlängerungen 8' in den Erweiterungen 14 zu gewährleisten, ist an der Unterseite der Tischplatte 1 weiterhin ein als Zugfeder wirkendes Federelement 16 vorgesehen, welches mit seiner Längserstreckung radial zur Strebe 8 liegt und an dieser etwa in der Mitte mit einem Ende angreift. Das andere Ende des Federelementes 16 ist an der Unterseite der Tischplatte 1 im Bereich der Gelenke 11 befestigt. Durch das Federelement 16, welches bei der dargestellten Ausführungsform von einer Länge eines

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s. berigt. Perforationssystem

dehnbaren Polstergurtes gebildet ist, werden die beiden oberen Enden der Fußelemente 4 für eine Bewegung in Richtung auf die Unterseite der Tischplatte 1 sowie auch in Richtung auf die beiden Gelenke 11, d.h. für eine Bewegung im Sinne eines Einrastens der Verlängerungen 8' in die Erweiterungen 14 sowie auch für eine Bewegung in Richtung einer Vergrößerung der Höhe des Fußteiles 2 vorgespannt. Die Bedienung des beschriebenen Tisches läßt sich, wie folgt, beschreiben:

Es wird davon ausgegangen, daß die beiden Verlängerungen 8' jeweils in derjenigen, als Rast wirkenden Erweiterung 14 eingerastet sind, die sich an dem den Gelenken 11 am weitesten entfernt liegenden Ende der Führungsnut 12 befindet, der Tisch also seinen niedrigsten Zustand aufweist und eine Verriegelungseinrichtung 17 gelöst ist. Durch Anheben der Tischplatte 1 am Griff 15 erfolgt ein Entriegeln der Verlängerungen 8', wodurch sich diese Verlängerungen 8' in der jeweiligen Führungsnut 12 bis zur nächsten Rast oder Erweiterung 14 weiterbewegen können, und zwar aufgrund der von dem Federelement 16 ausgeübten Federkraft und solange, bis die Verlängerungen in die jeweils nächste Erweiterung 14 einrasten. Hiermit ist eine Vergrößerung der Höhe des Tisches um eine erste Stufe erreicht. Durch erneutes Anheben der Tischplatte am Griff 15 kann dann in gleicher Weise eine Vergrößerung der Tischhöhe um eine weitere Stufe erreicht werden, und zwar solange, bis sich die beiden Verlängerungen 8' an dem den Gelenken 11 zugewandten Ende der jeweiligen Führungsnut 13 bzw. in der dortigen Erweiterung 14 befinden. Zur Reduzierung der Tischhöhe erfolgt jeweils durch Anheben der Tischplatte 1 am Griff 15 ein Entriegeln durch Herausbewegen der Verlängerungen 8' aus der jeweiligen Erweiterung 14. Anschließend erfolgt durch Drücken auf die Oberseite der Tischplatte ein Auseinanderschwenken der oberen Enden der Fußelemente 3 und 4, bis die gewünschte Höhenstellung erreicht ist, in der die Verlängerungen 8' in zugehörige Erweiterungen 14 einrasten können.

Um ein unerwünschtes Verstellen der Tischhöhe durch zufälliges Anheben des Tisches am Griff 15 zu vermeiden, ist die Verriegelungseinrichtung 17 vorgesehen, mit der nach dem Einrasten der Verlängerungen 8' in Erweiterungen 14 dieser Zustand verriegelt bzw. arretiert werden kann. Die Verriegelungseinrichtung 17 besteht bei der dargestellten

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s. Bericht Perforationsdatum

Ausführungsform aus einer mehrfach gekröpften oder gebogenen Stange 18, die an der Unterseite der Tischplatte 1 um eine Achse parallel zu der Tischplatte sowie senkrecht zur Achse der Strebe 8 drehbar gelagert ist, und zwar an zwei Lagern 19 und 20. Über das dem Griff 15 näherliegende Lager 19 steht die Stange 18 mit einem zu einem Griff 21 abgewinkelten Ende vor. Zwischen den beiden Lagern 19 und 20 weist die Stange 18 einen kurbelartig gebogenen Abschnitt 22 auf. Die Anordnung ist dabei so getroffen, daß sich dieser kurbelartige Abschnitt 22 unterhalb der Strebe 8 über den gesamten Bereich erstreckt, in dem sich die Strebe 8 bei der Höhenverstellung des Tisches bewegt. Weiterhin ist der kurbelartige Abschnitt 22 so gebogen, daß in einer einer nichtverriegelnden Stellung der Verriegelungseinrichtung 17 entsprechenden Stellung der Stange 18 sich die Strebe 8 und deren Verlängerungen 8' auch in dem Maß senkrecht zur Ebene der Unterseite der Tischplatte 1 bewegen können, welches für das Entriegeln der Höhenverstellung, d.h. für das Herausführen der Verlängerungen 8' aus den Erweiterungen 14 in die Führungsnut 12 notwendig ist, und in einer dem verriegelnden Zustand der Verriegelungseinrichtung 17 entsprechenden Drehstellung dieser kurbelartige Abschnitt 22 derart gegen die der Tischplatte 1 abgewandte Unterseite der Strebe 8 anliegt, daß eine Entriegelung der Höhenverstellung, d.h. ein Herausbewegen der Verlängerungen 8' aus den Erweiterungen 14 nicht möglich ist.

Durch Anschläge 23 ist die Schwenkbewegung der Stange 18 auf einen vorgegebenen Winkelbereich, beispielsweise auf einen Winkelbereich von 90° beschränkt.

Sämtliche Elemente der Verriegelungseinrichtung 17 befinden sich an der Unterseite der Tischplatte, so daß diese optisch nicht störend ins Auge fallen. Eine Besonderheit besteht darin, daß nahezu sämtliche Elemente des Tisches, insbesondere auch die für die Höhenverstellung notwendigen Elemente weitestgehend aus Holz gefertigt werden können, eine Ausnahme hiervon im wesentlichen nur die Stange 18 und das Federelement 16 sowie die Gelenkbolzen 5 bilden.

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s. Bericht. Perforationsdatum

Die Neuerung wurde voranstehend an einem Ausführungsbeispiel beschrieben. Es versteht sch, daß zahlreiche Änderungen sowie Abwandlungen möglich sind, ohne daß dadurch der der Neuerung zugrundeliegende Erfindungsgedanke verlassen wird.

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Perforationsdatum ungültig
s. bericht. Perforationsdatum

Bezugszeichenliste

1	Tischplatte
2	Fußteil
3, 4	Fußelement
5	Gelenkbolzen
6 - 9	Strebe
10	Rad
11	Gelenk
12	Führungsnut
13	Führungs- und Rastelement
14	Erweiterung
15	Griff
16	Federelement
17	Verriegelungselement
18	Stange
19, 20	Lager
21	Handgriff
22	kurbelartiger Abschnitt
23	Anschlag

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Recherchenantrag eingegangen
s. Bericht Recherchendatum

Schutzansprüche

1. Höhenverstellbarer Tisch mit wenigstens einer Tischplatte (1) und einem an der Tischplatte vorgesehenen, höhenverstellbaren Fußteil, **dadurch gekennzeichnet**, daß das Fußteil (2) von wenigstens zwei sich scherenartig kreuzenden und an einem Gelenk (5) gelenkig miteinander verbundenen Fußelementen (3, 4) gebildet ist, von denen jedes Fußelement an einem oberen Ende an der Tischplatte gehalten ist und am unteren Ende eine Standfläche bildet, daß ein erstes (3) der Fußelemente (3, 4) an seinem oberen Ende um eine Achse parallel zur Ebene der Tischplatte und parallel zum Gelenk (5) an einem Anlenkpunkt (11) an der Unterseite der Tischplatte (1) angelenkt ist, daß ein zweites (4) der Fußelemente (3, 4) mit einem an seinem einen Ende vorgesehenen Führungsstück (8') in wenigstens einer Führung (12) eines Führungs- und Rastelementes (13) geführt ist , daß die Führung (12) sich in einer Achsrichtung erstreckt, die senkrecht zur Achse des Gelenkes (5) liegt, daß die Führung (12) zumindest auf einer Teillänge von der Ebene der Unterseite der Tischplatte (1) beabstandet ist und an einer der Tischplatte (1) zugewandtenSeite wenigstens eine Rast (14) für das Führungsstück (8') aufweist, und daß ein Federelement (16) vorgesehen ist, welches das obere Ende des zweiten Fußelementes (4) für eine Bewegung in die wenigstens eine Rast (14) und/oder in Richtung auf den Anlenkpunkt (11) des oberen Endes des ersten Fußelementes (3) vorspannt.

2. Tisch nach Anspruch 1, dadurch gekennzeichnet, daß das Führungsstück ein Zapfen (8') ist.

3. Tisch nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die wenigstens eine Führung ein Führungsnut (12) ist..

4. Tisch nach Anspruch 3, dadurch gekennzeichnet, daß die Rasten an der Führung von Vorsprüngen, z.B. Dübeln oder Zapfen, an der der Führungsnut (12) und/oder von Erweiterungen (14) der Führungsnut (12) gebildet sind.

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Recherchenbericht Recherchenort

5. Tisch nach einem der Ansprüche 1 - 4, dadurch gekennzeichnet, daß an der Führung (12) wenigstens an dem dem Anlenkpunkt (11) entfernt liegenden Ende eine Rast (14) aufweist.

6. Tisch nach einem der Ansprüche 1 - 5, dadurch gekennzeichnet, daß das Fußteil (2) aus zwei Paaren von sich kreuzenden ersten und zweiten Fußelementen (3, 4) besteht, und daß die zugehörigen Fußelemente (3, 4) der Paare über Streben (6, 7, 8, 9), die mit ihrer Längserstreckung in Richtung der Achse des Gelenkes (5) liegen, miteinander verbunden sind.

7. Tisch nach einem der Ansprüche 1 - 6, dadurch gekennzeichnet, daß an der Unterseite der Tischplatte (1) zwei Führungs- und Rastelemente (13) mit jeweils einer mindestens eine Rast aufweisenden Führung parallel zueinander und im Abstand voneinander vorgesehen sind, und daß mit jedem Führungs- und Rastelement ein Zapfen (8') eines zweiten Fußelementes (4) eines Fußelementpaares zusammenwirkt.

8. Tisch nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß sich die Führung (12) in einer Achsrichtung parallel oder etwa parallel zur Ebene der Tischplatte (1) erstreckt.

9. Tisch nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß sich die Führung (12) in einer Achsrichtung erstreckt, die mit der Ebene der Tischplatte (1) einen spitzen Winkel, d.h. einen Winkel kleiner als 20° einschließt.

10. Tisch nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß am unteren Ende des wenigstens einen zweiten Fußelementes (4) Rollen (10) vorgesehen sind.

11. Tisch nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß an der dem wenigstens einen Führungs- oder Rastelement (13) benachbarten Seite der

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Übersicht Personalisierbar

Tischplatte (1) ein Griff (15) vorgesehen ist.

12. Tisch nach einem der vorhergehenden Ansprüche, gekennzeichnet durch eine Verriegelungseinrichtung (17) zum Verriegeln des in eine Rast (14) eingerasteten Führungsstück (8').

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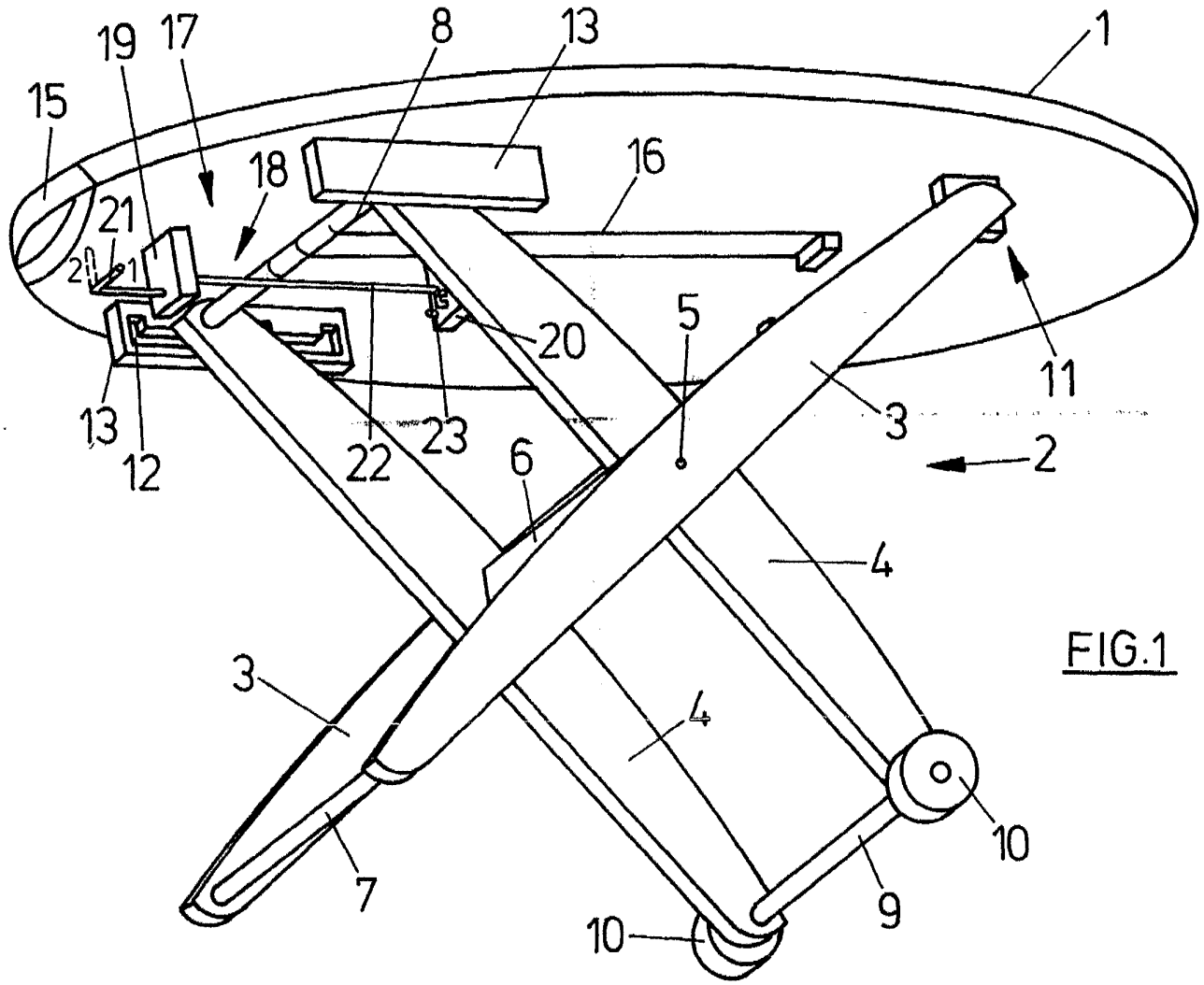


FIG.1

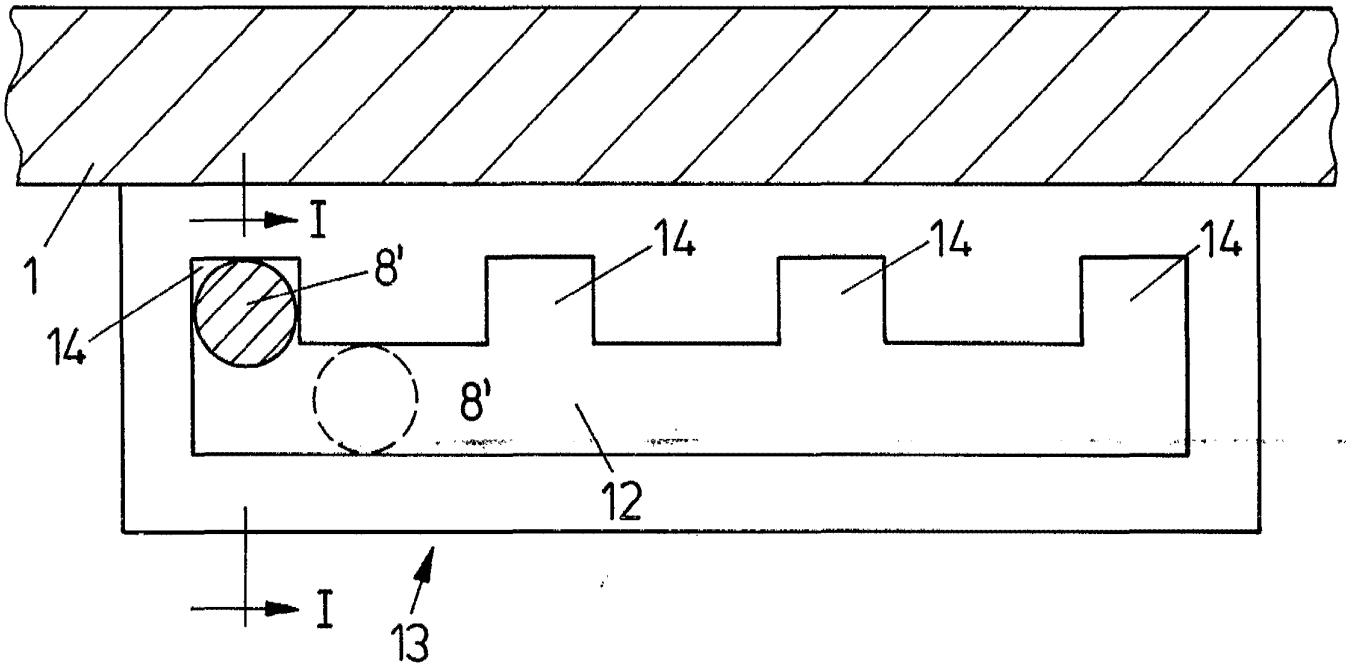


FIG.2

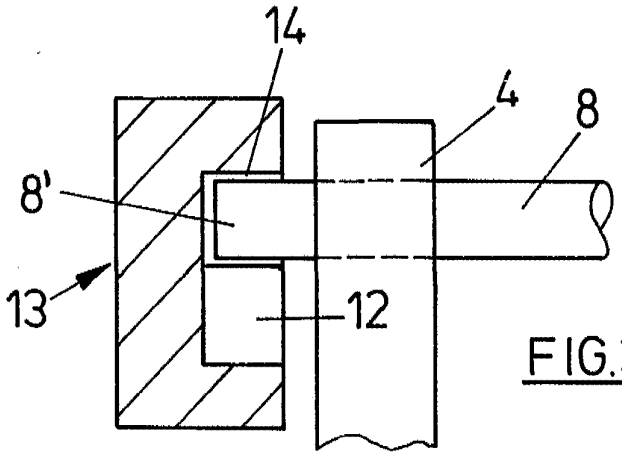


FIG.3

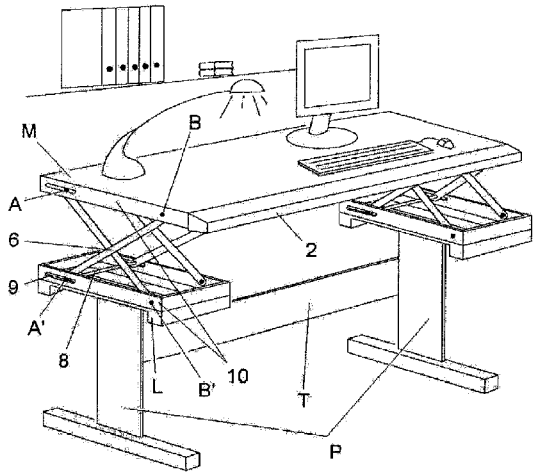
Patents

Desk with pad on the edge of the board and height regulation of said board

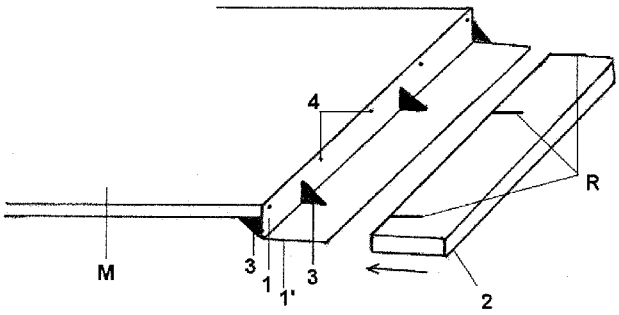
Abstract

The table is characterized mainly to have a seat incorporated on the edge of the board table and in the controller mechanism of height of the item mentioned before. The characteristics of this table have as purpose to improve the comfortably and the postural health in the position of sitting. The comfortably is essential for this space that we are used to spending a lot of time seated for working, studying or leisure reasons.

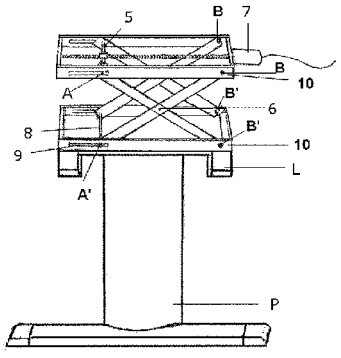
The stability of the table keeps from a metallic chassis made by two feet put in a side of the broad and joined between them in a half height by a bolster which is welded or screwed together, appearing the broad independently and with the function of going up or going down to get the suitable height, for that, between the top part of each foot, the broad is located a scissors lift put in a frame in two symmetric rectangles, in charge of regulating the height of the broad. This regulation system is designed to realize the action of going up or going down the height of the support in the forearms in a fast, comfortable and easy way according to user convenience.



DRAWING 1



DRAWING 2



DRAWING 3

EP2745733A1
European Patent Office

Download PDF Find Prior Art Similar

Other languages: German, French

Inventor: Manuel Nieves Barea

Worldwide applications

2012 ES 2013 EP

Application EP13382389.8A events

2012-10-04 Priority to ES201231623U

2013-10-04 Application filed by Manuel Nieves Barea

2014-06-25 Publication of EP2745733A1

Status Withdrawn

Info: Patent citations (4), Cited by (9), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, EPO GPI, EP Register, Global Dossier, Discuss

Images (4)



Classifications

» A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

View 2 more classifications

Claims (4) Hide Dependent

1. Working, desktop or study table with a seat on the edge of the board and height regulation which consists of a metallic chassis made of two feet (P) joined between them in a middle height by a wooden or metallic bolster(T) in the way the broad in independent, so it has the function of going up and down to get the right height which places our backbone in an upright shape. In front of the board, the metallic, plastic or wooden bracket(1) is screwed and it has one vertical wing (1') screwed of the edge of the broad (1) and another wing(1") which sets up a 90° angle in relation to the previous vertical wing and with a high width forming a plane extended area and positioned in an horizontal sense supplied by internal and external consoles(3).
Over the bracket, it is held by a piece made of elastic birdlime and/ or polyurethane (2) in a high quality, this piece has a rectangular prism shape, has the same length than the bracket and it must have the thickness enough. This piece will get some slop (R) ready for putting together the consoles (3).

2. Working, desktop or study table with a seat on the edge of the board and height regulation already said it, according to the first claim, the bracket and the seat will go hidden with a clothing piece preferably with elastic clothing, ventilated and easy to clean and with low thermal conductivity. The seat as a whole is incorporated on the table of the broad without standing out over the vertical plane

3. Working, desktop or study table with a seat on the edge of the board and height regulation, according to the claims mentioned before, it is located in the end side of the broad over every foot(P), a metallic structure in a scissor shape (6) and with a screwed spindle(5) which traverses all the structure longitudinally, so that, by means of this and moving by electrical driving force (7), the scissors is opened or closed and, as a result, the broad goes up and down. The legs of the scissors have a fixed (B) and mobile side (A) joined between them by a shaft (8) which is slid all through a slot (9) positioned in the base structure(10) lateral side.
The scissors is put together in the central point (6) where both arms take across themselves and, as well, in the beginning of previous arms points (A and B).

4. Working, desktop or study table with a seat on the edge of the board and height regulation, according to the claims mentioned before, the scissors is driven by traction through a wire (C) which is screwed or unscrewed following the axis movement of the driving force (7')
The joint of the scissors keeps in a framed metallic structure in two symmetric metallic rectangles (10) in which the superior sheet-metal pieces(L) of the feet are supported.

Description

Aim of the creation

[0001] This invention is referred to a working, desktop or study table with a seat on the edge of the board and height regulation with some new technique characteristics which have been conceived and made in order to obtain some large and prominent advantages in relation to other existing ways of analogous purposes.

[0002] It is made up with a metallic chassis formed by two bases in the shape of I with 30 cm bolster piece about width in an half height connected by welding and a wood (or similar material) broad, preferably. The bolster which joins the bases could be made of wood or similar material in which case it would go screwed.

[0003] This creation has as purpose of improving the comfortably and the postural hygienic seated

[0004] The present creation belongs to the furniture area to work or study.

Precedents of the conditions of the previous techniques to the creation

[0005] It is known other devices responsible for padding different areas, but few for the edge of the working, desktop or study table. The owner of the present creation Mr. Manuel Nieves Sares realized a seat for the edge of the table which is aim of the patent with application number P200300576 based on clothing pieces submit to tautness thanks to a rigid piece, this device has an inconvenient because the stretched pieces have been tasted and, after using, loss the tautness and so that their effectiveness.

[0006] Another inconvenient is that the structure is not built on the board in such way that this one creates a staggering in relation to the table board making an important change in the relief and this is the item which impedes the realization of diverse activities attainable on a table, such as the use of documents, the use of drawing rules or the use of clothing, among others. it is not obey the area of working of the user and is an obstacle when it is time to realize different activities.

[0007] With regards to the ergonomics, this dispositive lacks some characteristics which improve the ergonomics which is detailed in this text forward.

[0008] Nevertheless, the experience has shown it is possible to get better the characteristics of the patent with application number P200300576 and in consequence a new seat has been invented and its characteristics are the aim of this creation.

[0009] The applicant does not know any invention that by means of the support of the forearms on the edge of the table and the regulation of the height of this support gets the upright and healthy posture in our backbone, although it is known a lot of devices responsible for adjusting the height in the working, living-room or desk table and so on.

Description of the invention

[0010] The table is characterized mainly by consisting of a seat incorporated on the edge of the board table and of the controller mechanism of height of the item mentioned before. The characteristics of this table have as purpose to improve the comfortably and the postural health in the position of sitting. The comfortably is essential for this space that we get used to spend a lot of time seated for working, studying or leisure reasons.

[0011] The stability of the table keeps from a metallic chassis made by two feet put in a side of the broad and joined between them in a half height by a bolster which is welded or screwed together, appearing the broad independently and with function of going up or going down to get the suitable height, for that between the top part of each foot, the broad is located a scissors lift put in a frame in two symmetric rectangles, in charge of regulating the height of the broad. This regulation system is designed to realize the action of going up or going down the height of the support in the forearms in a fast, comfortable and easy way according to user's convenience.

Advantages of the creation

[0012] We expose below the main advantages which are obtained with this invention in an informative not limitative way, to know:

This table includes a seat added to the edge of the board of the foretell table to support the forearms doing more comfortable this support. Thanks to this, noticeable improvements are achieved regarding these types of seats known so far.

[0013] The seat has a new structure in order to get to stretch on shelf life of the advice, improve the ergonomic and respect the user working area.

[0014] This seat kept on the front edge of the board of the table is specially designed to get the forearms on a computer, working and study table providing an extraordinary sensation of comfortably in a key point but not only about it, but correct in height. A good computer, study or working table should allow positioning properly the user's body, stabilizing to do activities in comfortable, safe and functional postures. Moreover, it includes a regulation height system of the board which has the aim of regulating the height of the support point set up by the seat so in this way to keep our backbone upright and healthy, improving the postural hygienic and avoiding back and neck pains. It is possible to look for the height of the forearms' support in a fast, comfortable and easy way positioning our backbone upright and graduating in children the height of this support according to the growth of their body so that this is a good contribution to the right development of the backbone in children during the growth time.

[0015] The characteristics of this table have as purpose to improve the comfortably and the postural hygienic on a seat position. The comfortably is essential for this space in which we get used to be seated and spend a lot of time in this same position for reasons of working, leisure or study.

[0016] We have to stand out that everybody are not the same in height terms so we are not good for the same table for everybody, above all if children are included because they needs the table grows up at the same time than them to have a upright and healthy back posture.

[0017] Having said which, the applicant has thought about the importance and benefits of the support of the forearms on the edge of the table and the regulation of the height on the seated way in front of a computer, working or study table.

Description of the drawings

[0018] Completing this description and to have a better comprehension of this report, it has been carried out the drawings enclosed which show an example of priority realization, not limitative, of the object of the invention in which we have:

The figure 1 is a sight in a perspective of the table with the broad raised

The figure 2 is a sight of the broad with the screwed basis and the separated seated in details.

The figure 3 is a detail of the elevator mechanism of the broad.

The figure 4 presents a possible variation of the elevator mechanism of the broad.

Description of the priority realization of the invention

[0019] The table aim of this creation is characterized mainly by having a seat(2) incorporated on the edge of the broad of the table(M) and a regulator mechanism of height of the previous mentioned broad.

[0020] The seat in question is put together by three pieces: the bracket (1) which can be made of plastic, wood and metal and it has one vertical wing (1') screwed of the edge of the broad (M) and another wing(1) which sets up a 90° angle in relation to the previous vertical wing and with a high width forming a plane extended area and positioned in an horizontal sense. This piece will be which supports the weight of the user and so that it is provided with interior and exterior consoles (3) in the right angle which give rigidity to this component.

[0021] Over the bracket, it is held by a piece made of elastic birdlime and/ or polyurethane (2) in a high quality, this piece has a rectangular prism shape, has the same length than the bracket and it must have the thickness enough to achieve perfectly with the function of seating, improving the circulation blood thanks to the qualities of these materials. This piece will get some slop (R) ready for putting together the consoles (3).

[0022] This piece will have a clothing cover preferably with elastic clothing, ventilated and easy to clean and with low thermal conductivity. This cover covers up the two pieces mentioned before and it is the visible part of the seat.

[0023] The seat is an extension of the broad and formed a plane and spongy area which doesn't stand out in the vertical plane of the table, having a special respect to working area of the user, without having the seat an obstacle to manage documents, drawing rules, clothing or any activity viable on a table.

[0024] It is advisable to the person who will be seated in front of a table for working, leisure or study reasons, who support the forearms on the edge of the table and it has the suitable height for the user in order to avoid postural bad habits or possible back and neck pains.

[0025] If the support of the forearms on the edge of the table makes the proper height of the user positioned in an healthy way, his/ her body keeping the upright backbone releasing its weight when we support the forearms allowing relaxing the musculature which let us balanced thanks to the stability which supplies the forearms' support and in the end, improving the postural hygienic because not everybody has the same height and also children haven't finished to build up their body, at the moment, they start to study or use the desktop. This creation makes a commitment to be complemented by the regulation of the height of the support with the intent to contribute the right development and growth of the backbone. The applicant has thought about the importance and benefits of the support of the forearms on the edge of the table and also the height gives the support.

[0026] It should be noted that the regulation of the height only affects the broad of the table without affecting at all neither the legs not the rest of the structure of the table. The stability of the table is built from the joining together the two feet (P) the bolster (T) and in this way the stability of the table is complete. (See fig. 1) staying the broad independently and this does the function of going up and down to get the desired height. This regulation's system is designed to do in a comfort, fast and easy way, the action of going up and down the height of the support of the forearms in the advisable way of the user.

[0027] For that, this table counts on the top part of each foot on a metallic structure in a scissors(6) way made with two sheet metal sides with some fixed(B-B') and mobiles sides(A-A') joined by a shaft(8) whose sides sliding by two slots(9) located in the sheet metal(10) sides in both rectangles which frame the scissors. The whole mechanism makes through a thread spindle(5) moving by an electric driving force(7) which open or close the scissors, so therefore, the broad goes up and down too.

[0028] The top side of the foot has an I shape with two sheet metal pieces(L) in the sides over which the scissors 'base is supported. The feet join between then in a mid-height by a metallic or wooden bolster(T) about 30 cm of width.

[0029] The metal structure of the scissors is framed in both symmetric metallic rectangles which are supported on the superior sheet-metal pieces of the feet.

[0030] The scissors will be able to be started up by means of the spindle (5) in which the turntable action over it by the fraction with a wire(C) in which it wreathe or unscrew following the movement of the driving force(7).

[0031] The driving force(7) gets used to hitch to the metallic structure of the scissors lift (10), or the inferior side of the broad. The mechanism's button hitches in the front inferior side of the broad.

Patent Citations (4)

Publication number	Priority date	Publication date	Assignee	Title

US6523486B1 *	2001-06-22	2003-02-25	Bay View Industries, Inc.	Removable edge system for a work surface
US20050150431A1 *	2004-01-08	2005-07-14	Jiang Lijian	Table mounting assembly
FR2901981A1 *	2006-06-13	2007-12-14	C O P Check Out Production Sa	Customer e.g. handicapped person, accommodating cabin e.g. superstore checkout counter, has box including base with unit varying height of cabin, and structures actuated by expanding and folding across motor acting on cabin, unit and frames
US20090200437A1 *	2008-02-11	2009-08-13	Ole Falk Smed	Adjustable Height Keyboard Support

Family To Family Citations

* Cited by examiner, † Cited by third party

Cited By (9)

Publication number	Priority date	Publication date	Assignee	Title
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US9668572B2	2014-04-14	2017-06-06	Ergotron, Inc.	Height adjustable desktop work surface
WO2017181569A1 *	2016-04-21	2017-10-26	杭州速达工艺制品有限公司	Dual-powered raising/lowering desktop
JP2019022806A *	2018-11-19	2019-02-14	株式会社オカムラ	Top board lift-type desk
US10244861B1 *	2015-01-24	2019-04-02	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
US10542817B2	2015-09-24	2020-01-28	Ergotron, Inc.	Height adjustable device
US10602840B2	2015-10-08	2020-03-31	Ergotron, Inc.	Height adjustable table
US10893748B1	2017-07-08	2021-01-19	Office Kick, Inc.	Height adjustable desktop
CN112890421A *	2021-02-20	2021-06-04	江西阳光安全设备集团有限公司	Multi-functional reading table in library

Family To Family Citations

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
EP2745733A1	2014-06-25	Desk with pad on the edge of the board and height regulation of said board
US8864233B2	2014-10-21	Tattoo chair
KR101674286B1	2016-11-22	A bed for patients
CN203433957U	2014-02-19	Computer chair combined with chair computer desk flat display support
CN103315536A	2013-09-25	Computer chair associated with chair, computer desk and flat-panel display bracket
US20140028067A1	2014-01-30	Seat pad adjustable chair
US9955788B1	2018-05-01	Rope rocking chair
CN202950219U	2013-05-29	Tabletop-adjustable bed table
CN204169336U	2015-02-25	Comfortable desk and chair
CN211048875U	2020-07-21	Novel chair
CN206714437U	2017-12-08	A kind of multi-functional lecture theater row chair
CN207870637U	2018-09-18	A kind of integrated office seat
US20190110602A1	2019-04-18	Back support including armpit support parts
CN204764390U	2015-11-18	Leisure official working seat
CN201452143U	2010-05-12	Seat capable of facilitating students to nap

KR101480285B1	2015-01-14	Moving chairs for disabled
CN203776472U	2014-08-20	Novel multi-functional computer chair
CN201986956U	2011-09-28	Computer desk with adjustable height
CN206499196U	2017-09-19	A kind of height of seat and adjustable back students' dormitory seat
CN214905264U	2021-11-30	Adjustable office chair with waist support
Caglar	2008	Next generation.
CN216316518U	2022-04-19	Integral type desk chair
GB2530580A	2016-03-30	Sunlounger
CN210158354U	2020-03-20	Multifunctional changeable seat
CN211092875U	2020-07-28	Seat unit and seat

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
ES201231023U	2012-10-04	2012-10-04	WORK TABLE, COMPUTER OR STUDY WITH PAD ON THE EDGE OF THE BOARD AND HEIGHT REGULATION OF SUCH BOARD

Legal Events

Date	Code	Title	Description
2014-06-24	PUAI	Public reference made under article 153(3) epc to a published international application that has entered the european phase	**Free format text:** ORIGINAL CODE: 0009012
2014-06-25	17P	Request for examination filed	**Effective date:** 20131004
2014-06-25	AK	Designated contracting states	**Kind code of ref document:** A1 **Designated state(s):** AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
2014-06-25	AX	Request for extension of the european patent	**Extension state:** BA ME
2015-07-10	STAA	Information on the status of an ep patent application or granted ep patent	**Free format text:** STATUS: THE APPLICATION IS DEEMED TO BE WITHDRAWN
2015-08-12	18D	Application deemed to be withdrawn	**Effective date:** 20150106

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
metal		claims,description	7	0.000
easy-to-clean		claims,description	2	0.000
plastic		claims,description	2	0.000
polyurethane		claims,description	2	0.000

polyurethane	claims,description	2	0.000
plastic	claims	1	0.000
Forearm	abstract,description	13	0.000
postural	abstract,description	7	0.000
regulatory	abstract,description	3	0.000

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(19) Europäisches Patentamt
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(11) EP 2 745 733 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.06.2014 Bulletin 2014/26

(51) Int Cl.:
A47B 9/16 *(2006.01)*

(21) Application number: **13382389.8**

(22) Date of filing: **04.10.2013**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **04.10.2012 ES 201231023 U**

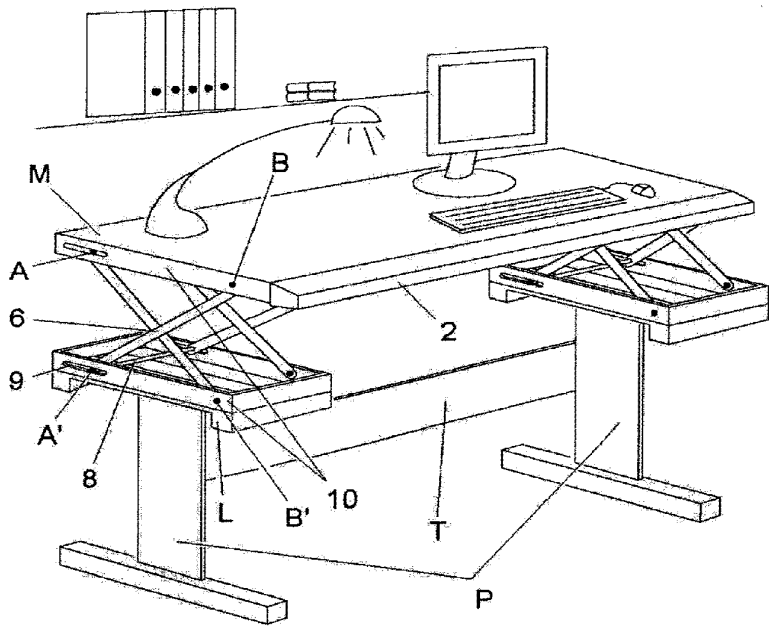
(71) Applicant: **Nieves Barea, Manuel**
23770 Jaen (ES)

(72) Inventor: **Nieves Barea, Manuel**
23770 Jaen (ES)

(54) Desk with pad on the edge of the board and height regulation of said board

(57) The table is characterized mainly to have a seat incorporated on the edge of the board table and in the controller mechanism of height of the item mentioned before. The characteristics of this table have as purpose to improve the comfortably and the postural health in the position of sitting. The comfortably is essential for this space that we are used to spending a lot of time seated for working, studying or leisure reasons.

The stability of the table keeps from a metallic chassis made by two feet put in a side of the broad and joined between them in a half height by a bolster which is welded or screwed together, appearing the broad independently and with the function of going up or going down to get the suitable height, for that, between the top part of each foot, the broad is located a scissors lift put in a frame in two symmetric rectangles, in charge of regulating the height of the broad. This regulation system is designed to realize the action of going up or going down the height of the support in the forearms in a fast, comfortable and easy way according to user convenience.

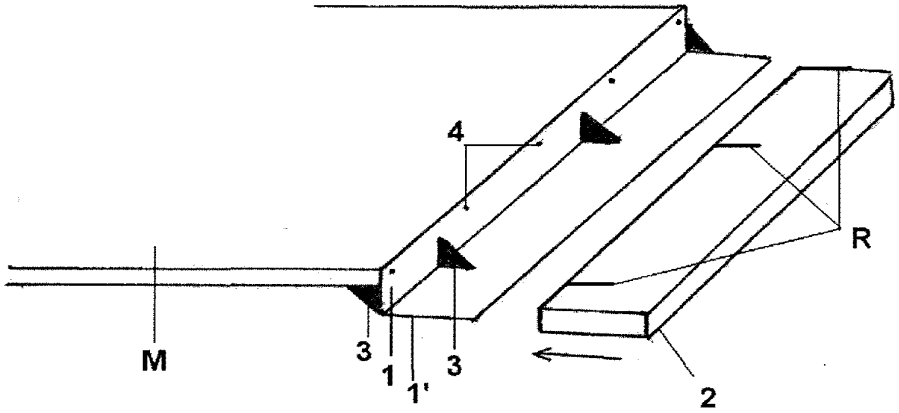


DRAWING 1

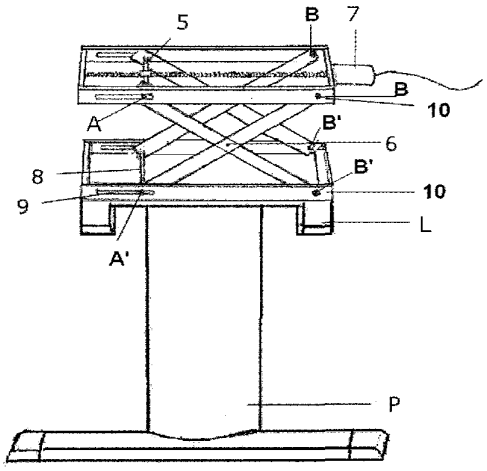
EP 2 745 733 A1

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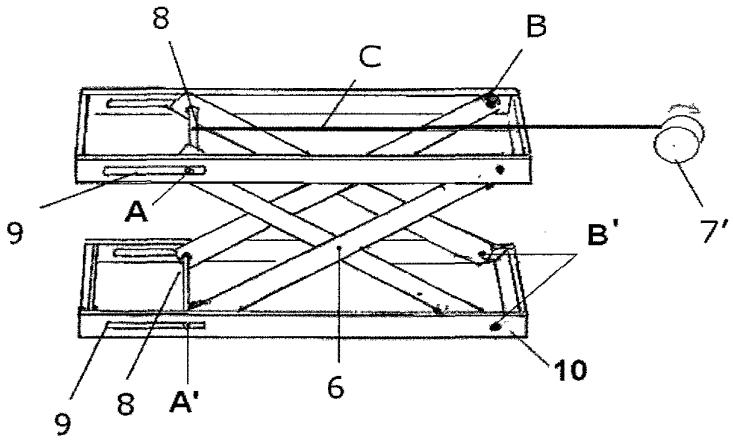
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DRAWING 2



DRAWING 3



DRAWING 4

Description

Aim of the creation

[0001] This invention is referred to a working, desktop or study table with a seat on the edge of the board and height regulation with some new technique characteristics which have been conceived and made in order to obtain some large and prominent advantages in relation to other existing ways of analogous purposes.

[0002] It is made up with a metallic chassis formed by two bases in the shape of I with 30 cm bolster piece about width in an half height connected by welding and a wood (or similar material) broad, preferably. The bolster which joins the bases could be made of wood or similar material in which case it would go screwed.

[0003] This creation has as purpose of improving the comfortably and the postural hygienic seated

[0004] The present creation belongs to the furniture area to work or study.

Precedents of the conditions of the previous techniques to the creation

[0005] It is known other devices responsible for padding different areas, but few for the edge of the working, desktop or study table. The owner of the present creation Mr. Manuel Nieves Barea realized a seat for the edge of the table which is aim of the patent with application number P200300576 based on clothing pieces submit to tautness thanks to a rigid piece, this device has an inconvenient because the stretched pieces have been tasted and, after using, loss the tautness and so that their effectiveness.

[0006] Another inconvenient is that the structure is not built on the board in such way that this one creates a staggering in relation to the table board making an important change in the relief and this is the item which impedes the realization of diverse activities attainable on a table, such as the use of documents, the use of drawing rules or the use of clothing, among others. It is not obey the area of working of the user and is an obstacle when it is time to realize different activities.

[0007] With regards to the ergonomics, this dispositive lacks some characteristics which improve the ergonomics which is detailed in this text forward.

[0008] Nevertheless, the experience has shown it is possible to get better the characteristics of the patent with application number P200300576 and in consequence a new seat has been invented and its characteristics are the aim of this creation.

[0009] The applicant does not know any invention that by means of the support of the forearms on the edge of the table and the regulation of the height of this support gets the upright and healthy posture in our backbone, although it is known a lot of devices responsible for adjusting the height in the working, living-room or desk table and so on.

Description of the invention

[0010] The table is characterized mainly by consisting of a seat incorporated on the edge of the board table and of the controller mechanism of height of the item mentioned before. The characteristics of this table have as purpose to improve the comfortably and the postural health in the position of sitting. The comfortably is essential for this space that we get used to spend a lot of time seated for working, studying or leisure reasons.

[0011] The stability of the table keeps from a metallic chassis made by two feet put in a side of the broad and joined between them in a half height by a bolster which is welded or screwed together, appearing the broad independently and with function of going up or going down to get the suitable height, for that between the top part of each foot, the broad is located a scissors lift put in a frame in two symmetric rectangles, in charge of regulating the height of the broad. This regulation system is designed to realize the action of going up or going down the height of the support in the forearms in a fast, comfortable and easy way according to user's convenience.

Advantages of the creation

[0012] We expose below the main advantages which are obtained with this invention in an informative not limitative way, to know:

- This table includes a seat added to the edge of the board of the foretell table to support the forearms doing more comfortable this support. Thanks to this, noticeable improvements are achieved regarding these types of seats known so far.

[0013] The seat has a new structure in order to get to stretch on shelf life of the advice, improve the ergonomic and respect the user working area.

[0014] This seat kept on the front edge of the board of the table is specially designed to get the forearms on a computer, working and study table providing an extraordinary sensation of comfortably in a key point but not only about it, but correct in height. A good computer, study or working table should allow positioning properly the user's body, stabilizing to do activities in comfortable, safe and functional postures. Moreover, it includes a regulation height system of the board which has the aim of regulating the height of the support point set up by the seat so in this way to keep our backbone upright and healthy, improving the postural hygienic and avoiding back and neck pains. It is possible to look for the height of the forearms' support in a fast, comfortable and easy way positioning our backbone upright and graduating in children the height of this support according to the growth of their body so that this is a good contribution to the right development of the backbone in children during the growth time.

[0015] The characteristics of this table have as pur-

pose to improve the comfortably and the postural hygienic on a seat position. The comfortably is essential for this space in which we get used to be seated and spend a lot of time in this same position for reasons of working, leisure or study.

[0016] We have to stand out that everybody are not the same in height terms so we are not good for the same table for everybody, above all if children are included because they needs the table grows up at the same time than them to have a upright and healthy back posture.

[0017] Having said which, the applicant has thought about the importance and benefits of the support of the forearms on the edge of the table and the regulation of the height on the seated way in front of a computer, working or study table.

Description of the drawings

[0018] Completing this description and to have a better comprehension of this report, it has been carried out the drawings enclosed which show an example of priority realization, not limitative, of the object of the invention in which we have:

The figure 1 is a sight in a perspective of the table with the broad raised

The figure 2 is a sight of the broad with the screwed basis and the separated seated in details.

The figure 3 is a detail of the elevator mechanism of the broad.

The figure 4 presents a possible variation of the elevator mechanism of the broad.

Description of the priority realization of the invention

[0019] The table aim of this creation is characterized mainly by having a seat(2) incorporated on the edge of the broad of the table(M) and a regulator mechanism of height of the previous mentioned broad.

[0020] The seat in question is put together by three pieces: the bracket (1) which can be made of plastic, wood and metal and it has one vertical wing (1') screwed of the edge of the broad (M) and another wing(1) which sets up a 90° angle in relation to the previous vertical wing and with a high width forming a plane extended area and positioned in an horizontal sense. This piece will be which supports the weight of the user and so that it is provided with interior and exterior consoles (3) in the right angle which give rigidity to this component.

[0021] Over the bracket, it is held by a piece made of elastic birdlime and/ or polyurethane (2) in a high quality, this piece has a rectangular prism shape, has the same length than the bracket and it must have the thickness enough to achieve perfectly with the function of seating, improving the circulation blood thanks to the qualities of these materials. This piece will get some slop (R) ready for putting together the consoles (3).

[0022] This piece will have a clothing cover preferably with elastic clothing, ventilated and easy to clean and with low thermal conductivity. This cover covers up the two pieces mentioned before and it is the visible part of the seat.

[0023] The seat is an extension of the broad and formed a plane and spongy area which doesn't stand out in the vertical plane of the table, having a special respect to working area of the user, without having the seat an obstacle to manage documents, drawing rules, clothing or any activity viable on a table.

[0024] It is advisable to the person who will be seated in front of a table for working, leisure or study reasons, who support the forearms on the edge of the table and it has the suitable height for the user in order to avoid postural bad habits or possible back and neck pains.

[0025] If the support of the forearms on the edge of the table makes the proper height of the user positioned in an healthy way, his/ her body keeping the upright backbone releasing its weight when we support the forearms allowing relaxing the musculature which let us balanced thanks to the stability which supplies the forearms' support and in the end, improving the postural hygienic because not everybody has the same height and also children haven't finished to build up their body, at the moment, they start to study or use the desktop. This creation makes a commitment to be complemented by the regulation of the height of the support with the intent to contribute the right development and growth of the backbone. The applicant has thought about the importance and benefits of the support of the forearms on the edge of the table and also the height gives the support.

[0026] It should be noted that the regulation of the height only affects the broad of the table without affecting at all neither the legs not the rest of the structure of the table. The stability of the table is built from the joining together the two feet (P) the bolster (T) and in this way the stability of the table is complete. (See fig. 1) staying the broad independently and this does the function of going up and down to get the desired height. This regulation's system is designed to do in a comfort, fast and easy way, the action of going up and down the height of the support of the forearms in the advisable way of the user.

[0027] For that, this table counts on the top part of each foot on a metallic structure in a scissors(6) way made with two sheet metal sides with some fixed(B-B') and mobiles sides(A-A') joined by a shaft(8) whose sides sliding by two slots(9) located in the sheet metal(10) sides in both rectangles which frame the scissors. The whole mechanism makes through a thread spindle(5) moving by an electric driving force(7) which open or close the scissors, so therefore, the broad goes up and down too.

[0028] The top side of the foot has an I shape with two sheet metal pieces(L) in the sides over which the scissors 'base is supported. The feet join between then in a mid-

height by a metallic or wooden bolster(T) about 30 cm of width.

[0029] The metal structure of the scissors is framed in both symmetric metallic rectangles which are supported on the superior sheet-metal pieces of the feet.

[0030] The scissors will be able to be started up by means of the spindle (5) in which the turntable action over it by the fraction with a wire(C) in which it wreathe or unscrew following the movement of the driving force(7).

[0031] The driving force(7) gets used to hitch to the metallic structure of the scissors lift (10), or the inferior side of the broad. The mechanism's button hitches in the front inferior side of the broad.

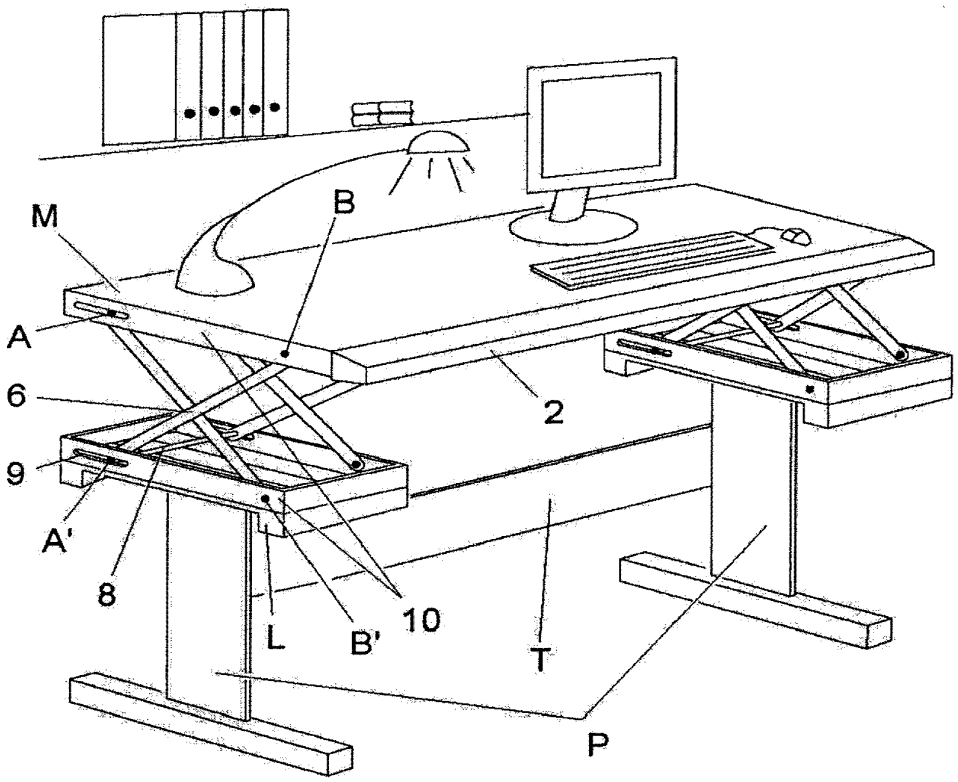
Claims

1. Working, desktop or study table with a seat on the edge of the board and height regulation which consists of a metallic chassis made of two feet (P) joined between them in a middle height by a wooden or metallic bolster(T) in the way the broad in independent, so it has the function of going up and down to get the right height which places our backbone in an upright shape. In front of the board, the metallic, plastic or wooden bracket(1) is screwed and it has one vertical wing (1') screwed of the edge of the broad (1) and another wing(1') which sets up a 90° angle in relation to the previous vertical wing and with a high width forming a plane extended area and positioned in an horizontal sense supplied by internal and external consoles(3).
   Over the bracket, it is held by a piece made of elastic birdlime and/ or polyurethane (2) in a high quality, this piece has a rectangular prism shape, has the same length than the bracket and it must have the thickness enough. This piece will get some slop (R) ready for putting together the consoles (3).

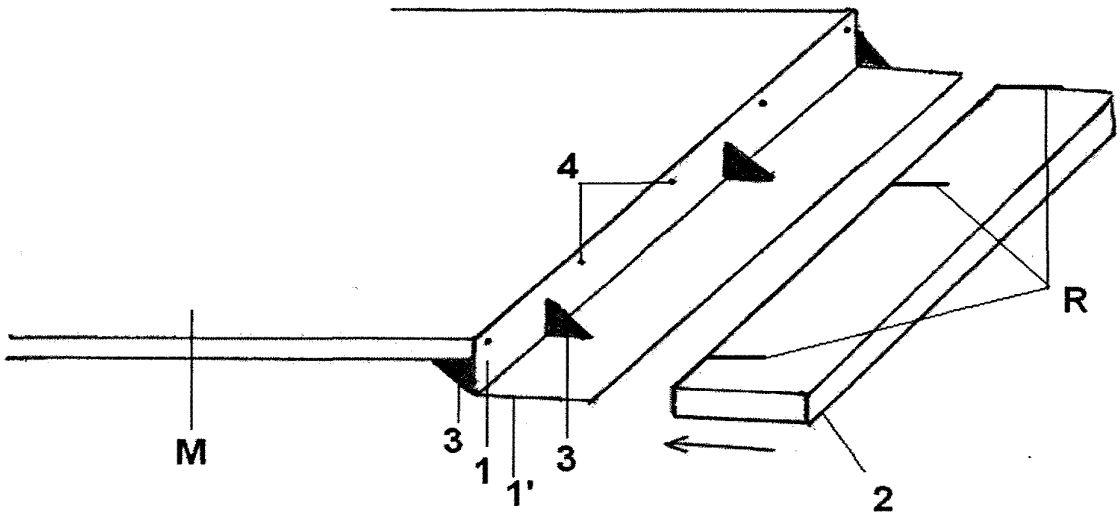
2. Working, desktop or study table with a seat on the edge of the board and height regulation already said it, according to the first claim, the bracket and the seat will go hidden with a clothing-piece preferably with elastic clothing, ventilated and easy to clean and with low thermal conductivity. The seat as a whole is incorporated on the table of the broad without standing out over the vertical plane

3. Working, desktop or study table with a seat on the edge of the board and height regulation, according to the claims mentioned before, it is located in the end side of the broad over every foot(P), a metallic structure in a scissor shape (6) and with a screwed spindle(5) which traverses all the structure longitudinally, so that, by means of this and moving by electrical driving force (7), the scissors is opened or closed and, as a result, the broad goes up and down.
   The legs of the scissors have a fixed (B) and mobile side (A) joined between them by a shaft (8) which is slid all through a slot (9) positioned in the base structure(10) lateral side.
   The scissors is put together in the central point (6) where both arms take across themselves and, as well, in the beginning of previous arms points (A and B).

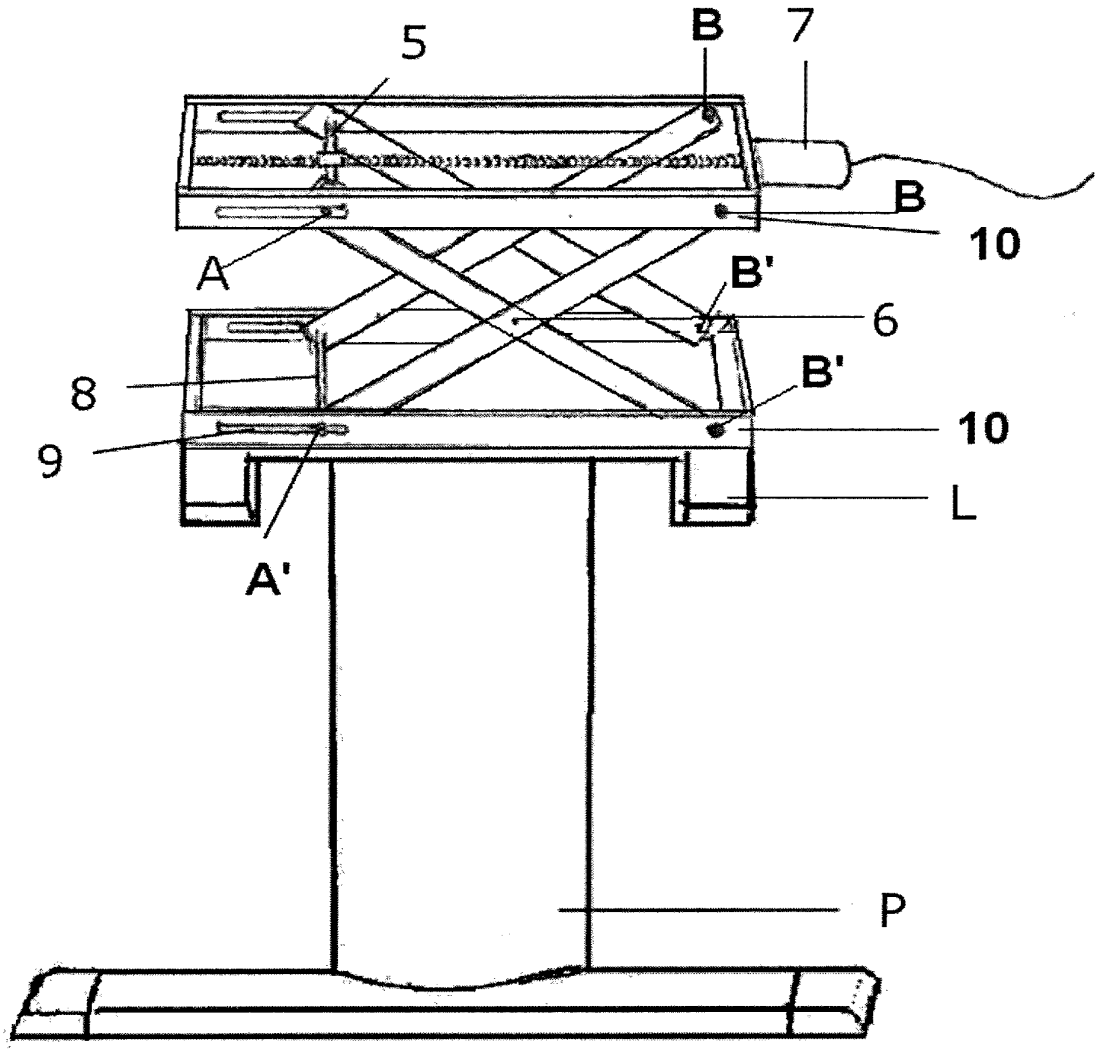
4. Working, desktop or study table with a seat on the edge of the board and height regulation, according to the claims mentioned before, the scissors is driven by traction through a wire (C) which is screwed or unscrewed following the axis movement of the driving force (7')
   The joint of the scissors keeps in a framed metallic structure in two symmetric metallic rectangles (10) in which the superior sheet-metal pieces(L) of the feet are supported.



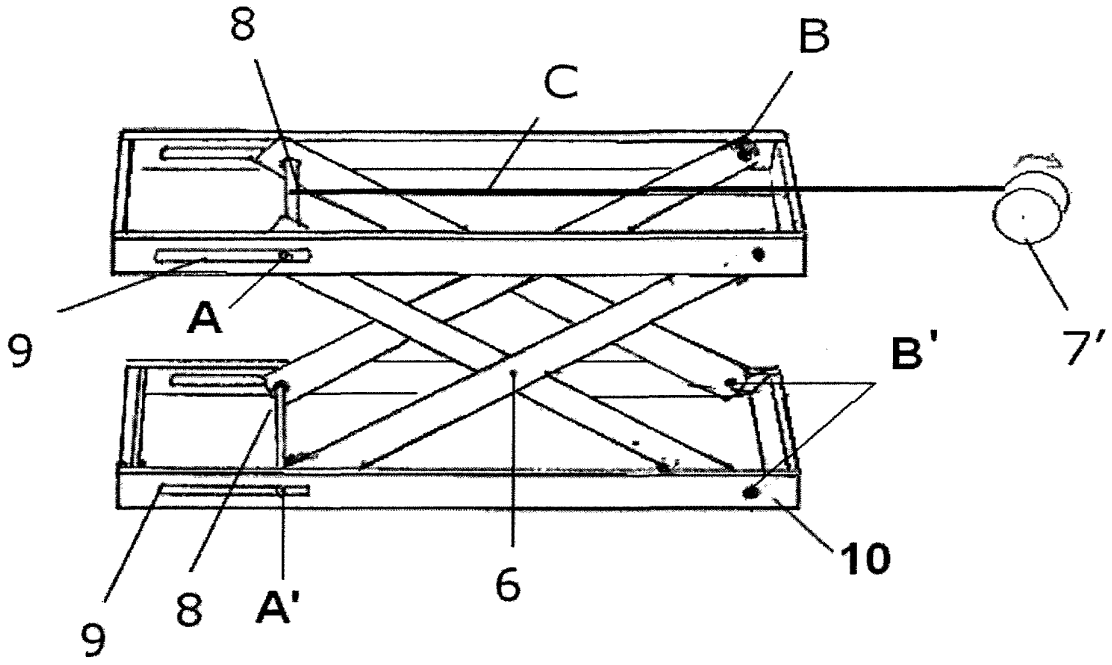
DRAWING 1



DRAWING 2



DRAWING 3



DRAWING 4

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EUROPEAN SEARCH REPORT

Application Number
EP 13 38 2389

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	FR 2 901 981 A1 (C O P CHECK OUT PRODUCTION SA [FR]) 14 December 2007 (2007-12-14) * page 1, line 4 - page 5, line 3; figures 1-3 *	1-4	INV. A47B9/16
A	US 6 523 486 B1 (PLITT EUGENE T [US] ET AL) 25 February 2003 (2003-02-25) * column 1, line 8 - column 8, line 21; figures 1-5 *	1-4	
A	US 2009/200437 A1 (SMED OLE FALK [CA]) 13 August 2009 (2009-08-13) * paragraph [0002] - paragraph [0017]; figures 1-10 *	1-4	
A	US 2005/150431 A1 (LIJIAN JIANG [CN]) 14 July 2005 (2005-07-14) * paragraph [0003] - paragraph [0026]; figures 1-7 *	1-4	
			TECHNICAL FIELDS SEARCHED (IPC) A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 May 2014	Kohler, Pierre

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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13-05-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2901981 A1	14-12-2007	NONE	
US 6523486 B1	25-02-2003	NONE	
US 2009200437 A1	13-08-2009	NONE	
US 2005150431 A1	14-07-2005	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO P200300576 A **[0005]**
- JP P200300576 B **[0008]**

Patents

Lifting desk top used on office desk

Abstract

The utility model relates to the field of office supplies. A lifting desk top used on an office desk comprises a desk top cover plate, a switch and two groups of supporting assemblies, wherein the switch is installed on the desk top cover plate, the desk top cover plate is installed on the two groups of supporting assemblies, the two groups of supporting assemblies are arranged symmetrically on the left side and on the right side along the center of the desk top cover plate, and the two groups of supporting assemblies are parallel to each other. The lifting desk top used on the office desk has the advantages of being novel and compact in structure, small in volume, good in lifting stability, low in electric motor power, high in bearing capacity, free from modification and damage to the original desk top and applicable to offices.

CN202681013U

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Hangzhou Landa Art & Craft Product Co ltd

Worldwide applications

2012 CN

Application CN 201220336241 events

2012-07-11	Application filed by Hangzhou Landa Art & Craft Product Co ltd
2012-07-11	Priority to CN 201220336241
2013-01-23	Application granted
2013-01-23	Publication of CN202681013U
Status	Expired - Fee Related
2022-07-11	Anticipated expiration

Info: Cited by (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (3)

Hide Dependent

1. the lifting desk surface that uses on the desk is characterized in that comprising desktop cover board, switch and two groups of supporting components; Switch is installed on the desktop cover board, and desktop cover board is installed on two groups of supporting components, and two groups of supporting components are arranged along the center left-right symmetry of desktop cover board, and two groups of supporting components are arranged parallel to each other; Supporting component comprises pedestal, motor, decelerator, screw mandrel, two support bars, torsion spring, slide rail, upper limit position switch, lower position switch and collision blocks, motor, decelerator and screw mandrel are installed in the pedestal, decelerator links to each other with screw mandrel, motor is connected the lower end of two support bars by decelerator with screw mandrel, the upper end of support bar connects desktop cover board by slide rail; The middle part of two support bars is hinged by connector, and two support bars connect by torsion spring; Slide rail is installed on the desktop cover board, and the upper end of support bar is installed on the slide rail, and the upper limit position switch that mates with the upper end of support bar is installed on the slide rail; Pedestal is provided with lower position switch, and the collision block with the lower position switch coupling is installed on the support bar.

2. the lifting desk surface that uses on a kind of desk according to claim 1 is characterized in that being provided with gripper shoe between two groups of supporting components, and the gripper shoe two ends link to each other with a support bar on two groups of supporting components respectively.

3. the lifting desk surface that uses on a kind of desk according to claim 1 is characterized in that on the described desktop cover board heating plate being installed.

Description

The lifting desk surface that uses on a kind of desk

Technical field

The utility model relates to the office appliance field, the lifting desk surface that especially uses on the desk.

Background technology

Along with social development, office's occupational disease is in rising trend.In a single day existing desk height all is constant, can customize height when perhaps making, still be delivered for use rear its height or very difficult change.The clerk is in for a long time on the desk desktop of sustained height and handles official business, and very easily produces the occupational disease of waist, back, neck or shank.

Summary of the invention

Goal of the invention of the present utility model is in order to overcome the problem that above-mentioned existing desk desktop can't lifting, a kind of novel structure is provided, need not to change with destroy former desktop be use on the common desk can the desk of table top height adjusting on the lifting desk surface that uses.

In order to realize the foregoing invention purpose, the utility model has adopted following technical scheme:

The lifting desk surface that uses on a kind of desk comprises desktop cover board, switch and two groups of supporting components; Switch is installed on the desktop cover board, and desktop cover board is installed on two groups of supporting components, and two groups of supporting components are arranged along the center left-right symmetry of desktop cover board, and two groups of supporting components are arranged parallel to each other; Supporting component comprises pedestal, motor, decelerator, screw mandrel, two support bars, torsion spring, slide rail, upper limit position switch, lower position switch and collision blocks, motor, decelerator and screw mandrel are installed in the pedestal, decelerator links to each other with screw mandrel, motor is connected the lower end of two support bars by decelerator with screw mandrel, the upper end of support bar connects desktop cover board by slide rail; The middle part of two support bars is hinged by connector, and two support bars connect by torsion spring; Slide rail is installed on the desktop cover board, and the upper end of support bar is installed on the slide rail, and the upper limit position switch that mates with the upper end of support bar is installed on the slide rail; Pedestal is provided with lower position switch, and the collision block with the lower position switch coupling is installed on the support bar.

As preferably, be provided with gripper shoe between described two groups of supporting components, the gripper shoe two ends link to each other with a support bar on two groups of supporting components respectively.

As preferably, on the described desktop cover board heating plate is installed.

Adopted the lifting desk surface that uses on a kind of desk of technique scheme, two groups of supporting components are arranged in parallel, and have namely adopted the up-down mode of bilateral driving, have guaranteed the stationarity of lifting.Motor is connected two support bars by decelerator with screw mandrel, the too fast stability that affects lifting of toggle speed when preventing from starting.Two support bars connect by torsion spring, have solved that power of motor is too small turns round hypodynamic problem.The advantage of the lifting desk surface that uses on this desk is that the novel structure compact volume is little, and the lifting stationarity is good, and the little bearing capacity of power of motor is high, need not to change with the especially suitable office of the former desktop of destruction to use.

Description of drawings

Fig. 1: the Facad structure schematic diagram of the utility model embodiment.

Fig. 2: the side structure schematic diagram of the utility model embodiment.

The specific embodiment

Below in conjunction with accompanying drawing 1 and Fig. 2 the utility model is described further.

The lifting desk surface that uses on a kind of desk as depicted in figs. 1 and 2, comprise desktop cover board 1, switch 2 and two groups of supporting components 3, switch 2 is installed on the desktop cover board 1, desktop cover board 2 is installed on two groups of supporting components 3, two groups of supporting components 3 are arranged along the center left-right symmetry of desktop cover board 1, and the bottom of two groups of supporting components 3 is arranged parallel to each other.

Every group of supporting component 3 includes pedestal 31, motor 32, decelerator 33, screw mandrel 34, two support bars 35, torsion spring 36, slide rail 37, upper limit position switch 38, lower position switch 30 and collision blocks 39.Pedestal 31 is square-tube-shaped, and motor 32, decelerator 33 and screw mandrel 34 are installed in the pedestal 31, and pedestal 31 volumes are little.Decelerator 33 links to each other with screw mandrel 34, motor 31 is connected the lower end that connects two support bars 35 by decelerator 33 with screw mandrel, the middle part of two support bars 35 is hinged by connector, and connector can be bolt, and two support bars 35 also connect by torsion spring 36, the position of torsion spring 36 is in the outside of connector, torsion spring 36 upper ends are fixed on the top of support bar 35, and torsion spring 36 lower ends are fixed on the bottom of support bar 35, and torsion spring 36 is two, the both sides of connector arrange respectively one, make its uniform stressed.The upper end of support bar 35 connects desktop cover board 1.Decelerator 33 and screw mandrel 34 support the use, the too fast stability that affects lifting of toggle speed when preventing from starting.Because be that office uses, therefore need the size of control pedestal 31 and motor 32, and need the power of control motor, prevent that noise is excessive, therefore adopted the structure of torsion spring 36, solved that power of motor is too small turns round hypodynamic problem.

The upper end of support bar 35 is fixed on the desktop cover board 1, and slide rail 37 is being installed on the desktop cover board 1, and the upper end of support bar 35 is installed on the slide rail 37, and support bar 35 connects desktop cover board 1 by slide rail 37.The upper limit position switch 38 that mates with the upper end of support bar 35 is installed on the slide rail 37.Pedestal 31 is provided with lower position switch 30, and the collision block 39 that mates with lower position switch 30 is installed on the support bar 35, and its position is in the bottom of support bar 35.Therefore adopted the structure of two groups of supporting component 3 bilateral drivings for the stability that improves support, but because the problem of two groups of supporting components 3 itself, support bar 35 adjustable heights and the inconsistent problem of speed of two groups of supporting components 3 about causing easily such as fine error of motor 31 rotating speeds etc., and adopted said structure namely to control position and the distance that liftings start and stop by lower position switch 30 and upper limit position switch 38, namely had the function of two groups of supporting component 3 adjustable heights of automatic adjustment and desktop cover board 1 leveiness.

Be provided with gripper shoe 5 between two groups of supporting components 3, gripper shoe 5 two ends link to each other with a support bar 35 on two groups of supporting components 3 respectively, and gripper shoe 5 is with the folding condition conversion angle of inclination of support bar 35.When two groups of supporting components 3 are distant, desktop cover board 1 shakes easily when lifting, gripper shoe 5 can well address the above problem, and after rising put in place, gripper shoe 5 can be used as baffle plate and uses simultaneously, block the sight line in dead ahead, because after user's desktop rose, the colleague's on its opposite height of table top may also be in original state, sight line just in time is between desktop cover board 1 and the pedestal 31, this moment, gripper shoe 5 can be blocked its sight line, had guaranteed a part of privacy.

Heating plate can be installed in above-mentioned desktop cover board 1 top, and the sky can heat practicality very in the time of cold.The lifting desk surface of this product is to use at desk, have the article such as water tumbler and display and be placed on it, so the stability when its weight capacity, balance, lifting is all particularly important.

During use, the lifting desk surface of this product directly is placed on the desktop of existing common desk, has guaranteed the integrality of original desk tops, need not to change and the former desktop of destruction, and cost is more economical than substituting existing desk, is convenient to promote.After opening switch, motor 31 is propped up desktop cover board 1 by decelerator 33 and screw mandrel 34 control support bars 35, and the height of desktop cover board 1 lifting can be controlled automatically by switch 2, in order to prevent faulty operation, switch 2 can be color or vary in size a plurality of.

The advantage of above-mentioned lifting desk surface is that the lifting stationarity is good, power of motor and volume are little, bearing capacity is high, need not to change and the original desktop of destruction, especially being fit to office uses, the desktop of the use differing heights that the clerk is frequent can be regulated the state of shank, waist, back, neck and shoulder, prevents that it is in for a long time an angle and state and produces occupational disease.

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
US10413083B2	2012-05-24	2019-09-17	Varidesk, Llc	Adjustable desk platform
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN202874328U	2013-04-17	Table with embedded type lifting table top
CN102715729B	2014-05-21	Lifting table top
CN202681005U	2013-01-23	Lifting table top for offices
CN202874336U	2013-04-17	Rise-fall desktop
CN202868239U	2013-04-10	Supporting platform used at home
CN206336564U	2017-07-18	A kind of portable office computer display bracket
CN205267444U	2016-06-01	Multifunctional desk with heat dissipation cooling function
CN202874335U	2013-04-17	Lifting table top
CN103638378	2016-03-02	A kind of bookcase of motorized adjustment height
CN202681006U	2013-01-23	Lifting table top
CN203286239U	2013-11-13	Liquid crystal displayer support capable of rising, falling and changing angle automatically
CN202681013U	2013-01-23	Lifting desk top used on office desk
CN202714432U	2013-02-06	Lifting table top
CN104188350A	2014-12-10	Multi-degree-of-freedom intelligent leveling and lifting mechanical device for office table
CN202950219U	2013-05-29	Tabletop-adjustable bed table
CN210777767U	2020-06-16	Display support adjusting device of international trade exhibition
CN202681004U	2013-01-23	Lifting device used on office desk
CN208837247U	2019-05-10	A kind of adjustable book holding rack
CN203457981U	2014-03-05	Lifting desktop
CN201743221U	2011-02-16	Computer desk
CN104706000A	2015-06-17	Frame for supporting table board
CN202043752U	2011-11-23	Tablet computer bag bracket structure
CN204328404U	2015-05-13	A kind of desktop Multifunctional combined support
CN204617545U	2015-09-09	A kind of multipurpose cabinet
CN204962191U	2016-01-13	Accomodate three -dimensional double -purpose notebook computer support of adjusting of formula wide angle degree

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN 201220336241	2012-07-11	2012-07-11	Lifting desk top used on office desk

Applications Claiming Priority (1)

Application	Filing date	Title
CN 201220336241	2012-07-11	Lifting desk top used on office desk

Legal Events

Date	Code	Title	Description
2013-01-23	GR01	Patent grant	
2013-01-23	C14	Grant of patent or utility model	
2019-06-28	CF01	Termination of patent right due to non-payment of annual fee	**Granted publication date:** 20130123 **Termination date:** 20180711
2019-06-28	CF01	Termination of patent right due to non-payment of annual fee	

Concepts

machine-extracted

Download Filter table

Name	Image	Sections	Count	Query match
heat treatment		claims,description	3	0.000
coupling		claims,description	2	0.000
coupling process		claims,description	2	0.000
coupling reaction		claims,description	2	0.000
assembly		abstract	4	0.000
modification		abstract	1	0.000
modification reaction		abstract	1	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 202681013 U
(45)授权公告日 2013.01.23

(21)申请号 201220336241.X

(22)申请日 2012.07.11

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(51)Int.Cl.
A47B 13/08(2006.01)
A47B 13/02(2006.01)
A47B 9/16(2006.01)

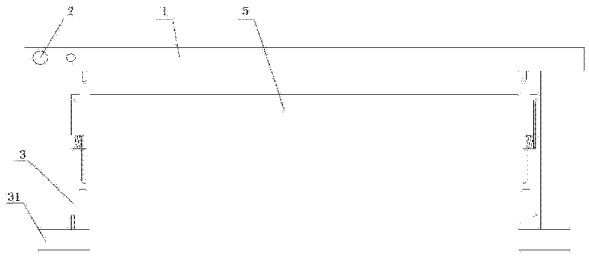
权利要求书 1 页 说明书 2 页 附图 1 页

(54)实用新型名称

一种办公桌上使用的升降桌面

(57)摘要

本实用新型涉及办公用品领域。一种办公桌上使用的升降桌面，包括桌面盖板、开关和两组支撑组件；开关安装在桌面盖板上，桌面盖板安装在两组支撑组件上，两组支撑组件沿桌面盖板的中心左右对称排列，且两组支撑组件相互平行排列。该办公桌上使用的升降桌面的优点是结构新颖紧凑体积小，升降平稳性好，电机功率小承载力高，无需改动与破坏原桌面尤其适合办公室使用。



CN 202681013 U

1. 一种办公桌上使用的升降桌面，其特征在于包括桌面盖板、开关和两组支撑组件；开关安装在桌面盖板上，桌面盖板安装在两组支撑组件上，两组支撑组件沿桌面盖板的中心左右对称排列，且两组支撑组件相互平行排列；支撑组件包括基座、电机、减速器、丝杆、两根支撑杆、扭簧、滑轨、上限位开关、下限位开关和撞块，电机、减速器和丝杆安装在基座内，减速器和丝杆相连，电机通过减速器和丝杆连接两根支撑杆的下端，支撑杆的上端通过滑轨连接桌面盖板；两根支撑杆的中部通过连接件铰接，并且两根支撑杆通过扭簧连接；滑轨安装在桌面盖板上，支撑杆的上端安装在滑轨上，滑轨上安装有与支撑杆的上端匹配的上限位开关；基座上设有下限位开关，支撑杆上安装有与下限位开关匹配的撞块。

2. 根据权利要求 1 所述的一种办公桌上使用的升降桌面，其特征在于两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连。

3. 根据权利要求 1 所述的一种办公桌上使用的升降桌面，其特征在于所述桌面盖板上安装有加热板。

一种办公桌上使用的升降桌面

技术领域

[0001] 本实用新型涉及办公用品领域，尤其是办公桌上使用的升降桌面。

背景技术

[0002] 随着社会发展，办公室职业病呈上升趋势。现有的办公桌高度都是恒定的，或者制造时可以定制高度，但是一旦交付使用后其高度还是很难改变的。办公室人员长期处于同一高度的办公桌桌面上办公，极易产生腰部、背部、颈部或腿部的职业病。

发明内容

[0003] 本实用新型的发明目的是为了克服上述现有办公桌桌面无法升降的问题，提供一种结构新颖，无需改动与破坏原桌面即普通办公桌上使用的可以调节桌面高度的办公桌上使用的升降桌面。

[0004] 为了实现上述发明目的，本实用新型采用了以下技术方案：

[0005] 一种办公桌上使用的升降桌面，包括桌面盖板、开关和两组支撑组件；开关安装在桌面盖板上，桌面盖板安装在两组支撑组件上，两组支撑组件沿桌面盖板的中心左右对称排列，且两组支撑组件相互平行排列；支撑组件包括基座、电机、减速器、丝杆、两根支撑杆、扭簧、滑轨、上限位开关、下限位开关和撞块，电机、减速器和丝杆安装在基座内，减速器和丝杆相连，电机通过减速器和丝杆连接两根支撑杆的下端，支撑杆的上端通过滑轨连接桌面盖板；两根支撑杆的中部通过连接件铰接，并且两根支撑杆通过扭簧连接；滑轨安装在桌面盖板上，支撑杆的上端安装在滑轨上，滑轨上安装有与支撑杆的上端匹配的上限位开关；基座上设有下限位开关，支撑杆上安装有与下限位开关匹配的撞块。

[0006] 作为优选，所述两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连。

[0007] 作为优选，所述桌面盖板上安装有加热板。

[0008] 采用了上述技术方案的一种办公桌上使用的升降桌面，两组支撑组件平行排列，即采用了双边驱动的升降方式，确保了升降的平稳性。电机通过减速器和丝杆连接两根支撑杆，防止启动时启动速度过快影响升降的稳定性。两根支撑杆通过扭簧连接，解决了电机功率过小扭力不足的问题。该办公桌上使用的升降桌面的优点是结构新颖紧凑体积小，升降平稳性好，电机功率小承载力高，无需改动与破坏原桌面尤其适合办公室使用。

附图说明

[0009] 图 1 ：本实用新型实施例的正面结构示意图。

[0010] 图 2 ：本实用新型实施例的侧面结构示意图。

具体实施方式

[0011] 下面结合附图 1 和图 2 对本实用新型做进一步描述。

[0012] 如图 1 和图 2 所示的一种办公桌上使用的升降桌面，包括桌面盖板 1、开关 2 和两组支撑组件 3，开关 2 安装在桌面盖板 1 上，桌面盖板 2 安装在两组支撑组件 3 上，两组支撑组件 3 沿桌面盖板 1 的中心左右对称排列，且两组支撑组件 3 的底部相互平行排列。

[0013] 每组支撑组件 3 均包括基座 31、电机 32、减速器 33、丝杆 34、两根支撑杆 35、扭簧 36、滑轨 37、上限位开关 38、下限位开关 30 和撞块 39。基座 31 呈方管形，电机 32、减速器 33 和丝杆 34 安装在基座 31 内，基座 31 体积小。减速器 33 和丝杆 34 相连，电机 31 通过减速器 33 和丝杆 34 连接两根支撑杆 35 的下端，两根支撑杆 35 的中部通过连接件铰接，连接件可以是螺栓，并且两根支撑杆 35 还通过扭簧 36 连接，扭簧 36 的位置处于连接件的外侧，扭簧 36 上端固定在支撑杆 35 的上部，扭簧 36 下端固定在支撑杆 35 的下部，扭簧 36 是两个，连接件的两侧分别设置一个，使其均匀受力。支撑杆 35 的上端连接桌面盖板 1。减速器 33 和丝杆 34 配套使用，防止启动时启动速度过快影响升降的稳定性。因为是办公室使用，因此需要控制基座 31 和电机 32 的尺寸，而且需要控制电机的功率，防止噪音过大，因此采用了扭簧 36 的结构，解决了电机功率过小扭力不足的问题。

[0014] 支撑杆 35 的上端固定在桌面盖板 1 上，滑轨 37 在安装在桌面盖板 1 上，支撑杆 35 的上端安装在滑轨 37 上，支撑杆 35 通过滑轨 37 连接桌面盖板 1。滑轨 37 上安装有与支撑杆 35 的上端匹配的上限位开关 38。基座 31 上设有下限位开关 30，支撑杆 35 上安装有与下限位开关 30 匹配的撞块 39，其位置处于支撑杆 35 的下部。为了提高支撑的稳定性因此采用了两组支撑组件 3 双边驱动的结构，但是由于两组支撑组件 3 本身的问题，例如电机 31 转速的细微误差等容易造成左右两组支撑组件 3 的支撑杆 35 升降高度和速度不一致的问题，而采用了上述结构即通过下限位开关 30 和上限位开关 38 控制升降启动和停止的位置和距离，即具有了自动调整两组支撑组件 3 升降高度和桌面盖板 1 水平度的功能。

[0015] 两组支撑组件 3 之间设有支撑板 5，支撑板 5 两端分别与两组支撑组件 3 上的一根支撑杆 35 相连，支撑板 5 随支撑杆 35 的开合状态变换倾斜角度。当两组支撑组件 3 距离较远时，在升降时桌面盖板 1 容易发生晃动，支撑板 5 可以很好的解决上述问题，同时在上升到位后，支撑板 5 可以作为挡板使用，挡住正前方的视线，因为使用者的桌面上升后，其对面的同事的桌面高度可能还处于原有的状态，视线正好处于桌面盖板 1 与基座 31 之间，此时支撑板 5 可以挡住其视线，确保了一部分的隐私。

[0016] 上述桌面盖板 1 顶部可以安装加热板，天冷的时候可以加热，非常的实用。本产品的升降桌面是在办公桌上使用，会有水杯和显示器等物品放置在其上，因此其承重能力、平衡性、升降时的稳定性都尤为重要。

[0017] 使用时，本产品的升降桌面直接放置在现有的普通办公桌的桌面上，保证了原有办公桌面的完整性，无需改动与破坏原桌面，成本较之更替现有办公桌更为经济，便于推广。打开开关后，电机 31 通过减速器 33 和丝杆 34 控制支撑杆 35 撑起桌面盖板 1，桌面盖板 1 升降的高度可以通过开关 2 自动控制，为了防止错误操作，开关 2 可以是颜色或者大小不同的多个。

[0018] 上述升降桌面的优点是升降平稳性好，电机功率和体积小，承载力高，无需改动与破坏原有桌面，尤其适合办公室使用，办公室人员经常的使用不同高度的桌面，可以调节腿部、腰部、背部、颈部和肩部的状态，防止其长时间的处于一个角度和状态而产生职业病。

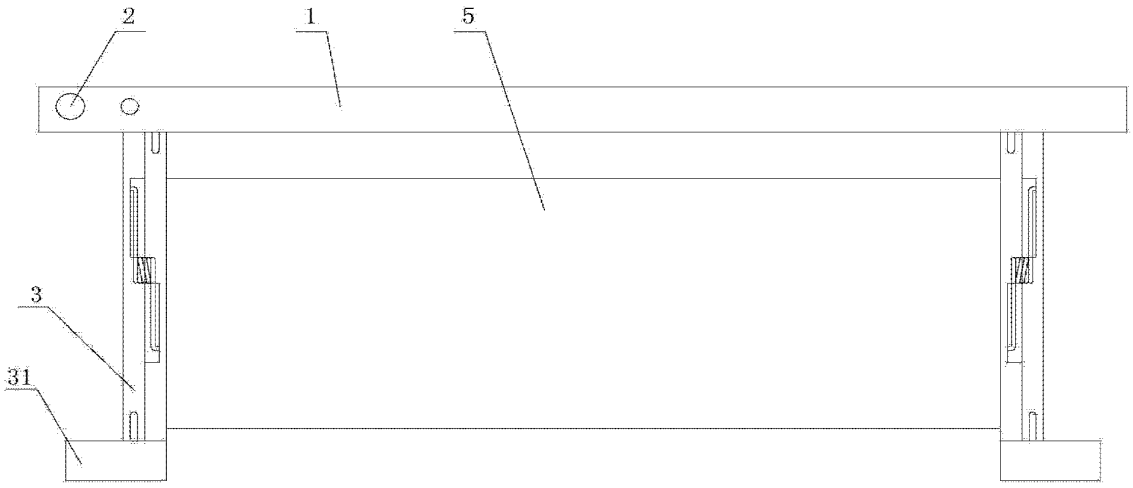


图 1

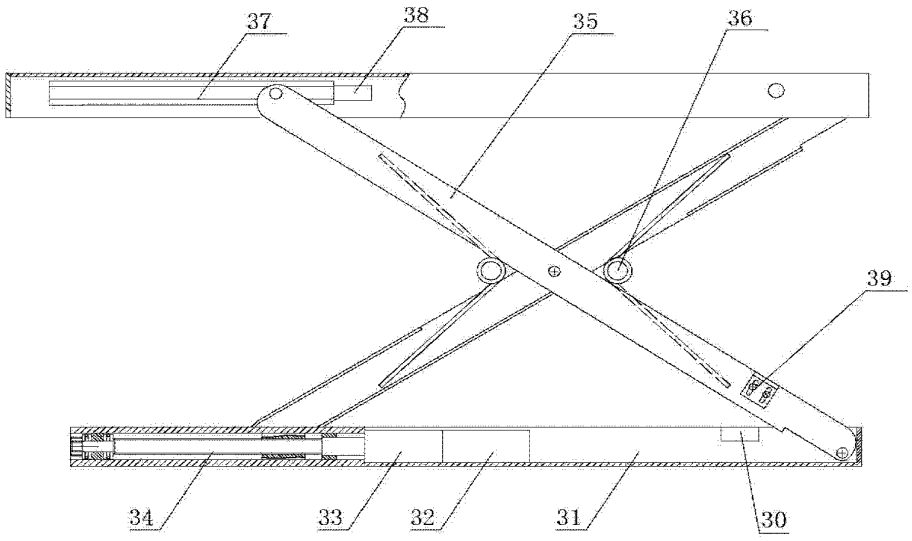


图 2

Patents

A kind of lifting tables

Abstract

A kind of lifting tables disclosed in this invention, the bottom end of at least two forked type cranes and the side progress parallel-moving type of pedestal are hinged, and it is hinged that a side of top one end and desktop bottom surface carries out parallel-moving type; The bottom other end of at least two forked type cranes and the other side pin shaft of pedestal are hinged, and the other side pin shaft of the top other end and desktop is hinged; It is connected between the bottom end of at least two forked type cranes by connecting rod, the driving device that control forked type crane is risen or fallen is fixed on pedestal, driving device is fixedly linked with connecting rod; The side of driving device is equipped with limit inductor, and the inductive head of limit inductor is corresponding with connecting rod.Its structure is by the descending operation of forked type crane, so that desktop realization rises or fails adjustings, and while rising or falling makes driving device work that lift adjustment can be completed, to improve practical performance using also more convenient.

Classifications

- A47B21/02 Tables or desks for office equipment, e.g. typewriters, keyboards with vertical adjustable parts

View 6 more classifications

CN109008216A

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Ningbo Kangying Metal Products Co Ltd

Worldwide applications

2018 CN

Application CN201811173016.7A events

2018-10-09	Application filed by Ningbo Kangying Metal Products Co Ltd
2018-10-09	Priority to CN201811173016.7A
2018-12-18	Publication of CN109008216A
Status	Pending

Info: Cited by (2), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (10)

Hide Dependent

1. a kind of lifting tables, which is characterized in that including pedestal, desktop and the elevator being installed between pedestal and desktop Structure is embedded with wireless charging device on desktop; Elevating mechanism includes at least two cranes, the bottom of at least two forked type cranes Portion one end and a side of pedestal progress parallel-moving type are hinged, and a side of top one end and desktop bottom surface carries out parallel-moving type hinge it connects; The bottom other end of at least two forked type cranes and the other side pin shaft of pedestal are hinged, the top other end and desktop The other side pin shaft it is hinged; it is connected between the bottom end of at least two forked type cranes by connecting rod, it is fixed on pedestal The driving device for having control forked type crane to be risen or fallen, driving device are fixedly linked with connecting rod.

2. a kind of lifting tables according to claim 1, which is characterized in that further include Keyboard supporting board, the front side portion of desktop it is fixedly linked by inclination connecting plate with Keyboard supporting board.

3. a kind of lifting tables according to claim 2, which is characterized in that inclination connecting plate is equipped with USB interface and drawer Slot, drawer slot is interior to be fixedly linked inserted with drawer box, the top opening edge of drawer slot and the bottom surface of desktop, and the leading flank of drawer box it is provided with knob.

4. a kind of lifting tables according to claim 3, which is characterized in that the specific composition structure of drawer slot are as follows: inclination The top of connecting plate is equipped with through-hole, and leading flank is fixed with decorative panel; The top of decorative panel has drawer groove body, and drawer groove body passes through Reach through hole, and the bottom side in the bottom inside face and drawer box of the drawer slot on drawer groove body is in isosceles triangle shape downwards Be recessed and form tilted recessed portion one, and drawer groove body bottom outside face formed with forked type crane be fully deployed after etc. The consistent isosceles triangle lateral surface one of lumbar triangle shape concave shape; The bottom outside face of drawer box is formed and tilted recessed portion One corresponding matched isosceles triangle lateral surface two; The bottom side of through-hole is matched with being bonded with isosceles triangle lateral surface one Tilted recessed portion two; The leading flank of decorative panel and the leading flank of drawer box all have decorative stripe.

5. a kind of lifting tables according to claim 3 or 4, which is characterized in that the leading flank side of drawer box has existing There is flange, there is existing annular groove at the front opening of drawer slot, flange is corresponding to be inserted into annular groove.

6. a kind of lifting tables according to claim 2, which is characterized in that the top surface fitting of Keyboard supporting board is fixed with anti-skidding Cushion.

7. a kind of lifting tables according to claim 1, which is characterized in that the bottom end of at least two forked type cranes Hinged with the side progress parallel-moving type of pedestal, it is hinged that a side of top one end and desktop bottom surface carries out parallel-moving type; Thereon State the hinged structure of specific parallel-moving type are as follows: at least two forked type cranes respectively include two hinged supports of the rear pin shaft that intersects Bar one and support rod two are all provided on the bottom surface of desktop and pedestal there are two track, the rail on orbital position and pedestal on desktop Road position corresponds to each other; There is translatable pulley in the translation slot of track, at least the bottom end of two support rods one by shaft with Pedestal top sheave progress parallel-moving type is hinged, and the bottom surface pin shaft of top and desktop is hinged; Two top of at least two support rod is by turning Axis and the pulley of desktop bottom surface progress parallel-moving type are hinged, and the side pin shaft of bottom end and pedestal is hinged; At least two support rods one it

is connected with each other between bottom end by connecting rod; At least it is interconnected and fixed between the hinged place of two support rods two by a cross bar.

8. a kind of lifting tables according to claim 7, which is characterized in that the bottom surface of desktop is fixed with peace up and down Shell is filled, two tracks on desktop are installed respectively to be positioned on two inner sidewall of left and right of installation shell.

9. a kind of lifting tables according to claim 1, which is characterized in that the side of driving device is equipped with limit induction The inductive head of device, limit inductor is corresponding with connecting rod.

10. a kind of lifting tables according to claim 9, which is characterized in that the top of driving device and the side of pedestal Covering is equipped with shield shell, and driving device goes up and down electric cylinders using straight line.

Description

A kind of lifting tables

Technical field

The present invention relates to the technical fields carried to tablet computer, laptop, desktop computer etc., especially one Kind lifting tables.

Background technique

Desk is commonly in life, work and Learning in School as a kind of daily necessities, general desk usually by Desktop is formed by fixedly connecting with table leg, and the length of table leg is also fixed, so that the height of entire desktop is to fix not it is adjustable; And when needing to charge to mobile phone or tablet computer, it is necessary to pull out charging data line from attaching plug and insert Enter and carry out charging operations on mobile phone or tablet computer, since the length of charging data line is restricted, so that in charging Incoming call answer, make a phone call and information inspection is replied inconvenient, and the charging data line is easy to and it its power supply line, keyboard connecting line or the winding of mouse connecting line, so that the desktop of lifting tables is quite mixed and disorderly; And with application environment Difference and different crowd application demand, the requirement to the high diversity of desk, automatic degree, level of comfort also gets over Carry out convenience that is higher, and using; Therefore a kind of same table that liftable is adjusted is needed.

Summary of the invention

The one kind designed the purpose of the present invention is to solve the deficiency of above-mentioned technology desktop can be carried out rise or under Falling tone section, and a kind of lifting tables easy to use.

A kind of lifting tables designed by the present invention, including pedestal, desktop and the liter being installed between pedestal and desktop Descending mechanism is embedded with wireless charging device on desktop; Elevating mechanism includes at least two cranes, at least two forked type cranes Bottom end and pedestal a side carry out parallel-moving type it is hinged, top one end and desktop bottom surface a side carry out parallel-moving type Hingedly; The bottom other end of at least two forked type cranes and the other side pin shaft of pedestal are hinged, the top other end and table The other side pin shaft of plate is hinged; It is connected between the bottom end of at least two forked type cranes by connecting rod, it is solid on pedestal Surely the driving device for having control forked type crane to be risen or fallen, driving device are fixedly linked with connecting rod.

It further preferably, further include Keyboard supporting board, the front side portion of desktop passes through inclination connecting plate and Keyboard supporting board stationary phase Even.

Further preferably, inclination connecting plate is equipped with USB interface and drawer slot, and drawer slot is interior inserted with drawer box, drawer slot Top opening along and the bottom surface of desktop be fixedly linked, and the leading flank of drawer box is provided with knob.

Further preferably, the specific composition structure of drawer slot are as follows: the top for tilting connecting plate is equipped with through-hole, and leading flank is solid Surely there is decorative panel; The top of decorative panel has drawer groove body, and drawer groove body runs through through-hole, and the bottom of the drawer slot on drawer groove body Bottom side in portion's medial surface and drawer box is recessed downwards in isosceles triangle shape and forms tilted recessed portion one, and drawer The bottom outside face of groove body forms the consistent isosceles triangle of isosceles triangle concave shape after being fully deployed with forked type crane Shape lateral surface one; The bottom outside face of drawer box forms matched isosceles triangle lateral surface corresponding with tilted recessed portion one Two; The bottom side of through-hole, which has, is bonded matched tilted recessed portion two with isosceles triangle lateral surface one; The front side of decorative panel The leading flank of face and drawer box all has decorative stripe.

Further preferably, the leading flank side of drawer box has existing flange, has at the front opening of drawer slot existing Annular groove, flange is corresponding to be inserted into annular groove.

Further preferably, the top surface fitting of Keyboard supporting board is fixed with Skidproof soft cushion.

Further preferably, progress parallel-moving type in a side of the bottom end of at least two forked type cranes and pedestal is hinged, it is hinged that one side of its top one end and desktop bottom surface carries out parallel-moving type; The hinged structure of its above-mentioned specific parallel-moving type are as follows: at least Two forked type cranes respectively include two hinged support rods of the rear pin shaft that intersects one and support rod two, the bottom surface and bottom of desktop The orbital position there are two track, on desktop is all provided on seat to correspond to each other with the orbital position on pedestal; In the translation slot of track With translatable pulley, at least bottom end of two support rods one is hinged by shaft and pedestal top sheave progress parallel-moving type, top it holds hinged with the bottom surface pin shaft of desktop; Two top of at least two support rod carries out parallel-moving type hinge by the pulley of shaft and desktop bottom surface It connects, the side pin shaft of bottom end and pedestal is hinged; It is connected with each other at least between the bottom end of two support rods one by connecting rod; At least it is interconnected and fixed between the hinged place of two support rods two by a cross bar.

Further preferably, the bottom surface of desktop is fixed with installation shell up and down, and two tracks on desktop are installed respectively it is positioned on two inner sidewall of left and right of installation shell.

Further preferably, the side of driving device is equipped with limit inductor, the inductive head and connecting rod of limit inductor it is corresponding.

Further preferably, the top of driving device and the side of pedestal, which cover, is equipped with shield shell, and driving device is adopted Electric cylinders are gone up and down with straight line.

A kind of lifting tables designed by the present invention, structure passes through the descending operation of forked type crane, so that desktop is real Make driving device work that lift adjustment can be completed when now rising or falling adjusting, and rising or falling, realizes in desktop Upper progress wireless charging operation, to improve practical performance using also more convenient.

Detailed description of the invention

Fig. 1 is the overall structure diagram (one) of embodiment 1;

Fig. 2 is the overall structure diagram (two) of embodiment 1;

Fig. 3 is the overall structure diagram (three) of embodiment 1;

Fig. 4 is the explosive view of embodiment 1;

Fig. 5 is the structural schematic diagram (one) of the drawer of embodiment 1;

Fig. 6 is the structural schematic diagram (two) of the drawer of embodiment 1;

Fig. 7 is the overall structure diagram (four) of embodiment 1;

Fig. 8 is the overall structure diagram (five) of embodiment 1.

Specific embodiment

Following will be combined with the drawings in the embodiments of the present invention, and technical solution in the embodiment of the present invention carries out clear, complete Site preparation description, it is clear that described embodiments are only a part of the embodiments of the present invention, instead of all the embodiments.It is based on Embodiment in the present invention, those of ordinary skill in the art's every other embodiment obtained belong to what the present invention protected Range.

Embodiment 1:

As Figure 1-Figure 8, a kind of lifting tables described in the present embodiment, including pedestal 1, desktop 2 and be located at bottom Seat 1 and desktop 2 between and side by side spaced at least two forked types crane 3, the bottom one of at least two forked type cranes 3 End and a side of pedestal progress parallel-moving type are hinged, and it is hinged that a side of top one end and 2 bottom surface of desktop carries out parallel-moving type; Extremely The bottom other end of few two forked type cranes 3 and the other side pin shaft of pedestal are hinged, and the top other end is another with desktop 2 One side pin shaft is hinged; It is connected between the bottom end of at least two forked type cranes 3 by connecting rod 5, is fixed on pedestal 1 The driving device 4 that control forked type crane 3 is risen or fallen, driving device 4 are fixedly linked with connecting rod 5; Driving device 4 Side limit inductor 6 is installed, the inductive head of limit inductor 6 is corresponding with connecting rod 5.Straight line liter can be used in driving device Electric cylinders, cylinder, oil cylinder or gas spring drop; Straight line goes up and down electric cylinders by cylinder body and is set to the intracorporal screw rod of cylinder, servo motor structure At the end of cylinder body has been pierced by piston rod, and the bottom end of piston rod and the idler wheel sliding block of lead screw are fixed.

Wireless charging device 14 is embedded on desktop 2.Its wireless charging device, which solves, is needing opponent in the prior art When machine or tablet computer are charged, it is necessary to pull out from attaching plug and be carried out on charging data line insertion mobile phone or tablet computer Charging operations, since the length of charging data line is restricted, so that the incoming call in charging is answered, made a phone call And information inspection reply is inconvenient, and the charging data line is easy to and other power supply lines, keyboard connecting line or mouse Connecting line winding is marked, so that the technical problem that the desktop of lifting tables is quite mixed and disorderly; It is convenient to reach charging, desktop when charging The technical effect of neat and tidy, it is thus also avoided that the case where receiving calls during the charging process or playing game occurs (due to charging It receives calls or plays in the process the operations such as game to be easy to keep lithium battery hot, to be easy to occur to cause safety because hot Accident, safety are lower).

The design principle of above structure: straight line lifting electric cylinders and limit inductor are powered on, and straight line goes up and down the work of electric cylinders Stopper rod stretches out the operation for reaching the decline of forked type crane so that the upper and lower ends of forked type crane strut; When straight line goes up and down electric cylinders Piston rod retraction, promote the upper and lower ends of forked type crane to shrink, with reach forked type crane rise operation, the company of rising to After extension bar and the touching of the inductive head of limit inductor, electric cylinders, which automatically power off, to stop working, to complete to rise to maximum; Due to it is spaced setting side by side in front and back between each forked type crane, so that the support to desktop is more steady reliable, prevents side it turns over.It carries out carrying out wireless charging to mobile phone or tablet computer by wireless charging device.

In the present embodiment, the bottom end of at least two forked type cranes 3 and a side of pedestal 1 carry out parallel-moving type hinge it connects, it is hinged that a side of top one end and 2 bottom surface of desktop carries out parallel-moving type; The hinged structure of its above-mentioned specific parallel-moving type are as follows: At least two forked type cranes 3 respectively include two hinged support rods of the rear pin shaft that intersects 1 and support rod 2 32, desktop 2 Bottom surface and pedestal 1 on be all provided with there are two track 10,10 position of track on desktop 2 and 10 position of track on pedestal 1 are mutual it is corresponding; There is translatable pulley 12, at least bottom end of two support rods 1 passes through shaft and bottom in the translation slot 11 of track 10 Seat 1 top sheave progress parallel-moving type is hinged, and top and the bottom surface pin shaft of desktop 2 are hinged; 2 32 top of at least two support rod passes through The pulley of shaft and 2 bottom surface of desktop progress parallel-moving type is hinged, and bottom end and the side pin shaft of pedestal 1 are hinged; At least two support rods it is connected with each other between one 31 bottom end by connecting rod 5; Pass through 16 phase of a cross bar at least between the hinged place of two support rods 2 31 Connect fixation.Its structure makes forked type crane when doing the work risen or fallen, between support rod one and support rod two Hinged place top position or lower position strut or shrink more smooth stabilization, promote service performance, and structure has more compactedness; Two support rods two are fixed by cross bar, so that the positioning of two support rods two is more firm.And pulley can be in the translation slot of track it is slid or is translated or roll displacement.

In the present embodiment, the bottom surface of desktop 2 is fixed with installation shell 13 up and down, and two tracks 10 on desktop 2 divide It An Zhuan not be positioned on two inner sidewall of left and right of installation shell 13.Its structure is more firm to the installation positioning of track, convenient, and And pulley is also more smooth when translating sliding in slot.

It further include Keyboard supporting board 8 in the present embodiment, the front side portion of desktop 2 is solid by inclination connecting plate 7 and Keyboard supporting board 8 It is fixed to be connected.Its Keyboard supporting board is used for holding keyboard.For Keyboard supporting board when fixed, the rear side of Keyboard supporting board has locating slot, inclination Connecting plate is caught in locating slot, and the bottom for tilting connecting plate has supporting plate, and the rear side bottom surface of Keyboard supporting board is fixed on supporting plate. To use the fixed structure of the Keyboard supporting board, so that stronger reliable after Keyboard supporting board is fixed.

In the present embodiment, inclination connecting plate 7 is equipped with USB interface 71 and drawer slot 702, and drawer slot 702 is interior inserted with drawer The top opening of box 9, drawer slot 702 is fixedly linked along the bottom surface with desktop 2, and the leading flank of drawer box 9 is provided with knob 94. USB interface can directly plug data line and carry out carrying out charging operations to any mobile device, it is not necessary that plug is in addition inserted in power supply On socket, use is more convenient; Drawer box has the function of storing sundries.

In the present embodiment, the specific composition structure of drawer slot 702 are as follows: the top of inclination connecting plate 7 is equipped with through-hole 72, before Side is fixed with decorative panel 70; The top of decorative panel 70 has drawer groove body 701, and drawer groove body 701 runs through through-hole 72, and drawer Bottom side in the bottom inside face and drawer box 9 of drawer slot 702 on groove body 701 downwards in isosceles triangle shape recess and Form tilted recessed portion 1, and the bottom outside face of drawer groove body 701 formed after being fully deployed with forked type crane 3 etc. The consistent isosceles triangle lateral surface 1 of lumbar triangle shape concave shape; The bottom outside face of drawer box 9 formed with it is tilted recessed The isosceles triangle lateral surface 2 92 of one 91 Corresponding matching of concave portion; The bottom side of through-hole 72 has and isosceles triangle lateral surface one The 704 matched tilted recessed portions 2 711 of fitting; The leading flank of decorative panel 70 and the leading flank of drawer box 9 all have ornamental strip Line 705.its is compact-sized reliable, when making drawer box inner space more Datong District by isosceles triangle lateral surface and introversion inclined portion Forked type support frame is just being better than the outside bottom surface fitting of drawer groove body after being fully deployed, any interference does not occur after guaranteeing desktop decline Effect.Two sides of decorative panel and bottom side all have positioning plate, and two sides of bottom side positioning plate have locating piece, inclination connection Plate is positioned between the side positioning plate of decorative panel both sides, and bottom side positioning plate contradicts the supporting plate top surface in inclination connecting plate, and holds in the palm Plate is located between the locating piece of two side of bottom side positioning plate, is fixed after the completion of positioning by bolt.

In the present embodiment, the top of driving device 4 and the side of pedestal 1 cover and are equipped with shield shell 15.its shield shell Have the function of dust-proof, and makes pedestal more beautiful.

In the present embodiment, the leading flank side of drawer box 9 has existing flange 93, has at the front opening of drawer slot 702 There is existing annular groove 7021, flange 93 is corresponding to be inserted into annular groove 7021.Its structure positions after bouncing back to drawer box, to prevent from taking out Drawer, which is excessively pushed into inside drawer slot, to be caused to pull out drawer box into more difficulty, to improve service performance.

In the present embodiment, the top surface fitting of Keyboard supporting board 8 is fixed with Skidproof soft cushion 91; Its Skidproof soft cushion prevents from being placed on key Article slides and breaks on pan arrest plate.

The present invention is not limited to above-mentioned preferred forms, anyone can show that other are various under the inspiration of the present invention The product of form, however, make any variation in its shape or structure, it is all that there is skill identical or similar to the present application Art scheme, is within the scope of the present invention.

Cited By (2)

Publication number	Priority date	Publication date	Assignee	Title
CN110116426A *	2019-05-16	2019-08-13	苏州市职业大学	A kind of lifting computer desk
US10568841681 *	2015-01-24	2020-02-25	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN109008216A	2018-12-18	A kind of lifting tables
US20200107633A1	2020-04-09	Lifting desk
CN209202319U	2019-08-06	A kind of lifting tables
CN202218706U	2012-05-16	Multifunctional folding and lifting placement table for sewing machine
CN211657723U	2020-10-13	Multifunctional bedside cabinet
CN206342175U	2017-07-21	A kind of multifunction bedside cabinet
CN204393906U	2015-06-17	A kind of bed accessory
CN106690824A	2017-05-24	Computer desk
CN210144098U	2020-03-17	Multifunctional lifting table
CN207691877U	2018-08-03	A kind of folding portable cellular phone holder
CN207506175U	2018-06-19	A kind of Multifunctional mobile computer desk
CN207438074U	2018-06-01	A kind of computer supporting rack
CN206088817U	2017-04-12	Floating crane's dead weight balancing unit
CN107668926A	2018-02-09	A kind of lifting learning desk for adolescents with learning
CN208479241U	2019-02-05	A kind of moveable mobile phone charging pile

CN210471383U	2020-05-08	Office equipment for project cost budget
CN106385477B	2019-03-26	Handset bracket is used on leaf spring bed
CN215958832U	2022-03-08	Novel combined drawing table
CN209401473U	2019-09-17	A kind of adjustable coil body turnover device
CN211186241U	2020-08-07	Lifting table with expandable surface area
CN213757145U	2021-07-23	Lifting support leg structure for intelligent electric lifting office table
CN211380091U	2020-09-01	Desk integrating office work and life
CN209763139U	2019-12-10	Lighter with mobile phone support
CN210144116U	2020-03-17	Double-layer workbench
CN211269169U	2020-08-18	Movable computer workbench

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201811173016.7A	2018-10-09	2018-10-09	A kind of lifting tables

Applications Claiming Priority (1)

Application	Filing date	Title
CN201811173016.7A	2018-10-09	A kind of lifting tables

Legal Events

Date	Code	Title	Description
2018-12-18	PB01	Publication	
2018-12-18	PB01	Publication	
2019-01-11	SE01	Entry into force of request for substantive examination	
2019-01-11	SE01	Entry into force of request for substantive examination	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
corresponding		claims,abstract,description	11	0.000
inductive effect		claims,abstract,description	6	0.000
installation		claims,description	6	0.000
elevating		claims,description	2	0.000
rising		abstract,description	4	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 109008216 A
(43)申请公布日 2018.12.18

(21)申请号 201811173016.7

(22)申请日 2018.10.09

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(51)Int.Cl.
A47B 21/02(2006.01)
A47B 21/03(2006.01)
A47B 9/16(2006.01)

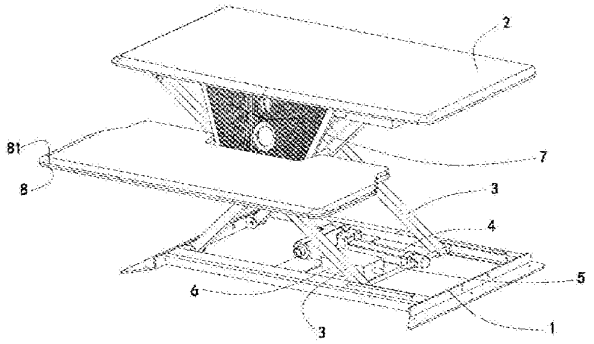
权利要求书1页 说明书4页 附图8页

(54)发明名称

一种升降桌台

(57)摘要

本发明所公开的一种升降桌台，至少两个叉型升降架的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板底面的一侧部进行平移式铰接；至少两个叉型升降架的底部另一端与底座的另一侧部销轴铰接，其顶部另一端与桌板的另一侧部销轴铰接；至少两个叉型升降架的底部一端之间通过连接杆相连，底座上固定有控制叉型升降架进行上升或下降的驱动装置，驱动装置与连接杆固定相连；驱动装置的侧部安装有限位感应器，限位感应器的感应头与连接杆对应。其结构通过叉型升降架的升降操作，使得桌板实现上升或下降调节，并且上升或下降时使得驱动装置工作即可完成升降调节，从而使用也较为便捷，提升了实用性能。



CN 109008216 A

1.一种升降桌台，其特征在于，包括底座、桌板以及安装于底座与桌板之间的升降机构，桌板上嵌设有无线充电装置；升降机构包括至少两个升降架，至少两个叉型升降架的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板底面的一侧部进行平移式铰接；至少两个叉型升降架的底部另一端与底座的另一侧部销轴铰接，其顶部另一端与桌板的另一侧部销轴铰接；至少两个叉型升降架的底部一端之间通过连接杆相连，底座上固定有控制叉型升降架进行上升或下降的驱动装置，驱动装置与连接杆固定相连。

2.根据权利要求1所述的一种升降桌台，其特征在于，还包括键盘托板，桌板的前侧部通过倾斜连接板与键盘托板固定相连。

3.根据权利要求2所述的一种升降桌台，其特征在于，倾斜连接板设有USB接口和抽屉槽，抽屉槽内插入有抽屉盒，抽屉槽的顶部口沿与桌板的底面固定相连，且抽屉盒的前侧面设置有拉手。

4.根据权利要求3所述的一种升降桌台，其特征在于，抽屉槽的具体构成结构为：倾斜连接板的顶部设有通孔，其前侧面固定有装饰板；装饰板的顶部具有抽屉槽体，抽屉槽体贯穿通孔，且抽屉槽体上的抽屉槽的底部内侧面和抽屉盒内的底侧面均向下呈等腰三角形状凹陷而形成内倾斜凹陷部一，且抽屉槽体的底部外侧面形成与叉型升降架完全展开后的等腰三角形凹陷形状一致的等腰三角形外侧面一；抽屉盒的底部外侧面形成与内倾斜凹陷部一对应匹配的等腰三角形外侧面二；通孔的底侧面具有与等腰三角形外侧面一贴合匹配的内倾斜凹陷部二；装饰板的前侧面和抽屉盒的前侧面均具有装饰条纹。

5.根据权利要求3或4所述的一种升降桌台，其特征在于，抽屉盒的前侧面侧边具有现有凸缘，抽屉槽的前端开口处具有现有环槽，凸缘对应插入环槽内。

6.根据权利要求2所述的一种升降桌台，其特征在于，键盘托板的顶面贴合固定有防滑软垫。

7.根据权利要求1所述的一种升降桌台，其特征在于，至少两个叉型升降架的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板底面的一侧部进行平移式铰接；其上述具体平移式铰接的结构为：至少两叉型升降架分别包括两根相互交叉后销轴铰接的支撑杆一和支撑杆二，桌板的底面和底座上均设有两个轨道，桌板上的轨道位置与底座上的轨道位置相互对应；轨道的平移槽内具有可平移的滑轮，至少两支撑杆一的底端通过转轴与底座上滑轮进行平移式铰接，其顶端与桌板的底面销轴铰接；至少两支撑杆二顶端通过转轴与桌板底面的滑轮进行平移式铰接，其底端与底座的侧部销轴铰接；至少两支撑杆一的底端之间通过连接杆相互连接；至少两支撑杆二的铰接处之间通过一横杆相互连接固定。

8.根据权利要求7所述的一种升降桌台，其特征在于，桌板的底面固定有上下贯通的安装壳体，桌板上的两轨道分别安装定位于安装壳体的左右两内侧壁上。

9.根据权利要求1所述的一种升降桌台，其特征在于，驱动装置的侧部安装有限位感应器，限位感应器的感应头与连接杆对应。

10.根据权利要求9所述的一种升降桌台，其特征在于，驱动装置的上方和底座的侧部均覆盖安装有护罩壳，且驱动装置采用直线升降电缸。

一种升降桌台

技术领域

[0001] 本发明涉及对平板电脑、笔记本电脑、台式电脑等进行承载的技术领域，尤其是一种升降桌台。

背景技术

[0002] 桌子作为一种日常生活用品，常见在生活、工作及学校学习中，一般的桌子通常由桌面与桌腿固定连接而成，而桌腿的长度也是固定的，从而使得整个桌面的高度是固定不可调节的；并且需要对手机或平板电脑进行充电时，必须从电源插头上拉出充电数据线插入手机或平板电脑上进行充电操作，由于充电数据线的长度受到限制，从而使得在充电时的电话来电接听、拨打电话以及信息查看回复均不太方便，而且该充电数据线很容易与其它电源线、键盘连接线或鼠标连接线缠绕，使得升降桌台的桌面相当杂乱；而随着应用环境的不同，以及不同人群的应用需求，对桌子的高度多样化、自动程度、舒适程度的要求也越来越高，以及使用的便捷性；因此需要一种可升降调节的升降桌。

发明内容

[0003] 本发明的目的是为了解决上述技术的不足而设计的一种可对桌板进行上升或下降调节，且使用便捷的一种升降桌台。

[0004] 本发明所设计的一种升降桌台，包括底座、桌板以及安装于底座与桌板之间的升降机构，桌板上嵌设有无线充电装置；升降机构包括至少两个升降架，至少两个叉型升降架的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板底面的一侧部进行平移式铰接；至少两个叉型升降架的底部另一端与底座的另一侧部销轴铰接，其顶部另一端与桌板的另一侧部销轴铰接；至少两个叉型升降架的底部一端之间通过连接杆相连，底座上固定有控制叉型升降架进行上升或下降的驱动装置，驱动装置与连接杆固定相连。

[0005] 进一步优选，还包括键盘托板，桌板的前侧部通过倾斜连接板与键盘托板固定相连。

[0006] 进一步优选，倾斜连接板设有USB接口和抽屉槽，抽屉槽内插入有抽屉盒，抽屉槽的顶部口沿与桌板的底面固定相连，且抽屉盒的前侧面设置有拉手。

[0007] 进一步优选，抽屉槽的具体构成结构为：倾斜连接板的顶部设有通孔，其前侧面固定有装饰板；装饰板的顶部具有抽屉槽体，抽屉槽体贯穿通孔，且抽屉槽体上的抽屉槽的底部内侧面和抽屉盒内的底侧面均向下呈等腰三角形状凹陷而形成内倾斜凹陷部一，且抽屉槽体的底部外侧面形成与叉型升降架完全展开后的等腰三角形凹陷形状一致的等腰三角形外侧面一；抽屉盒的底部外侧面形成与内倾斜凹陷部一对应匹配的等腰三角形外侧面二；通孔的底侧面具有与等腰三角形外侧面一贴合匹配的内倾斜凹陷部二；装饰板的前侧面和抽屉盒的前侧面均具有装饰条纹。

[0008] 进一步优选，抽屉盒的前侧面侧边具有现有凸缘，抽屉槽的前端开口处具有现有环槽，凸缘对应插入环槽内。

[0009] 进一步优选，键盘托板的顶面贴合固定有防滑软垫。

[0010] 进一步优选，至少两个叉型升降架的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板底面的一侧部进行平移式铰接；其上述具体平移式铰接的结构为：至少两叉型升降架分别包括两根相互交叉后销轴铰接的支撑杆一和支撑杆二，桌板的底面和底座上均设有两个轨道，桌板上的轨道位置与底座上的轨道位置相互对应；轨道的平移槽内具有可平移的滑轮，至少两支撑杆一的底端通过转轴与底座上滑轮进行平移式铰接，其顶端与桌板的底面销轴铰接；至少两支撑杆二顶端通过转轴与桌板底面的滑轮进行平移式铰接，其底端与底座的侧部销轴铰接；至少两支撑杆一的底端之间通过连接杆相互连接；至少两支撑杆二的铰接处之间通过一横杆相互连接固定。

[0011] 进一步优选，桌板的底面固定有上下贯通的安装壳体，桌板上的两轨道分别安装定位于安装壳体的左右两内侧壁上。

[0012] 进一步优选，驱动装置的侧部安装有限位感应器，限位感应器的感应头与连接杆对应。

[0013] 进一步优选，驱动装置的上方和底座的侧部均覆盖安装有护罩壳，且驱动装置采用直线升降电缸。

[0014] 本发明所设计的一种升降桌台，其结构通过叉型升降架的升降操作，使得桌板实现上升或下降调节，并且上升或下降时使得驱动装置工作即可完成升降调节，实现在桌板上进行无线充电操作，从而使用也较为便捷，提升了实用性能。

附图说明

[0015] 图1是实施例1的整体结构示意图（一）；

[0016] 图2是实施例1的整体结构示意图（二）；

[0017] 图3是实施例1的整体结构示意图（三）；

[0018] 图4是实施例1的爆炸视图；

[0019] 图5是实施例1的抽屉的结构示意图（一）；

[0020] 图6是实施例1的抽屉的结构示意图（二）；

[0021] 图7是实施例1的整体结构示意图（四）；

[0022] 图8是实施例1的整体结构示意图（五）。

具体实施方式

[0023] 下面将结合本发明实施例中的附图，对本发明实施例中的技术方案进行清楚、完整地描述，显然，所描述的实施例仅仅是本发明一部分实施例，而不是全部的实施例。基于本发明中的实施例，本领域普通技术人员所获得的所有其他实施例，都属于本发明保护的范围。

[0024] 实施例1：

[0025] 如图1-图8所示，本实施例所描述的一种升降桌台，包括底座1、桌板2以及位于底座1与桌板2之间且并列间隔设置的至少两个叉型升降架3，至少两个叉型升降架3的底部一端与底座的一侧部进行平移式铰接，其顶部一端与桌板2底面的一侧部进行平移式铰接；至少两个叉型升降架3的底部另一端与底座的另一侧部销轴铰接，其顶部另一端与桌板2的另

一侧部销轴铰接；至少两个叉型升降架3的底部一端之间通过连接杆5相连，底座1上固定有控制叉型升降架3进行上升或下降的驱动装置4，驱动装置4与连接杆5固定相连；驱动装置4的侧部安装有限位感应器6，限位感应器6的感应头与连接杆5对应。驱动装置可采用直线升降电缸、气缸、油缸或气弹簧；直线升降电缸由缸体、以及设于缸体内的丝杆、伺服电机构成，缸体的端部穿出有活塞杆，活塞杆的底端与丝杠的滚轮滑块固定。

[0026] 桌板2上嵌设有无线充电装置14。其无线充电装置解决了现有技术中在需要对手机或平板电脑进行充电时，必须从电源插头上拉出充电数据线插入手机或平板电脑上进行充电操作，由于充电数据线的长度受到限制，从而使得在充电时的电话来电接听、拨打电话以及信息查看回复均不太方便，而且该充电数据线很容易与其它电源线、键盘连接线或鼠标连接线缠绕，使得升降桌台的桌面相当杂乱的技术问题；从而达到充电便捷，充电时桌面干净整洁的技术效果，还避免了在充电过程中接听电话或玩游戏的情况发生(由于在充电过程中接听电话或玩游戏等操作很容易使锂电池发烫，从而很容易发生因发烫而引发安全事故，安全性较低)。

[0027] 上述结构的设计原理：直线升降电缸和限位感应器通电工作，直线升降电缸的活塞杆伸出使得叉型升降架的上下两端撑开，达到叉型升降架下降的操作；当直线升降电缸的活塞杆回缩，促使叉型升降架的上下两端收缩，以达到叉型升降架上升的操作，上升至连接杆与限位感应器的感应头触碰后，电缸自动断电停止工作，以完成上升至最高限度；由于各叉型升降架之间处于前后并列间隔设置，使得对桌板的支撑更加平稳可靠，防止发生侧翻。通过无线充电装置进行对手机或平板电脑进行无线充电。

[0028] 本实施例中，至少两个叉型升降架3的底部一端与底座1的一侧部进行平移式铰接，其顶部一端与桌板2底面的一侧部进行平移式铰接；其上述具体平移式铰接的结构为：至少两叉型升降架3分别包括两根相互交叉后销轴铰接的支撑杆一31和支撑杆二32，桌板2的底面和底座1上均设有两个轨道10，桌板2上的轨道10位置与底座1上的轨道10位置相互对应；轨道10的平移槽11内具有可平移的滑轮12，至少两支撑杆一31的底端通过转轴与底座1上滑轮进行平移式铰接，其顶端与桌板2的底面销轴铰接；至少两支撑杆二32顶端通过转轴与桌板2底面的滑轮进行平移式铰接，其底端与底座1的侧部销轴铰接；至少两支撑杆一31的底端之间通过连接杆5相互连接；至少两支撑杆二31的铰接处之间通过一横杆16相互连接固定。其结构使得叉型升降架在做上升或下降的工作时，支撑杆一和支撑杆二之间铰接处上方位置或下方位置撑开或收缩更加顺畅稳定，提升使用性能，且结构更具紧凑性；通过横杆固定两支撑杆二，使得两支撑杆二的定位更加稳固。且滑轮可在轨道的平移槽内进行滑移或平移或滚动位移。

[0029] 本实施例中，桌板2的底面固定有上下贯通的安装壳体13，桌板2上的两轨道10分别安装定位于安装壳体13的左右两内侧壁上。其结构对轨道的安装定位更加稳固，便捷，并且滑轮在平移槽内滑动时也较为顺畅。

[0030] 本实施例中，还包括键盘托板8，桌板2的前侧部通过倾斜连接板7与键盘托板8固定相连。其键盘托板用于放置键盘。键盘托板在固定时，键盘托板的后侧具有定位槽，倾斜连接板卡入定位槽内，且倾斜连接板的底部具有托板，键盘托板的后侧底面固定于托板上。从而采用该键盘托板的固定结构，使得键盘托板固定后更加牢固可靠。

[0031] 本实施例中，倾斜连接板7设有USB接口71和抽屉槽702，抽屉槽702内插入有抽屉

盒9，抽屉槽702的顶部口沿与桌板2的底面固定相连，且抽屉盒9的前侧面设置有拉手94。USB接口可直接插上数据线进行对任何移动设备进行充电操作，无需另外将插头插于电源插座上，使用更加便捷；抽屉盒具有收纳杂物的作用。

[0032] 本实施例中，抽屉槽702的具体构成结构为：倾斜连接板7的顶部设有通孔72，其前侧面固定有装饰板70；装饰板70的顶部具有抽屉槽体701，抽屉槽体701贯穿通孔72，且抽屉槽体701上的抽屉槽702的底部内侧面和抽屉盒9内的底侧面均向下呈等腰三角形状凹陷而形成内倾斜凹陷部一91，且抽屉槽体701的底部外侧面形成与叉型升降架3完全展开后的等腰三角形凹陷形状一致的等腰三角形外侧面一704；抽屉盒9的底部外侧面形成与内倾斜凹陷部一91对应匹配的等腰三角形外侧面二92；通孔72的底侧面具有与等腰三角形外侧面一704贴合匹配的内倾斜凹陷部二711；装饰板70的前侧面和抽屉盒9的前侧面均具有装饰条纹705。其结构紧凑可靠，通过等腰三角形外侧面和内倾斜部使得抽屉盒内部空间更大同时叉型支撑架完全展开后正好于抽屉槽体的外侧底面贴合，保证桌板下降后不发生任何干涉的作用。装饰板的两旁侧和底侧均具有定位板，底侧定位板的两旁侧具有定位块，倾斜连接板定位于装饰板两旁侧定位板之间，且底侧定位板抵触在倾斜连接板的托板顶面，并且托板定位在底侧定位板两旁侧的定位块之间，定位完成后通过螺栓进行固定。

[0033] 本实施例中，驱动装置4的上方和底座1的侧部均覆盖安装有护罩壳15。其护罩壳具有防尘的作用，并使得底座更加美观。

[0034] 本实施例中，抽屉盒9的前侧面侧边具有现有凸缘93，抽屉槽702的前端开口处具有现有环槽7021，凸缘93对应插入环槽7021内。其结构对抽屉盒回缩后进行定位，以防止抽屉过于推入抽屉槽内部导致将抽屉盒拉出较为困难，从而提升了使用性能。

[0035] 本实施例中，键盘托板8的顶面贴合固定有防滑软垫91；其防滑软垫防止放置在键盘托板上物品滑落而摔坏。

[0036] 本发明不局限于上述最佳实施方式，任何人在本发明的启示下都可得出其他各种形式的产品，但不论在其形状或结构上作任何变化，凡是具有与本申请相同或相近似的技术方案，均落在本发明的保护范围之内。

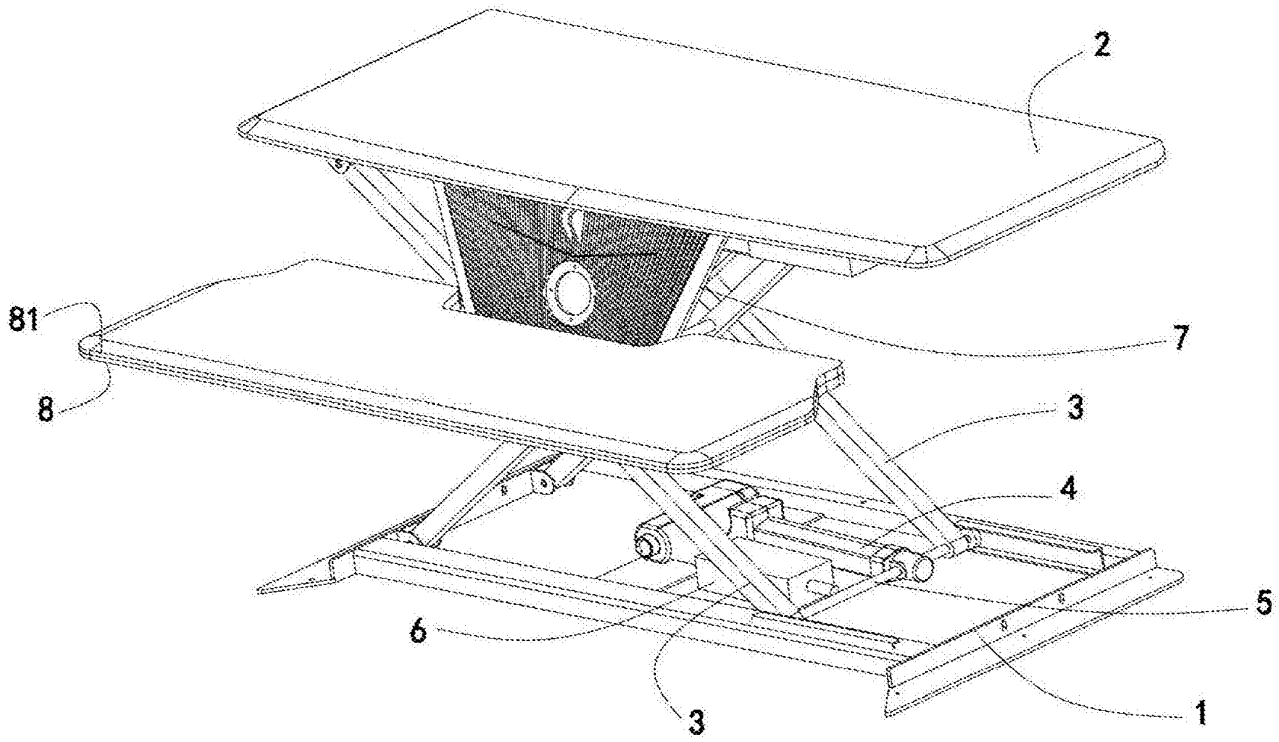


图1

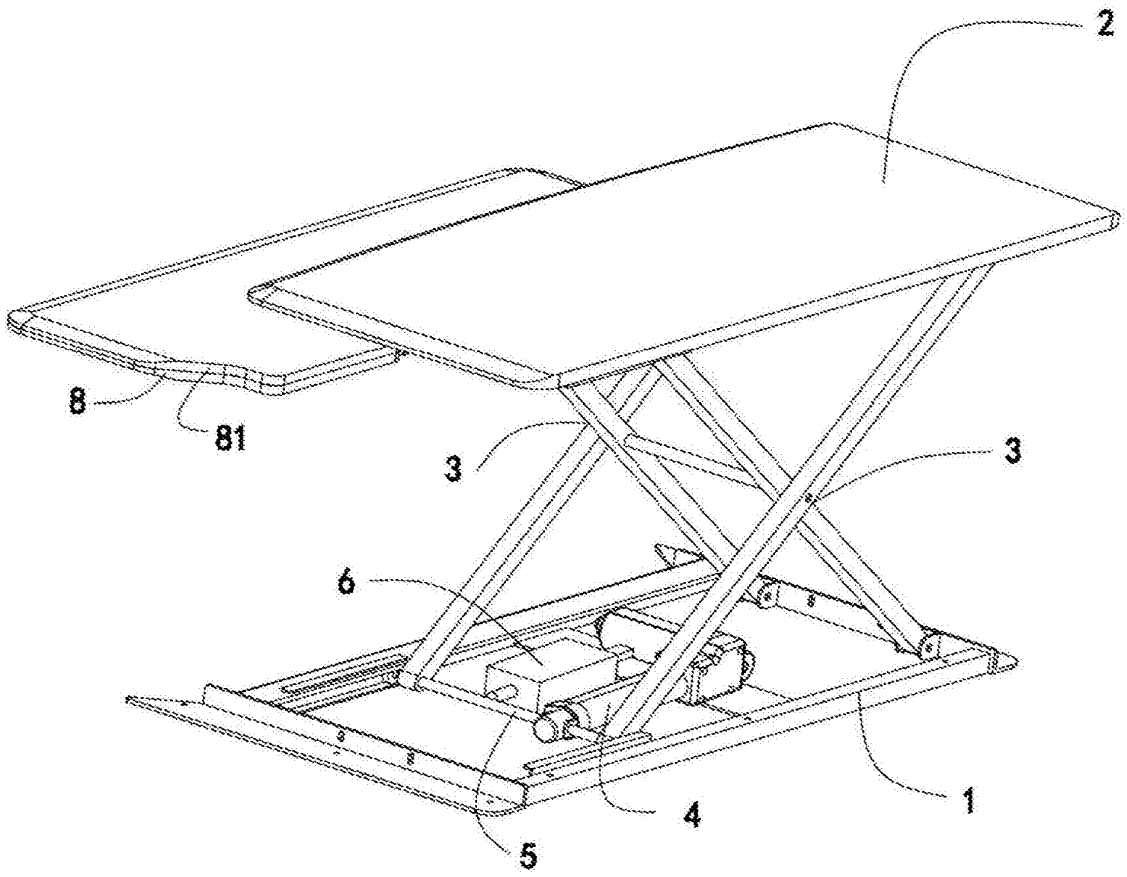


图2

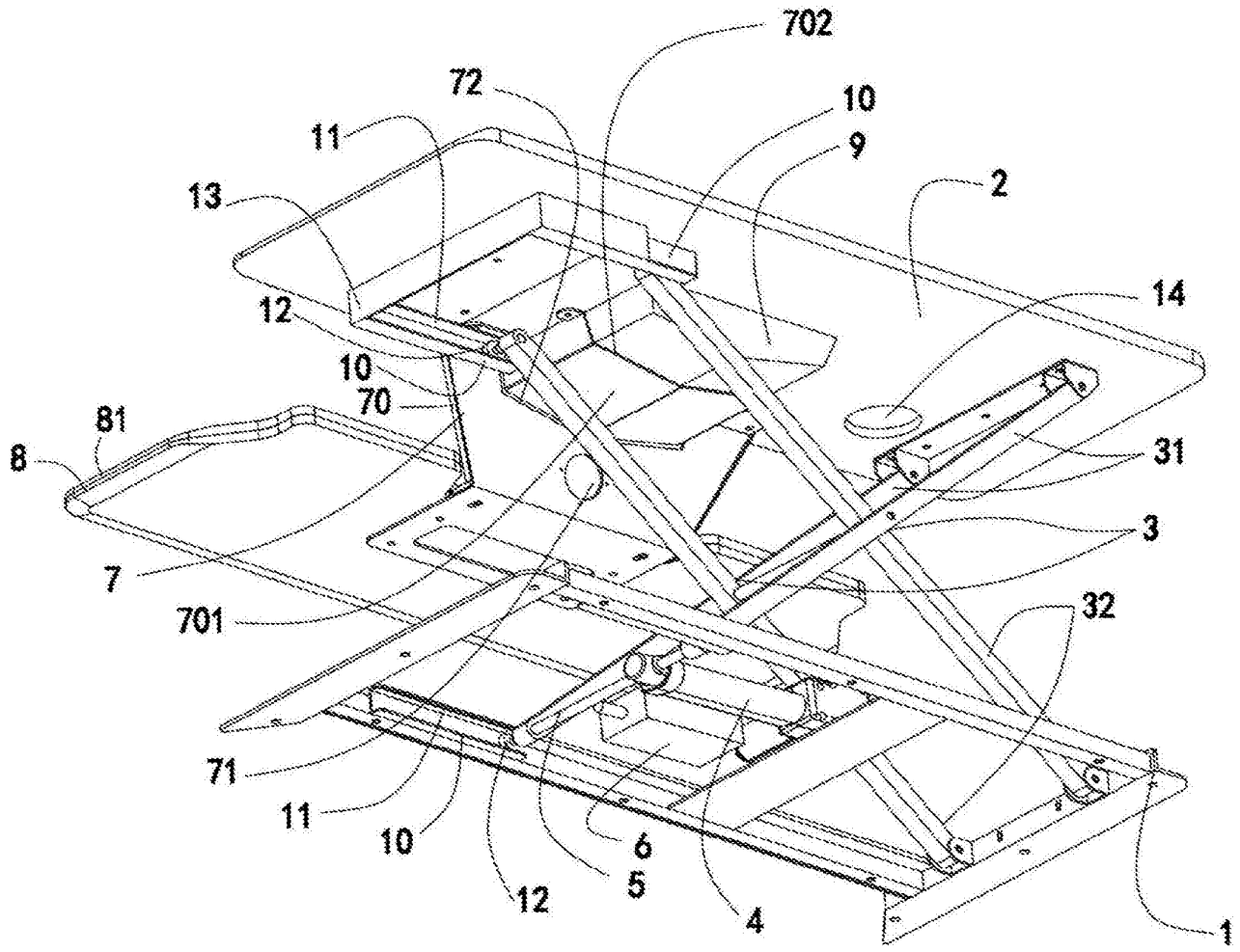


图3

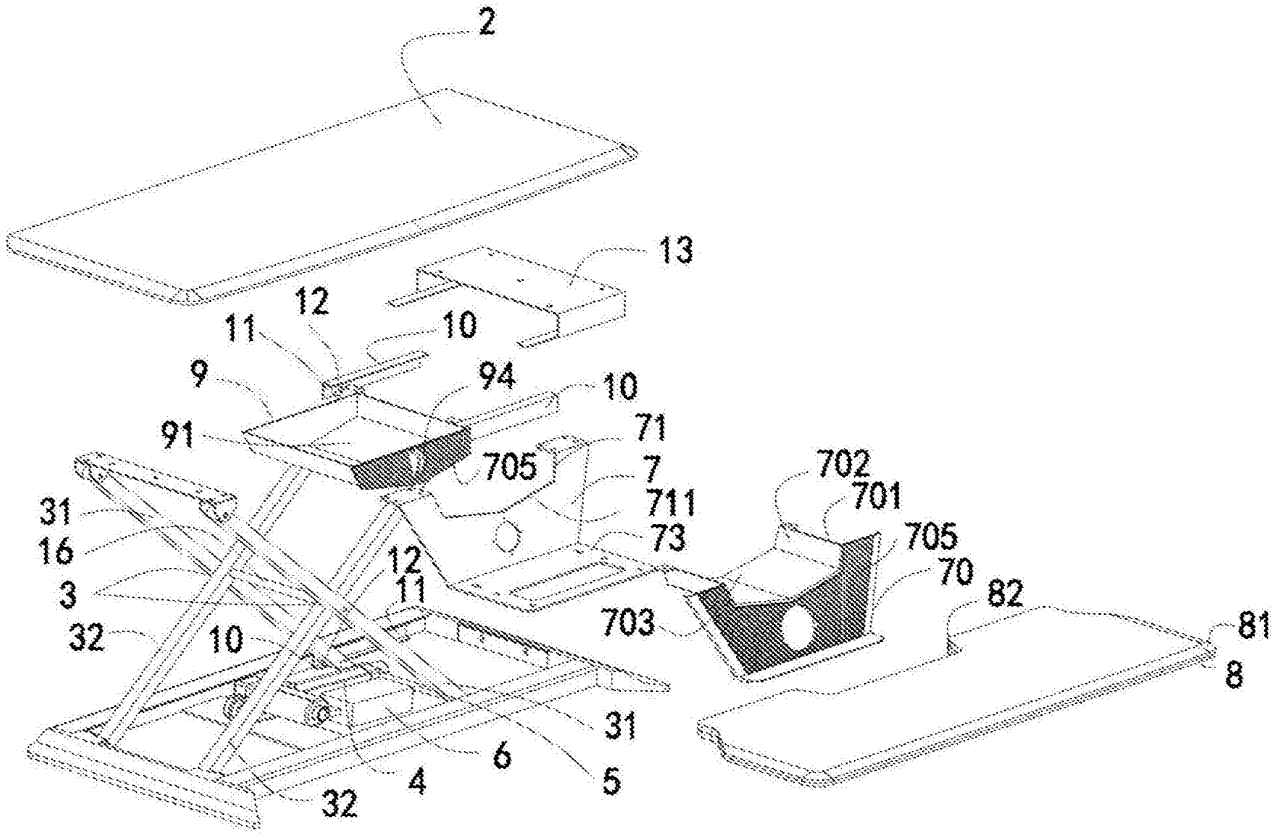

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图4

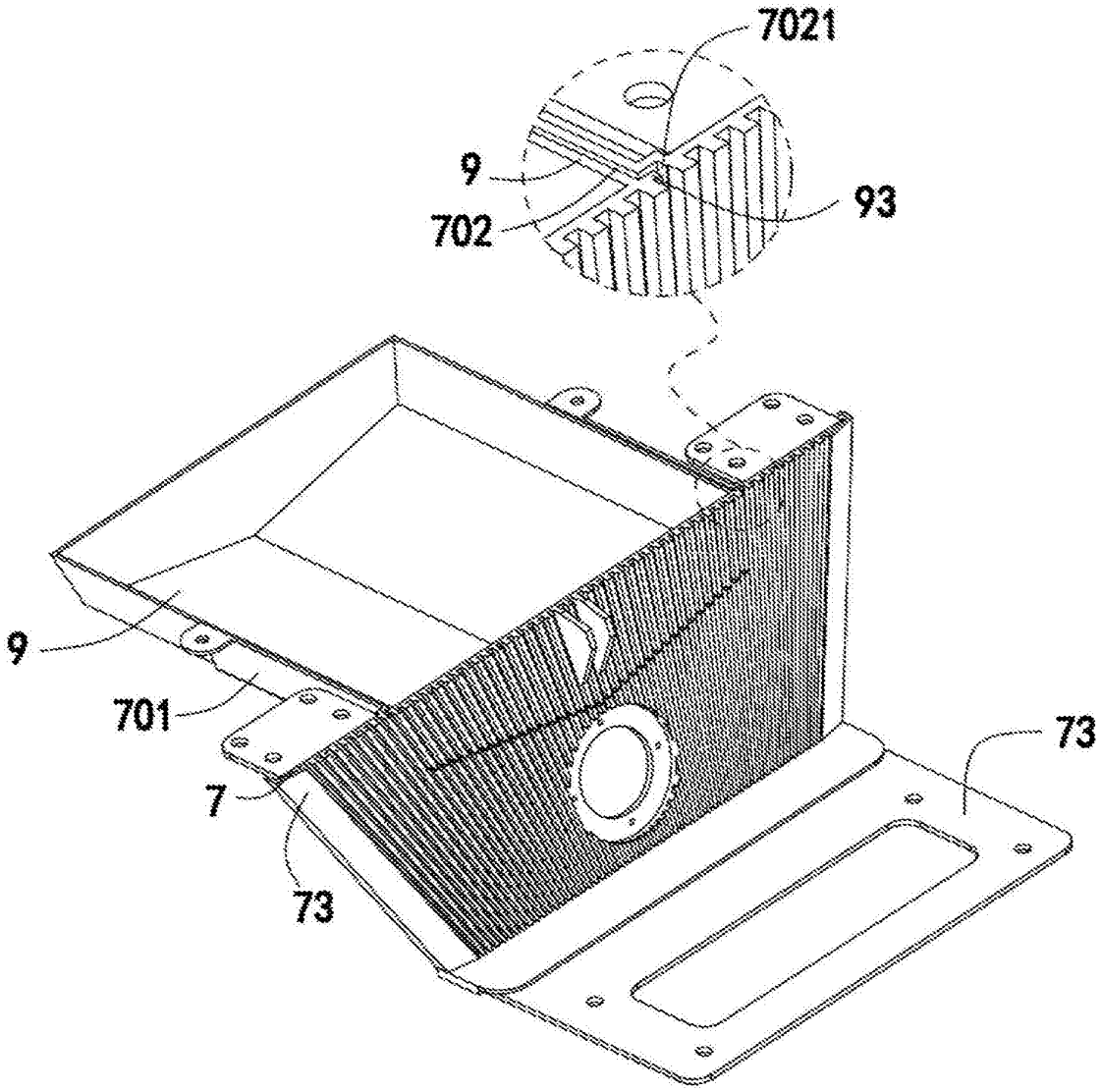


图5

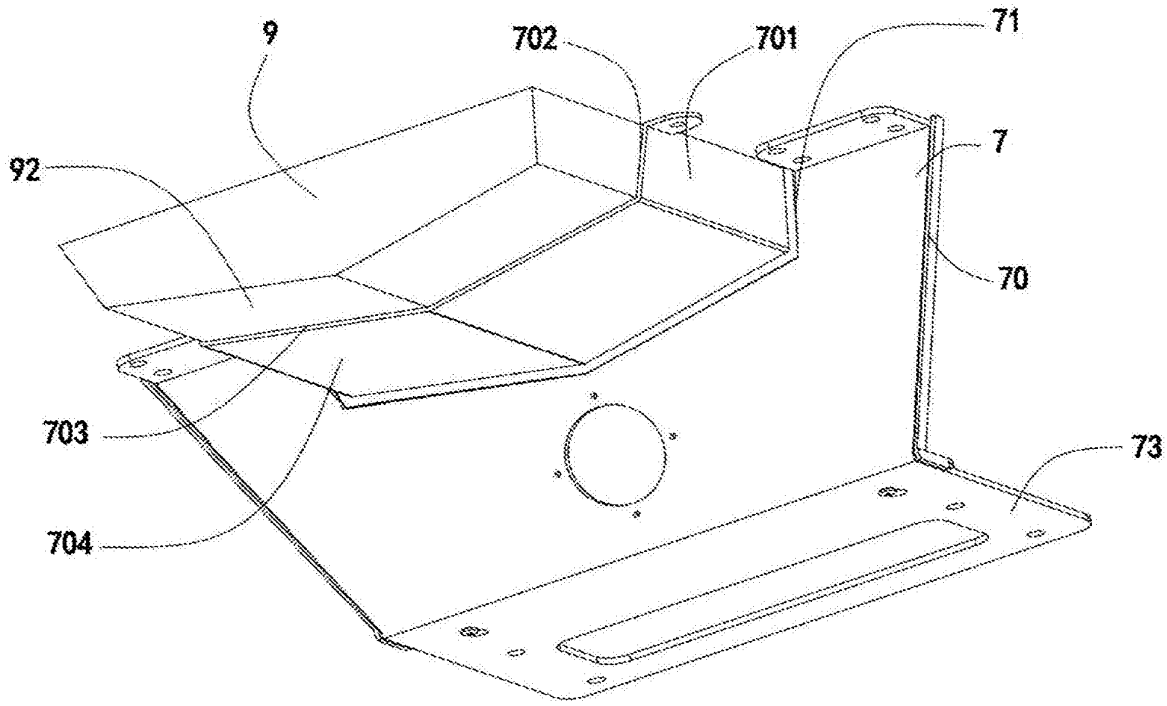


图6

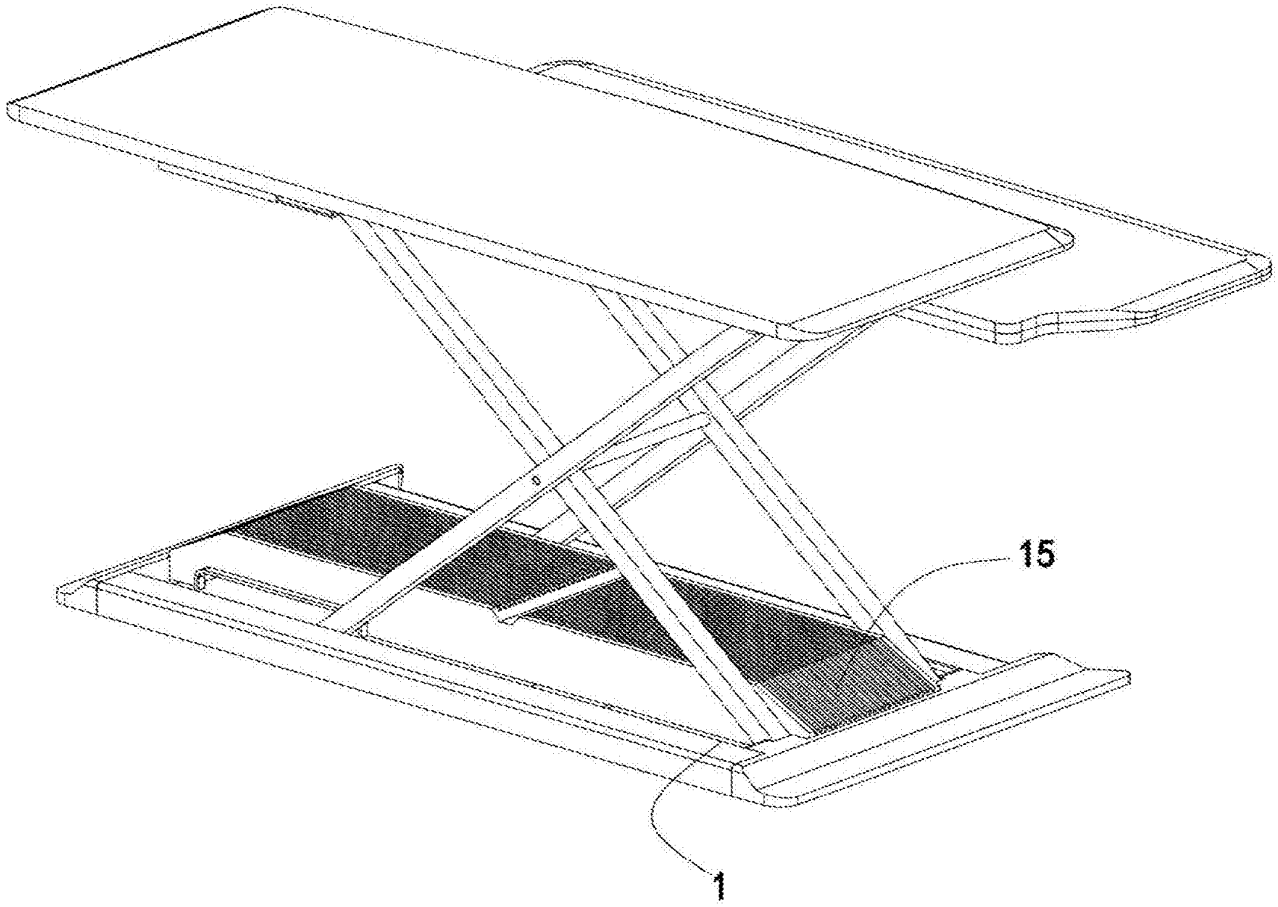


图7

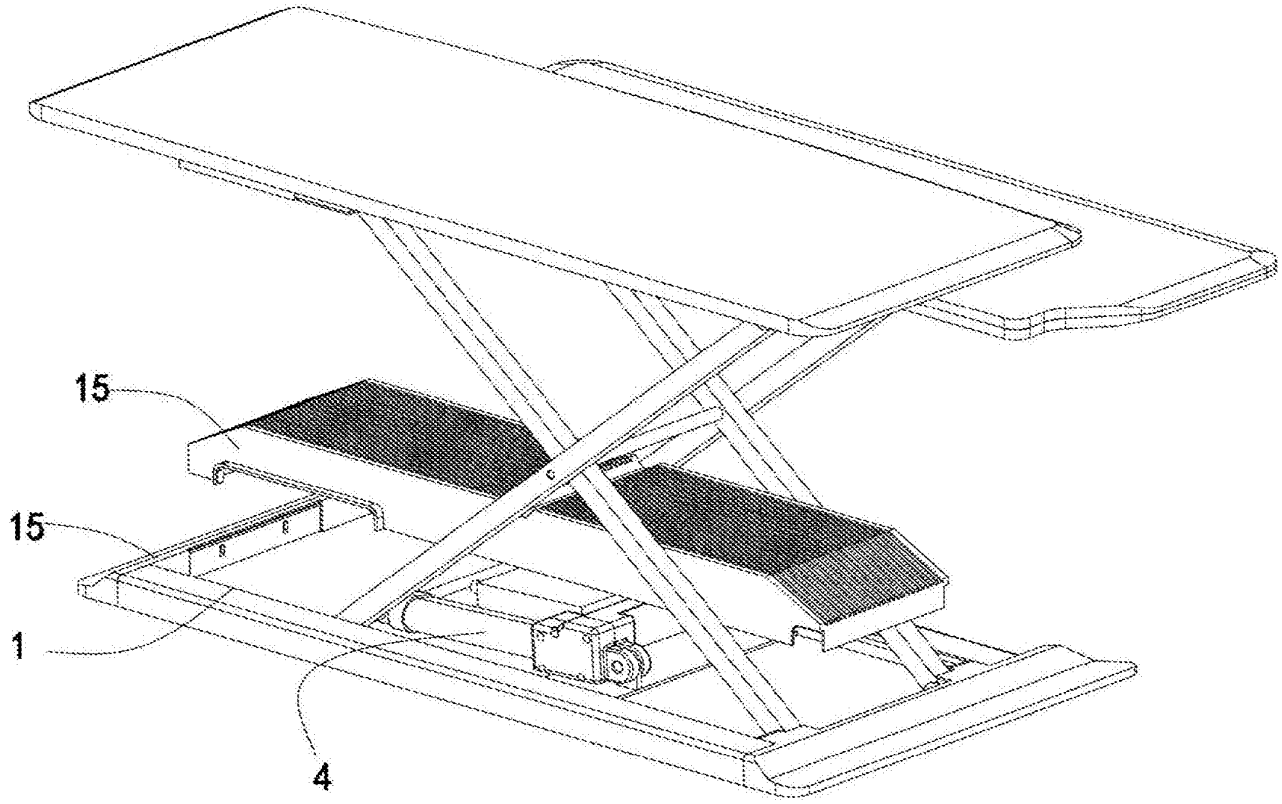


图8

Patents

A kind of hand-operated lifting table

Abstract

The invention provides a kind of hand-operated lifting table, belong to field of mechanical technique.It solves existing same table inconvenient problem with use.This hand-operated lifting table includes：Support；Desk body, it is installed on support；Lifting assembly, the quantity of the lifting assembly is the both sides that two groups and two groups of lifting assemblies are respectively arranged at desk body, and the two ends of two groups of lifting assemblies are connected with desk body and support respectively, and the lifting assembly can adjust the vertical height of desk body and support between the two.This hand-operated lifting table has the advantages that simple in construction, easy to use.

Classifications

- A47B13/02 Underframes

View 3 more classifications

CN107048695A

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Ningbo Huiwuzhou Intelligent Technology Co Ltd

Worldwide applications

2017 CN

Application CN201710240036.0A events

2017-04-13	Application filed by Ningbo Huiwuzhou Intelligent Technology Co Ltd
2017-04-13	Priority to CN201710240036.0A
2017-08-18	Publication of CN107048695A
Status	Pending

Info: Cited by (3), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (10)

Hide Dependent

1. a kind of hand-operated lifting table, it is characterised in that including：

Support；

Desk body, it is installed on support；

Lifting assembly, the quantity of the lifting assembly is the both sides that two groups and two groups of lifting assemblies are respectively arranged at desk body, two groups The two ends of lifting assembly are connected with desk body and support respectively, and the lifting assembly can adjust desk body and support between the two vertical Highly.

2. a kind of hand-operated lifting table according to claim 1, it is characterised in that the lifting assembly includes mounting bracket, peace The two ends shelved are hingedly connected in desk body and support, and locating part corresponding with mounting bracket is provided with desk body, described spacing Part can be such that mounting bracket is moved along desk body and can adjust desk body and the vertical height of support between the two.

3. a kind of hand-operated lifting table according to claim 2, it is characterised in that the mounting bracket includes arranged in a crossed manner the One mounting bracket and the second mounting bracket, the first mounting bracket two ends are hingedly connected in desk body and support, the first mounting bracket and The middle part of two mounting brackets is hinged setting by jointed shaft.

4. a kind of hand-operated lifting table according to claim 3, it is characterised in that the locating part include the first limiting plate and Rotating shaft, first limiting plate is arranged at the first mounting bracket and desk body between the two, and first limiting plate is fixedly arranged on the first peace The upper end and first limiting plate for filling plate can be horizontally set on the lower surface of desk body along desk body transverse shifting, the rotating shaft And projection is formed with limiting section in rotating shaft, the rotating shaft can drive limiting section synchronous axial system and limiting section is inserted in the first limit The first limiting plate is set to keep geo-stationary with desk body on the plate of position.

5. a kind of hand-operated lifting table according to claim 4, it is characterised in that the lower surface of desk body is provided with fixation Plate, offers fixing groove in fixed plate, and first limiting plate and rotating shaft are located in fixing groove, opened up on the first limiting plate There are multiple spacing breach, the rotating shaft can drive limiting section to be inserted in spacing breach.

6. a kind of hand-operated lifting table according to claim 5, it is characterised in that handle and connection are installed with rotating shaft Portion, the surface in desk body is provided with connecting seat, and link slot corresponding with connecting portion, described are offered in the middle part of connecting seat Hand can drive rotating shaft to circumferentially rotate and connecting portion is inserted or be disconnected groove.

7. a kind of hand-operated lifting table according to claim 6, it is characterised in that the support includes bottom plate and cover plate, institute State cover plate to be covered on bottom plate and be formed with accommodating chamber between the two in cover plate and bottom plate, first mounting bracket is articulated with bottom

plate On, the second limiting plate is provided with the lower end of the second mounting bracket, second limiting plate is movably set in accommodating chamber.

8. a kind of hand-operated lifting table according to claim 7, it is characterised in that multiple first spacing holes are opened up on bottom plate, The second spacing hole corresponding with the first spacing hole is offered on the second limiting plate and the first spacing hole axial line and second spacing The axial line in hole is in same level position.

9. a kind of hand-operated lifting table according to claim 8, it is characterised in that set flexible on the second mounting bracket Part, one end that piston rod and piston rod are provided with elastic component extends downwardly from elastic component and is connected with bottom plate.

10. a kind of hand-operated lifting table according to claim 1, it is characterised in that be arranged in parallel on the lower surface of desk body There is the second desk body.

Description

A kind of hand-operated lifting table

Technical field

The invention belongs to field of mechanical technique, it is related to a kind of hand-operated lifting table.

Background technology

Same table refers in the desk with elevating function, real life, as office worker is seated office in an office Time is increasingly longer, and people gradually recognize that sitting is unfavorable for improving operating efficiency, thus people begin attempt to be seated office and Two kinds of working ways of office stand alternately, same table, which just can meet office worker and carry out alternately sitting and standing formula in the course of the work, to be done Public affairs, but there is complicated, inconvenient problem with use in same table of the prior art, in summary, to solve existing liter Deficiency on table structure drops, it is necessary to design a kind of hand-operated lifting table simple in construction, easy to use.

The content of the invention

The purpose of the present invention is there is above mentioned problem for existing technology, it is proposed that a kind of simple in construction, easy to use Hand-operated lifting table.

The purpose of the present invention can be realized by following technical proposal：A kind of hand-operated lifting table, including：

Support；

Desk body, it is installed on support；

Lifting assembly, the quantity of the lifting assembly is the both sides that two groups and two groups of lifting assemblies are respectively arranged at desk body, The two ends of two groups of lifting assemblies are connected with desk body and support respectively, and the lifting assembly can adjust desk body and support between the two Vertical height.

In a kind of above-mentioned hand-operated lifting table, the lifting assembly includes mounting bracket, and the two ends of mounting bracket are respectively articulated with in in desk body and support, being provided with locating part corresponding with mounting bracket in desk body, the locating part can make mounting bracket along table Body moves and can adjust desk body and the vertical height of support between the two.

In a kind of above-mentioned hand-operated lifting table, the mounting bracket includes the first mounting bracket arranged in a crossed manner and second and installed Frame, the first mounting bracket two ends are hingedly connected in desk body and support, are passed through in the middle part of the first mounting bracket and the second mounting bracket Jointed shaft is hinged setting.

In a kind of above-mentioned hand-operated lifting table, the locating part includes the first limiting plate and rotating shaft, and described first is spacing Plate is arranged at the first mounting bracket and desk body between the two, and first limiting plate is fixedly arranged on the upper end of the first installing plate and described One limiting plate can be horizontally set on the lower surface of desk body along desk body transverse shifting, the rotating shaft and be convexed to form in rotating shaft Limited location portion, the rotating shaft can drive limiting section synchronous axial system and limiting section is inserted on the first limiting plate and make first spacing Plate keeps geo-stationary with desk body.

In a kind of above-mentioned hand-operated lifting table, the lower surface of desk body is provided with fixed plate, offered in fixed plate Fixing groove, first limiting plate and rotating shaft are located in fixing groove, and multiple spacing breach are offered on the first limiting plate, described Rotating shaft can drive limiting section to be inserted in spacing breach.

In a kind of above-mentioned hand-operated lifting table, handle and connecting portion are installed with rotating shaft, the surface in desk body is set Connecting seat is equipped with, link slot corresponding with connecting portion is offered in the middle part of connecting seat, the handle can drive rotating shaft circumferentially to turn Move and connecting portion is inserted or be disconnected groove.

In a kind of above-mentioned hand-operated lifting table, the support includes bottom plate and cover plate, and the cover plate is covered on bottom plate And accommodating chamber is formed between the two in cover plate and bottom plate, first mounting bracket is articulated with bottom plate, in the second mounting bracket Lower end is provided with the second limiting plate, and second limiting plate is movably set in accommodating chamber.

In a kind of above-mentioned hand-operated lifting table, multiple first spacing holes are opened up on bottom plate, are opened up on the second limiting plate The axial line for having the second spacing hole corresponding with the first spacing hole and the first spacing hole axial line and the second spacing hole is in same Horizontal level.

In a kind of above-mentioned hand-operated lifting table, elastic component is provided with the second mounting bracket, is provided with elastic component One end of piston rod and piston rod extends downwardly from elastic component and is connected with bottom plate.

In a kind of above-mentioned hand-operated lifting table, the second desk body is arranged with parallel on the lower surface of desk body.

Compared with prior art, the present invention at least has the advantages that：

1st, the present invention includes support and desk body, lifting assembly is provided between the two in support and desk body, in the course of work in, user can adjust the vertical height of support and desk body between the two according to itself practical needs by lifting assembly, side User use, improve the comfortableness that user uses.

2nd, the quantity of lifting assembly is two groups, and two groups of lifting assemblies are respectively arranged at the both sides of desk body, two groups of lifting assemblies Two ends be connected respectively with desk body and support, user can be respectively adjusted between desk body both sides and support by two groups of lifting assemblies Spacing, facilitate the use of user.

Brief description of the drawings

Fig. 1 is the structural representation of the present invention.

Fig. 2 is the structural representation of omission desk body in Fig. 1.

Fig. 3 is Fig. 2 side view.

Fig. 4 is Fig. 2 top view.

Fig. 5 is the part-structure schematic diagram of the present invention.

In figure, 100, desk body; 110th, the second desk body; 111st, fixed mount; 120th, fixed plate; 121st, slide plate; 200th, bottom plate; 201st, the first spacing hole; 210th, cover plate; 220th, the second limiting plate; 221st, the second spacing hole; 300th, the first mounting bracket; 310th, second Mounting bracket; 400th, the first limiting plate; 401st, spacing breach; 410th, rotating shaft; 411st, limiting section; 412nd, handle; 413rd, connecting portion; 414th, connecting seat; 415th, link slot; 420th, hinged seat; 500th, elastic component; 510th, piston rod.

Embodiment

The following is specific embodiment of the invention and with reference to accompanying drawing, technical scheme is further described, But the present invention is not limited to these embodiments.

As shown in Figure 1 and Figure 5, this hand-operated lifting table includes support, is arranged on support in desk body 100 and in desk body 100 and support be provided with lifting assembly between the two, in the course of the work, lifting assembly can adjust both desk body 100 and support Between vertical range.

The quantity of above-mentioned lifting assembly is two groups, and two groups of lifting assemblies are respectively arranged at the both sides of desk body 100 and two groups of liters The come down to a lower group two ends of part are connected with desk body 100 and support respectively, so that user can adjust desk body respectively by two groups of lifting assemblies 100 and the vertical interval at support two ends, facilitate the use of user.

Above-mentioned lifting assembly includes mounting bracket, and the two ends of mounting bracket are connected with desk body 100 and support respectively, in desk body 100 On be provided with locating part corresponding with mounting bracket, the locating part can be such that mounting bracket is moved along desk body 100 and can adjust desk body 100 With the vertical height of support between the two.

Preferably, above-mentioned mounting bracket includes the first mounting bracket 300 and the second mounting bracket 310 arranged in a crossed manner, and first installs One end of frame 300 is connected with locating part, and the other end of the first mounting bracket 300 is connected with support, the two ends point of the second mounting bracket 310 It is not connected with desk body 100 and support, and the middle part of the first mounting bracket 300 and the second mounting bracket 310 is hinged by jointed shaft and set Put, the first mounting bracket 300 and the second mounting bracket 310 are arranged at desk body 100 and support and can play support to desk body 100 between the two Effect, when locating part drives the first mounting bracket 300 along 100 transverse shifting of desk body, the first mounting bracket 300 and the second mounting bracket 310 can circumferentially rotate around jointed shaft so that the vertical interval of desk body 100 and support between the two carries out accommodation.

Further, above-mentioned locating part includes the first limiting plate 400 and rotating shaft 410, and the first limiting plate 400 is fixedly arranged on first The upper end of mounting bracket 300 and the first limiting plate 400 is resisted against on the lower surface of desk body 100, rotating shaft 410 is horizontally set at desk body Projection is formed with limiting section 411 on 100 lower surface and in rotating shaft 410, and above-mentioned rotating shaft 410 can drive limiting section 411 circumferential Rotate and limiting section 411 is inserted on the first limiting plate 400 and make both holdings of the first limiting plate 400 and desk body 100 relative It is static.

Fixed plate 120 is installed with the lower surface of desk body 100, fixing groove, above-mentioned first are offered in fixed plate 120 Limiting plate 400 and rotating shaft 410 are mounted in fixing groove, specifically, and two hinged seats 420, rotating shaft are provided with fixed plate 120 410 two ends are inserted on two hinged seats 420 respectively and the rotating shaft 410 can be circumferentially rotated.

Include transition part, installation portion and plug division, wherein transition part and the first mounting bracket 300 in the first limiting plate 400 Be connected, installation portion be arranged at transition part and plug division between the two and installation portion two ends respectively with both transition part and plug division It is connected, the upper end of installation portion is resisted against in fixed plate 120, and both installation portion and plug division are parallel to each other, on plug division Multiple spacing breach 401 corresponding with connecting portion 413 are offered, during the above-mentioned drive of rotating shaft 410 limiting section 411 is circumferentially rotated Limiting section 411 can be made to be arranged in spacing breach 401 so that rotating shaft 410 and the portion of plugging remains stationary state between the two, so that Ensure the remains stationary state of desk body 100.

Slide plate 121 is additionally provided with fixing groove, the side wall of above-mentioned installation portion is resisted against on the outer surface of slide plate 121, slide plate 121 setting, which is avoided during installation portion slides in fixing groove, there is the generation of catching phenomenon, improves installation portion cunning The stationarity of shifting.

It is installed with handle 412 on the outer surface of rotating shaft 410, handle 412 drives rotating shaft 410 around two hinged seat 420 weeks To rotation, connecting portion 413 is additionally provided with the outer surface of rotating shaft 410, sets corresponding with connecting portion 413 in desk body 100 Connecting seat 414, link slot 415 corresponding with connecting portion 413 is offered at the middle part of the connecting seat 414, in an initial condition, Connecting portion 413 is arranged in link slot 415, while limiting section 411 is arranged in spacing breach 401, when rotating shaft 410 is with rotation connection 413 circumferentially rotate and can make limiting section 411 away from spacing breach 401, so that user can be moved by installation portion along slide plate 121 And the vertical interval of desk body 100 and support between the two is adjusted, and above-mentioned rotating shaft 410 can only be with rotation connection 413 to connection The inner side of groove 415 is rotated, so that connecting portion 413 is arranged in link slot 415 always, it is ensured that rotating shaft 410 is in a lateral direction not It can be subjected to displacement and influence the normal generation using phenomenon of the invention.

Above-mentioned support includes bottom plate 200 and cover plate 210, and cover plate 210 is covered on bottom plate 200 and in cover plate 210 and bottom plate 200 are formed with accommodating chamber between the two, and above-mentioned first mounting bracket 300 is articulated with bottom plate 200, under the second mounting bracket 310 End is provided with the second limiting plate 220, and the second limiting plate 220 is movably set in accommodating chamber, and second limiting plate 220 can accommodated intracavitary slides along bottom plate 200, so that user can be by adjusting the second mounting bracket 310 and the first mounting bracket 300 between the two Angle so as to adjusting the vertical interval of desktop and bottom plate 200 between the two.

Preferably, on bottom plate 200 on offer multiple first spacing holes 201, offered on the second limiting plate 220 many It is individual with corresponding second spacing hole 221 of the first spacing hole 201, and the axial line of the first spacing hole 201 and the second spacing hole 221 Axial line be in same horizontal line on, when the second limiting plate 220 is slid onto predeterminated position by user, user can pass through Screw sequentially passes through the first spacing hole 201 and the second spacing hole 221 and both the second limiting plate 220 and bottom plate 200 is kept Geo-stationary, while user can adjust the vertical height of desk body 100 and bottom plate 200 between the two by the first limiting plate 400.

It is hinged on the second mounting bracket 310 and is provided with elastic component 500, piston rod 510 and piston is set in elastic component 500 The lower end elasticity of extension part 500 of bar 510 is simultaneously articulated with bottom plate 200, and the corresponding peace of piston rod 510 is arranged on bottom plate 200 Fill seat, the piston rod 510 is articulated with mounting seat, elastic component 500 is in compressive state and the elastic component 500 can act in Elastic force on second mounting bracket 310 and mounting seat, elastic force can reduce user's required application during manual regulation Active force, so as to facilitate the use of user.

The second desk body 110 is arranged with parallel in the lower surface of desk body 100, is provided with the both sides of the second desk body 110 solid Determine frame 110, one end of fixed mount 110 is arranged in desk body 100, and the other end of fixed mount 110 is connected with the second desk body 110, have Body, mounting groove is offered on fixed mount 110, mounting screw is provided with fixed mount 110, one end of mounting screw is passed through Mounting groove is simultaneously threadedly connected in fixed plate 120, and the other end of mounting screw is resisted against on fixed mount 110, so as to ensure that solid Determine the steadiness that frame 110 is connected between the two with regulation plate, and ensure the steadiness that the desk body 110 of desk body 100 and second is installed, carry The security that high user uses.

Specific embodiment described herein is only to spirit explanation for example of the invention.Technology neck belonging to of the invention The technical staff in domain can be made various modifications or supplement to described specific embodiment or be replaced using similar mode Generation, but without departing from the spiritual of the present invention or surmount scope defined in appended claims.

Cited By (3)

Publication number	Priority date	Publication date	Assignee	Title
CN108851583A *	2018-09-13	2018-11-23	江苏天泽教育咨询有限公司	A kind of liftable student desk
WO2019041579A1 *	2017-08-31	2019-03-07	嘉兴海虹新电科技有限公司	Folding height-adjustable desk workstation
US11160367B1 *	2015-01-24	2021-11-02	Office Kick, Inc.	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN107048695A	2017-08-18	A kind of hand-operated lifting table
CN202536740U	2012-11-21	Dual-purpose chair for sitting and lying
CN105078681A	2015-11-25	Electric bed
CN104840030B	2018-03-13	A kind of seat back of the body linkage chair
CN206880375U	2018-01-16	Folding liftable table work station
CN108887881A	2018-11-27	A kind of multi-purpose computer table arrangement
CN207519837U	2018-06-22	A kind of hand-operated lifting table
CN204908701U	2015-12-30	Electric bed
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CN103271578A	2013-09-04	Sleeping head rack
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CN209404165U	2019-09-20	Comfort type armchair

CN207444666U	2018-06-05	A kind of multifunctional office leisure chaise longue
CN207583073U	2018-04-20	A kind of electric motor protecting structure of same table
CN206036552U	2017-03-22	Television support
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CN205180959U	2016-04-27	Adjustable pillow structure
CN205460664U	2016-08-17	Multifunctional fitness equipment
CN104223872B	2015-07-08	Automatic lifting pillow
CN216616873U	2022-05-27	Fixing support for template based on constructional engineering
CN204573495U	2015-08-19	Camera support angle demodulator
CN209547376U	2019-10-29	A kind of liftable desk
CN210948981U	2020-07-07	Magnetic suspension vertical shaft wind driven generator

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201710240036.0A	2017-04-13	2017-04-13	A kind of hand-operated lifting table

Applications Claiming Priority (1)

Application	Filing date	Title
CN201710240036.0A	2017-04-13	A kind of hand-operated lifting table

Legal Events

Date	Code	Title	Description
2017-08-18	PB01	Publication	
2017-08-18	PB01	Publication	
2017-09-12	SE01	Entry into force of request for substantive examination	
2017-09-12	SE01	Entry into force of request for substantive examination	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
assembly		claims,abstract,description	10	0.000
corresponding		claims,description	12	0.000
synchronised		claims,description	2	0.000
construction		abstract,description	3	0.000
method		abstract,description	2	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 107048695 A
(43)申请公布日 2017.08.18

(21)申请号 201710240036.0

(22)申请日 2017.04.13

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(51)Int.Cl.
A47B 9/16(2006.01)
A47B 13/02(2006.01)

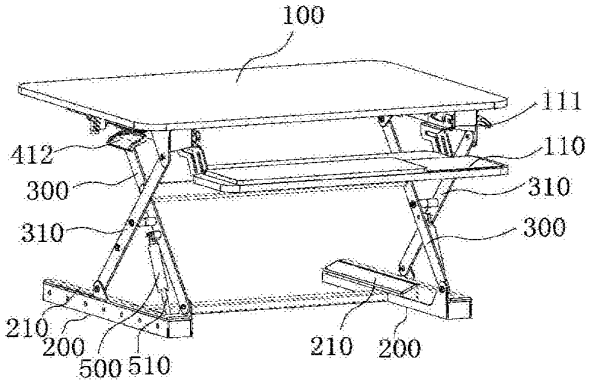
权利要求书1页 说明书4页 附图5页

(54)发明名称

一种手动升降桌

(57)摘要

本发明提供了一种手动升降桌，属于机械技术领域。它解决了现有的升降桌使用不方便的问题。本手动升降桌包括：支架；桌体，其安装于支架上；升降组件，所述升降组件的数量为两组且两组升降组件分别设置于桌体的两侧，两组升降组件的两端分别与桌体和支架相连，所述升降组件能调节桌体和支架两者之间的垂直高度。本手动升降桌具有结构简单、使用方便的优点。



CN 107048695 A

1.一种手动升降桌，其特征在于，包括：

支架；

桌体，其安装于支架上；

升降组件，所述升降组件的数量为两组且两组升降组件分别设置于桌体的两侧，两组升降组件的两端分别与桌体和支架相连，所述升降组件能调节桌体和支架两者之间的垂直高度。

2.根据权利要求1所述的一种手动升降桌，其特征在于，所述升降组件包括安装架，安装架的两端分别铰接于桌体和支架上，在桌体上设置有与安装架对应的限位件，所述限位件能使安装架沿着桌体移动并能调节桌体与支架两者之间的垂直高度。

3.根据权利要求2所述的一种手动升降桌，其特征在于，所述安装架包括交叉设置的第一安装架和第二安装架，所述第一安装架两端分别铰接于桌体和支架上，第一安装架和第二安装架的中部通过铰接轴铰接设置。

4.根据权利要求3所述的一种手动升降桌，其特征在于，所述限位件包括第一限位板和转轴，所述第一限位板设置于第一安装架和桌体两者之间，所述第一限位板固设于第一安装板的上端且所述第一限位板能沿着桌体横向移动，所述转轴横向设置于桌体的下表面上且在转轴上凸起形成有限位部，所述转轴能带动限位部同步转动并使限位部插设于第一限位板上而使第一限位板与桌体保持相对静止。

5.根据权利要求4所述的一种手动升降桌，其特征在于，在桌体的下表面设置有固定板，在固定板上开设有固定槽，所述第一限位板和转轴位于固定槽内，在第一限位板上开设有多个限位缺口，所述转轴能带动限位部插设于限位缺口内。

6.根据权利要求5所述的一种手动升降桌，其特征在于，在转轴上固设有把手和连接部，在桌体上的表面设置有连接座，在连接座的中部开设有与连接部对应的连接槽，所述把手能带动转轴周向转动并使连接部插入或者脱离连接槽。

7.根据权利要求6所述的一种手动升降桌，其特征在于，所述支架包括底板和盖板，所述盖板盖设于底板上且在盖板和底板两者之间形成有容纳腔，所述第一安装架铰接于底板上，在第二安装架的下端设置有第二限位板，所述第二限位板活动设置于容纳腔内。

8.根据权利要求7所述的一种手动升降桌，其特征在于，底板上开设多个第一限位孔，在第二限位板上开设有与第一限位孔对应的第二限位孔且第一限位孔轴心线和第二限位孔的轴心线处于同一水平位置。

9.根据权利要求8所述的一种手动升降桌，其特征在于，在第二安装架上设置有弹性件，在弹性件内设置有活塞杆且活塞杆的一端向下伸出弹性件并与底板相连。

10.根据权利要求1所述的一种手动升降桌，其特征在于，在桌体的下表面上平行设置有第二桌体。

一种手动升降桌

技术领域

[0001] 本发明属于机械技术领域，涉及一种手动升降桌。

背景技术

[0002] 升降桌是指具有升降功能的办公桌，实际生活中，随着职员在办公室中坐着办公时间越来越长，人们逐渐意识到久坐不利于提高工作效率，因此人们开始尝试坐着办公和站立办公两种办公方式交替进行，升降桌便能满足职员在工作过程中进行坐站交替式办公，但是现有技术中的升降桌存在结构复杂、使用不方便的问题，综上所述，为解决现有升降桌结构上的不足，需要设计一种结构简单、使用方便的手动升降桌。

发明内容

[0003] 本发明的目的是针对现有的技术存在上述问题，提出了一种结构简单、使用方便的手动升降桌。

[0004] 本发明的目的可通过下列技术方案来实现：一种手动升降桌，包括：

[0005] 支架；

[0006] 桌体，其安装于支架上；

[0007] 升降组件，所述升降组件的数量为两组且两组升降组件分别设置于桌体的两侧，两组升降组件的两端分别与桌体和支架相连，所述升降组件能调节桌体和支架两者之间的垂直高度。

[0008] 在上述的一种手动升降桌中，所述升降组件包括安装架，安装架的两端分别铰接于桌体和支架上，在桌体上设置有与安装架对应的限位件，所述限位件能使安装架沿着桌体移动并能调节桌体与支架两者之间的垂直高度。

[0009] 在上述的一种手动升降桌中，所述安装架包括交叉设置的第一安装架和第二安装架，所述第一安装架两端分别铰接于桌体和支架上，第一安装架和第二安装架的中部通过铰接轴铰接设置。

[0010] 在上述的一种手动升降桌中，所述限位件包括第一限位板和转轴，所述第一限位板设置于第一安装架和桌体两者之间，所述第一限位板固设于第一安装板的上端且所述第一限位板能沿着桌体横向移动，所述转轴横向设置于桌体的下表面上且在转轴上凸起形成有限位部，所述转轴能带动限位部同步转动并使限位部插设于第一限位板上而使第一限位板与桌体保持相对静止。

[0011] 在上述的一种手动升降桌中，在桌体的下表面设置有固定板，在固定板上开设有固定槽，所述第一限位板和转轴位于固定槽内，在第一限位板上开设有多个限位缺口，所述转轴能带动限位部插设于限位缺口内。

[0012] 在上述的一种手动升降桌中，在转轴上固设有把手和连接部，在桌体上的表面设置有连接座，在连接座的中部开设有与连接部对应的连接槽，所述把手能带动转轴周向转动并使连接部插入或者脱离连接槽。

[0013] 在上述的一种手动升降桌中，所述支架包括底板和盖板，所述盖板盖设于底板上且在盖板和底板两者之间形成有容纳腔，所述第一安装架铰接于底板上，在第二安装架的下端设置有第二限位板，所述第二限位板活动设置于容纳腔内。

[0014] 在上述的一种手动升降桌中，底板上开设多个第一限位孔，在第二限位板上开设有与第一限位孔对应的第二限位孔且第一限位孔轴心线和第二限位孔的轴心线处于同一水平位置。

[0015] 在上述的一种手动升降桌中，在第二安装架上设置有弹性件，在弹性件内设置有活塞杆且活塞杆的一端向下伸出弹性件并与底板相连。

[0016] 在上述的一种手动升降桌中，在桌体的下表面上平行设置有第二桌体。

[0017] 与现有技术相比，本发明至少具有以下有益效果：

[0018] 1、本发明包括支架和桌体，在支架和桌体两者之间设置有升降组件，在工作过程中，使用者能根据自身实用需要而通过升降组件调整支架和桌体两者之间的垂直高度，方便了使用者的使用，提高了使用者使用的舒适性。

[0019] 2、升降组件的数量为两组，两组升降组件分别设置于桌体的两侧，两组升降组件的两端分别与桌体和支架相连，使用者能通过两组升降组件分别调节桌体两侧与支架之间的间距，方便了使用者的使用。

附图说明

[0020] 图1是本发明的结构示意图。

[0021] 图2是图1中省略桌体的结构示意图。

[0022] 图3是图2的侧视图。

[0023] 图4是图2的俯视图。

[0024] 图5是本发明的部分结构示意图。

[0025] 图中，100、桌体；110、第二桌体；111、固定架；120、固定板；121、滑板；200、底板；201、第一限位孔；210、盖板；220、第二限位板；221、第二限位孔；300、第一安装架；310、第二安装架；400、第一限位板；401、限位缺口；410、转轴；411、限位部；412、把手；413、连接部；414、连接座；415、连接槽；420、铰接座；500、弹性件；510、活塞杆。

具体实施方式

[0026] 以下是本发明的具体实施例并结合附图，对本发明的技术方案作进一步的描述，但本发明并不限于这些实施例。

[0027] 如图1和图5所示，本手动升降桌包括支架，在支架上设置于桌体100上并且在桌体100和支架两者之间设置有升降组件，在工作过程中，升降组件能调节桌体100和支架两者之间的垂直距离。

[0028] 上述升降组件的数量为两组，两组升降组件分别设置于桌体100的两侧且两组升降组件的两端分别与桌体100和支架相连，从而使用者能通过两组升降组件分别调节桌体100和支架两端的垂直间距，方便了使用者的使用。

[0029] 上述升降组件包括安装架，安装架的两端分别与桌体100和支架相连，在桌体100上设置有与安装架对应的限位件，该限位件能使安装架沿着桌体100移动并能调节桌体100

与支架两者之间的垂直高度。

[0030] 优选地，上述安装架包括交叉设置的第一安装架300和第二安装架310，第一安装架300的一端与限位件相连，第一安装架300的另一端与支架相连，第二安装架310的两端分别与桌体100和支架相连，并且第一安装架300和第二安装架310的中部通过铰接轴铰接设置，第一安装架300和第二安装架310设置于桌体100和支架两者之间能对桌体100起到支撑作用，当限位件带动第一安装架300沿着桌体100横向移动时，第一安装架300和第二安装架310能绕着铰接轴周向转动从而使得桌体100和支架两者之间的垂直间距进行适应性调整。

[0031] 进一步地，上述限位件包括第一限位板400和转轴410，第一限位板400固设于第一安装架300的上端且第一限位板400抵靠于桌体100的下表面上，转轴410横向设置于桌体100的下表面上且在转轴410上凸起形成有限位部411，上述转轴410能带动限位部411周向转动并使限位部411插设于第一限位板400上而使第一限位板400与桌体100两者保持相对静止。

[0032] 在桌体100的下表面上固设有固定板120，在固定板120上开设有固定槽，上述第一限位板400和转轴410均安装于固定槽内，具体地，在固定板120上设置有两铰接座420，转轴410的两端分别插设于两铰接座420上且该转轴410能周向转动。

[0033] 在第一限位板400包括过渡部、安装部以及插接部，其中过渡部与第一安装架300相连，安装部设置于过渡部和插接部两者之间且安装部的两端分别与过渡部和插接部两者固连，安装部的上端抵靠于固定板120上，并且安装部和插接部两者相互平行，在插接部上开设有多个与连接部413对应的限位缺口401，上述转轴410带动限位部411周向转动过程中能使限位部411卡设于限位缺口401内，使得转轴410和插设部两者之间保持静止状态，从而保证桌体100保持静止状态。

[0034] 在固定槽内还设置有滑板121，上述安装部的侧壁抵靠于滑板121外表面上，滑板121的设置避免了安装部在固定槽内滑移的过程中出现卡滞现象的产生，提高了安装部滑移的平稳性。

[0035] 在转轴410的外表面上固设有把手412，把手412带动转轴410绕着两铰接座420周向转动，在转轴410的外表面上还设置有连接部413，在桌体100上设置哟与连接部413对应的连接座414，在该连接座414的中部开设有与连接部413对应的连接槽415，在初始状态下，连接部413卡设于连接槽415内，同时限位部411卡设于限位缺口401，当转轴410带动连接部413周向转动能使限位部411远离限位缺口401，从而使用者能通过安装部沿着滑板121移动而调整桌体100和支架两者之间的垂直间距，并且上述转轴410只能带动连接部413向连接槽415内侧转动，从而连接部413一直卡设于连接槽415内，保证了转轴410在横向方向上不会发生位移而影响本发明正常使用现象的产生。

[0036] 上述支架包括底板200和盖板210，盖板210盖设于底板200上且在盖板210和底板200两者之间形成有容纳腔，上述第一安装架300铰接于底板200上，在第二安装架310的下端设置有第二限位板220，第二限位板220活动设置于容纳腔内，该第二限位板220能在容纳腔内沿着底板200滑移，从而使用者能通过调节第二安装架310和第一安装架300两者之间的夹角从而调节桌面和底板200两者之间的垂直间距。

[0037] 优选地，在底板200上上开设有多个第一限位孔201，在第二限位板220上开设有多个与第一限位孔201对应的第二限位孔221，并且第一限位孔201的轴心线和第二限位孔221

的轴心线处于同一水平线上，当使用者将第二限位板220滑移至预设位置时，使用者能通过螺钉依次穿过第一限位孔201和第二限位孔221而使得第二限位板220和底板200两者保持相对静止，同时使用者能通过第一限位板400调节桌体100和底板200两者之间的垂直高度。

[0038] 在第二安装架310上铰接设置有弹性件500，在弹性件500内设置活塞杆510且活塞杆510的下端伸出弹性件500并铰接于底板200上，在底板200上设置于活塞杆510对应的安装座，该活塞杆510铰接于安装座上，弹性件500处于压缩状态且该弹性件500能产生作用于第二安装架310和安装座上的弹性力，弹性力能减少使用者在手动调节过程中所需要施加的作用力，从而方便了使用者的使用。

[0039] 在桌体100的下表面平行设置有第二桌体110，在第二桌体110的两侧均设置有固定架110，固定架110的一端设置于桌体100上，固定架110的另一端与第二桌体110相连，具体地，在固定架110上开设有安装槽，在固定架110上设置有安装螺钉，安装螺钉的一端穿过安装槽并螺纹连接于固定板120上，安装螺钉的另一端抵靠于固定架110上，从而保证了固定架110与规定板两者之间连接的稳固性，并保证桌体100和第二桌体110安装的稳固性，提高了使用者使用的安全性。

[0040] 本文中所描述的具体实施例仅仅是对本发明精神作举例说明。本发明所属技术领域的技术人员可以对所描述的具体实施例做各种各样的修改或补充或采用类似的方式替代，但并不会偏离本发明的精神或者超越所附权利要求书所定义的范围。

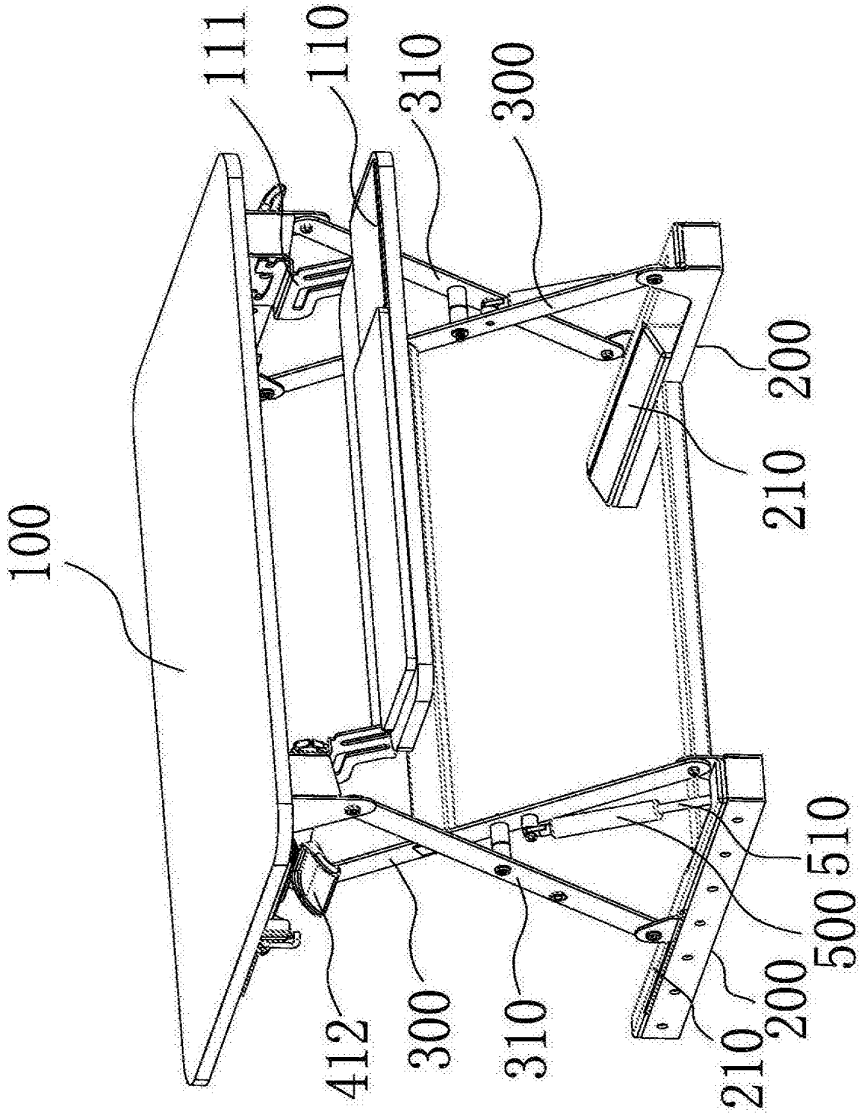


图1

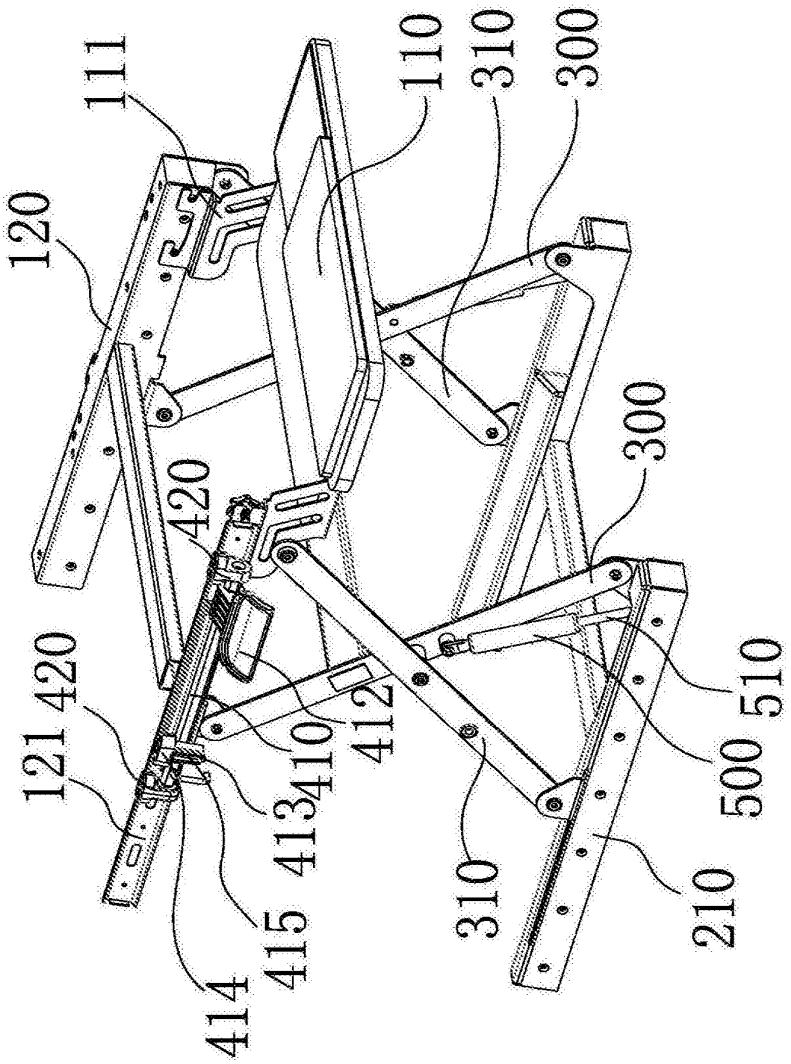

111
110
310
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414

图2

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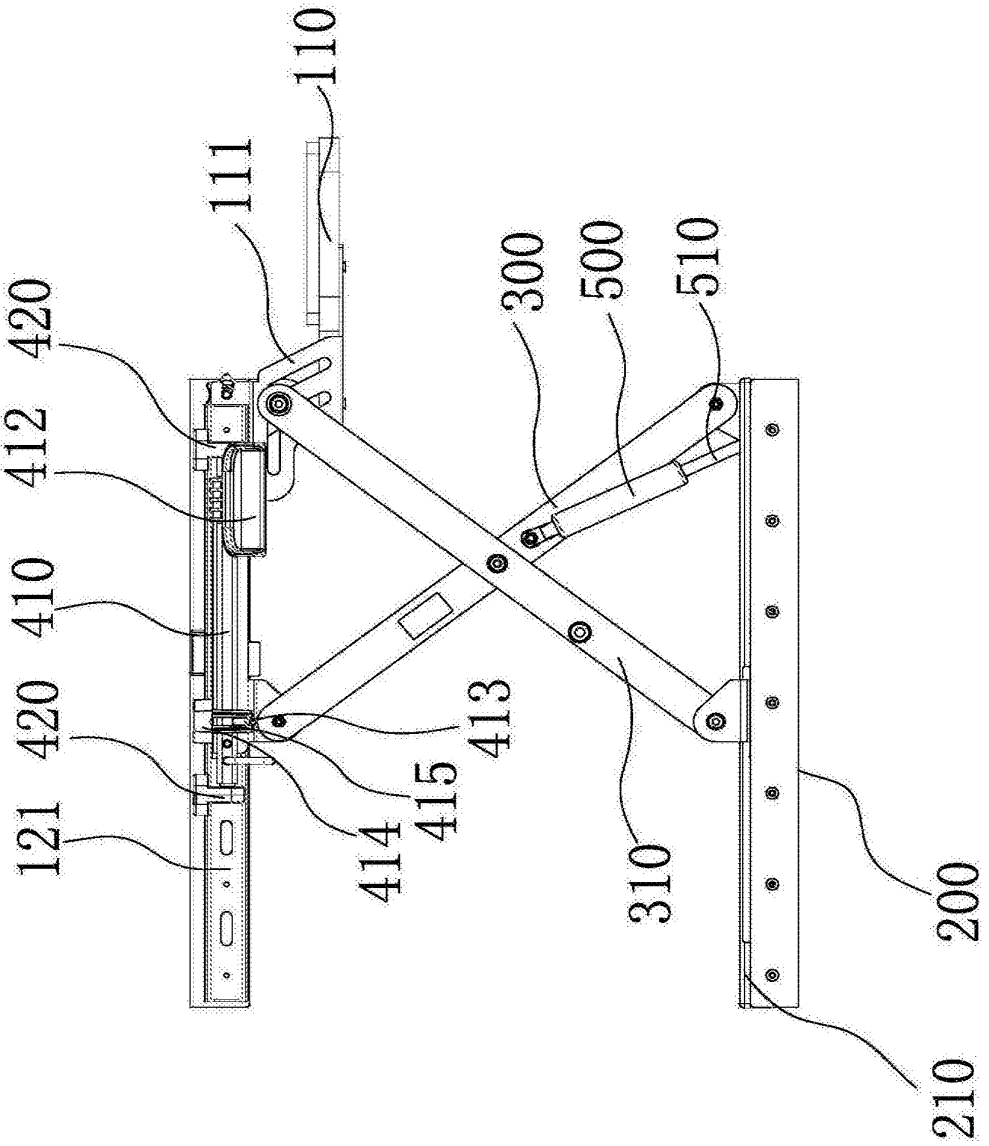


图3

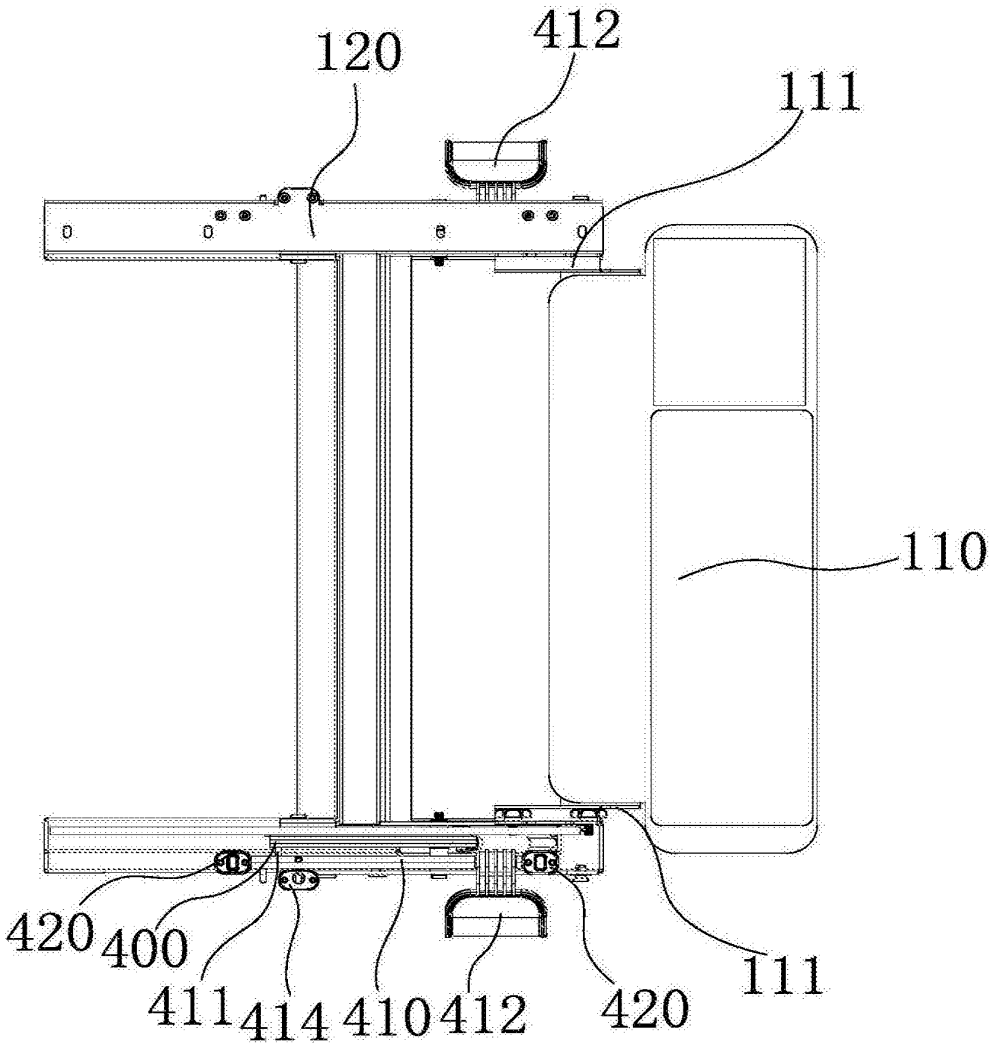


图4

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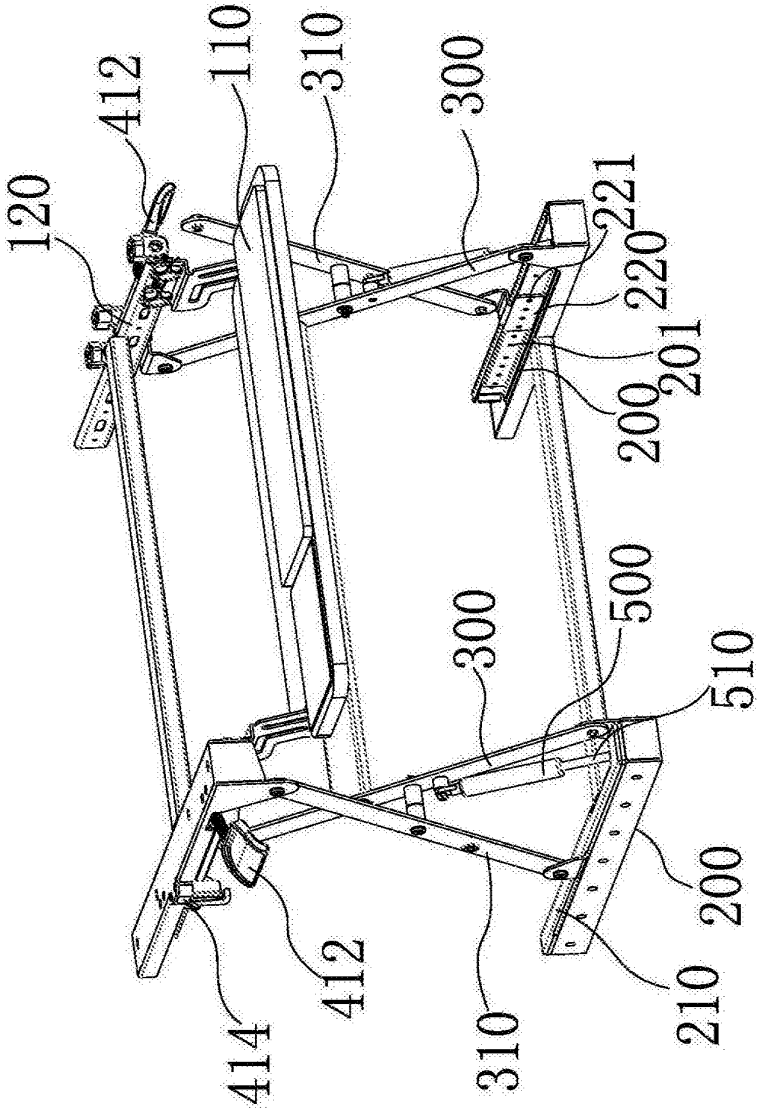


图5

Patents

X-type single-motor-driven lifting workbench

Abstract

The invention relates to the field of office furniture, in particular to an X-shaped single-motor-driven lifting workbench, which belongs to the field of intelligent office and is characterized by comprising a panel, an X-shaped cross connecting rod mechanism, a base, a control system and the like. The invention changes the operation mode of manual lifting of the conventional lifting workbench, realizes electric control by adopting the electric push rod, the control box and the hand controller, provides the X-type single-motor-driven lifting workbench, can realize a large-range working lifting area, is beneficial to people with different heights, improves the working conditions of users by utilizing the motor-driven mode, is beneficial to the health of the users, and simultaneously improves the working efficiency, thereby improving the user experience of the intelligent office equipment.

Classifications

- A47B9/00 Tables with tops of variable height

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CN110840072A

China

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Other languages: Chinese

Inventor: 不公告发明人

Current Assignee : Jiaxing Smart Technology Co Ltd

Worldwide applications

2018 CN

Application CN201810993790.6A events

2018-08-20	Application filed by Jiaxing Smart Technology Co Ltd
2018-08-20	Priority to CN201810993790.6A
2020-02-28	Publication of CN110840072A
Status	Pending

Info: Legal events, Similar documents, Priority and Related Applications

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Claims (10)

Hide Dependent

1. An X-type single motor driven lifting workbench is characterized by comprising a mechanical structure part of the lifting workbench and an electrical control part.

2. An X-type single motor driven lift table according to claim 1, consisting of two sections of tubing, each section consisting of two identical tubes. Wherein the upper ends of the two pipes at the inner side are fixed, and the lower ends are connected with the bearing nylon small pulleys to realize movement. The upper ends of the two outer pipes are connected with a bearing nylon small pulley to realize movement, and the lower ends of the two outer pipes are fixed.

3. The X-type single motor driven lifting workbench according to claim 1, wherein the power source of the lifting workbench is an electric push rod, and the movement of the bearing nylon small pulley is realized by the extension and contraction of the push rod. The electric push rod converts rotary motion into linear motion through the direct current motor, the worm gear and the screw rod, and has a self-locking function.

4. The X-type single motor driven lifting workbench according to claim 1, wherein four foot pads are arranged below the base, so as to achieve the effects of skid resistance and stability enhancement.

5. The single motor driven elevating table as set forth in claim 1, wherein the control system consists of hand controller and control box or Y line, switch power supply and hand controller.

6. The X-type single motor driven elevating table as claimed in claim 1, wherein the elevating table is raised and lowered by operating the raising and lowering keys of the hand controller by cooperation of the control system and the hand controller.

7. An X-type single motor driven lifting workbench according to claim 1, wherein the lifting structure of the lifting workbench is composed of X-type cross connecting rods. The crossed connecting rods are separated by a certain distance through the shaft sleeves, and the function of preventing hands from being clamped is achieved.

8. The X-type single motor driven lifting workbench according to claim 1, wherein a USB interface is arranged on the hand controller.

9. An X-type single motor driven elevating table as claimed in claim 1, wherein a life monitoring sensor is installed between the panel and the base when the control system of the hand controller and the control box is used. Can detect the organism, feed back to control box, elevating platform and make a response in real time.

10. An X-type single motor driven elevating table as claimed in claim 1, wherein a voice function is attached when a control system of a hand controller and a control box is used. The user can control the lifting of the lifting platform in a voice mode.

Description

X-type single-motor-driven lifting workbench

Technical Field

The invention belongs to the field of intelligent office, and particularly relates to an X-type single-motor-driven lifting workbench.

Background

At present, a large number of lifting workbenches are used in European and American countries, the most common is manual lifting workbenches, and domestic application is gradually accepted and started. Its main function is that help official working or study crowd do not stand for a long time and sit, realize sitting and standing and do office in turn. Especially, the lifting workbench can be adjusted according to human engineering, and is suitable for people with different heights. With the fact that people sit for working for longer time and are aware of the fact that sitting for a long time is unfavorable to work efficiency, people start trying to work in a sitting-standing alternative mode, and the sitting-standing alternative mode becomes a popular healthy working mode. The workbench can be used as a desk, a bed computer desk and the like. Can be used independently or placed on the original table for height adjustment. Can be folded at any time, and the placing space is reduced. The existing lifting workbench is mainly manual, and the lifting of the workbench is realized through the extension and retraction of a gas spring. Manual formula elevating platform, the resistance of overcoming the air spring is great, and under some occasions, local crowd all is very difficult to compress it, is unfavorable for very much drawing in of workstation. Compared with the manual mode, the motor-driven lifting workbench is more beneficial to automatic lifting, so that the requirement of a consumer on product use experience cannot be met in the prior art, the urgent need of the market is met, and the defects of the prior art are overcome.

Disclosure of invention

The invention avoids the defects in the prior art, so that the workbench can be lifted more conveniently and is simpler and more labor-saving to use. And provides an X-type single motor driven elevating table. This workstation utilizes motor drive's mode, has improved user of service's operating condition, has improved work efficiency when being favorable to user of service healthy to improve the user experience of wisdom office equipment.

In order to achieve the purpose, the invention provides the following technical scheme:

the driving device is an electric push rod, and an executing mechanism with a self-locking function is driven by a direct current motor.

The X-type single motor driven elevating worktable includes panel, base and X-type cross link mechanism. The X-shaped cross link mechanism is positioned between the panel and the base, one part of the upper end surface of the X-shaped scissor mechanism is hinged with the panel, the other part of the upper end surface of the X-shaped scissor mechanism is connected with the panel in a sliding mode, one part of the lower end of the X-shaped scissor mechanism is hinged with the base, and the other part of the lower end of the X-shaped scissor mechanism is connected with the base in a sliding mode. The sliding connection part is connected by a small nylon pulley which moves in a corresponding track groove.

The X-shaped cross connecting rod mechanism comprises four pipes and connecting fittings, and two middle parts close to the outside are hinged with two middle parts in the inside respectively. The upper ends of the two pipes inside are hinged with the driving end of the driving device, the lower ends of the two pipes are hinged with equal-edge angle steel on the base, the two upper ends close to the outside are hinged with a panel mounting support on the panel, and the lower ends are restrained in a groove of a pulley mounting plate of the base.

The hand controller is arranged below the panel, and a display screen and an indicator lamp are arranged on the hand controller, so that the height of the current panel relative to the base can be displayed at any time. The indicator light can display different colors for different conditions of the lifting table.

Preferably, the hand controller is provided with a USB interface, and data exchange or charging function is carried out on any product which can be connected with the USB.

Preferably, a life monitoring sensor is arranged between the panel and the base, an unknown object or an object with life breath can be detected, and once the object is detected, the lifting motion is stopped and an alarm is given.

Preferably, the control box is provided with a voice function, and a user can control the lifting of the lifting platform through voice.

X type elevating platform mainly solve current elevating platform and pass through the problem that manual control workstation lift operation is not convenient. Mainly comprises two processes of ascending and descending. The ascending and descending of the workbench are realized by operating the keys on the hand controller.

Compared with the prior art, the lifting device is simple in structure, convenient to use, capable of achieving a large lifting range and wide in application range.

Drawings

Fig. 1 is a schematic three-dimensional structure diagram of an X-type single motor driven lifting workbench according to the present invention.

Fig. 2 is a front view of an X-type single motor driven elevating table of the present invention.

Fig. 3 is a wiring diagram of an electric appliance of a first embodiment of the X-type single motor driven elevating table of the present invention.

Fig. 4 is a wiring diagram of an electric appliance of a second embodiment of the X-type single motor driven elevating table of the present invention.

In the figure: 1. the novel multifunctional desk comprises a base, 2 parts of equilateral angle steel, 3 parts of a pipe, 4 parts of a polished rod, 5 parts of an electric push rod, 6 parts of a panel, 7 parts of a panel mounting support, 8 parts of a pipe, 9 parts of a ball cap-shaped nut, 10 parts of a connecting rod, 11 parts of a pulley mounting plate, 12 parts of a pulley mounting plate, 13 parts of a control box, 14 parts of a rod, 15 parts of a bearing nylon small pulley, 16 parts of a reinforcing rib, 17 parts of a desk mat, 18 parts of a pulley mounting plate, 19 parts of a foot mat, 20 parts of a panel mounting support, 30 parts of a power line, 31 parts of a switching power.

Detailed Description

The invention will be further explained and supplemented with reference to the drawings, without being restricted thereto.

Example 1

As shown in fig. 1, four foot pads 19 are installed at the bottom of the base 1, and play a role in preventing skidding and enhancing stability. Two equilateral angle steels 2 and two pulley mounting plates 18 are welded on the base 1. The lower ends of the two pipes 3 are connected to the base 1 through the matching of the internal threads of the polished rod 4 and the bolts. The lower ends of the two pipes 8 are connected with a bearing nylon small pulley 15 which is restrained in a groove of a pulley mounting seat 18. Both pipes 3 and 8 are connected by a connecting rod 10. The upper end of the pipe 8 is hinged with the panel mounting support 20 through a bolt, the upper end of the pipe 3 is connected with a small nylon pulley 15, and the pulley 15 is restrained in a groove of the pulley mounting plate 11. The tail ends of the two pipes 3 are provided with a rod 14, the panel mounting support 7 is connected with the panel 6, a motor mounting tail seat 20 is further arranged below the panel 6, and the motor mounting tail seat 20 is provided with an electric push rod 5. The lever 14 is connected to the slider of the electric putter 5. Four table pads 17 are arranged at the

four edges under the panel 6. When the desk is lowered to the lowest, the upper part and the lower part are prevented from colliding, and the desk mat plays a role in protection. A hand controller 12 and a control box 13 are arranged below the panel 6. One end of the control box 13 is connected with alternating current, the other end is connected with the hand controller and the electric push rod, and the upward and downward keys of the hand controller 12 are operated to realize the lifting of the workbench through a chip arranged in the control box. The specific wiring is shown in fig. 3.

When the workbench is required to descend, the descending button is pressed, the electric push rod extends outwards to push the small nylon pulley 15 at the upper end of the pipe 3, and meanwhile, the small nylon pulley 15 at the lower end of the pipe 8 also moves in the same direction. The pipe rotates around the connecting rod 10.

When the workbench is required to ascend, the upward button is pressed, the electric push rod retracts inwards, the nylon small pulley 15 at the upper end of the pipe 3 is pulled back, and meanwhile, the nylon small pulley 15 at the lower end of the pipe 8 also moves in the same direction. The pipe rotates around the connecting rod 10.

When this embodiment is selected, the control box has the following functions.

A slow start function: when the height of the table top is adjusted, the process of the table top from the static state to the running state is a slow process. The running speed of the desktop is changed from slow to fast.

A slow stop function: when the height of the desktop is not adjusted, the process of the desktop from the running state to the static state is a slow process. The running speed of the desktop is from high to low to stop.

The anti-pinch function is as follows: in the process of adjusting the height of the desktop, when the desktop descends, the desktop meets an obstacle, and at the moment, the desktop can automatically rebound upwards to run. When the desktop is lifted, a barrier is pressed on the desktop instantly, and the desktop can automatically rebound to move downwards.

The learning function is as follows: the controller can memorize the lowest position and the highest position through key operation.

Limiting function: when the height of the table top is adjusted, the table top can automatically stop when running to the highest or lowest mechanical zero point so as to avoid mechanical impact.

A position memory function: the power failure at any position can be realized by adjusting the height of the desktop, and the controller can know the current position height.

Energy-saving power-down function: after stopping adjusting the desktop, the controller will automatically turn off the power at 15S. The key is automatically turned on when the desktop is adjusted next time.

The panel function of the hand controller: 3-digit digital tube status information display, 4 groups of position memory function keys, ascending/descending function key, M function key.

And (4) voice function: the user can control the lifting of the lifting platform through voice.

A sensor is arranged between the panel 6 and the base 1, when the lifting workbench is in the process of ascending or descending, once an obstacle or a living being with life breath occurs between the panel 6 and the base 1, the workbench stops moving at once. The hand controller displays red color, and when the obstacle is eliminated, the color is restored to green. When it returns to green, it can operate normally.

Example 2

As shown in fig. 1, four foot pads 19 are installed at the bottom of the base 1, and play a role in preventing skidding and enhancing stability. Two equilateral angle steels 2 and two pulley mounting plates 18 are welded on the base 1. The lower ends of the two pipes 3 are connected to the base 1 through the matching of the internal threads of the polished rod 4 and the bolts. The lower ends of the two pipes 8 are connected with a bearing nylon small pulley 15 which is restrained in a groove of a pulley mounting seat 18. Both pipes 3 and 8 are connected by a connecting rod 10. The upper end of the pipe 8 is hinged with the panel mounting support 20 through a bolt, the upper end of the pipe 3 is connected with a small nylon pulley 15, and the pulley 15 is restrained in a groove of the pulley mounting plate 11. The tail ends of the two pipes 3 are provided with a rod 14, the panel mounting support 7 is connected with the panel 6, a motor mounting tail seat 20 is further arranged below the panel 6, and the motor mounting tail seat 20 is provided with an electric push rod 5. The lever 14 is connected to the slider of the electric putter 5. Four table pads 17 are arranged at the four edges under the panel 6. When the desk is lowered to the lowest, the upper part and the lower part are prevented from colliding, and the desk mat plays a role in protection. The hand controller 12 and the switching power supply 31 are arranged below the panel 6. One end of the switch power supply 31 is connected with alternating current, the other end is connected with a Y line, the other line of the Y line on the same side of the switch power supply 31 is connected with the hand controller, the other end is connected with the electric push rod 5, and the lifting of the workbench is realized by operating the upward and downward keys of the hand controller 12. The specific wiring is shown in fig. 4.

When the workbench is required to descend, the descending button is pressed, the electric push rod extends outwards to push the small nylon pulley 15 at the upper end of the pipe 3, and meanwhile, the small nylon pulley 15 at the lower end of the pipe 8 also moves in the same direction. The pipe rotates around the connecting rod 10.

When the workbench is required to ascend, the upward button is pressed, the electric push rod retracts inwards, the nylon small pulley 15 at the upper end of the pipe 3 is pulled back, and meanwhile, the nylon small pulley 15 at the lower end of the pipe 8 also moves in the same direction. The pipe rotates around the connecting rod 10.

Similar Documents

Publication	Publication Date	Title
CN204635550U	2015-09-16	Can the intelligent cabinet of automatic lifting
CN2796510Y	2006-07-19	Height regulatable multipurpose table
CN209058258U	2019-07-05	Electric elevatable table
CN110840072A	2020-02-28	X-type single-motor-driven lifting workbench
CN210482961U	2020-05-08	Workstation convenient to adjust for building construction

CN201356298Y	2009-12-09	Automatic lifting bed with safety device
CN210870326U	2020-06-30	Electric lifting table
CN208388245U	2019-01-18	A kind of electric lifting bedstead
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CN109106115A	2019-01-01	A kind of electric lifting chair with deceleration device
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CN208540978U	2019-02-26	A kind of novel elevating machine
CN212098624U	2020-12-08	Lifting table for motor home
CN2403279Y	2000-11-01	Table with top of variable height
CN210383093U	2020-04-24	Electric heating table lifting driver with hand clamping prevention function
CN107594906A	2018-01-19	Pressure liftable electric heating tea table
CN209186128U	2019-08-02	A kind of intelligent elevated bed and house system
CN214312158U	2021-09-28	Liftable practical training platform for automobile teaching
CN215014446U	2021-12-07	Automatic lifting table
CN209403996U	2019-09-20	A kind of multifunctional dress design work platform
CN211984294U	2020-11-24	Electric lifting table
KR101947612B1	2019-05-21	Moving position desk equipment

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201810993790.6A	2018-08-20	2018-08-20	X-type single-motor-driven lifting workbench

Applications Claiming Priority (1)

Application	Filing date	Title
CN201810993790.6A	2018-08-20	X-type single-motor-driven lifting workbench

Legal Events

Date	Code	Title	Description
2020-02-28	PB01	Publication	
2020-02-28	PB01	Publication	
2022-02-25	WD01	Invention patent application deemed withdrawn after publication	**Application publication date:** 20200228
2022-02-25	WD01	Invention patent application deemed withdrawn after publication	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
Nylon		claims,description	17	0.000

≈ nylon	claims,description	17	0.000
≈ elevating	claims,description	14	0.000
≈ effects	claims	1	0.000

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(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 110840072 A
(43)申请公布日 2020.02.28

(21)申请号 201810993790.6

(22)申请日 2018.08.20

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(51)Int.Cl.
A47B 9/00(2006.01)
A47B 13/02(2006.01)

权利要求书1页 说明书3页 附图2页

(54)发明名称

一种X型单电机驱动升降工作台

(57)摘要

本发明涉及办公家具领域，尤其是设计一种X型单电机驱动升降工作台，属于智慧办公领域，其特征在于，包括面板、X型交叉连杆机构、底座、控制系统等。本发明改变目前升降工作台手动升降的操作方式，采用电动推杆、控制盒和手控器来实现电动控制，提供了一种X型单电机驱动升降工作台，能实现大范围的工作升降区域，利于不同身高的人群，利用电机驱动的方式，改善了使用人员的工作条件，有利于使用人员健康的同时提高了工作效率，从而改善智慧办公设备的用户体验。

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1.一种X型单电机驱动升降工作台，其特征在于，包括升降台机械结构部分和电气控制部分。

2.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，由两部分管子组成，每一部分都由两根相同的管子组成。其中内侧两根管子上端固定，下端连接轴承尼龙小滑轮并实现移动。外侧两根管子上端连接轴承尼龙小滑轮并实现移动，下端固定。

3.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，升降台的动力源为电动推杆，通过推杆的伸缩来实现的轴承尼龙小滑轮移动。所述的电动推杆，通过直流电机、蜗轮蜗杆和丝杆，将旋转运动转换为直线运动，并有自锁功能。

4.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，底座下方有四个脚垫，可以起到防滑和增强稳定性的作用。

5.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，控制系统采用手控器和控制盒或Y线、开关电源和手控器组成。

6.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，利用控制系统和手控器的配合，通过操作手控器的上升与下降键来实现升降桌的上升与下降。

7.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，升降台升降结构采用X型交叉连杆组成。交叉连杆之间通过轴套分隔开一定的距离，起到防夹手的作用。

8.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，在手控器上面有USB接口。

9.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，当采用手控器和控制盒这套控制系统时，在面板与底座之间安装有生命监测传感器。能对生物进行检测，实时反馈给控制盒，升降台并做出反应。

10.根据权利要求1所述的一种X型单电机驱动升降工作台，其特征在于，当采用手控器和控制盒这套控制系统时，附带语音功能。使用者可以通过语音的形式来控制升降台的升降。

一种X型单电机驱动升降工作台

技术领域

[0001] 本发明属于智慧办公领域，具体涉及一种X型单电机驱动升降工作台。

背景技术

[0002] 目前在欧美国家已经开始大量使用升降工作台，最为普遍的是手动升降工作台，而国内也逐渐认可和开始应用。它的主要功能是帮助办公或者学习人群告别久坐，实现坐站交替办公。尤其是升降工作台可以根据人体工学进行调节，适用不同身高人群。随着人们坐着办公的时间越来越长，人们逐渐意识到久坐反而不利于工作效率，人们开始尝试坐站交替式办公，使用坐站交替式办公成为一种流行的健康办公方式。工作台可以作为书桌、床上电脑桌等使用。可以单独使用，也可以放置在原有的桌上进行高度调节。随时可以收拢，减小其放置空间。现有的升降工作台以手动为主，通过气弹簧的伸缩来实现工作台的升降。手动式升降工作台，克服气弹簧的阻力较大，部分场合下，局部人群都是很难对其进行压缩，非常不利于工作台的收拢。相比较于手动的而言，电机驱动的更利于自动升降，因此，现有技术已经不能满足消费者对产品使用体验的需求，为适应市场的迫切需要，规避现有技术的缺点，本发明提供了一种X型单电机驱动升降工作台。

发明内容

[0003] 本发明皆在规避上述现有技术中的缺点，使得工作台升降更便捷，使用更简单和省力。而提供一种X型单电机驱动升降工作台。该工作台利用电机驱动的方式，改善了使用人员的工作条件，有利于使用人员健康的同时提高了工作效率，从而改善智慧办公设备的用户体验。

[0004] 为了达到上述目的，本发明提供如下技术方案：

[0005] 所述驱动装置是电动推杆，由直流电机驱动带有自锁功能的执行机构。

[0006] X型单电机驱动升降工作台，包括面板、底座和X型交叉连杆机构。所述X型交叉连杆机构处于面板与底座中间，所述X型剪式机构上端面的一部分与面板铰接，另一部分与面板滑动连接，X型剪式机构下端的一部分与底座铰接，另一部分与底座滑动连接。滑动连接处采用尼龙小滑轮连接，尼龙小滑轮在相应的轨道凹槽中移动。

[0007] 所述X型交叉连杆机构包括四根管子以及连接配件，靠近外面的两根中部与里面的两根中部分别铰接在一起。里面的两根管子上端与所述驱动装置的驱动端铰接，并且这两根管子下端与底座上的等边角钢铰接，靠近外面的两根上端与面板上的面板安装支座铰接，下端约束在底座滑轮安装板的凹槽中。

[0008] 所述的手控器安装在面板下方，上面有显示屏与指示灯，可以随时显示当前面板相对于底座的高度。指示灯会对升降桌不同情况而显示不同的颜色。

[0009] 优选的，所述的手控器上有USB接口，对任意与USB可相连的产品，进行数据交换或实现充电功能。

[0010] 优选的，所述的面板与底座之间安装有生命监测传感器，可对不明物体或带有生

命气息的物体进行检测，一旦检测到，停止升降运动并报警。

[0011] 优选的，所述的控制盒内附带语音功能，使用者可通过语音来控制升降台的升降。

[0012] 所述的X型升降工作台主要解决现有升降工作台通过手动控制工作台升降操作不便捷的问题。主要包括上升与下降两个过程。工作台上升下降均通过操作手控器上面的按键来实现。

[0013] 与现有技术相比，本发明的结构简单、使用方便，能够实现大的升降范围，适用范围广。

附图说明

[0014] 附图1为本发明的一种X型单电机驱动升降工作台立体结构示意图。

[0015] 附图2为本发明的一种X型单电机驱动升降工作台主视图。

[0016] 附图3为本发明的一种X型单电机驱动升降工作台的实施例一的电器接线图。

[0017] 附图4为本发明的一种X型单电机驱动升降工作台的实施例二的电器接线图。

[0018] 图中：1.底座，2.等边角钢，3.管子，4.光杆，5.电动推杆，6.面板，7.面板安装支座，8.管子，9.球头盖形螺母，10.连杆，11.滑轮安装板，12.滑轮安装板，13.控制盒，14.杆，15.轴承尼龙小滑轮，16.加强筋，17.桌垫，18.滑轮安装板，19.脚垫，20.面板安装支座，30.电源线，31.开关电源，32.Y线。

具体实施方式

[0019] 以下结合附图对本发明进一步解释和补充，对本发明不构成任何限制。

[0020] 实施例1

[0021] 如图1所示，所述底座1底部安装有四个脚垫19，起到防滑与增强稳定性的作用。底座1上焊接有两个等边角钢2和两个滑轮安装板18。两根管子3下端通过光杆4的内螺纹与螺栓的配合，连接在底座1上。两根管子8下端与轴承尼龙小滑轮15连接，滑轮约束在滑轮安装座18的凹槽中。两根管子3和两根管子8都通过连杆10连接。管子8上端通过螺栓与面板安装支座20铰接，管子3上端与尼龙小滑轮15连接，滑轮15约束在滑轮安装板11的凹槽中。两根管子3末端装有一杆14，面板安装支座7与面板6相连，面板6下方还装有电机安装尾座20，电机安装尾座20上装有一款电动推杆5。杆14与电动推杆5的拉头相连。面板6下方四个边沿处装有四个桌垫17。当桌子下降到最低时，防止上下部件碰撞，桌垫起到保护的作用。面板6下方装有手控器12和控制盒13。控制盒13的一端与交流电相连，另一端与手控器和电动推杆相连，通过控制盒内置芯片，操作手控器12的向上与向下键来实现工作台的升降。具体接线如图3所示。

[0022] 当工作台需要下降时，按下下降的按键，电动推杆向外伸出，推动管子3上端的尼龙小滑轮15，与此同时管子8下端的尼龙小滑轮15也往相同的方向移动。管子绕连杆10旋转。

[0023] 当工作台需要上升时，按下向上的按键，电动推杆向内缩回，拉回管子3上端的尼龙小滑轮15，与此同时管子8下端的尼龙小滑轮15也往相同的方向移动。管子绕连杆10旋转。

[0024] 当选择此实施例时，控制盒带有以下功能。

[0025] 慢启动功能：在进入调节桌面高度时，桌面由静止状态到运行状态的过程是一个缓慢的过程。桌面的运行速度由慢到快。

[0026] 慢停功能：在退出调节桌面高度时，桌面由运行状态到静止状态的过程是一个缓慢的过程。桌面的运行速度由快到慢直到停止。

[0027] 防夹功能：调节桌面高度过程中，桌面下降时，遇到障碍物，此时，桌面会自动往上反弹运行。桌面在上升时，有障碍物瞬间压在桌面上，桌面会自动反弹向下运行。

[0028] 学习功能：控制器能通过按键操作可以对最低、最高位置进行记忆。

[0029] 限位功能：调节桌面高度时，桌面在运行到最高或者最低机械零点时，会自动停止，以免进行机械撞击。

[0030] 位置记忆功能：调节桌面高度到任意位置掉电，控制器都能知道当前的位置高度。

[0031] 节能掉电功能：在停止调节桌面后，控制器会在15S自动关闭电源。下次调节桌面时按键自动开机。

[0032] 手控器面板功能：3位数码管状态信息显示、4组位置记忆功能键、升/降功能键、M功能键。

[0033] 语音功能：使用者可通过语音来控制升降台的升降。

[0034] 在面板6和底座1之间装有传感器，当升降工作台处于上升或下降的途中，面板6与底座1之间一旦出现障碍物或带有生命气息的生物，工作台立即停止当前运动。手控器上显示红色，当障碍排除时，恢复成绿色。当恢复成绿色时，可正常操作。

[0035] 实施例2

[0036] 如图1所示，所述底座1底部安装有四个脚垫19，起到防滑与增强稳定性的作用。底座1上焊接有两个等边角钢2和两个滑轮安装板18。两根管子3下端通过光杆4的内螺纹与螺栓的配合，连接在底座1上。两根管子8下端与轴承尼龙小滑轮15连接，滑轮约束在滑轮安装座18的凹槽中。两根管子3和两根管子8都通过连杆10连接。管子8上端通过螺栓与面板安装支座20铰接，管子3上端与尼龙小滑轮15连接，滑轮15约束在滑轮安装板11的凹槽中。两根管子3末端装有一杆14，面板安装支座7与面板6相连，面板6下方还装有电机安装尾座20，电机安装尾座20上装有一款电动推杆5。杆14与电动推杆5的拉头相连。面板6下方四个边沿处装有四个桌垫17。当桌子下降到最低时，防止上下部件碰撞，桌垫起到保护的作用。面板6下方装有手控器12和开关电源31。开关电源31的一端与交流电相连，另一端与Y线相连，Y线在开关电源31同侧的另一根线与手控器相连，另一端与电动推杆5相连，通过操作手控器12的向上与向下键来实现工作台的升降。具体接线如图4所示。

[0037] 当工作台需要下降时，按下下降的按键，电动推杆向外伸出，推动管子3上端的尼龙小滑轮15，与此同时管子8下端的尼龙小滑轮15也往相同的方向移动。管子绕连杆10旋转。

[0038] 当工作台需要上升时，按下向上的按键，电动推杆向内缩回，拉回管子3上端的尼龙小滑轮15，与此同时管子8下端的尼龙小滑轮15也往相同的方向移动。管子绕连杆10旋转。

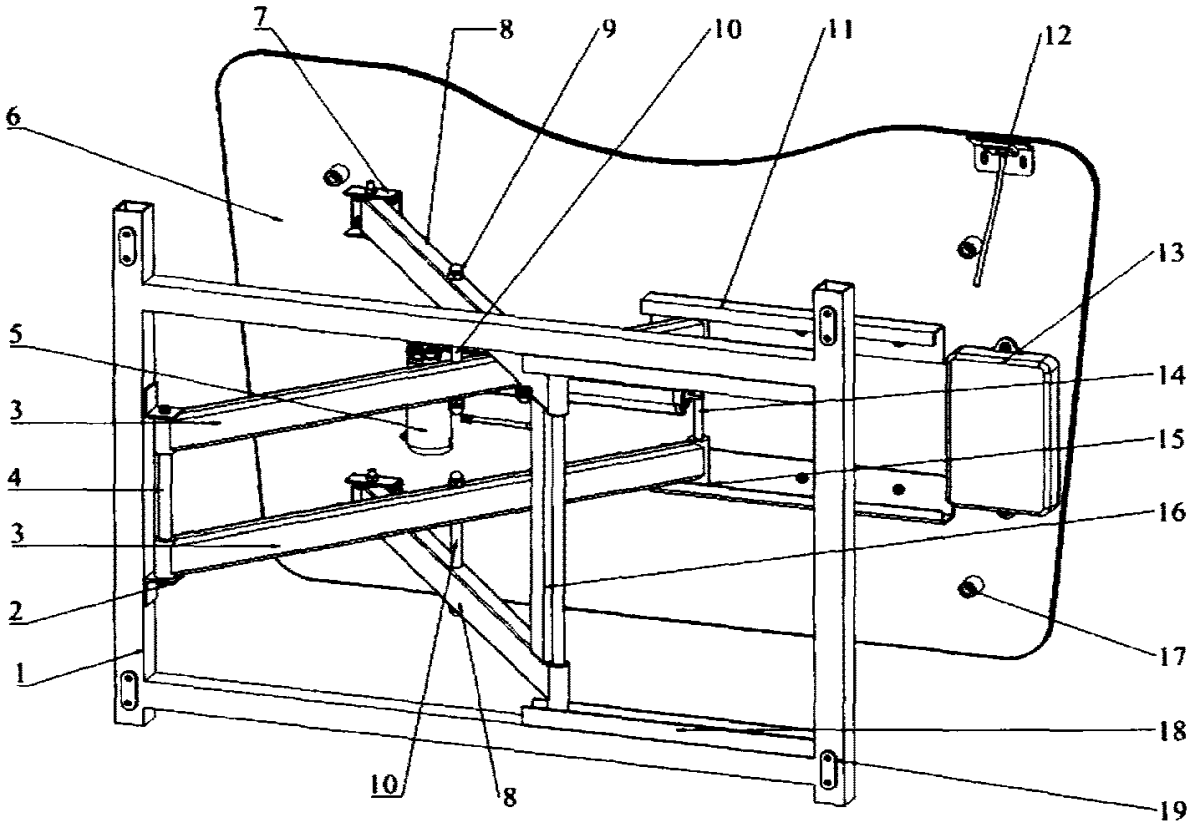


图1

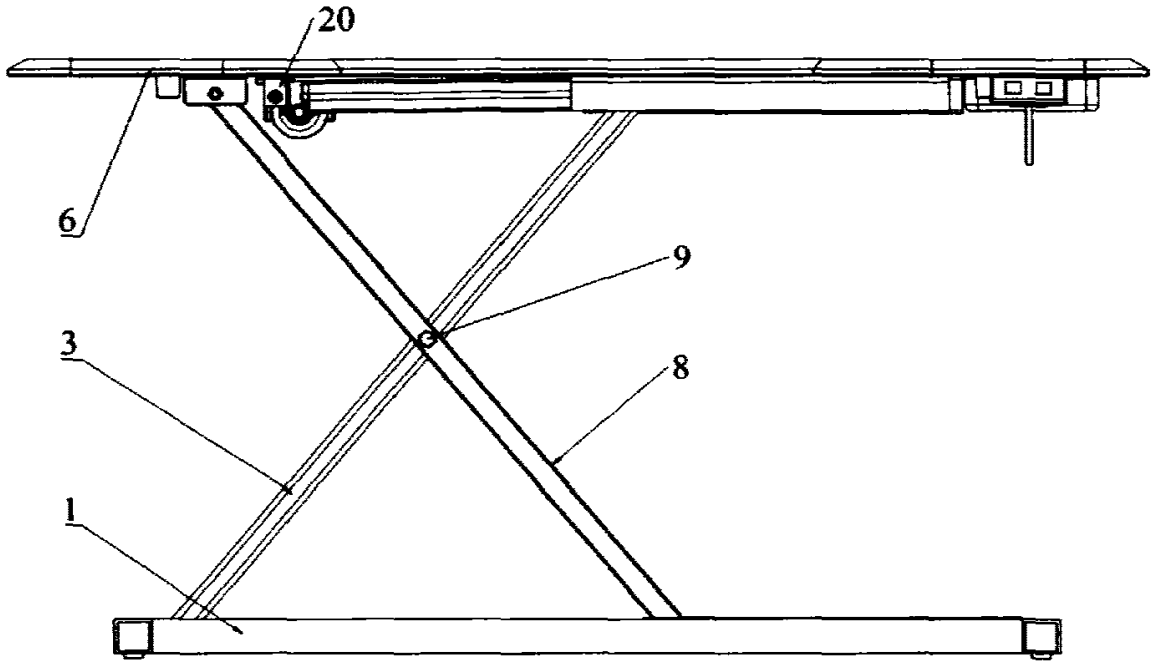


图2

6

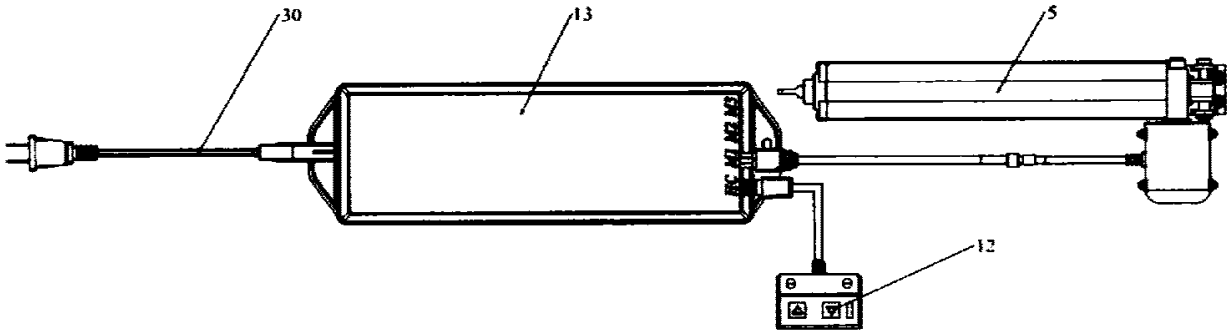


图3

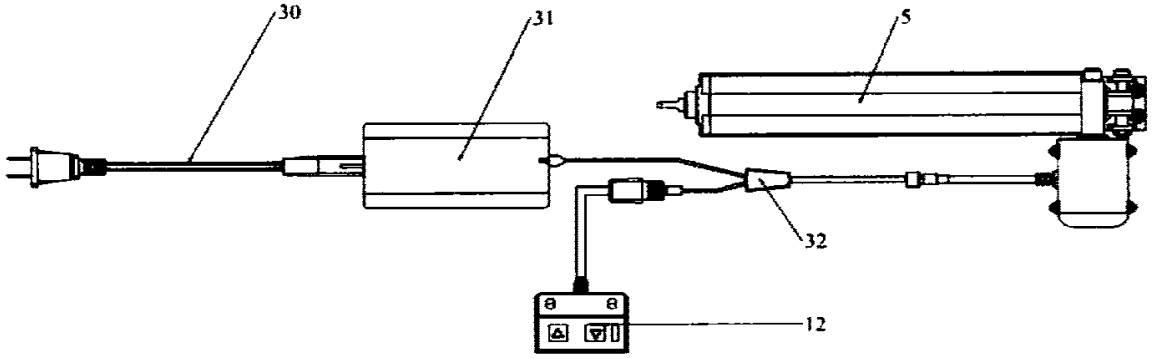
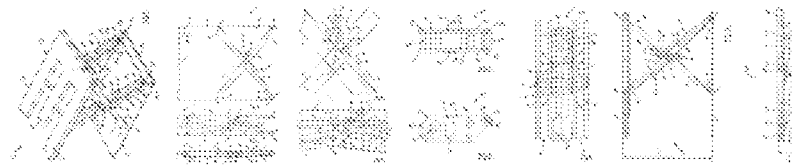


图4

Patents

Scissor type lifting table

Images (8)



Classifications

⊗ A47B9/16 Tables with tops of variable height with means for, or adapted for, inclining the legs of the table for varying the height of the top, e.g. with adjustable cross legs

View 2 more classifications

EP0613852B1

European Patent Office

Download PDF Find Prior Art Similar

Other languages: German, French

Inventor: Hermann Janzen

Current Assignee : HYDRAULIK TECHNIEK

Worldwide applications

1993 BE 1994 DE EP AT

Application EP94102702A events ⓘ

1993-03-02 Priority to DE9302967U

1993-03-02 Priority to DE9302967U

1994-02-23 Application filed by HYDRAULIK TECHNIEK

1994-09-07 Publication of EP0613852A1

1997-11-05 Application granted

1997-11-05 Publication of EP0613852B1

2014-02-23 Anticipated expiration

Status Expired - Lifetime

Info: Patent citations (18), Cited by (9), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, EPO GPI, EP Register, Global Dossier, Discuss

Claims (13) Hide Dependent

1. A scissor-type lifting table comprising between a bottom frame (2) which is on the floor side and an upper table top (3) at least one pair of scissor arms (5, 6; 7, 8) connected to one another in a universal joint (4) and which, in oppositely disposed end portions (14, 15; 16, 17) are in each case rigidly connected at one end to a pivot bearing (18, 19) and at the other via a loose bearing (20, 21) on the bottom frame (2) or on the table top (3), whereby this starting position which is disposed close to the bottom frame is in the region of at least one scissor arm (6, 8) subject to an expanding lever (40) with a pressure roller (44; 144) engaging underneath it in order to initiate a starting travel of the table top (3), the expanding lever (40) being disposed at the outer end (39) of the piston rod of a piston/cylinder unit (23, 24), characterised in that the expanding lever (40) is constructed as a lifting and swinging arm (42) disposed between respective inner members (25', 26'; 27', 28') of at least one of the pairs of scissor arms (5, 6; 7, 8) and which has at least at one end a connecting part (43, 43') coaxial with the universal joint (4) and which has at the other the pressure roller (44) and axially parallel between the universal joint (4) and the spindle (45) of the pressure roller a piston rod articulation (38) which, in the lowered position, is disposed above the median longitudinal plane (35) of the piston/cylinder unit (23; 24).

    2. A scissor type lifting table according to claim 1, characterised in that via a bracing arrangement (31, 32) which fixes the cylinder (33, 34) of the piston/cylinder unit (23, 24) in the end part close to the pivot bearing (18, 19) of the scissor arm (6, 8), the lifting swinging arm (42) on the one hand, the piston rod articulation (38) on the other and the thrust roller (44) constitutes an operative connection with the table top (3) and in that this latter can be moved into an extreme lifted position by only one piston/cylinder unit (23, 24) which, in every phase of lifting (H; H'; H"), has a substantially constant internal cylinder pressure, only one such unit (23, 24) being provided per pair of scissor arms (5, 6; 7, 8) and engaging under the table top (3).

    3. A scissor type lifting table according to claim 1 or 2, characterised in that the lifting swinging arm (42) has a shaped part (47, 47') which limits the pivot range in a first lifting phase (H') via an abutment member (46, 46') braced in the region of whichever is the inner arm (25', 26').

    4. A scissor type lifting table according to one of claims 1 to 3, characterised in that the table top (3) comprising a supporting area (48) on the under side of the table top has a pressure roller (44) disposed on the lifting swinging arm (42) so engaging under it that a bracing engagement is formed in a first lifting phase (H') bounded by the inward pivoting of the abutment member (46, 46') into the shaped part (47, 47').

    5. A scissor type lifting table according to one of claims 1 to 4, characterised in that the scissor arm (6) connected by a loose bearing (20) to the table top (3) is connected to the table top (3) via an element (51) engaging under the roller and the length (50) of which is attuned to the pivoting part of the lifting swinging arm (42).

6. A scissor type lifting table according to one of claims 1 to 5, characterised in that the cylinder (33, 34) of the piston/cylinder unit (23, 24) has in the region of the respective pivot bearing (19, 19') a bracing (53, 53') which is spaced apart from the longitudinal central plane (35, 35') thereof.

7. A scissor type lifting table according to one of claims 1 to 6, characterised in that the lifting swinging arm (42) is constructed as a transversely reinforced double member (55) between the thrust plates (56, 57) of which there is a piston rod articulation (38) which co-operates with the connecting part (43) in the region of the intersecting joint (4) and the pressure roller (44).

8. A scissor type lifting table according to one of claims 1 to 7, characterised in that the thrust plates (56, 57) disposed between a particular pair of scissor arms (25', 26', 27', 28') have in each case a groove (58) forming the shaped part (47, 47') into which it is possible for a pin (59, 59') to pivot which serves as an abutment member (46, 46') on the inner arms (25', 26') of the pairs (5, 6) of scissor arms.

9. A scissor type lifting table according to one of claims 1 to 8, characterised in that the thrust plates (56, 57) are provided with a coaxial connecting sleeve (43') in the region of the universal joint (4).

10. A scissor type lifting table according to one of claims 1 to 9, characterised in that two pairs (5, 6 and 7, 8) of scissor arms are each provided with a piston/cylinder unit (23, 24) and a lifting swinging arm (42, 42').

11. A scissor type lifting table according to one of claims 1 to 10, characterised in that the table top (3) is in the supporting region (48) for the supporting roller (44) provided with a stabilising plate on the under side.

12. A scissor type lifting table according to one of claims 1 to 11, characterised in that the piston/cylinder unit (23, 24) is provided with an inlet trough (60) in the region of the piston rod end (39).

13. A scissor type lifting table according to one of claims 1 to 12, characterised in that the expanding lever (40) is constructed as a double lifting swinging arm (142) with two piston/cylinder units (23; 123) whereby in the starting position there is respectively one (23) above and one (123) below the longitudinal median plane (35) over the piston rod articulating members (38) which are at the same radial distance associated with the universal joint (4).

Description

translated from German

The invention relates to a scissor lift table according to the preamble of claim 1.

In the case of a scissor lifting table of the type mentioned above, known from DE 39 30 529 A1, at least one of the scissor arms which cooperate as a pair and is connected in the region of an intersection joint is provided with a spreading lever which has a first piston / cylinder unit and with which the in an initial position Scissor arms located near a subframe are spread out from a lowered position, spread further via a second piston / cylinder unit when an initial stroke position is reached, and a table platform can thus be brought into a stroke end position. With such an arrangement of two piston / cylinder units connected in parallel via a common control unit, both the technical outlay and the production and operating costs are disadvantageously increased.

The invention has for its object a scissor lift table of the type mentioned Reduction of the technical effort so that this allows a flat and space-saving design when the scissor arms are in the lowered position and a long stroke of the table platform can be reached via a uniform lifting movement.

The invention solves this problem by a scissor lift table with the features of claim 1. With regard to further refinements, reference is made to claims 2 to 13.

The scissor-type lifting table according to the invention has, with the lifting rocker, a stroke-introducing member connected to the piston / cylinder unit, which forms an operative connection with a coaxial connection, provided on the one hand directly in the intersection joint, to the respective scissor arms, the articulation of the piston rod end arranged parallel to the axis, and the pressure roller supported on the other hand, which enables an advantageous flat design of the scissor lift table, the table platform of which can be moved from the lower position close to the ground to the end of stroke position by continuous utilization of the piston stroke by only one piston / cylinder unit without additional individual parts.

On the table platform as a direct part of the force flow in the scissor lift table, starting from a parallel starting position of the scissor arms, a pulling movement which is effective in a first lifting phase is initiated on the scissor arms to be spread via the pressure roller and, at a certain lifting angle, the lifting arm is locked against further swiveling in such a way that Torque is imparted to the scissor arms via the lifting arm via the continued stroke movement of the piston / cylinder unit and under Spreading the scissor arms the table platform is raised to the stroke end position.

With the piston rod linkage at a distance from the central longitudinal plane of the piston / cylinder unit that is essentially determined by the component height of the scissor arms in the lowered position, an asymmetrical linkage is formed with little effort, which enables the table platform to be raised in pressure in the first stroke phase with a few articulation points. A corresponding connection of the table platform to the scissor arm ends causes their mutual spreading, whereby after a certain stroke path a system part simultaneously entering a connection engagement on the lifting rocker on at least one scissor arm enables continuous pressure entry from the piston / cylinder unit, the further piston displacement thereof is deflected via a constant lever arm formed on the lifting rocker and the table platform can thus be moved into the end of stroke position with a largely constant internal cylinder pressure.

Fig. 1
eine Perspektivdarstellung eines erfindungsgemäßen Scherenhubtisches in einer ersten Ausführungsform,
Fig. 2
eine Seitenansicht des Scherenhubtisches ähnlich Fig. 1 mit einer Tischplattform in einer bodennahen Absenkstellung,
Fig. 3
eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 mit der Tischplattform am Ende einer ersten Hubphase,
Fig. 4
eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 oder 3 mit der Tischplattform in einer oberen Endstellung,
Fig. 5
eine Ausschnittsvergrößerung im Bereich eines Kreuzungsgelenks der Scherenarme des Scherenhubtisches gemäß Fig. 4,
Fig. 6
eine vergrößerte Ausschnittsdarstellung ähnlich Fig. 5 mit den Scherenarmen in einer Hubphase gemäß Fig. 3,
Fig. 7 und 8
jeweils eine Einzeldarstellung einer Hubschwinge gemäß der Erfindung in verschiedenen Ansichten,
Fig. 9
eine Seitenansicht im Bereich des Kreuzungsgelenks gemäß Fig. 5,
Fig. 10

eine Seitenansicht des in Hubendstellung befindlichen Scherenhubtisches in einer zweiten Ausführungsform mit einer Doppel-Hubschwinge im Bereich des Kreuzungsgelenkes der Scherenarme,

Fig. 11
eine Seitenansicht des Scherenhubtisches ähnlich Fig. 10 mit der Tischplattform in einer ersten Hubphase, und

Fig. 12
eine Einzeldarstellung der Doppel-Hubschwinge.

With regard to significant further advantages and individual parts of the invention, reference is made to the following description and the drawing, in which an exemplary embodiment of the object of the invention is illustrated schematically in more detail. The drawing shows:

Fig. 1
1 shows a perspective view of a scissor lift table according to the invention in a first embodiment,

Fig. 2
2 shows a side view of the scissor lift table similar to FIG. 1 with a table platform in a lowered position close to the ground,

Fig. 3
2 shows the side view of the scissor lift table according to FIG. 2 with the table platform at the end of a first lifting phase,

Fig. 4
3 shows a side view of the scissor lift table according to FIG. 2 or 3 with the table platform in an upper end position,

Fig. 5
4 shows an enlarged detail in the region of an intersection joint of the scissor arms of the scissor lift table according to FIG. 4,

Fig. 6
5 with the scissor arms in a lifting phase according to FIG. 3,

7 and 8
each an individual representation of a lifting arm according to the invention in different views,

Fig. 9
5 shows a side view in the region of the cross joint according to FIG. 5,

Fig. 10
a side view of the scissor lift table in the end of stroke position in a second embodiment with a double lifting arm in the region of the cross joint of the scissor arms,

Fig. 11
a side view of the scissor lift table similar to FIG. 10 with the table platform in a first lifting phase, and

Fig. 12
a single view of the double lifting arm.

1 shows a scissor lift table 1, designated as a whole as 1, designed as a flat lift table, the scissor arms 5, which are arranged along a longitudinal edge and are paired with each other in a cross joint 4,4 ', between a bottom frame 2 and an upper table platform 3, 6 or 7,8.

The table platform 3 is provided with an E-shaped, respective outer plate regions 9, 10 and a central region 11 having a plate contour with which, for example, a lifting tool (not shown) can reach under the objects located on the table platform 3 via respective shape recesses 12, 13. It is also conceivable to design the table platform 3 as a continuous plate or with a U-shaped plate contour for other applications, in particular one requiring a flat construction.

In FIG. 4, a side view of the scissor lift table 1 illustrates a connection provided in opposite end regions 14, 15 and 16, 17 of the scissor arms 5, 6, one end of which is fixed via a pivot bearing 18, 19 and the other end via a floating bearing 20, 21 is formed on the underside of the table platform 3 or the top of the lower frame 2 so that the table platform 3 can be brought into different lifting heights H (FIG. 2), H '(FIG. 3) and H' '(FIG. 4).

The pairs of scissors arms 5, 6 and 7, 8 are each in the area of the scissor arms 6 and 8 supported by the fixed pivot bearing 19, 19 'with an as Hydraulic cylinder trained piston / cylinder unit 23,24, which extends between respective legs 25,26 and 27,28 of the scissor arms 6 and 8 respectively.

The hydraulic cylinders 23, 24 are fixed at one end in the area of their cylinders 33, 34 to a lower cross member 30 (FIG. 1) located between the respective pivot bearings 19, 19 'of the scissor arms 6, 8, and respective support bearings 31, 32, and Piston rods 36, 37 movable via fluid pressure in a central longitudinal plane 35 of the piston / cylinder unit 23, 24 are connected at the other ends in the respective head region 39 via a piston rod linkage 38 with an expansion lever 40 (FIG. 1) or 40 '(not visible).

The enlarged representations according to FIGS. 5 and 6 make it clear in connection with FIG. 9 that the spreading lever 40 acts as one between the respective inner legs 25 ', 26' or 27 ', 28' of the respective pair of scissor arms 5, 6 or 7,8 located rocker arm 42 is formed which on one end has a connecting part 43 coaxial to the intersection joint 4 or 4 ', on the other end a pressure roller 44 and axially parallel between the intersection joint 4 and the pressure roller axis 45 which, in the lowered position of the table platform 3, advantageously above the central longitudinal plane 35 the piston / cylinder unit 23, 24 has the piston rod linkage 38 (FIG. 2).

With such a linkage of the lifting rocker 42, the respective cylinders 33, 34 of the piston / cylinder unit 23, 24 in the end region near the pivot bearing 19, 19 'of the scissor arms 6, 8 can be fixed Support bearing 31, 32 on the one hand, the piston rod linkage 38 on the other hand, and the pressure roller 44 to the table platform 3 are effectively connected, and the scissor-type lifting table 1, which is designed in an advantageous space-saving flat design, moves from the lowering position illustrated in FIG. 2 in a first lifting phase to that shown in FIG. 3 Stroke position H'd be brought about by the fact that the movement of the piston rods 36, 37 with a superimposed stroke-swivel movement in the area of the lifting arms 42, 42 'raises the cross joints 4,4', so that the lifting arm 42, 42 'is supported the rolling pressure roller 44 on the underside of the table platform 3 executes a pivoting of the lifting arms 42, 42 ' and the pairs of scissors arms 5, 6 are raised into the spreading position according to FIG. 3 via the bearings 18 and 20 on the table platform 3.

In this movement phase, respective stop parts 46, 46 'which limit the swivel angle of the lifting rocker 42 in this first lifting phase to the respective inner legs 25', 26 'are swiveled into the region of molded parts 47, 47', the pressure roller 44 on the underside of the plate the table platform 3 forms a support engagement in a support area 48 until the pivoting of the stop part 46 into the molded part 47 forms a positive connection which enables further force introduction. To stabilize the table platform 3, a stabilizing plate (not shown) can be provided in the support area 48.

In this lifting phase shown in FIGS. 2 and 3, the one with the table platform 3 is via the floating bearing 20 connected scissor arm 6 supported on the table platform 3 via a length 50 matched to the above-described swivel path or support area 48 of the lifting rocker 42, so that the lifting forces introduced via the pressure roller 44 on the scissor arms 5.6 and 7.8 both form a vertical spreading force component in the bearing 20 as well as in the bearing 18 and thus a uniform component load is achieved.

For the movement sequence described above, in particular for the movement of the flat scissor lift table 1 from the lowered position according to FIG. 2, the piston rod linkage 38 located above the central longitudinal plane 35 of the piston / cylinder unit 23, 24 forms an asymmetrical one in the region of the respective piston rods 36, 37 Force transmission, the effectiveness of which can be increased further in that the respective cylinders 33, 34 in the area of their support bearings 31, 32 have a support

53, which is also asymmetrical with respect to the central longitudinal plane 35, and thus the scissor lift table 1 on the respective lifting arm 42, 42 ', in the lowered position, a pressure action plane 52 is shown as a connecting line between the linkage 38 and the support 53.

In the area of the lifting rocker 42, respective force introduction levers are formed with the pressure action plane 52 both between the respective piston rod linkage 38 and the cross joint 4 and between the piston rod linkage 38 and the pressure roller 44, with which the scissor lift table 1 can be designed in a particularly space-saving flat design so that the Spreading or lifting as described above with only one piston / cylinder unit 23,24 can be carried out in the respective scissor arm pairs 5,6 or 7,8. A high mechanical efficiency can thus be achieved with reduced technical complexity and a uniform stroke movement over a large stroke distance, for example up to 1000 mm, can be achieved via a cylinder pressure which is largely constant in all stroke positions H, H ', H".

In FIGS. 5 and 6, enlarged detail representations in the area of the lifting rocker 42 illustrate a distance 54 which forms the effective lever length between the piston rod linkage 38 and the cross joint 4 and which extends from the lowered position H (FIG. 2) to the position H '(FIG. 3, Fig. 6) changes and with further increasing spreading of the scissor arms 5, 6 via the abutment of the stop parts 46 in the molded part 47, 47 ', this distance 54 remains effective as a constant lever arm until the table platform 3 reaches the stroke position H' '(FIG. 4, Fig. 5) has reached.

7 and 8, the lifting rocker 42 is illustrated in an advantageous illustration of its advantageous design as a cross-stiffened double member 55, with one end of a connecting sleeve 43 'supported in the region of the cross joint 4 between the connecting parts 43 between the pressure plates 56, 57 and the other on the other a support pin 44 'located pressure roller 44 and between these the piston rod linkage 38 are provided.

The installation position of the lifting rocker 42 according to FIG. 9 clarifies in connection with FIG. 8 that the pressure plates 56, 57 located between the respective pair of scissor arms 25 ', 26' each form a part 47,47 'forming groove 58,58' (Fig. 8), into each of which a pin 59,59 'provided as the stop member 46,46' and supported on the inner legs 25 ', 26' of the pairs of scissors arms can be pivoted.

In an expedient embodiment, the piston / cylinder unit 23, 24 is provided in the area of the respective head region 39 with an inlet recess 60 (FIG. 6), so that in the lowered position according to FIG. Cylinder unit 23, 24 allowing free space is reached and thus the components of the scissor lift table 1 can be lowered to an overall height forming the lifting height H without an overhang and good handling of the scissor lifting table 1 is made possible even in confined spaces.

FIG. 10 shows a second embodiment of a scissor lift table 101 which, in the area of the cross joint 4 as the spreading lever 40, has a double lifting arm 142 (FIG. 12) and its scissor arms 5,6 (or 7,8) with simultaneous action are spread by two piston / cylinder pairs 23, 123 and 24, 124 (not visible).

11 illustrates that the double rocker arm 142 and the scissor lift table 101 can be moved into the illustrated lifting position H 'in that a simultaneous working stroke of the two piston rods 36 of the piston-cylinder pair 23, 123 that are effective in one direction of rotation the double lifting arm 142 is imparted a superimposed lifting and pivoting movement in the region of the cross joint 4, around which the double lifting arm 142 is supported on the one hand the rolling pressure roller 44 on the underside of the table platform 3 and, on the other hand, the pressure roller 144 on the subframe 2 pivots and the bearings 18 and 20 raise the pairs of scissors arms 5, 6 to the spread position according to FIG. 10.

The individual representation of the double rocker arm 142 according to FIG. 12 shows its design with the respective effective pressure rollers 44, 144 grouping around the bore for the intersection joint 4, the two piston rod linkages 38, the distances 54, 154 and the shaped grooves 58, via which, in the manner described above Lifting force of the piston / cylinder units 23, 123 can simultaneously be transferred to the scissor arms 5, 6 (FIG. 10).

In an advantageous embodiment, the scissor lift table 101 having the double lifting rocker 142 can thus be provided for lifting larger weights, so that the possible uses of the lifting table are improved overall.

Patent Citations (18)

Publication number	Priority date	Publication date	Assignee	Title
Family To Family Citations				
US3246876A *	1963-12-26	1966-04-19	Jeddeloh Bros Sweed Mills Inc	Scissor-lift mechanism
DE1805941C3 *	1968-10-30	1980-05-08	Alois Dipl.-Ing. 4790 Paderborn Loedige	Scissor lifting device
US3991857A *	1975-03-24	1976-11-16	Charles J. Wolk	Elevatable platform for load transfer
SU527377A1 *	1975-03-28	1976-09-05	Проектно-Конструкторское Бюро Главного Управления Автомобильного Транспорта Мосгорисполкома	Lifting table
IT1140561B *	1980-02-12	1986-10-01	Giovanni Rossini	LIFTING DEVICE PARTICULARLY FOR THE MOVEMENT OF FLOORS OF FURNITURE AND SIMILAR
US4526346A *	1982-01-18	1985-07-02	G. W. Galloway Company, Inc.	Self-contained elevating table
CH660838A5 *	1983-08-18	1987-05-29	Lista Degersheim Ag	Device for setting the position of a visual display unit
US4558848A *	1983-09-20	1985-12-17	Lift-R Technologies, Inc.	Energy-recycling scissors lift
SU1276616A1 *	1985-03-11	1986-12-15	Волгодонский Филиал Всесоюзного Проектно-Конструкторского Технологического Инст Итута Атомного Машиностроения И Котлостроения	Hoisting arrangement
SE456499B *	1987-02-04	1988-10-10	Hymo Ab	DEVICE AT A HYDRAULIC LIFT TABLE
DD268459A1 *	1988-02-01	1989-05-31	Ifa Ingenieur Betrieb Veb	Scissor
SE462282B *	1988-10-25	1990-05-28	Olof Sehlstedt	DEVICE FOR INITIATION OF A LIFT MOVEMENT BY A LIFTING MECHANISM, EXTRA AT THE LIFT TABLE

US4899987A *	1988-12-08	1990-02-13	Hein-Werner Corporation	Vehicle scissor lift
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Application	Priority date	Filing date	Title
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Legal Events

Date	Code	Title	Description
1994-07-21	PUAI	Public reference made under article 153(3) epc to a published international application that has entered the european phase	**Free format text:** ORIGINAL CODE: 0009012
1994-09-07	AK	Designated contracting states	**Kind code of ref document:** A1 **Designated state(s):** AT BE CH DE FR GB LI NL
1995-01-18	17P	Request for examination filed	**Effective date:** 19941117
1997-01-21	GRAG	Despatch of communication of intention to grant	**Free format text:** ORIGINAL CODE: EPIDOS AGRA
1997-03-12	17Q	First examination report despatched	**Effective date:** 19970123
1997-04-30	GRAH	Despatch of communication of intention to grant a patent	**Free format text:** ORIGINAL CODE: EPIDOS IGRA
1997-06-03	GRAH	Despatch of communication of intention to grant a patent	**Free format text:** ORIGINAL CODE: EPIDOS IGRA
1997-09-19	GRAA	(expected) grant	**Free format text:** ORIGINAL CODE: 0009210
1997-11-05	AK	Designated contracting states	**Kind code of ref document:** B1 **Designated state(s):** AT BE CH DE FR GB LI NL
1997-11-05	REF	Corresponds to:	**Ref document number:** 159918 **Country of ref document:** AT **Date of ref document:** 19971115

			Kind code of ref document: T
1997-11-14	REG	Reference to a national code	Ref country code: CH Ref legal event code: NV Representative=s name: BOVARD AG PATENTANWAELTE Ref country code: CH Ref legal event code: EP
1997-11-14	ET	Fr: translation filed	
1997-12-10	GBT	Gb: translation of ep patent filed (gb section 77(6)(a)/1977)	Effective date: 19971114
1997-12-11	REF	Corresponds to:	Ref document number: 59404495 Country of ref document: DE Date of ref document: 19971211
1998-09-11	STAA	Information on the status of an ep patent application or granted ep patent	Free format text: STATUS: NO OPPOSITION FILED WITHIN TIME LIMIT
1998-10-28	26N	No opposition filed	
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2013-02-28	PGFP	Annual fee paid to national office [announced via postgrant information from national office to epo]	Ref country code: GB Payment date: 20121218 Year of fee payment: 20
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2014-02-28	BE20	Be: patent expired	Owner name: *HYDRAULIK TECHNIEK Effective date: 20140223
2014-02-28	REG	Reference to a national code	Ref country code: CH Ref legal event code: PL
2014-03-05	REG	Reference to a national code	Ref country code: NL Ref legal event code: V4 Effective date: 20140223
2014-03-19	REG	Reference to a national code	Ref country code: GB Ref legal event code: PE20 Expiry date: 20140222
2014-04-15	REG	Reference to a national code	Ref country code: AT Ref legal event code: MK07 Ref document number: 159918 Country of ref document: AT Kind code of ref document: T Effective date: 20140223
2014-04-30	PG25	Lapsed in a contracting state [announced via postgrant information from national office to epo]	Ref country code: GB Free format text: LAPSE BECAUSE OF EXPIRATION OF PROTECTION Effective date: 20140222 Ref country code: DE Free format text: LAPSE BECAUSE OF EXPIRATION OF PROTECTION Effective date: 20140225

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(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 613 852 B1

(12) **EUROPÄISCHE PATENTSCHRIFT**

(45) Veröffentlichungstag und Bekanntmachung des Hinweises auf die Patenterteilung:
05.11.1997 Patentblatt 1997/45

(51) Int. Cl.[6]: **B66F 7/08**

(21) Anmeldenummer: **94102702.1**

(22) Anmeldetag: **23.02.1994**

(54) Scherenhubtisch

Scissor type lifting table

Table élévatrice à ciseaux

(84) Benannte Vertragsstaaten:
AT BE CH DE FR GB LI NL

(30) Priorität: **02.03.1993 DE 9302967 U**

(43) Veröffentlichungstag der Anmeldung:
07.09.1994 Patentblatt 1994/36

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Printed by Rank Xerox (UK) Business Services
2.14.22/3.4

EP 0 613 852 B1

Beschreibung

Die Erfindung betrifft einen Scherenhubtisch nach dem Oberbegriff des Anspruchs 1.

Bei einem Scherenhubtisch der vorstehend genannten, aus der DE 39 30 529 A1 bekannten Art ist zumindest einer der als ein Paar zusammenwirkenden und im Bereich eines Kreuzungsgelenks verbundenen Scherenarme mit einem eine erste Kolben/Zylinder-Einheit aufweisenden Spreizhebel versehen, mit dem die in einer Ausgangsstellung nahe einem Unterrahmen befindlichen Scherenarme aus einer Absenkstellung herausgespreizt, bei Erreichen einer Anfangshublage über eine zweite Kolben/Zylinder-Einheit weiter gespreizt und so eine Tischplattform bis in eine Hubendstellung verbracht werden kann. Mit einer derartigen Anordnung von zwei über eine gemeinsame Steuereinheit parallel geschalteten Kolben/Zylinder-Einheiten sind sowohl der technische Aufwand als auch die Gestehungs- und Betriebskosten nachteilig erhöht.

Der Erfindung liegt die Aufgabe zugrunde, einen Scherenhubtisch der eingangs genannten Art unter Verringerung des technischen Aufwands so weiterzubilden, daß dieser bei in Absenkstellung befindlichen Scherenarmen eine flache und raumsparende Bauform ermöglicht und über eine gleichmäßige Hubbewegung ein großer Hubweg der Tischplattform erreichbar ist.

Die Erfindung löst diese Aufgabe durch einen Scherenhubtisch mit den Merkmalen des Anspruchs 1. Hinsichtlich weiterer Ausgestaltungen wird auf die Ansprüche 2 bis 13 verwiesen.

Der erfindungsgemäße Scherenhubtisch weist mit der Hubschwinge ein mit der Kolben/Zylinder-Einheit verbundenes Hubeinleitungsglied auf, das mit einer einerseits unmittelbar im Kreuzungsgelenk vorgesehenen koaxialen Verbindung zu den jeweiligen Scherenarmen, der dazu achsparallel angeordneten Anlenkung des Kolbenstangenendes und der andererseits abgestützten Druckrolle eine Wirkverbindung bildet, die eine vorteilhafte Flachbauweise des Scherenhubtisches ermöglicht, dessen Tischplattform ohne zusätzliche Einzelteile aus der bodennahen Absenkstellung bis in die Hubendstellung durch eine kontinuierliche Ausnutzung des Kolbenhubes nur einer Kolben/Zylinder-Einheit verbringbar ist.

Über die Tischplattform als unmittelbarer Teil des Kraftflusses im Scherenhubtisch wird dabei ausgehend von einer parallelen Ausgangsstellung der Scherenarme eine in einer ersten Hubphase wirksame Zugbewegung auf die zu spreizenden Scherenarme über die Druckrolle eingeleitet und dabei ab einem bestimmten Hubwinkel die Hubschwinge gegen weiteres Schwenken so arretiert, daß über die fortgesetzte Hubbewegung der Kolben/Zylinder-Einheit den Scherenarmen über die Hubschwinge ein Drehmoment vermittelt und unter Spreizung der Scherenarme die Tischplattform bis in die Hubendstellung angehoben wird.

Mit der Kolbenstangenanlenkung in einem, im wesentlichen von der Bauteilhöhe der in Absenkstellung befindlichen Scherenarme bestimmten Abstand zur Mittellängsebene der Kolben/Zylinder-Einheit ist mit geringem Aufwand eine asymmetrische Anlenkung gebildet, die mit wenigen Gelenkpunkten in der ersten Hubphase eine Druckhebung der Tischplattform ermöglicht. Über eine entsprechende Verbindung der Tischplattform mit den Scherenarmenden wird deren gegenseitige Spreizung bewirkt, wobei daß nach einem bestimmten Hubweg ein gleichzeitig in einen Verbindungseingriff an der Hubschwinge einlaufender Anlageteil an zumindest einem Scherenarm einen kontinuierlichen Druckeintrag aus der Kolben/Zylinder-Einheit ermöglicht, deren weitere Kolbenausschiebung über einen an der Hubschwinge gebildeten, konstanten Hebelarm umgelenkt und so die Tischplattform mit weitgehend konstantem Zylinderinnendruck bis in die Hubendstellung bewegt werden kann.

Hinsichtlich wesentlicher weiterer Vorteile und Einzelteile der Erfindung wird auf die nachfolgende Beschreibung und die Zeichnung verwiesen, in der ein Ausführungsbeispiel des Gegenstands der Erfindung schematisch näher veranschaulicht ist. In der Zeichnung zeigen:

Fig. 1	eine Perspektivdarstellung eines erfindungsgemäßen Scherenhubtisches in einer ersten Ausführungsform,
Fig. 2	eine Seitenansicht des Scherenhubtisches ähnlich Fig. 1 mit einer Tischplattform in einer bodennahen Absenkstellung,
Fig. 3	eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 mit der Tischplattform am Ende einer ersten Hubphase,
Fig. 4	eine Seitenansicht des Scherenhubtisches gemäß Fig. 2 oder 3 mit der Tischplattform in einer oberen Endstellung,
Fig. 5	eine Ausschnittsvergrößerung im Bereich eines Kreuzungsgelenks der Scherenarme des Scherenhubtisches gemäß Fig. 4,
Fig. 6	eine vergrößerte Ausschnittsdarstellung ähnlich Fig. 5 mit den Scherenarmen in einer Hubphase gemäß Fig. 3,
Fig. 7 und 8	jeweils eine Einzeldarstellung einer Hubschwinge gemäß der Erfindung in verschiedenen Ansichten,
Fig. 9	eine Seitenansicht im Bereich des Kreuzungsgelenks gemäß Fig. 5,
Fig. 10	eine Seitenansicht des in Hubendstel-

lung befindlichen Scherenhubtisches in einer zweiten Ausführungsform mit einer Doppel-Hubschwinge im Bereich des Kreuzungsgelenkes der Scherenarme,

Fig. 11 eine Seitenansicht des Scherenhubtisches ähnlich Fig. 10 mit der Tischplattform in einer ersten Hubphase, und

Fig. 12 eine Einzeldarstellung der Doppel-Hubschwinge.

In Fig. 1 ist ein insgesamt mit 1 bezeichneter, als Flachhubtisch ausgebildeter Scherenhubtisch 1 in einer Perspektivdarstellung veranschaulicht, der zwischen einem bodenseitigen Unterrahmen 2 und einer oberen Tischplattform 3 jeweils längsrandseitig angeordnete, in einem Kreuzungsgelenk 4,4' jeweils paarweise miteinander verbundene Scherenarme 5,6 bzw. 7,8 aufweist.

Die Tischplattform 3 ist dabei mit einer E-förmigen, jeweilige äußere Plattenbereiche 9,10 und einen Mittelbereich 11 aufweisenden Plattenkontur versehen, mit der über jeweilige Formaussparungen 12,13 beispielsweise ein Hubwerkzeug (nicht dargestellt) die auf der Tischplattform 3 befindlichen Gegenstände untergreifen kann. Ebenso ist denkbar, die Tischplattform 3 für andere, insbesondere eine Flachbauweise erfordernde Anwendungsfälle als durchgehende Platte bzw. mit einer U-förmigen Plattenkontur auszubilden.

In Fig. 4 veranschaulicht eine Seitenansicht des Scherenhubtisches 1 eine in jeweils gegenüberliegenden Endbereichen 14,15 bzw. 16,17 der Scherenarme 5,6 vorgesehene Verbindung, wobei diese einenends ortsfest über jeweils ein Schwenklager 18,19 und anderenends über ein Loslager 20,21 an der Unterseite der Tischplattform 3 bzw. der Oberseite des Unterrahmens 2 so ausgebildet ist, daß die Tischplattform 3 in unterschiedliche Hubhöhen H (Fig. 2), H' (Fig. 3) und H" (Fig. 4) verbringbar ist.

Die Scherenarmpaare 5,6 bzw. 7,8 sind dabei jeweils im Bereich des über das ortsfeste Schwenklager 19,19' abgestützten Scherenarmes 6 bzw. 8 mit einer als Hydraulikzylinder ausgebildeten Kolben/Zylinder-Einheit 23,24 versehen, die sich zwischen jeweiligen Schenkeln 25,26 bzw. 27,28 der Scherenarme 6 bzw. 8 erstreckt.

Die Hydraulikzylinder 23,24 sind dabei einenends im Bereich ihrer Zylinder 33,34 an einem unteren, zwischen den jeweiligen Schwenklagern 19,19' der Scherenarme 6,8 befindlichen Querträger 30 (Fig. 1) über jeweilige Stützlager 31,32 festgelegt und jeweilige, über Fluiddruck in einer Mittellängsebene 35 der Kolben/Zylinder-Einheit 23,24 bewegliche Kolbenstangen 36,37 sind anderenends im jeweiligen Kopfbereich 39 über eine Kolbenstangenanlenkung 38 mit einem Spreizhebel 40 (Fig. 1) bzw. 40' (nicht sichtbar) verbunden.

Die vergrößerten Darstellungen gemäß Fig. 5 und Fig. 6 machen im Zusammenhang mit Fig. 9 deutlich, daß der Spreizhebel 40 als eine zwischen den jeweiligen inneren Schenkeln 25',26' bzw. 27',28' des jeweiligen Scherenarmpaares 5,6 bzw. 7,8 befindliche Hubschwinge 42 ausgebildet ist, die einenends einen zum Kreuzungsgelenk 4 bzw. 4' koaxialen Verbindungsteil 43, anderenends eine Druckrolle 44 und achsparallel zwischen dem Kreuzungsgelenk 4 und der Druckrollenachse 45 die in der Absenkstellung der Tischplattform 3 vorteilhaft oberhalb der Mittellängsebene 35 der Kolben/Zylinder-Einheit 23,24 befindliche Kolbenstangenanlenkung 38 aufweist (Fig. 2).

Mit einer derartigen Anlenkung der Hubschwinge 42 kann über die, die jeweiligen Zylinder 33,34 der Kolben/Zylinder-Einheit 23,24 im Endbereich nahe dem Schwenklager 19,19' der Scherenarme 6,8 festlegenden Stützlager 31,32 einerseits, die Kolbenstangenanlenkung 38 andererseits und die Druckrolle 44 zur Tischplattform 3 hin eine Wirkverbindung gebildet werden und der in vorteilhafter raumsparender Flachbauweise ausgebildete Scherenhubtisch 1 aus der in Fig. 2 veranschaulichten Absenkstellung in einer ersten Hubphase in die in Fig. 3 dargestellte Hubstellung H'dadurch verbracht werden, daß die Bewegung der Kolbenstangen 36,37 mit einer überlagerten Hub-Schwenk-Bewegung im Bereich der Hubschwingen 42,42' die Kreuzungsgelenke 4,4' anhebt, um dieses gleichzeitig die Hubschwinge 42,42' unter Abstützung der abrollenden Druckrolle 44 an der Unterseite der Tischplattform 3 eine Schwenkung der Hubschwingen 42,42' ausführt und über die Lager 18 und 20 an der Tischplattform 3 die Scherenarmpaare 5,6 in die Spreizstellung gemäß Fig. 3 angehoben werden.

In dieser Bewegungsphase werden gleichzeitig jeweilige, den Schwenkwinkel der Hubschwinge 42 in dieser ersten Hubphase zu den jeweiligen inneren Schenkeln 25',26' begrenzende Anschlagteil 46,46' in den Bereich von Formteilen 47,47' eingeschwenkt, wobei die Druckrolle 44 an der Plattenunterseite der Tischplattform 3 in einem Stützbereich 48 solange einen Abstützungseingriff bildet, bis mit dem Einschwenken des Anschlagteils 46 in das Formteil 47 ein die weitere Krafteinleitung ermöglichender Formschluß gebildet ist. Zur Stabilisierung der Tischplattform 3 kann dabei im Stützbereich 48 eine Stabilisierungsplatte (nicht dargestellt) vorgesehen sein.

In dieser in Fig. 2 und 3 dargestellten Hubphase ist der mit der Tischplattform 3 über das Loslager 20 verbundene Scherenarm 6 über einen in seiner Länge 50 auf den vorbeschriebenen Schwenkweg bzw. Stützbereich 48 der Hubschwinge 42 abgestimmten Rollenuntergriff 51 an der Tischplattform 3 abgestützt, so daß die über die Druckrolle 44 eingeleiteten Hubkräfte an den Scherenarmen 5,6 bzw. 7,8 sowohl im Lager 20 als auch im Lager 18 jeweils eine vertikale Spreizkraftkomponente bilden und damit eine gleichmäßige Bauteilbelastung erreicht ist.

Für den vorbeschriebenen Bewegungsablauf, ins-

besondere für die Bewegung des flach bauenden Scherenhubtisches 1 aus der Absenkstellung gemäß Fig. 2, bildet die oberhalb der Mittellängsebene 35 der Kolben/Zylinder-Einheit 23,24 befindlichen Kolbenstangenanlenkung 38 im Bereich der jeweiligen Kolbenstangen 36,37 eine asymmetrische Krafteinleitung, deren Wirksamkeit noch dadurch erhöht werden kann, daß die jeweiligen Zylinder 33,34 im Bereich ihrer Stützlager 31,32 eine ebenfalls zur Mittellängsebene 35 asymmetrische, nach unten versetzte Abstützung 53 aufweisen und damit der Scherenhubtisch 1 an der jeweiligen Hubschwinge 42,42' in der Absenkstellung eine als Verbindungslinie zwischen der Anlenkung 38 und der Abstützung 53 dargestellte Druckwirkungsebene 52 darbietet.

Im Bereich der Hubschwinge 42 sind mit der Druckwirkungsebene 52 sowohl zwischen der jeweiligen Kolbenstangenanlenkung 38 und dem Kreuzungsgelenk 4 als auch zwischen der Kolbenstangenanlenkung 38 und der Druckrolle 44 jeweilige Krafteinleitungshebel gebildet, mit denen der Scherenhubtisch 1 in besonders raumsparender Flachbauweise so ausgebildet sein kann, daß die vorbeschriebene Spreizung bzw. Hebung mit lediglich einer Kolben/Zylinder-Einheit 23,24 in den jeweiligen Scherenarmpaaren 5,6 bzw. 7,8 durchführbar ist. Damit ist bei vermindertem technischen Aufwand ein hoher mechanischer Wirkungsgrad erzielbar und über einen in allen Hubstellungen H,H',H'' weitgehend konstanten Zylinderdruck eine gleichmäßige Hubbewegung über einen großen Hubweg, z.B. bis 1000 mm, erreichbar.

In Fig. 5 und 6 veranschaulichen vergrößerte Ausschnittsdarstellungen im Bereich der Hubschwinge 42 einen die wirksame Hebellänge zwischen der Kolbenstangenanlenkung 38 und dem Kreuzungsgelenk 4 bildenden Abstand 54, der sich ausgehend von der Absenkstellung H (Fig. 2) bis zur Stellung H' (Fig. 3, Fig. 6) ändert und bei weiter zunehmender Spreizung der Scherenarme 5,6 über die Anlage der Anschlagteile 46 im Formteil 47,47' bleibt dieser Abstand 54 als konstanter Hebelarm wirksam, bis die Tischplattform 3 die Hubstellung H'' (Fig. 4, Fig. 5) erreicht hat.

In Fig. 7 und 8 ist die Hubschwinge 42 in einer deren vorteilhafte Ausbildung als ein querversteiftes Doppelglied 55 verdeutlichenden Einzeldarstellung veranschaulicht, wobei zwischen dessen Druckplatten 56,57 einenends eine im Bereich des Kreuzungsgelenks 4 zwischen den Verbindungsteilen 43 abgestützte Verbindungshülse 43', anderenends die auf einem Tragbolzen 44' befindliche Druckrolle 44 und zwischen diesen die Kolbenstangenanlenkung 38 vorgesehen sind.

Die Einbaulage der Hubschwinge 42 gemäß Fig. 9 verdeutlicht im Zusammenhang mit Fig. 8, daß die zwischen dem jeweiligen Scherenarmpaar 25',26' befindlichen Druckplatten 56,57 jeweils eine den Formteil 47,47' bildende Nut 58,58' (Fig. 8) aufweisen, in die jeweils ein als das Anschlagglied 46,46' vorgesehener und an den inneren Schenkeln 25',26' der Scherenarmpaare abgestützter Stift 59,59' einschwenkbar ist.

In zweckmäßiger Ausführung ist die Kolben/Zylinder-Einheit 23,24 im Bereich des jeweiligen Kopfbereiches 39 mit einer Einlaufmulde 60 (Fig. 6) versehen, so daß in der Absenkstellung gemäß Fig. 2 für die Druckrolle 44 ein die bodenparallele Ausrichtung der Kolben/Zylinder-Einheit 23,24 ermöglichender Freiraum erreicht ist und damit die Bauteile des Scherenhubtisches 1 auf eine die Hubhöhe H bildende Bauhöhe ohne Überstand absenkbar sind und auch bei beengten Platzverhältnissen eine gute Handhabbarkeit des Scherenhubtisches 1 ermöglicht ist.

In Fig. 10 ist eine zweite Ausführungsform eines Scherenhubtisches 101 dargestellt, der im Bereich des Kreuzungsgelenks 4 als den Spreizhebel 40 eine Doppel-Hubschwinge 142 (Fig. 12) aufweist und dessen Scherenarme 5,6 (bzw. 7,8) unter gleichzeitiger Einwirkung von zwei Kolben/Zylinder-Paaren 23,123 bzw. 24,124 (nicht sichtbar) gespreizt werden.

Die Hubphase gemäß Fig. 11 verdeutlicht dabei, daß die Doppel-Hubschwinge 142 bzw. der Scherenhubtisch 101 in die dargestellte Hubstellung H' dadurch verbringbar sind, daß über einen gleichzeitigen Arbeitshub der beiden in einer Drehrichtung wirksamen Kolbenstangen 36 des Kolben-Zylinder-Paares 23,123 der Doppel-Hubschwinge 142 eine überlagerte Hub-Schwenk-Bewegung im Bereich des Kreuzungsgelenks 4 vermittelt wird, um dieses die Doppel-Hubschwinge 142 unter gleichzeitiger Abstützung einerseits der abrollenden Druckrolle 44 an der Unterseite der Tischplattform 3 sowie andererseits der Druckrolle 144 am Unterrahmen 2 eine Schwenkung ausführt und über die Lager 18 und 20 die Scherenarmpaare 5,6 bis in die Spreizstellung gemäß Fig. 10 angehoben werden.

Die Einzeldarstellung der Doppel-Hubschwinge 142 gemäß Fig. 12 zeigt deren Ausbildung mit den jeweils wirkungsgleichen, sich um die Bohrung für das Kreuzungsgelenk 4 gruppierenden Druckrollen 44,144, die beiden Kolbenstangenanlenkungen 38, die Abstände 54,154 und die Formnuten 58, über die in vorbeschriebener Art die Hubkraft der Kolben/Zylinder-Einheiten 23,123 gleichzeitig auf die Scherenarme 5,6 übertragbar ist (Fig. 10).

In vorteilhafter Ausführung kann damit der die Doppel-Hubschwinge 142 aufweisende Scherenhubtisch 101 für eine Hebung größerer Gewichte vorgesehen werden, so daß die Einsatzmöglichkeiten des Hubtisches insgesamt verbessert sind.

Patentansprüche

1. Scherenhubtisch, der zwischen einem bodenseitigen Unterrahmen (2) und einer oberen Tischplattform (3) zumindest ein Paar in einem Kreuzungsgelenk (4) miteinander verbundene Scherenarme (5,6; 7,8) aufweist, die in gegenüberliegenden Endbereichen (14,15;16,17) jeweils einenends ortsfest an einem Schwenklager (18,19) und anderenends über ein Loslager (20,21) am Unterrahmen (2) bzw. an der Tischplattform (3)

abgestützt sind, wobei diese in einer nahe dem Unterrahmen befindlichen Ausgangsstellung im Bereich zumindest eines Scherenarmes (6,8) zur Einleitung eines Anfangshubes der Tischplattform (3) von einem am äußeren Kolbenstangenende (39) einer Kolben/Zylinder-Einheit (23,24) befindlichen Spreizhebel (40) mit Druckrolle (44;144) untergriffen ist, **dadurch gekennzeichnet,** daß der Spreizhebel (40) als eine zwischen jeweiligen inneren Schenkeln (25',26';27',28') zumindest eines der Scherenarmpaare (5,6;7,8) befindliche Hubschwinge (42) ausgebildet ist, die zumindest einenends einen zum Kreuzungsgelenk (4) koaxialen Verbindungsteil (43;43'), anderenends die Druckrolle (44) und achsparallel zwischen dem Kreuzungsgelenk (4) und der Druckrollenachse (45) eine in der Absenkstellung oberhalb der Mittellängsebene (35) der Kolben/Zylinder-Einheit (23;24) befindliche Kolbenstangenanlenkung (38) aufweist.

2. Scherenhubtisch nach Anspruch 1, dadurch gekennzeichnet, daß mit der Hubschwinge (42) über eine den Zylinder (33,34) der Kolben/Zylinder-Einheit (23,24) im Endbereich nahe dem Schwenklager (18,19) des Scherenarmes (6,8) festlegende Abstützung (31,32) einerseits, die Kolbenstangenanlenkung (38) andererseits und die Druckrolle (44) eine Wirkverbindung zur Tischplattform (3) hin gebildet und diese mit jeweils nur einer je Scherenarmpaar (5,6;7,8) die Tischplattform (3) untergreifenden, in jeder Hubphase (H;H';H") einen weitgehend konstanten Zylinderinnendruck aufweisenden Kolben/Zylinder-Einheit (23,24) in eine Hubendstellung verbringbar ist.

3. Scherenhubtisch nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Hubschwinge (42) ein deren Schwenkwinkel in einer ersten Hubphase (H') über ein im Bereich der jeweiligen inneren Schenkel (25',26') abgestütztes Anschlagglied (46,46') begrenzendes Formteil (47,47') aufweist.

4. Scherenhubtisch nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die einen Stützbereich (48) an der Plattenunterseite aufweisende Tischplattform (3) von der an der Hubschwinge (42) befindlichen Druckrolle (44) derart untergriffen ist, daß in einer ersten, vom Einschwenken des Anschlagglieds (46,46') in das Formteil (47,47') begrenzten Hubphase (H') ein Abstützungseingriff gebildet ist.

5. Scherenhubtisch nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß der mit der Tischplattform (3) über ein Loslager (20) verbundene Scherenarm (6) über einen in seiner Länge (50) auf den Schwenkweg der Hubschwinge (42) abgestimmten Rollenuntergriff (51) mit der Tischplattform (3) verbunden ist.

6. Scherenhubtisch nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß der Zylinder (33;34) der Kolben/Zylinder-Einheit (23;24) eine zu deren Mittellängsebene (35,35') beabstandete Abstützung (53;53') im Bereich des jeweiligen Schwenklagers (19,19') aufweist.

7. Scherenhubtisch nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die Hubschwinge (42) als ein querversteiftes Doppelglied (55) ausgebildet ist, zwischen dessen Druckplatten (56,57) die mit dem Verbindungsteil (43) im Bereich des Kreuzungsgelenks (4) und der Druckrolle (44) zusammenwirkende Kolbenstangenanlenkung (38) vorgesehen ist.

8. Scherenhubtisch nach einem der Ansprüche 1 bis 7, dadurch gekennzeichnet, daß die zwischen einem jeweiligen Scherenarmpaar (25',26';27',28') befindlichen Druckplatten (56,57) jeweils eine den Formteil (47,47') bildende Nut (58) aufweisen, in die jeweils ein als Anschlagglied (46,46') vorgesehener und an den inneren Schenkeln (25',26') der Scherenarmpaare (5,6) abgestützter Stift (59,59') einschwenkbar ist.

9. Scherenhubtisch nach einem der Ansprüche 1 bis 8, dadurch gekennzeichnet, daß die Druckplatten (56,57) im Bereich des Kreuzungsgelenks (4) mit einer koaxialen Verbindungshülse (43') versehen sind.

10. Scherenhubtisch nach einem der Ansprüche 1 bis 9, dadurch gekennzeichnet, daß zwei Scherenarmpaare (5,6 und 7,8) mit jeweils einer Kolben/Zylinder-Einheit (23,24) und jeweils einer Hubschwinge (42,42') vorgesehen sind.

11. Scherenhubtisch nach einem der Ansprüche 1 bis 10, dadurch gekennzeichnet, daß die Tischplattform (3) im Abstützungsbereich (48) für die Stützrolle (44) mit einer unterseitigen Stabilisierungsplatte versehen ist.

12. Scherenhubtisch nach einem der Ansprüche 1 bis 11, dadurch gekennzeichnet, daß die Kolben/Zylinder-Einheit (23,24) im Bereich des Kolbenstangenendes (39) mit einer Einlaufmulde (60) versehen ist.

13. Scherenhubtisch nach einem der Ansprüche 1 bis 12, dadurch gekennzeichnet, daß der Spreizhebel (40) als eine Doppel-Hubschwinge (142) mit zwei Kolben/Zylinder-Einheiten (23,123) ausgebildet ist, wobei in der Ausgangsstellung jeweils eine (23) oberhalb und eine (123) unterhalb der Mittellängsebene (35) über die im gleichen radialen Abstand

zum Kreuzungsgelenk (4) zugeordneten Kolbenstangenanlenkungen (38) abgestützt ist.

Claims

1. A scissor-type lifting table comprising between a bottom frame (2) which is on the floor side and an upper table top (3) at least one pair of scissor arms (5, 6; 7, 8) connected to one another in a universal joint (4) and which, in oppositely disposed end portions (14, 15; 16, 17) are in each case rigidly connected at one end to a pivot bearing (18, 19) and at the other via a loose bearing (20, 21) on the bottom frame (2) or on the table top (3), whereby this starting position which is disposed close to the bottom frame is in the region of at least one scissor arm (6, 8) subject to an expanding lever (40) with a pressure roller (44; 144) engaging underneath it in order to initiate a starting travel of the table top (3), the expanding lever (40) being disposed at the outer end (39) of the piston rod of a piston/cylinder unit (23, 24), characterised in that the expanding lever (40) is constructed as a lifting and swinging arm (42) disposed between respective inner members (25', 26'; 27', 28') of at least one of the pairs of scissor arms (5, 6; 7, 8) and which has at least at one end a connecting part (43, 43') coaxial with the universal joint (4) and which has at the other the pressure roller (44) and axially parallel between the universal joint (4) and the spindle (45) of the pressure roller a piston rod articulation (38) which, in the lowered position, is disposed above the median longitudinal plane (35) of the piston/cylinder unit (23; 24).

2. A scissor type lifting table according to claim 1, characterised in that via a bracing arrangement (31, 32) which fixes the cylinder (33, 34) of the piston/cylinder unit (23, 24) in the end part close to the pivot bearing (18, 19) of the scissor arm (6, 8), the lifting swinging arm (42) on the one hand, the piston rod articulation (38) on the other and the thrust roller (44) constitutes an operative connection with the table top (3) and in that this latter can be moved into an extreme lifted position by only one piston/cylinder unit (23, 24) which, in every phase of lifting (H; H'; H''), has a substantially constant internal cylinder pressure, only one such unit (23, 24) being provided per pair of scissor arms (5, 6; 7, 8) and engaging under the table top (3).

3. A scissor type lifting table according to claim 1 or 2, characterised in that the lifting swinging arm (42) has a shaped part (47, 47') which limits the pivot range in a first lifting phase (H') via an abutment member (46, 46') braced in the region of whichever is the inner arm (25', 26').

4. A scissor type lifting table according to one of claims 1 to 3, characterised in that the table top (3) comprising a supporting area (48) on the under side of the table top has a pressure roller (44) disposed on the lifting swinging arm (42) so engaging under it that a bracing engagement is formed in a first lifting phase (H') bounded by the inward pivoting of the abutment member (46, 46') into the shaped part (47, 47').

5. A scissor type lifting table according to one of claims 1 to 4, characterised in that the scissor arm (6) connected by a loose bearing (20) to the table top (3) is connected to the table top (3) via an element (51) engaging under the roller and the length (50) of which is attuned to the pivoting part of the lifting swinging arm (42).

6. A scissor type lifting table according to one of claims 1 to 5, characterised in that the cylinder (33, 34) of the piston/cylinder unit (23, 24) has in the region of the respective pivot bearing (19, 19') a bracing (53, 53') which is spaced apart from the longitudinal central plane (35, 35') thereof.

7. A scissor type lifting table according to one of claims 1 to 6, characterised in that the lifting swinging arm (42) is constructed as a transversely reinforced double member (55) between the thrust plates (56, 57) of which there is a piston rod articulation (38) which co-operates with the connecting part (43) in the region of the intersecting joint (4) and the pressure roller (44).

8. A scissor type lifting table according to one of claims 1 to 7, characterised in that the thrust plates (56, 57) disposed between a particular pair of scissor arms (25', 26', 27', 28') have in each case a groove (58) forming the shaped part (47, 47') into which it is possible for a pin (59, 59') to pivot which serves as an abutment member (46, 46') on the inner arms (25', 26') of the pairs (5, 6) of scissor arms.

9. A scissor type lifting table according to one of claims 1 to 8, characterised in that the thrust plates (56, 57) are provided with a coaxial connecting sleeve (43') in the region of the universal joint (4).

10. A scissor type lifting table according to one of claims 1 to 9, characterised in that two pairs (5, 6 and 7, 8) of scissor arms are each provided with a piston/cylinder unit (23, 24) and a lifting swinging arm (42, 42').

11. A scissor type lifting table according to one of claims 1 to 10, characterised in that the table top (3) is in the supporting region (48) for the supporting roller (44) provided with a stabilising plate on the under side.

12. A scissor type lifting table according to one of claims 1 to 11, characterised in that the piston/cylinder unit (23, 24) is provided with an inlet trough (60) in the region of the piston rod end (39).

13. A scissor type lifting table according to one of claims 1 to 12, characterised in that the expanding lever (40) is constructed as a double lifting swinging arm (142) with two piston/cylinder units (23; 123) whereby in the starting position there is respectively one (23) above and one (123) below the longitudinal median plane (35) over the piston rod articulating members (38) which are at the same radial distance associated with the universal joint (4).

Revendications

1. Table élévatrice à ciseaux, comportant, entre un cadre inférieur côté sol (2) et une plate-forme de table supérieure (3), au moins une paire de branches de ciseaux (5, 6; 7, 8) qui sont reliées l'une à l'autre en une articulation en croix (4) et qui, dans des zones d'extrémité opposées (14, 15; 16, 17), prennent appui, pour les premières extrémité, au niveau d'un pivot fixe (18, 19), et, pour les autres extrémités, au niveau d'un pivot mobile (20, 21) respectivement sur le cadre inférieur (2) et sur la plate-forme de table (3), sachant que dans une position de départ proche du cadre inférieur dans la zone d'au moins une branche de ciseaux (6, 8) ladite plate-forme de table est attaquée par en dessous par un levier d'écartement (40) pourvu d'un galet de pression (44; 144), situé à l'extrémité extérieure (39) de la tige de piston d'une unité de piston/cylindre (23, 24) et destiné à amorcer une levée initiale de la plate-forme de table (3), caractérisée en ce que le levier d'écartement (40) se présente sous la forme d'une biellette de levage (42) disposée entre les ailes intérieures respectives (25', 26'; 27', 28') d'au moins une des paires de branches de ciseaux (5, 6; 7, 8), cette biellette de levage comportant au moins à une extrémité une partie de liaison disposée sur le même axe que l'articulation en croix (4), à l'autre extrémité le galet de pression (44) et sur un axe parallèle entre l'articulation en croix (4) et l'axe du galet de pression (45) une articulation de tige de piston (38) se trouvant, dans la position d'abaissement, au-dessus du plan longitudinal central (35) de l'unité de piston/cylindre (23; 24).

2. Table élévatrice à ciseaux suivant la revendication 1, caractérisée en ce que la biellette de levage (42) permet de former, par l'intermédiaire d'une partn d'un élément d'appui (31, 32) fixant le cylindre (33, 34) de l'unité de piston/cylindre (23, 24) dans la zone d'extrémité à proximité du pivot fixe (18, 19) de la branche de ciseaux (6, 8), d'autre part, de l'articulation de tige de piston (38), et du galet de pression (44), une liaison active avec la plate-forme de table (3) et d'amener cette dernière dans une position finale de levage avec seulement une unité de piston/cylindre (23, 24) par paire de branches de ciseaux (5, 6 ; 7, 8) qui attaque par en dessous la plate-forme de table (3) et qui présente, à chaque phase de levage (H; H'; H''), une pression interne de cylindre largement constante.

3. Table élévatrice à ciseaux suivant la revendication 1 ou 2, caractérisée en ce que la biellette de levage (42) comporte une partie façonnée (47, 47') limitant son angle de pivotement au cours d'une première phase de levage (H') par l'intermédiaire d'un organe de butée (46, 46') montée dans la zone de chaque aile intérieure (25', 26').

4. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 3, caractérisée en ce que la plate-forme de table (3), comportant une zone d'appui (48) au niveau de sa face inférieure, est attaquée par en dessous par le galet de pression (44) prévu sur la biellette de levage (42), de telle sorte que, lors d'une première phase de levage (H') limitée par le pivotement de l'organe de butée (46, 46') dans la partie façonnée (47, 47'), un engagement d'appui soit formé.

5. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 4, caractérisée en ce que la branche de ciseaux (6) reliée à la plate-forme de table (3) par un pivot mobile (20) est relié à la plate-forme de table (3) par l'intermédiaire d'un rebord de contact de roulement en retour (51) adapté en longueur (50) au trajet de pivotement de la biellette de levage (42).

6. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 5, caractérisée en ce que le cylindre (33; 34) de l'unité de piston/cylindre (23; 24) présente dans la zone du pivot fixe (19, 19') un support (53, 53') décalé par rapport au plan longitudinal central de ladite unité de piston/cylindre.

7. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 6, caractérisée en ce que la biellette de levage (42) se présente sous la forme d'un élément double renforcé transversalement (55), entre les plaques de poussée (56, 57) duquel est prévue l'articulation de tige de piston (38) coopérant avec l'élément de liaison (43) dans la zone de l'articulation en croix (4) et avec le galet (44).

8. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 7, caractérisée en ce que les plaques de poussée (56, 57), situées entre les branches de ciseaux respectives (25', 26'; 27', 28') d'une paire de branches respective, comportent chacune une rainure (58) formant la partie façonnée (47, 47'), dans laquelle un tenon respectif (59,

59') prévue en tant qu'organe de butée (46, 46') et prenant appui sur les ailes intérieures (25', 26') de la paire de branches de ciseaux (5, 6) peut être amenée à pivoter.

9. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 8, caractérisée en ce que les plaques de poussée (56, 57) sont pourvues, dans la zone de l'articulation en croix (4), d'une douille de liaison coaxiale (43').

10. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 9, caractérisée en ce que deux paires de branches de ciseaux (5, 6 et 7, 8) sont prévues et comprennent chacune une unité de piston/cylindre (23, 24) et une biellette de levage (42, 42').

11. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 10, caractérisée en ce que la plate-forme de table (3) est pourvue, dans la zone d'appui (48) pour le galet de pression (44), d'une plaque de stabilisation sur sa face inférieure.

12. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 11, caractérisée en ce que l'unité de piston/cylindre (23, 24) est pourvue dans la zone de l'extrémité de la tige de piston (39) d'une échancrure de réception (60).

13. Table élévatrice à ciseaux suivant l'une quelconque des revendications 1 à 12, caractérisée en ce que le levier d'écartement (40) se présente sous la forme d'une double biellette de levage (142) comportant deux unités de piston/cylindre (23, 123), sachant que dans la position de départ, lesdites unités de piston/cylindre prennent appui, l'une (23) au-dessus et l'autre (123) en dessous du plan longitudinal central (35), par l'intermédiaire des articulations de tiges de pistons (38) montées à égale distance radiale de l'articulation en croix (4).

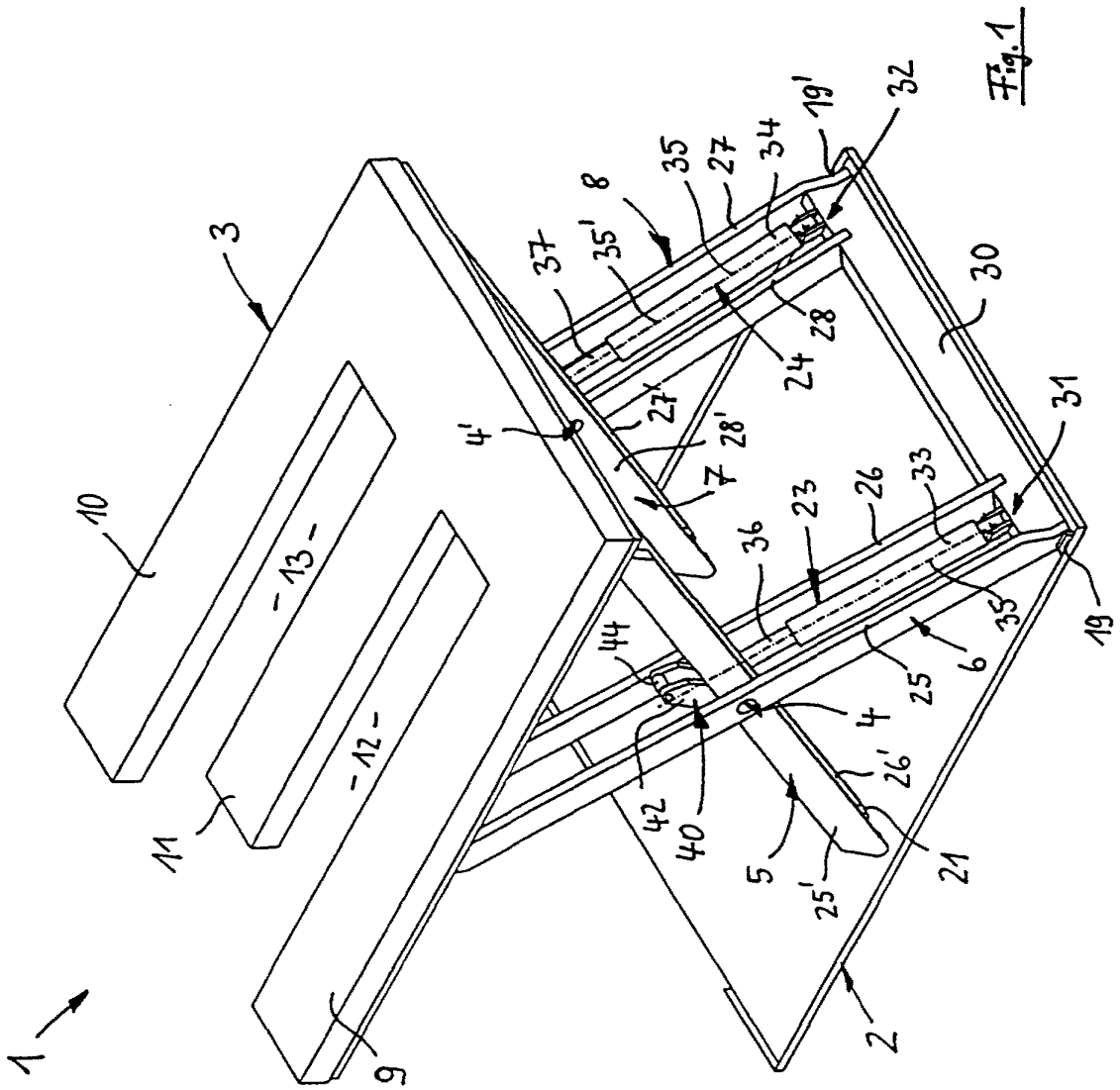

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10
11
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19
19'
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25'
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26'
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36
37
40
42
44

Fig.1

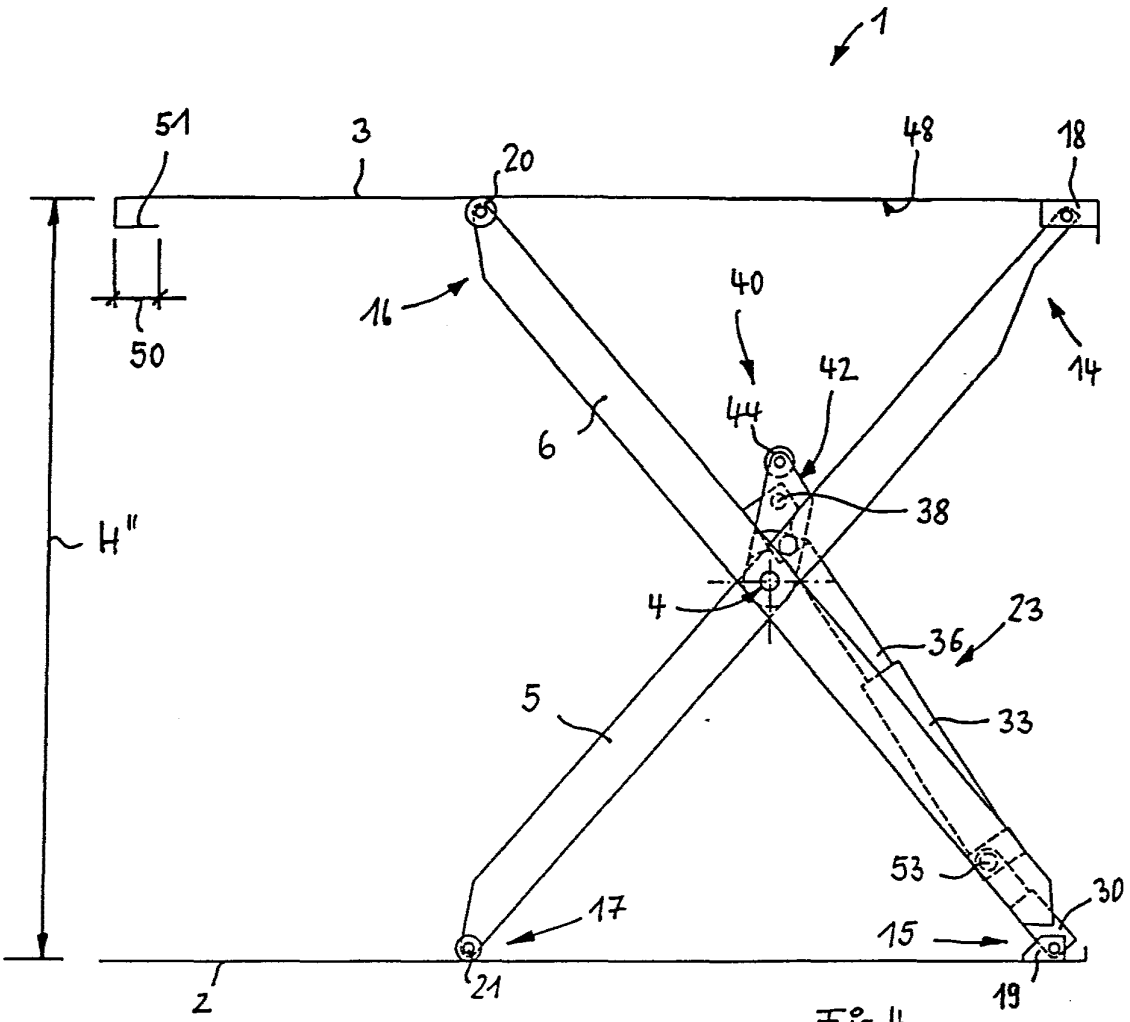


Fig. 4

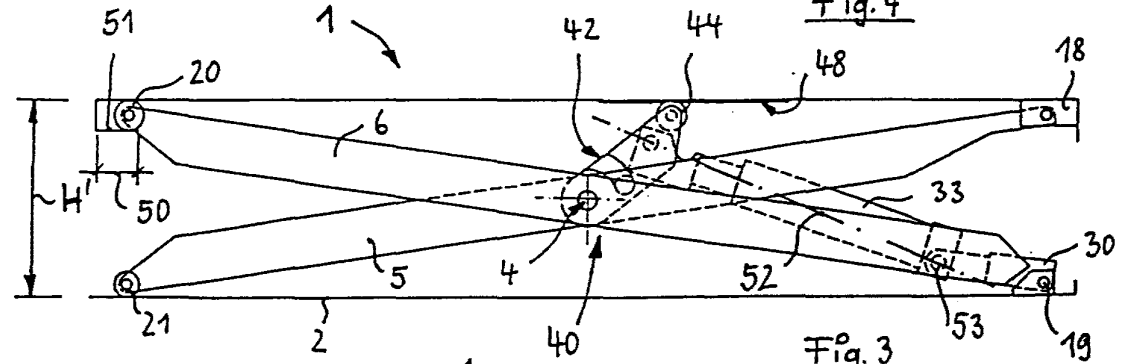


Fig. 3

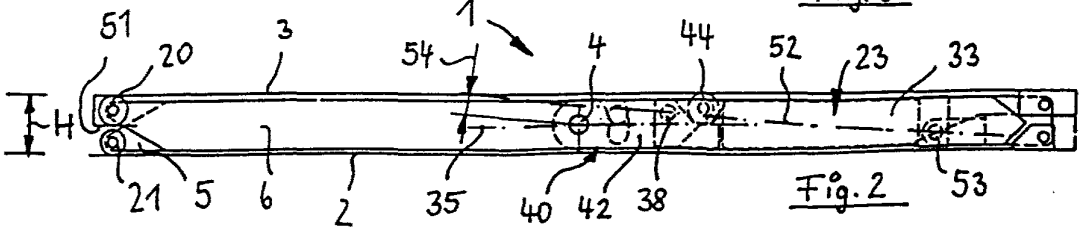


Fig. 2

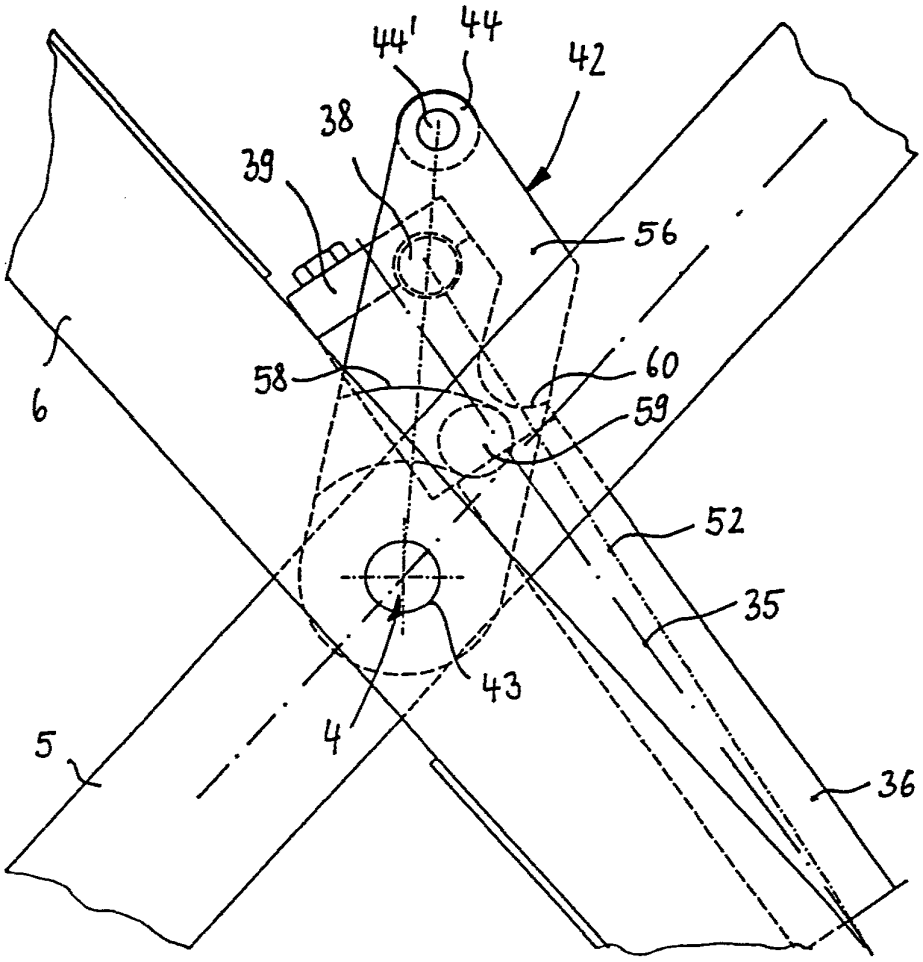

44'
44
42
38
39
56
6
58
60
59
52
35
43
4
5
36

Fig. 5

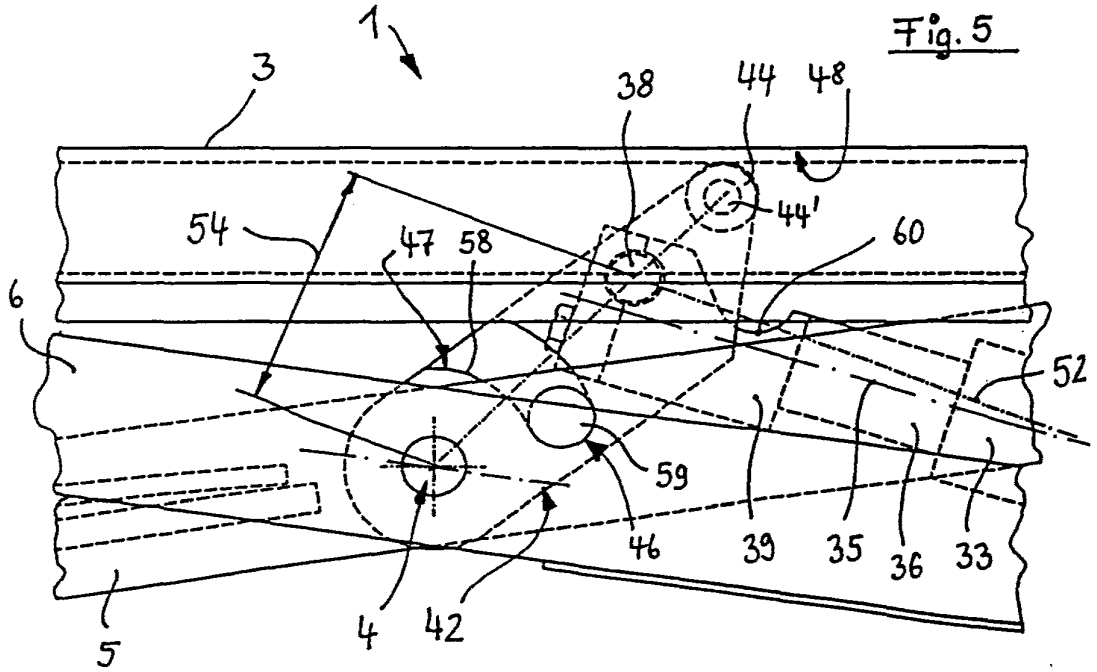

1
3
38
44
48
44'
54
47
58
60
6
52
59
46
39
35
36
33
4
42
5

Fig. 6

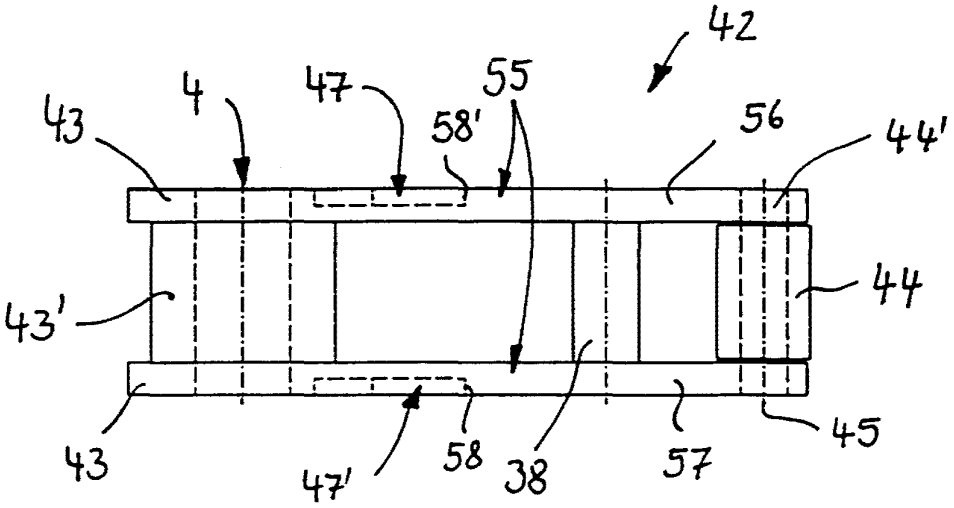

42
4
47
55
58'
56
44'
43
44
43'
45
43
47'
58
38
57

Fig. 7

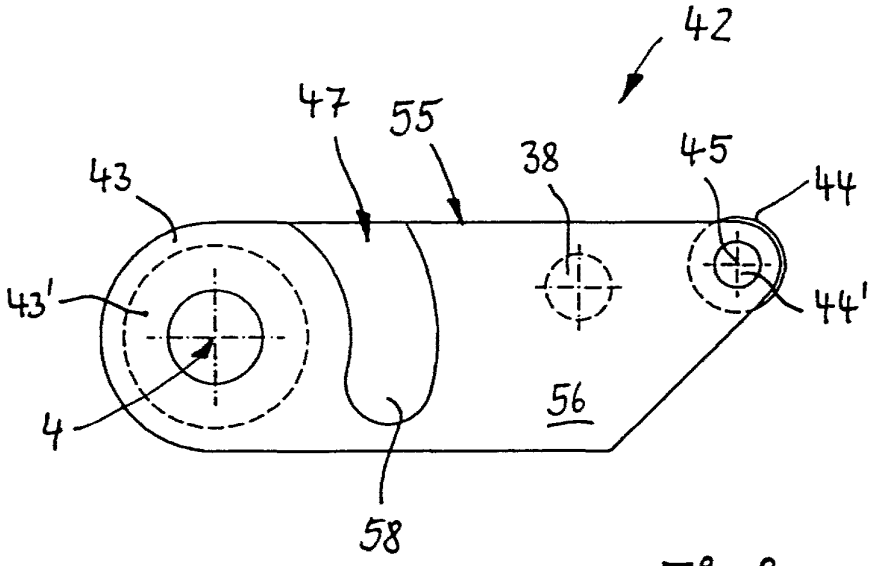

42
47
55
38
45
44
43
43'
44'
4
56
58

Fig. 8

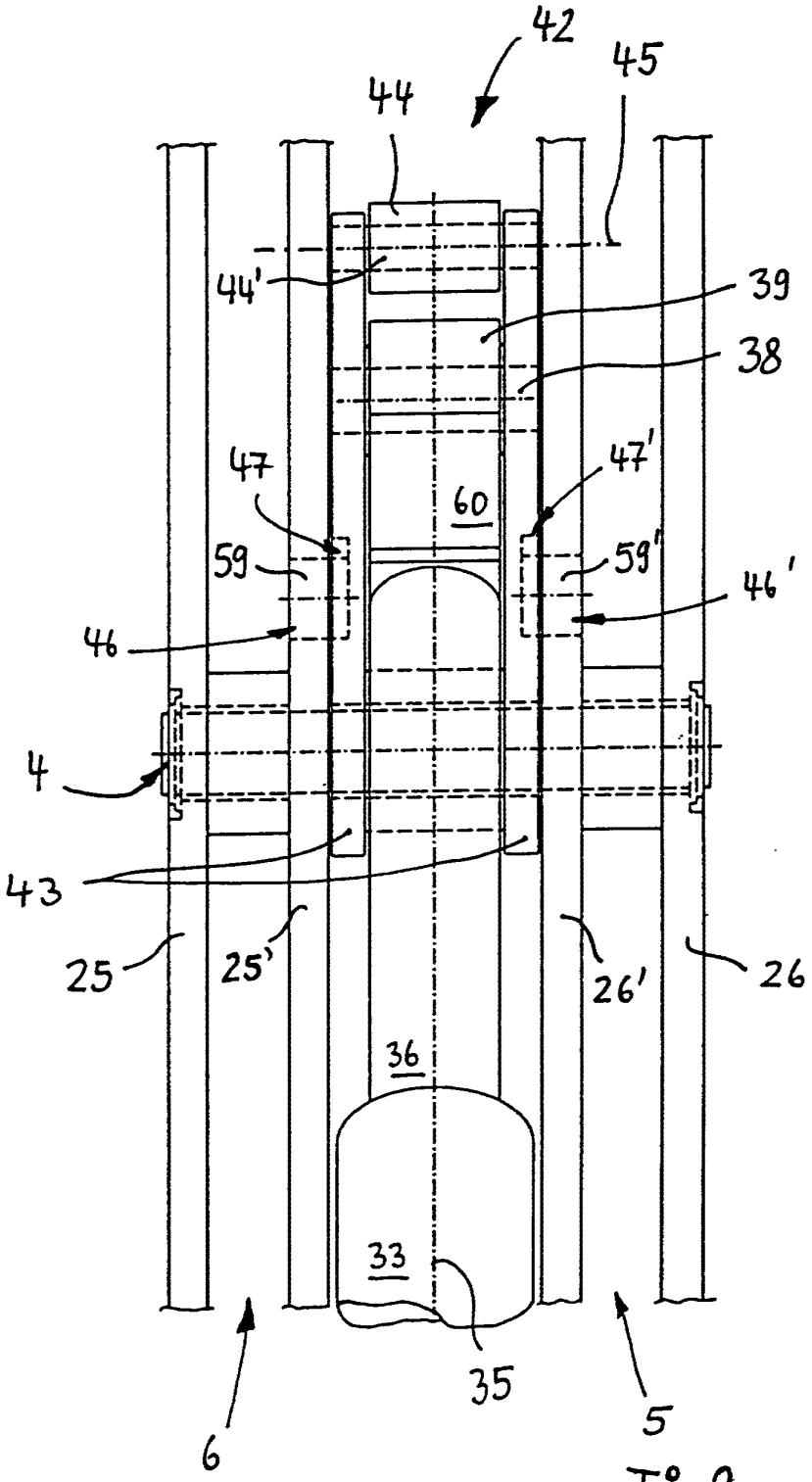


Fig.9

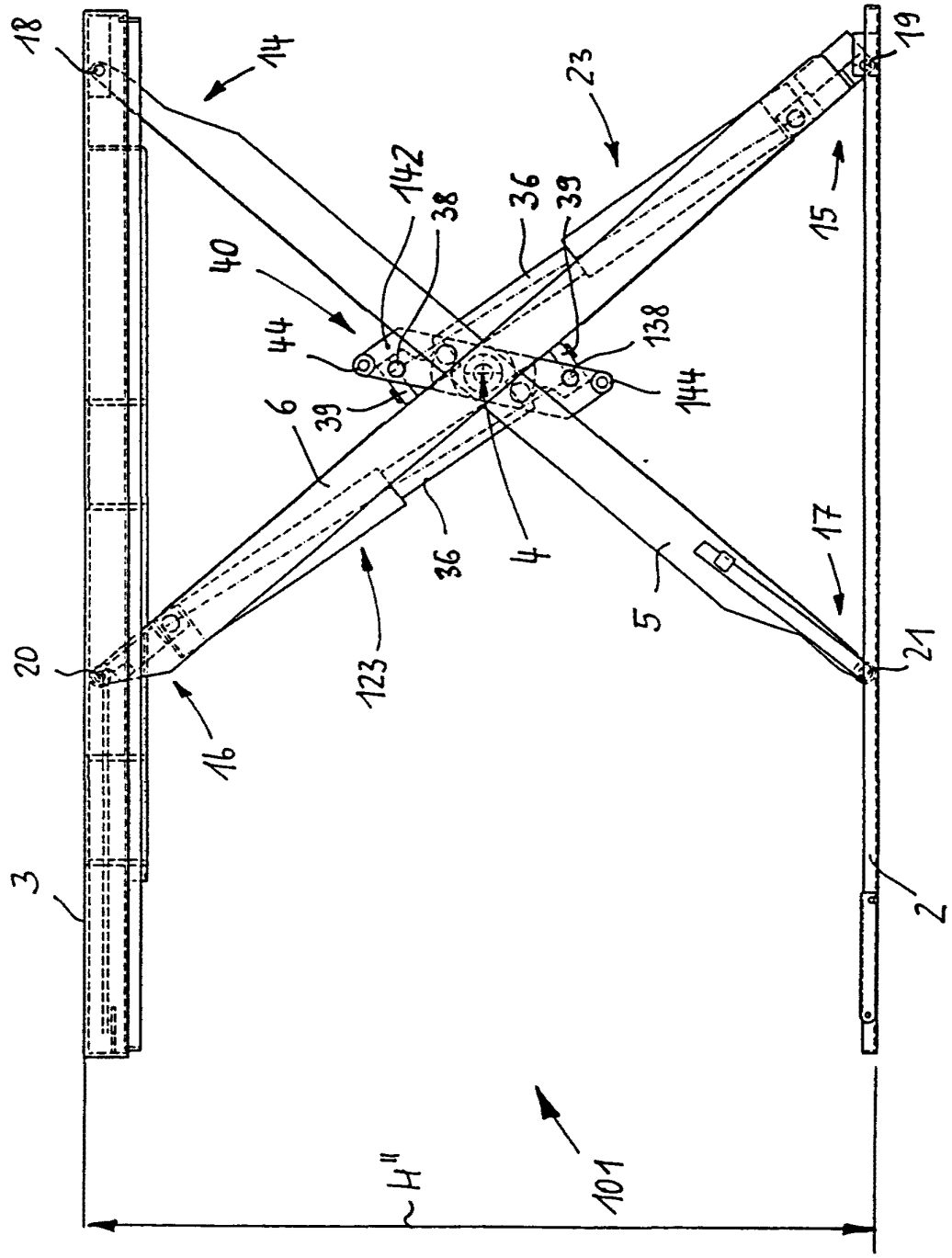

18
14
23
19
142
38
36
39
40
15
44
138
144
6
39
4
36
17
5
123
20
16
21
3
2
H"
101

Fig. 10

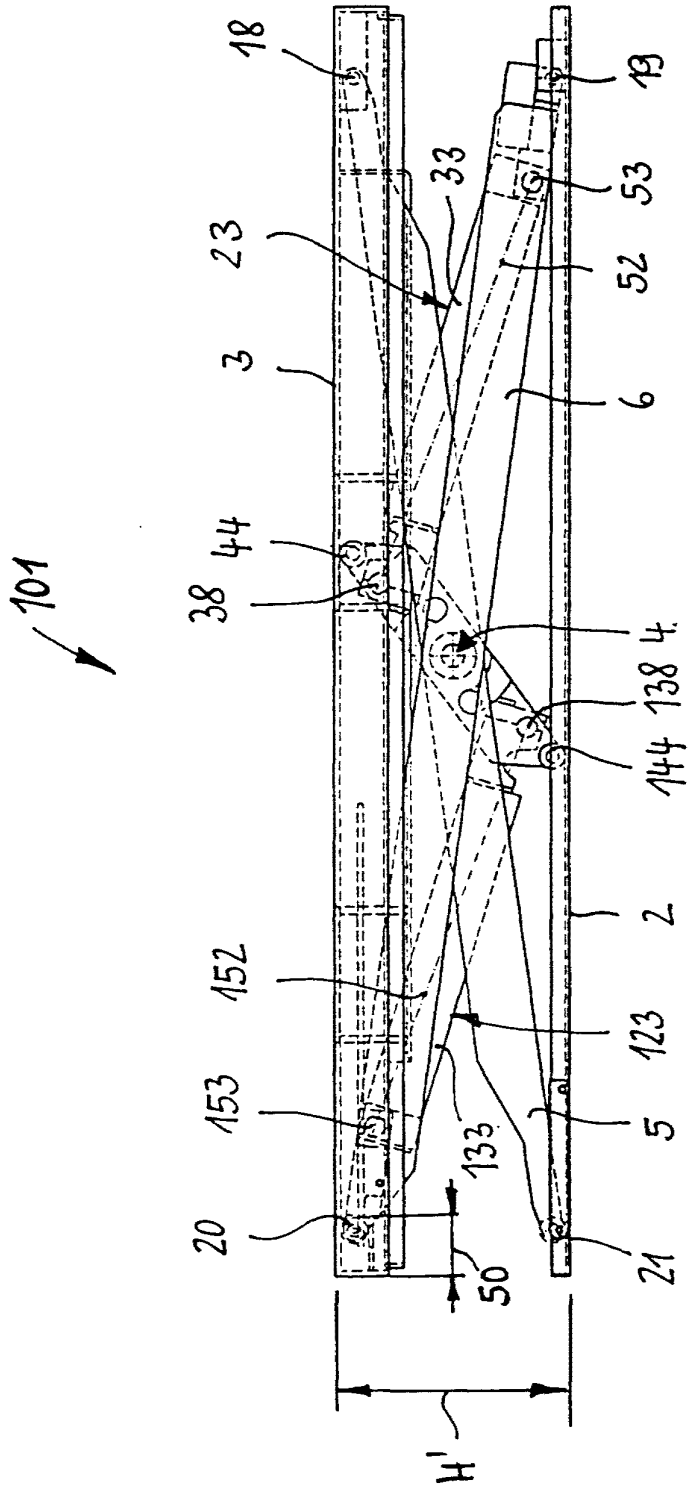


Fig. 11

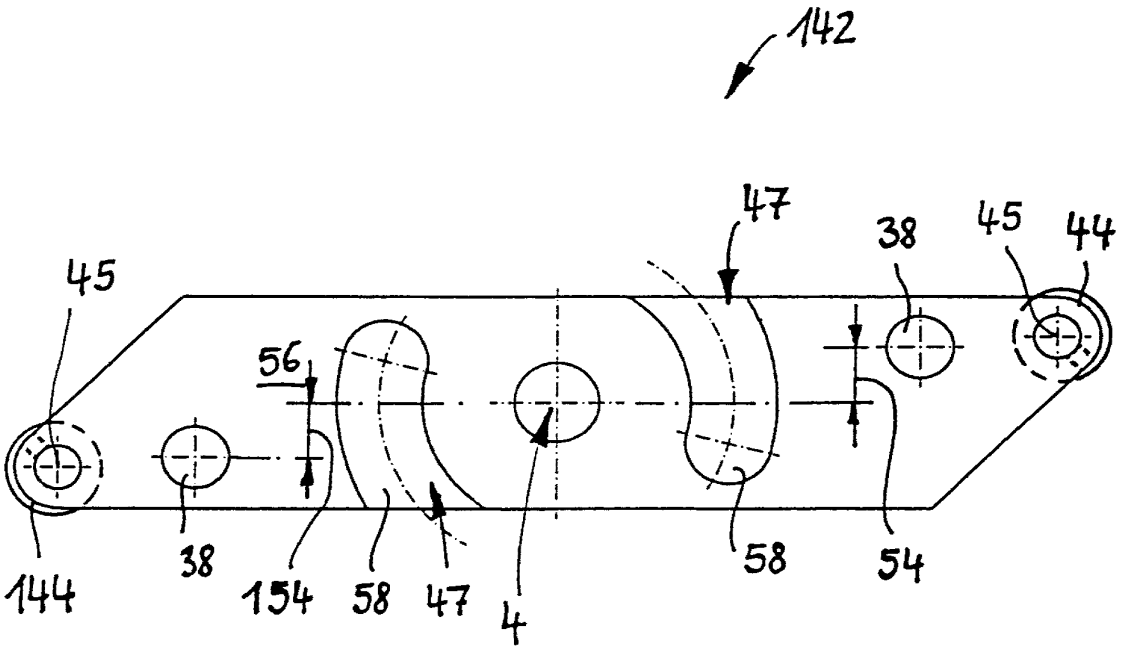


Fig. 12

Patents

The Table top type Liftable computer desk that a kind of bilateral slides

Abstract

The invention discloses the Table top type Liftable computer desk that a kind of bilateral slides, it includes desktop, the bottom plate being correspondingly arranged at below desktop, connect the lifting support group of desktop and bottom plate, four sliding slots are respectively equipped with desktop and bottom plate, the lifting support group includes two groups of crossbars and four pivoted poles for intersecting and being unfolded in " X " type, two pivoted poles connect the top both ends of two crossbars, other two pivoted pole connects the bottom both ends of two crossbars, adjusting detent mechanism is additionally provided between top or the one of which pivoted pole of bottom, the both ends of two pivoted poles at top are correspondingly arranged in the upper hopper chute respectively, the both ends of two pivoted poles of bottom are correspondingly arranged in the gliding groove respectively.Slided by the pivoted pole for lifting support group between the upper hopper chute of desktop and the gliding groove of bottom plate, realize the lifting of the computer desk, and positioning is realized by adjusting detent mechanism, make the computer desk of the present invention height can be adjusted according to the actual demand of user.

Classifications

- A47B21/0314 Platforms for supporting office equipment

View 3 more classifications

CN107912868A

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Inno Sports Co Ltd

Worldwide applications

2017 CN

Application CN201711308771.7A events

2017-12-11	Application filed by Inno Sports Co Ltd
2017-12-11	Priority to CN201711308771.7A
2018-04-17	Publication of CN107912868A
Status	Pending

Info: Cited by (2), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (8)

Hide Dependent

1. A kind of 1. Table top type Liftable computer desk that bilateral slides, it is characterised in that including：Desktop, be correspondingly arranged under desktop The bottom plate of side, the lifting support group for connecting desktop and bottom plate, the bottom surface of desktop are equipped with four upper hopper chutes, and upper hopper chute is correspondingly arranged at this The both sides of wherein two opposite ends of desktop, the opening of each upper hopper chute towards opposite end, the bottom plate be equipped with four it is corresponding with The identical gliding groove of upper hopper chute opening direction, the lifting support group include two groups of intersections for intersecting and being unfolded in " X " type Bar and four pivoted poles, two groups of crossbars are set in relative spacing, wherein two pivoted poles connect the top both ends of two crossbars, separately Outer two pivoted pole connects the bottom both ends of two crossbars, and adjusting is additionally provided between top or the one of which pivoted pole of bottom Detent mechanism, the both ends of two pivoted poles at top are correspondingly arranged in the upper hopper chute respectively, two pivoted poles of bottom Both ends are correspondingly arranged in the gliding groove respectively.
    2. 2. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 1 slides, it is characterised in that：The bottom plate Four gliding grooves are corresponded in the inner side or outside of the length direction of four upper hopper chutes of desktop at the same time respectively.
    3. 3. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 2 slides, it is characterised in that：The bottom plate Four gliding grooves are corresponded in the outside of the length direction of four upper hopper chutes of desktop respectively, make the crosspoints of two groups of crossbars positioned at leaning on The middle and upper part of nearly desktop side, the center of gravity of whole computer desk is close to the middle and lower part of bottom plate.
    4. 4. the Table top type Liftable computer desk that a kind of bilateral as described in any one in claims 1 to 3 slides, its feature exist in：At least two oblique fulcrum bars are further included, two oblique fulcrum bars are at least articulated on the bar of any crossbar close to pivoted pole One end, the other end of two oblique fulcrum bars, which is fixed, to be articulated on the desktop or bottom plate.
    5. 5. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 4 slides, it is characterised in that：The oblique fulcrum bar including four, the desktop is respectively equipped with an oblique fulcrum bar in being articulated on the crossbar of same pivoted pole, the bottom plate in An oblique fulcrum bar is set respectively on two crossbars on another pivoted pole set with the pivoted pole in diagonal.
    6. 6. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 5 slides, it is characterised in that：On the desktop The connector of two confessions oblique fulcrum bar pivot joint is installed with, the bottom plate is equipped with an outline border, and the connector is articulated in outline border On side wall.
    7. 7. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 1 slides, it is characterised in that：Described adjust is determined Position mechanism coordinates the structure of positioning pin for telescopic sleeve, and telescopic sleeve includes inner tube and outer tube, one of inner tube or outer tube Equipped with a location hole for being combined with positioning pin, another pipe fitting is equipped with multiple adjustment holes.
    8. 8. the Table top type Liftable computer desk that a kind of bilateral as claimed in claim 1 slides, it is characterised in that：it is arranged on desktop On two pivoted poles or two pivoted poles being articulated on bottom plate between be additionally provided with an at least spring, the both ends of spring are fixed On

two pivoted poles, for desktop when the distance between bottom plate is maximum, spring is in normal condition.

Description

The Table top type Liftable computer desk that a kind of bilateral slides

Technical field

The present invention relates to a kind of computer desk, particularly relates to the Table top type Liftable computer desk that a kind of bilateral slides.

Background technology

The height of ordinary desk generally can not all be adjusted, its height is commonly designed between 700-800mm, this highly may be used it is seated office using most people, but not everyone handles official business and likes the office that is seated, and there are many people due to various reasons can Office is stand, in this way, the height of desk obviously can bring puzzlement to office, particularly at abroad, many people like stand does Public affairs, therefore a computer desk can be placed on the desktop of desk and is handled official business to place tablet computer, but common computer desk it can not carry out lift adjustment, it is impossible to meet requirement of the people for usage comfort of different heights.

Done with the development of the society, occurring a kind of portable computer for being positioned over ordinary desk desktop currently on the market Public desktop, it uses the use demand of the office worker of different heights by adjusting the height of portable computer desk tops, But this its height adjustment device structure of adjustable for height computer office desktop is determined using by the way of manual positioning pin mostly Position adjusts height, adjusts inconvenience, and adjustable range is small, and existing computer office desktop is mostly directly to rotate on ordinary desk Desktop on, easily topple after placed the equipment such as computer, display on computer office desktop and cause the damage of equipment, Even cause the injury to office worker.

In view of this, the designer in the design of existing computer desk structure for not attaining many missings and not caused by improving Just, deeply conceive, and actively research improvement has a fling at and develops and design the present invention.

The content of the invention

It is an object of the invention to provide a kind of adjustment height, and the Table top type liftable that the bilateral of steadily of centre of gravity slides Computer desk, so as to meet the use demand of different height crowds.

In order to achieve the above objectives, solution of the invention is:

The Table top type Liftable computer desk that a kind of bilateral slides, it includes desktop, the bottom plate being correspondingly arranged at below desktop, connection The lifting support group of desktop and bottom plate, the bottom surface of desktop are equipped with four upper hopper chutes, and upper hopper chute is correspondingly arranged at wherein the two of the desktop The both sides of opposite end, for the opening of each upper hopper chute towards opposite end, the bottom plate is equipped with four corresponding and upper hopper chute opening sides To identical gliding groove, the lifting support group includes two groups and intersects and be unfolded in the crossbar of " X " type and four pivot joints Bar, two groups of crossbars are set in relative spacing, wherein two pivoted poles connect the top both ends of two crossbars, in addition two pivoted poles connect The bottom both ends of two crossbars are connect, adjusting detent mechanism is additionally provided between top or the one of which pivoted pole of bottom, are pushed up The both ends of two pivoted poles in portion are correspondingly arranged in the upper hopper chute respectively, and the both ends of two pivoted poles of bottom correspond to respectively It is arranged in the gliding groove.

Further, four gliding grooves of the bottom plate, the length direction of four upper hopper chutes in desktop corresponding at the same time respectively Inner side or outside.

Further, four gliding grooves of the bottom plate correspond in the outside of the length direction of four upper hopper chutes of desktop respectively, The crosspoint of two groups of crossbars is set to be located at close to the middle and upper part of desktop side, the center of gravity of whole computer desk is under in bottom plate Portion.

Further, the Table top type Liftable computer desk that a kind of bilateral slides includes at least two oblique fulcrum bars, and two tiltedly prop up Bar is at least articulated on the bar of any crossbar close to one end of pivoted pole, and the other end of two oblique fulcrum bars, which is fixed, to be articulated in On the desktop or bottom plate.

Further, the oblique fulcrum bar includes four, and the desktop is set in being articulated on the crossbar of same pivoted pole respectively There is an oblique fulcrum bar, the bottom plate is on two crossbars on another pivoted pole set with the pivoted pole in diagonal points She Zhi not an oblique fulcrum bar.

Further, the connector of two confessions oblique fulcrum bar pivot joint is installed with the desktop, the bottom plate is equipped with outside one Frame, the oblique fulcrum bar are articulated on the side wall of outline border.

Further, it is described adjust detent mechanism for telescopic sleeve coordinate positioning pin structure, telescopic sleeve include inner tube and Outer tube, one of inner tube or outer tube are equipped with a location hole for being combined with positioning pin, and another pipe fitting is equipped with multiple adjustment holes.

Further, it is additionally provided between two pivoted poles being arranged on desktop or two pivoted poles being articulated on bottom plate An at least spring, the both ends of spring are fixed on two pivoted poles, and when the distance between bottom plate is maximum, spring is in just desktop Normal state.

With the above structure, the Table top type Liftable computer desk that a kind of bilateral of the present invention slides is between desktop and bottom plate Lifting support group is set, is slided by the pivoted pole for lifting support group between the upper hopper chute of desktop and the gliding groove of bottom plate, it is real The now lifting of the computer desk, and realize positioning by adjusting detent mechanism, make the computer desk of the present invention can be according to the reality of user Border demand adjusts height.

Brief description of the drawings

Fig. 1 is the three-dimensional exploded view of the present invention.

Fig. 2 is the combination stereogram that the present invention is fully deployed.

Fig. 3 is the stereogram that other direction of the present invention is fully deployed.

Fig. 4 is the side view that the present invention is fully deployed.

Fig. 5 is that the present invention reduces the combination stereogram after height.

Fig. 6 is the side view of Fig. 5 of the present invention.

Fig. 7 is folded to minimum stereogram for the present invention.

Fig. 8 is folded to minimum another stereogram for the present invention.

Embodiment

In order to further explain the technical solution of the present invention, the present invention is explained in detail below by specific embodiment State.

As shown in Figures 1 to 8, present invention is disclosed the Table top type Liftable computer desk 100 that a kind of bilateral slides, it includes Desktop 1, the bottom plate 2 for being correspondingly arranged at the lower section of desktop 1, the lifting support group 3 of connection desktop 1 and bottom plate 2, the bottom surface of desktop 1 is set There are four upper hopper chutes 11, upper hopper chute 11 is correspondingly arranged at the both sides of wherein two opposite ends of the desktop 1, and the opening of each upper hopper chute 11 is equal Towards opposite end, the bottom plate 2 is equipped with four corresponding gliding grooves 21 identical with 11 opening direction of upper hopper chute, the lifting branch Support group 2 includes two groups of crossbars 31 and four pivoted poles 32 for intersecting and being unfolded in " X " type, and every group of crossbar 31 includes two Root bar 311, two groups of crossbars 31 are set in relative spacing, wherein two pivoted poles 21 connect the top both ends of two groups of crossbars 31, Other two pivoted pole 32 connects the bottom both ends of two groups of crossbars 31, between top or the one of which pivoted pole 32 of bottom It is additionally provided with and adjusts detent mechanism 4, the both ends of two pivoted poles 32 at top is correspondingly arranged in the upper hopper chute 11 respectively, bottom The both ends of two pivoted poles 32 be correspondingly arranged at respectively in the gliding groove 21.

Preferably, as shown in Fig. 1, Fig. 3 and Fig. 4, four gliding grooves 21 of the bottom plate 2 are corresponding in desktop 1 at the same time respectively Four upper hopper chutes 11 length direction inner side or outside, i.e. the length of gliding groove 21 and upper hopper chute 11 in the computer desk 100 Stagger setting on direction is spent, makes the length that upper hopper chute 11 and gliding groove 12 design smaller, so that whole computer desk was lifting Cheng Zhong, desktop 1 will not produce offset with bottom plate 2, and desktop 1 can only move on the vertical direction of bottom plate 2.

In order to make the center of gravity of whole computer desk 100 more steady, four gliding grooves 21 of the bottom plate 2 are corresponded in desktop 1 respectively The outside of the length direction of four upper hopper chutes 11, makes the crosspoint 312 of two groups of crossbars 31 be located in 1 side of desktop Portion, the center of gravity of whole computer desk is close to the middle and lower part of bottom plate 2.

In order to avoid each pivoted pole 32 slides in upper hopper chute 11 and gliding groove 12, computer desk 100 of the present invention further include to Few two oblique fulcrum bars 5, two oblique fulcrum bars 5 are at least articulated on the bar 311 of any crossbar 31 close to the one of pivoted pole 32 End, the other end of two oblique fulcrum bars 5, which is fixed, to be articulated on the desktop 1 or bottom plate 2.As shown in the figure, in the present embodiment, the tiltedly branch Bar 5 includes four, and the desktop 1 is respectively equipped with an oblique fulcrum bar 5, institute in being articulated on the crossbar 31 of same pivoted pole 32 Bottom plate 2 is stated in setting an institute respectively on two crossbars 31 on another pivoted pole 32 of the pivoted pole 31 in diagonal setting State oblique fulcrum bar 5.The connector 12 that two confessions oblique fulcrum bar 5 is pivotally connected is installed with the desktop 1, the bottom plate 2 is a framework, Framework has an outline border, and the oblique fulcrum bar 5 is articulated on the side wall of outline border, and the gliding groove 21 is also disposed at the madial wall of outline border On.

Adjusting 4 structure of detent mechanism can use a variety of adjusting location structures, the mode adjusted for example with rack, Or using telescopic sleeve coordinate positioning pin structure, as shown in Fig. 3, Fig. 5 and Fig. 7, the present embodiment be by taking telescopic sleeve as an example, The telescopic sleeve 4 includes inner tube 41 and outer tube 42, and outer tube 42 is equipped with a location hole for being combined with positioning pin （Do not illustrate in figure）, it is Interior Pipe 41 is equipped with multiple adjustment holes 411.For the ease of the rise of computer desk of the present invention, two pivoted poles being arranged on desktop 1 At least a spring 6, the both ends of spring 6 are additionally provided between 32 or pivot joint two pivoted poles 32 on a base plate 2 to be separately fixed at On two pivoted poles 32, for desktop 1 when the distance between bottom plate 2 is maximum, spring 6 is in normal condition.Since bottom plate 2 is frame Body, therefore the adjusting detent mechanism 4 and spring 6 are set directly at the bottom surface of desktop 1.

During assembling, the both ends that will lift four pivoted poles 32 of support group 3 correspond to assembling in upper hopper chute 11 and glide respectively On groove 21, the inner tube 41 of detent mechanism 4 will be adjusted and the free end of outer tube 42 is separately fixed at two pivoted poles of 1 bottom surface of desktop On 32, the both ends of the spring 6 are also secured on two pivoted poles 32 on the desktop 1, and one end of the oblique fulcrum bar 5 passes through pin Nail or pivot are rotatably fixed on desktop 1 or bottom plate 2, and the other end is rotatably fixed on the bar 311 of crossbar 31, Complete the assembling of the present invention.

As shown in Figures 2 to 4, when the bottom plate 2 and the distance between desktop 1 of the computer desk 100 are maximum, namely the computer desk When being fully deployed, two pivoted poles 32 on desktop 1 are located at the innermost end of upper hopper chute 11, and two pivoted poles 32 on bottom plate 2 The innermost end of gliding groove 21 also is located at, at this time, the distance of adjusting detent mechanism 4 is most short, i.e. the inner tube 41 of telescopic sleeve covers completely Enter in outer tube 42, spring 6 does not stress in normal condition.

As shown in Figures 5 and 6, when being intended to reduce the height of the computer desk 100, first release and adjust the spacing of detent mechanism 4, Adjusting detent mechanism 4 is in adjustable state, be pressed downward the top surface of desktop 1, two groups of 31 ends of crossbar of lifting support group 3 It is displaced outwardly, drives pivoted pole 32 to be moved toward the outer end of upper hopper chute 11 and gliding groove 21, spring 6 is gradually stretched at this time, stretches The inner tube 41 of casing is gradually elongated, to need height when, by adjust detent mechanism 4 carry out it is spacing, complete adjusting action.

Such as Fig. 7 and Fig. 8, when being intended to 100 folding of computer desk of the present invention, equally first release and adjust the spacing of detent mechanism 4, Adjusting detent mechanism 4 is in adjustable state, be pressed downward the top surface of desktop 1, until it is each to be fixed together with crossbar 31 Pivoted pole 32 is located at the outermost end of upper hopper chute 11 and gliding groove 12, and spring 6 is stretched, will adjust detent mechanism 4 carry out it is spacing i.e. Can.

If the computer desk 100 from it is low toward height adjustment when, same release adjusts the spacing of detent mechanism 4 first, due to spring 6 it is stretched, under the effect of its elastic force, two pivoted poles 32 fixed with the spring 6 can be driven to move inside, if not pushing down desktop 1, The desktop 1 can directly rise to extreme higher position, that is, spring reset under the action of the spring, then will adjust detent mechanism 4 into Row is spacing to can tune to highest state, if need to adjust to other positions, during spring 6 resets, can push down desktop 1 it is spacing to adjusting detent mechanism progress during the height of top surface, extremely needs.

The Table top type Liftable computer desk that a kind of bilateral of the present invention slides sets lifting support group between desktop and bottom plate, Slided by the pivoted pole for lifting support group between the upper hopper chute of desktop and the gliding groove of bottom plate, realize the liter of the computer desk Drop, and realize positioning by adjusting detent mechanism, make the computer desk of the present invention height can be adjusted according to the actual demand of user.

Above-described embodiment and schema and non-limiting product form of the invention and style, any technical field it is common The appropriate change or modification that technical staff does it, all should be regarded as not departing from the patent category of the present invention.

Cited By (2)

Publication number	Priority date	Publication date	Assignee	Title
CN111493513A *	2020-04-03	2020-08-07	常州市韩发华钢塑件有限公司	Portable lifting type office table
CN111839013A *	2020-07-30	2020-10-30	广州爱福康家具有限公司	Lifting folding kitchen cabinet based on connecting rod transmission
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN208676561U	2019-04-02	A kind of Table top type Liftable computer desk of bilateral sliding
US8056871B2	2011-11-15	Portable and adjustable stand for laptop computers or other devices
US20080251659A1	2008-10-16	Folding stand for laptop computers or other devices
CN107912868A	2018-04-17	The Table top type Liftable computer desk that a kind of bilateral slides
US7806812B2	2010-10-05	Foldable exercise device
CN210496089U	2020-05-12	Body-building aerial ladder convenient to adjust working distance
US8985031B2	2015-03-24	Desk top elevator
CN110410634A	2019-11-05	A kind of computer display screen fixation base structure
CN204499843U	2015-07-29	A kind of novel portable Deformable desk chair
CN208676540U	2019-04-02	A kind of auxiliary telescopic adjustment structure
CN201879096U	2011-06-29	Adjustable round dining table
CN104473437A	2015-04-01	Hung lifting desk board device
CN208676564U	2019-04-02	A kind of Liftable computer desk of single-sided sliding
CN209782112U	2019-12-13	Folding portable computer support
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CN207444567U	2018-06-05	Student's drawing tables
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CN109621303A	2019-04-16	A kind of foldable domestic fitness equipment
CN104676216B	2017-06-16	Adjustable supporting
CN210643486U	2020-06-02	Model head fixing support
CN211408060U	2020-09-04	Movable restaurant
CN216243415U	2022-04-08	Computer supporting device for processing remote sensing image with adjustable use posture

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201711308771.7A	2017-12-11	2017-12-11	The Table top type Liftable computer desk that a kind of bilateral slides

Applications Claiming Priority (1)

Application	Filing date	Title
CN201711308771.7A	2017-12-11	The Table top type Liftable computer desk that a kind of bilateral slides

Legal Events

Date	Code	Title	Description
2018-04-17	PB01	Publication	
2018-04-17	PB01	Publication	
2018-06-08	SE01	Entry into force of request for substantive examination	
2018-06-08	SE01	Entry into force of request for substantive examination	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
bilateral		title,claims,abstract,description	18	0.000
corresponding		claims,description	5	0.000
gravity		claims,description	5	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 107912868 A
(43)申请公布日 2018.04.17

(21)申请号 201711308771.7

(22)申请日 2017.12.11

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(51)Int.Cl.
A47B 21/013(2006.01)
A47B 9/16(2006.01)

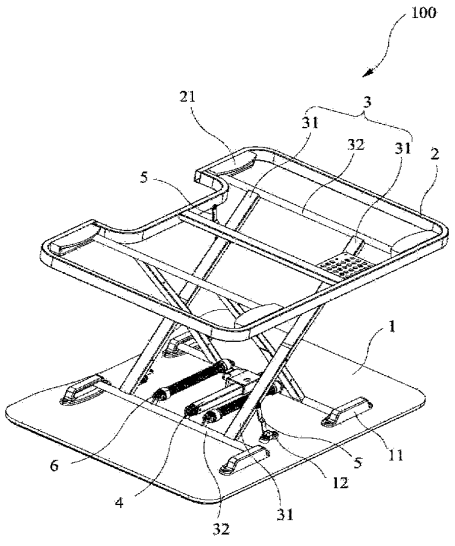
权利要求书1页 说明书4页 附图6页

(54)发明名称

一种双侧滑动的桌面式可升降电脑桌

(57)摘要

本发明公开了一种双侧滑动的桌面式可升降电脑桌，其包括桌板、对应设置在桌板下方的底板、连接桌板与底板的升降支撑组，桌板及底板上分别设有四个滑槽，所述升降支撑组包括两组相互交叉且展开呈“X”型的交叉杆及四根枢接杆，两枢接杆连接两交叉杆的顶部两端，另外两枢接杆连接两交叉杆的底部两端，位于顶部或底部的其中一组枢接杆之间还设有调节定位机构，顶部的两根枢接杆的两端分别对应设置在所述上滑槽内，底部的两根枢接杆的两端分别对应设置在所述下滑槽内。通过升降支撑组的枢接杆在桌板的上滑槽与底板的下滑槽之间滑动，实现该电脑桌的升降，并通过调节定位机构实现定位，使本发明的电脑桌可根据使用者的实际需求调节高度。



CN 107912868 A

1.一种双侧滑动的桌面式可升降电脑桌，其特征在于，包括：桌板、对应设置在桌板下方的底板、连接桌板与底板的升降支撑组，桌板的底面设有四个上滑槽，上滑槽对应设于该桌板的其中两相对端的两侧，各上滑槽的开口均朝向相对端，所述底板上设有四个对应与上滑槽开口方向相同的下滑槽，所述升降支撑组包括两组相互交叉且展开呈“X”型的交叉杆及四根枢接杆，两组交叉杆呈相对间隔设置，其中两枢接杆连接两交叉杆的顶部两端，另外两枢接杆连接两交叉杆的底部两端，位于顶部或底部的其中一组枢接杆之间还设有调节定位机构，顶部的两根枢接杆的两端分别对应设置在所述上滑槽内，底部的两根枢接杆的两端分别对应设置在所述下滑槽内。

2.如权利要求1所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：所述底板的四个下滑槽分别同时对应在桌板的四个上滑槽的长度方向的内侧或者外侧。

3.如权利要求2所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：所述底板的四个下滑槽分别对应在桌板四个上滑槽的长度方向的外侧，使两组交叉杆的交叉点位于靠近桌板一侧的中上部，整个电脑桌的重心在靠近底板的中下部。

4.如权利要求1至3中任意一项所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：还包括至少两根斜支杆，两斜支杆的至少枢接在所述任意交叉杆的杆上靠近枢接杆的一端，两斜支杆的另一端固定枢接在所述桌板或底板上。

5.如权利要求4所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：所述斜支杆包括四根，所述桌板于枢接在同一枢接杆的交叉杆上分别设有一所述斜支杆，所述底板于与该枢接杆呈对角线设置的另一枢接杆上的两根交叉杆上分别设置一所述斜支杆。

6.如权利要求5所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：所述桌板上固设有两个供所述斜支杆枢接的连接头，所述底板设有一外框，所述连接头枢接在外框的侧壁上。

7.如权利要求1所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：所述调节定位机构为伸缩套管配合定位销的结构，伸缩套管包括内管及外管，内管或外管的其中之一设有一配合有定位销的定位孔，另一管件上设有多个调节孔。

8.如权利要求1所述的一种双侧滑动的桌面式可升降电脑桌，其特征在于：设置在桌板上的两根枢接杆或者枢接在底板上的两根枢接杆之间还设有至少一弹簧，弹簧的两端固定在两根枢接杆上，桌板于底板之间的距离最大时，弹簧处于正常状态。

一种双侧滑动的桌面式可升降电脑桌

技术领域

[0001] 本发明涉及一种电脑桌，特别是指一种双侧滑动的桌面式可升降电脑桌。

背景技术

[0002] 普通办公桌的高度一般都无法调节，其高度通常设计在700-800mm之间，此高度可使用大多数人坐着办公，但是并非每个人办公都喜欢坐着办公，有很多人由于各种原因会站着办公，这样，办公桌的高度显然会给办公带来困扰，特别是在国外，很多人喜欢站着办公，因此会在办公桌的桌面上放置一电脑桌来放置平板电脑进行办公，但是普通的电脑桌无法进行升降调节，不能满足不同身高的人对于使用舒适度的要求。

[0003] 随着社会的进步，目前市场上出现了一种放置于普通办公桌桌面的便携式电脑办公桌面，其通过调节便携式电脑办公桌面的高度来使用不同身高的办公人员的使用需求，但是这种高度可调的电脑办公桌面其高度调节装置结构多是采用手动定位销的方式来定位调节高度，调节不便，调节范围小，而且现有的电脑办公桌面多是直接旋转于普通办公桌的桌面上，当电脑办公桌面上放置了电脑、显示器等设备后易发生倾覆而造成设备的损坏，甚至造成对办公人员的伤害。

[0004] 有鉴于此，本设计人针对现有电脑桌结构设计上未臻完善所导致的诸多缺失及不便，而深入构思，且积极研究改良试做而开发设计出本发明。

发明内容

[0005] 本发明的目的在于提供一种可调高度，并且重心稳定的双侧滑动的桌面式可升降电脑桌，从而满足不同身高人群的使用需求。

[0006] 为了达成上述目的，本发明的解决方案是：

一种双侧滑动的桌面式可升降电脑桌，其包括桌板、对应设置在桌板下方的底板、连接桌板与底板的升降支撑组，桌板的底面设有四个上滑槽，上滑槽对应设于该桌板的其中两相对端的两侧，各上滑槽的开口均朝向相对端，所述底板上设有四个对应与上滑槽开口方向相同的下滑槽，所述升降支撑组包括两组相互交叉且展开呈“X”型的交叉杆及四根枢接杆，两组交叉杆呈相对间隔设置，其中两枢接杆连接两交叉杆的顶部两端，另外两枢接杆连接两交叉杆的底部两端，位于顶部或底部的其中一组枢接杆之间还设有调节定位机构，顶部的两根枢接杆的两端分别对应设置在所述上滑槽内，底部的两根枢接杆的两端分别对应设置在所述下滑槽内。

[0007] 进一步，所述底板的四个下滑槽分别同时对应在桌板的四个上滑槽的长度方向的内侧或者外侧。

[0008] 进一步，所述底板的四个下滑槽分别对应在桌板四个上滑槽的长度方向的外侧，使两组交叉杆的交叉点位于靠近桌板一侧的中上部，整个电脑桌的重心在靠近底板的中下部。

[0009] 进一步，所述一种双侧滑动的桌面式可升降电脑桌包括至少两根斜支杆，两斜支

杆的至少枢接在所述任意交叉杆的杆上靠近枢接杆的一端，两斜支杆的另一端固定枢接在所述桌板或底板上。

[0010] 进一步，所述斜支杆包括四根，所述桌板于枢接在同一枢接杆的交叉杆上分别设有一所述斜支杆，所述底板于与该枢接杆呈对角线设置的另一枢接杆上的两根交叉杆上分别设置一所述斜支杆。

[0011] 进一步，所述桌板上固设有两个供所述斜支杆枢接的连接头，所述底板设有一外框，所述斜支杆枢接在外框的侧壁上。

[0012] 进一步，所述调节定位机构为伸缩套管配合定位销的结构，伸缩套管包括内管及外管，内管或外管的其中之一设有一配合有定位销的定位孔，另一管件上设有多个调节孔。

[0013] 进一步，设置在桌板上的两根枢接杆或者枢接在底板上的两根枢接杆之间还设有至少一弹簧，弹簧的两端固定在两根枢接杆上，桌板于底板之间的距离最大时，弹簧处于正常状态。

[0014] 采用上述结构后，本发明一种双侧滑动的桌面式可升降电脑桌在桌板与底板之间设置升降支撑组，通过升降支撑组的枢接杆在桌板的上滑槽与底板的下滑槽之间滑动，实现该电脑桌的升降，并通过调节定位机构实现定位，使本发明的电脑桌可根据使用者的实际需求调节高度。

附图说明

[0015] 图1为本发明的立体分解图。

[0016] 图2为本发明完全展开的组合立体图。

[0017] 图3为本发明另一方向完全展开的立体图。

[0018] 图4为本发明完全展开的侧视图。

[0019] 图5为本发明降低高度后的组合立体图。

[0020] 图6为本发明图5的侧视图。

[0021] 图7为本发明收折至最低的立体图。

[0022] 图8为本发明收折至最低的另一立体图。

具体实施方式

[0023] 为了进一步解释本发明的技术方案，下面通过具体实施例来对本发明进行详细阐述。

[0024] 如图1至图8所示，本发明揭示了一种双侧滑动的桌面式可升降电脑桌100，其包括桌板1、对应设置在桌板1下方的底板2、连接桌板1与底板2的升降支撑组3，桌板1的底面设有四个上滑槽11，上滑槽11对应设于该桌板1的其中两相对端的两侧，各上滑槽11的开口均朝向相对端，所述底板2上设有四个对应与上滑槽11开口方向相同的下滑槽21，所述升降支撑组2包括两组相互交叉且展开呈“X”型的交叉杆31及四根枢接杆32，每组交叉杆31包括两根杆311，两组交叉杆31呈相对间隔设置，其中两枢接杆21连接两组交叉杆31的顶部两端，另外两枢接杆32连接两组交叉杆31的底部两端，位于顶部或底部的其中一组枢接杆32之间还设有调节定位机构4，顶部的两根枢接杆32的两端分别对应设置在所述上滑槽11内，底部的两根枢接杆32的两端分别对应设置在所述下滑槽21内。

[0025] 较佳的，如图1、图3及图4所示，所述底板2的四个下滑槽21分别同时对应在桌板1的四个上滑槽11的长度方向的内侧或者外侧，即下滑槽21与上滑槽11在该电脑桌100的长度方向上错开设置，使上滑槽11及下滑槽12设计的长度较小，从而使整个电脑桌在升降过程中，桌板1与底板2不会产生偏移，桌板1仅会在底板2的竖直方向上移动。

[0026] 为了使整个电脑桌100的重心更稳，所述底板2的四个下滑槽21分别对应在桌板1四个上滑槽11的长度方向的外侧，使两组交叉杆31的交叉点312位于靠近桌板1一侧的中上部，整个电脑桌的重心在靠近底板2的中下部。

[0027] 为了避免各枢接杆32在上滑槽11及下滑槽12内滑动，本发明电脑桌100还包括至少两根斜支杆5，两斜支杆5的至少枢接在所述任意交叉杆31的杆311上靠近枢接杆32的一端，两斜支杆5的另一端固定枢接在所述桌板1或底板2上。如图所示，本实施例中，所述斜支杆5包括四根，所述桌板1于枢接在同一枢接杆32的交叉杆31上分别设有一所述斜支杆5，所述底板2于与该枢接杆31呈对角线设置的另一枢接杆32上的两根交叉杆31上分别设置一所述斜支杆5。所述桌板1上固设有两个供所述斜支杆5枢接的连接头12，所述底板2为一框体，框体具有一外框，所述斜支杆5枢接在外框的侧壁上，所述下滑槽21也设置在外框的内侧壁上。

[0028] 所述调节定位机构4结构可以采用多种调节定位结构，例如采用齿条调节的方式，或者采用伸缩套管配合定位销的结构，如图3、图5及图7所示，本实施例是以伸缩套管为例，该伸缩套管4包括内管41及外管42，外管42设有一配合有定位销的定位孔(图中未示意)，内管41上设有多个调节孔411。为了便于本发明电脑桌的升起，设置在桌板1上的两根枢接杆32或者枢接在底板2上的两根枢接杆32之间还设有至少一弹簧6，弹簧6的两端分别固定在两根枢接杆32上，桌板1于底板2之间的距离最大时，弹簧6处于正常状态。由于，底板2为框体，因此将所述调节定位机构4及弹簧6直接设置在桌板1的底面。

[0029] 组装时，将升降支撑组3的四根枢接杆32的两端分别对应装配在上滑槽11及下滑槽21上，将调节定位机构4的内管41及外管42的自由端分别固定在桌板1底面的两根枢接杆32上，所述弹簧6的两端也固定在该桌板1上的两根枢接杆32上，所述斜支杆5的一端通过销钉或者枢轴可转动的固定在桌板1或底板2上，另一端可转动的固定在交叉杆31的杆311上，即完成本发明的装配。

[0030] 如图2至图4所示，当该电脑桌100的底板2与桌板1之间的距离最大，也即该电脑桌完全展开时，桌板1上的两根枢接杆32位于上滑槽11的最里端，而底板2上的两根枢接杆32也位于下滑槽21的最里端，此时，调节定位机构4的距离最短，即伸缩套管的内管41完全套入外管42中，弹簧6处于正常状态不受力。

[0031] 如图5及图6所示，当欲降低该电脑桌100的高度时，先解除调节定位机构4的限位，使调节定位机构4处于可调节状态，向下压桌板1的顶面，升降支撑组3的两组交叉杆31端部向外移动，带动枢接杆32往上滑槽11及下滑槽21的外端移动，此时弹簧6逐渐被拉伸，伸缩套管的内管41逐渐拉长，至需要的高度时，将调节定位机构4进行限位，完成调节动作。

[0032] 如图7及图8，当欲将本发明电脑桌100收折时，同样先解除调节定位机构4的限位，使调节定位机构4处于可调节状态，向下压桌板1的顶面，直至与交叉杆31固定在一起的各枢接杆32位于上滑槽11及下滑槽12的最外端，弹簧6被拉伸，将调节定位机构4进行限位即可。

[0033] 若该电脑桌100由低往高调整时，首先同样解除调节定位机构4的限位，由于弹簧6被拉伸，在其弹力作用下，会带动与该弹簧6固定的两枢接杆32往内移动，若未压住桌板1，该桌板1在弹簧的作用下可直接上升至最高位置，也就是弹簧复位，再将调节定位机构4进行限位即可调整至最高状态，若需调整至其他位置，在弹簧6复位的过程中，可压住桌板1的顶面，至需要的高度时，对调节定位机构进行限位即可。

[0034] 本发明一种双侧滑动的桌面式可升降电脑桌在桌板与底板之间设置升降支撑组，通过升降支撑组的枢接杆在桌板的上滑槽与底板的下滑槽之间滑动，实现该电脑桌的升降，并通过调节定位机构实现定位，使本发明的电脑桌可根据使用者的实际需求调节高度。

[0035] 上述实施例和图式并非限定本发明的产品形态和式样，任何所属技术领域的普通技术人员对其所做的适当变化或修饰，皆应视为不脱离本发明的专利范畴。

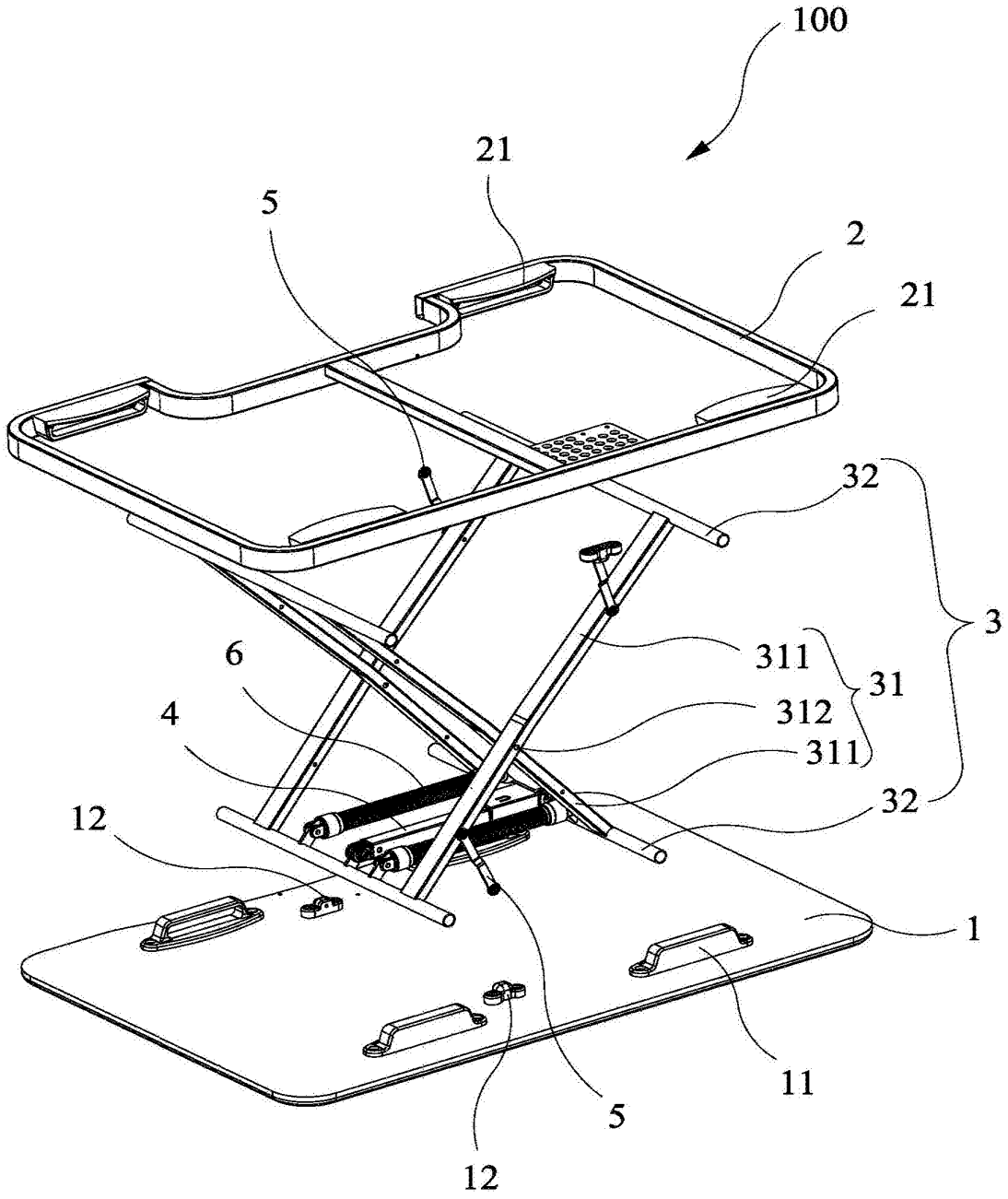


图1

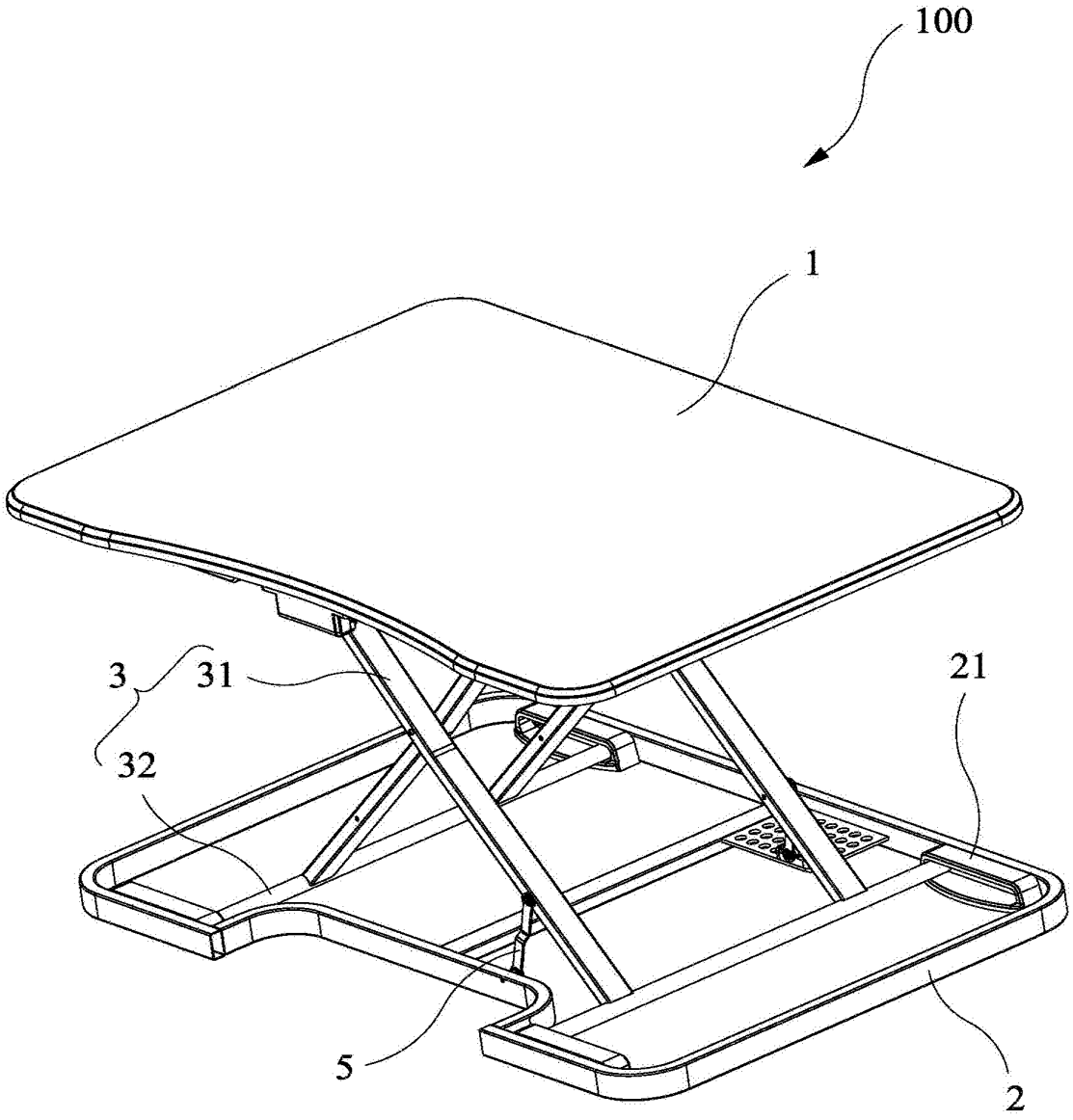


图2

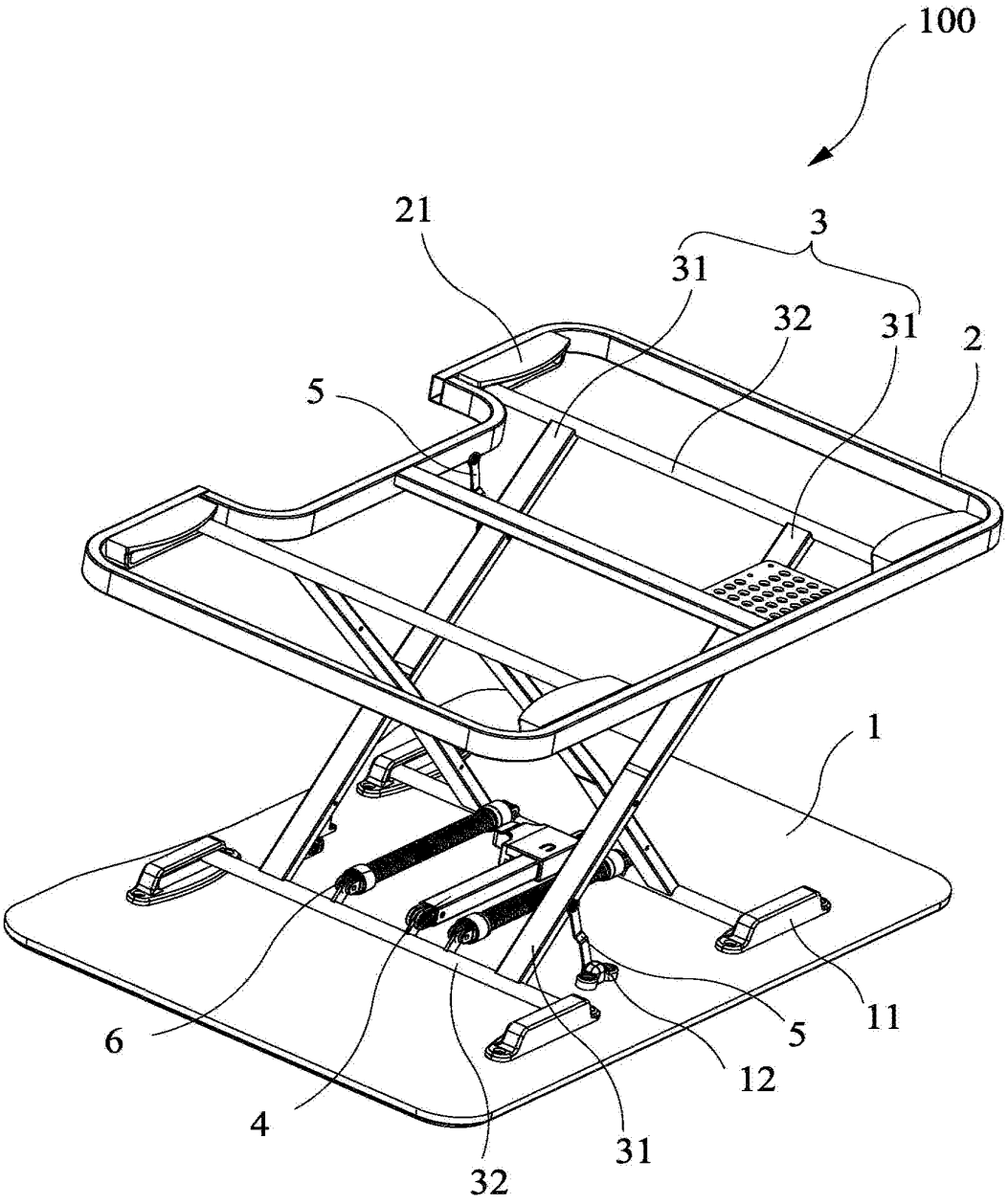


图3

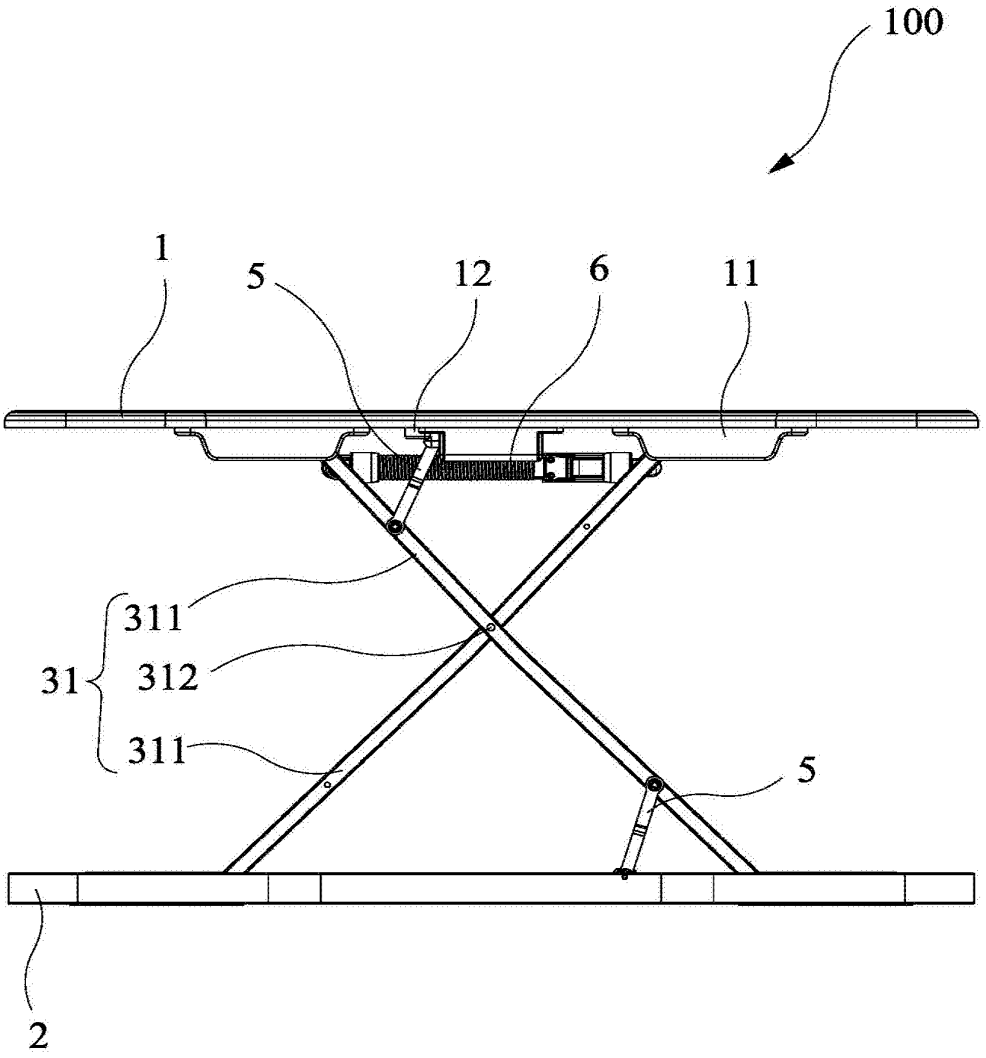


图4

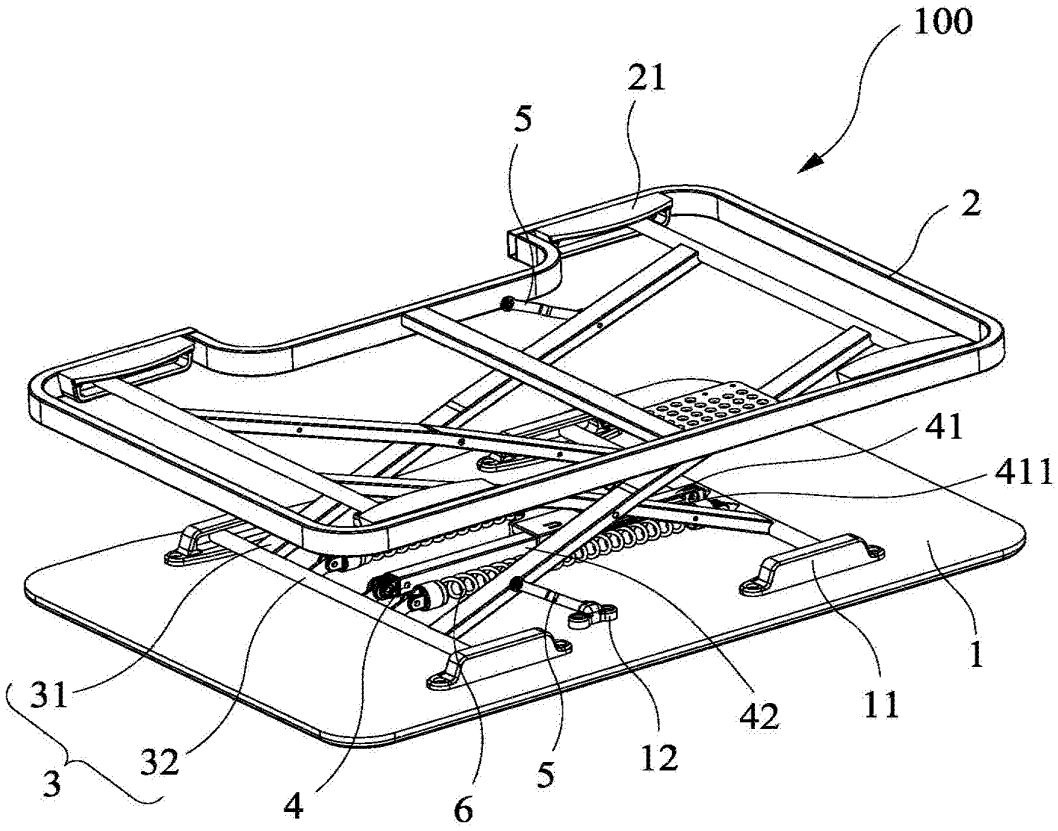


图5

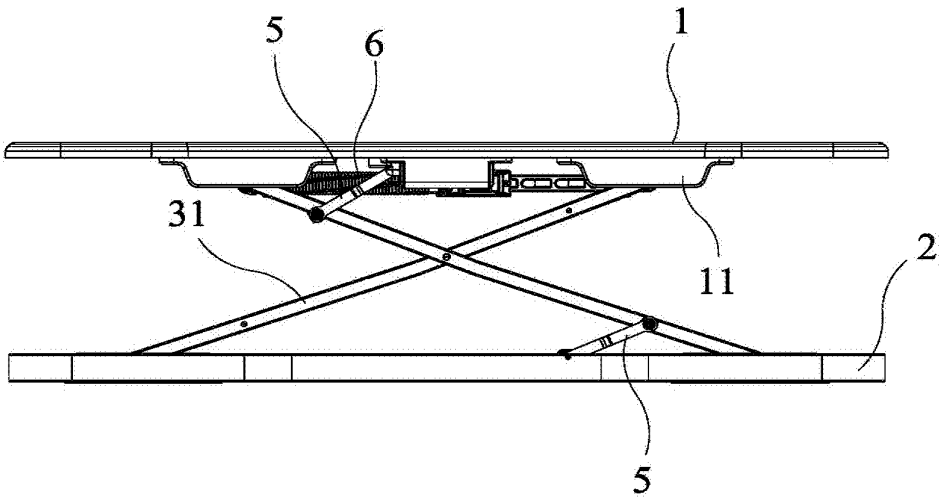


图6

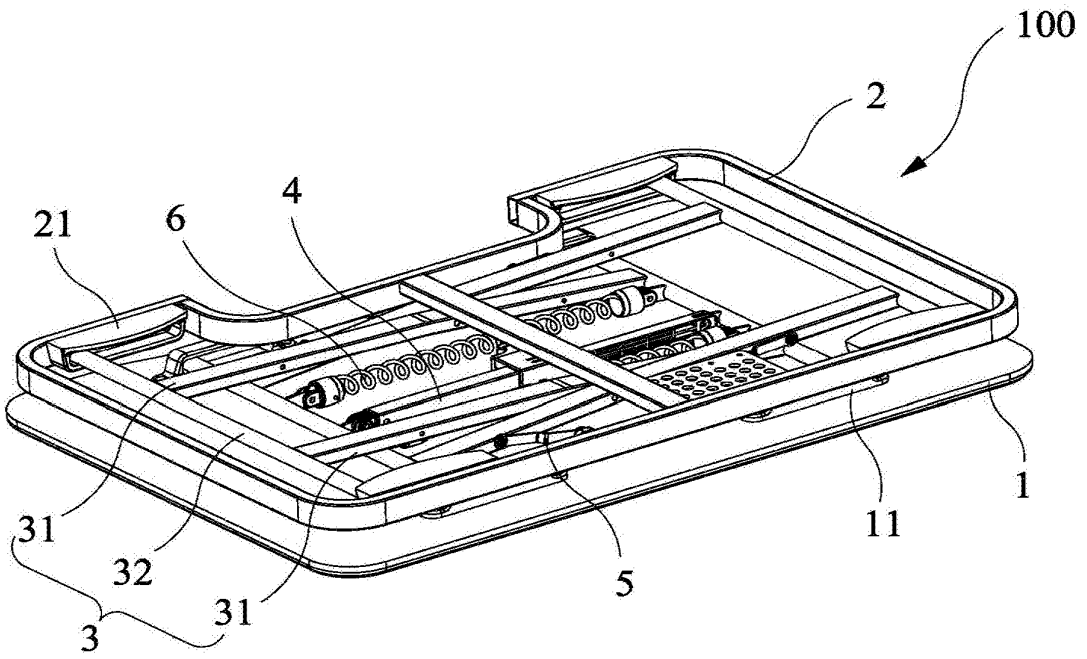


图7

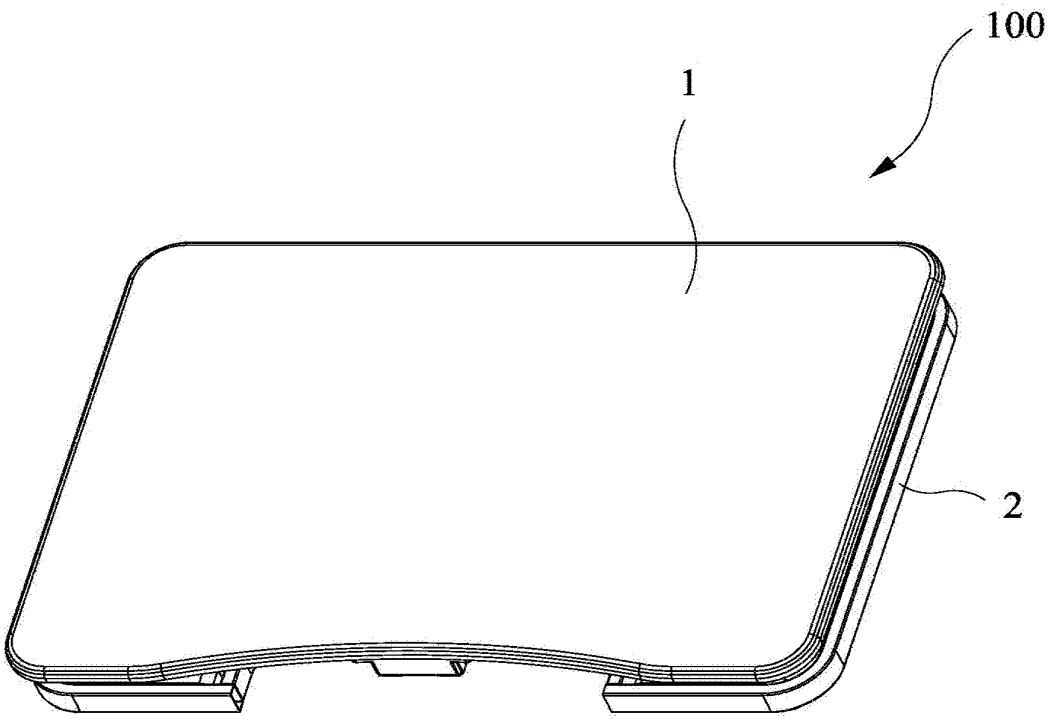


图8

Patents

Height adjustable work table with base and table top

Abstract

The connecting arrangement (18) has a first column (20) connected to the base (12), and a second column (22) connected to the table-top (16). The columns are pivotally interconnected by a system of parallel rods (24) using connecting axles (30,32,34,36). At least one spring arrangement (42) is mounted at one end (58) to one of the columns, and by its second end (44) to the system of parallel rods. The system of parallel rods consists of two laterally spaced part lower rods (26), and two parallel, laterally spaced apart top rods (28). The two lower rods have fixture strips (38) for the second end of the spring arrangement.

Classifications

- A47B17/02 Writing-tables with vertically-adjustable parts

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DE4424564A1

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Inventor: Volker Kluegl, Gernot Meyer

Current Assignee : ZALIUKAS PRANAS 90489 NUERNBERG DE

Worldwide applications

1994 DE

Application DE19944424564 events

1994-07-13 Application filed by ZALIUKAS PRANAS 90489 NUERNBERG DE

1994-07-13 Priority to DE19944424564

1996-01-18 Publication of DE4424564A1

Status Withdrawn

Info: Cited by (5), Legal events, Similar documents, Priority and Related Applications

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Claims (9)

Hide Dependent translated from German

1. Height-adjustable work table with a base means (12) and a table top (16), which are interconnected by means of a variable in their height dimension connecting means (18), characterized in that the connecting device (18) connected to the base means (12) first Has column element (20) and a second column element (22) connected to the table top (16), which are pivotably connected to one another by means of a parallel linkage (24) through connecting axes (30 , 32 , 34 , 36), and that at least one spring device (42) is provided which is supported at one end (58) on one of the column elements and at its second end (44) on the parallel linkage (24) such that the direction of action of the spring device (42) with the parallel linkage (24) intersects in an area within the connecting axes (30 , 32 , 34 , 36). 2. Table according to claim 1, characterized in that the two column elements (20 , 22) have a small width dimension compared to the width dimension of the table top (16) or the basic device (12) and that the connecting device (18) centrally between the basic device (12) and the table top (16) is provided. 3. Table according to claim 1, characterized in that the parallel linkage (24) has two laterally spaced lower link elements (26) and two parallel, laterally spaced upper link elements (28), the two lower link elements (26) with fastening tabs (38) for the second end (44) of the spring device (42) are formed. 4. Table according to claim 3, characterized in that between the two fastening tabs (38) extends an axis (40) which is provided for mounting the second end (44) of the spring device (42). 5. Table according to one of the preceding claims, characterized in that the spring device (42) has at least one gas spring (46 , 48). 6. Table according to claim 5, characterized in that the at least one gas spring (46 , 48) by means of an associated Bowden cable (50) is connected to an actuating member (52). 7. Table according to claim 6, characterized in that the actuating member (52) on the table top (16) is provided. 8. Table according to claim 1, characterized in that the second column element (22) with a the lowest table top position defining stop member (56) is provided. 9. Table according to claim 8, characterized in that the stop member (56) is elastically resilient for end position damping.

Description

translated from German

The invention relates to a height-adjustable work table with basic equipment and a table top that with each other by means of a height dimension that can be changed Connection device are connected.

A desk or drawing table with adjustable height Worktop that is supported by four screw spindles known from DE-PS 64 229, for example. Insert the screw spindles in vertical, with female thread and with gears Tubes, the latter by horizontal drive shafts in offset simultaneous rotation and thereby the spindles be raised. To tilt the worktop are the Gears of the front tubes down through collars slidable so that only the rear screw spindles increase. This well-known writing or drawing table has So a number of screw spindles and a number of associated Gears on, which is a considerable effort. The same applies to that known from US Pat. No. 1,927,598 Table, which is a movable work table can act, as well as that known from US Pat. No. 2,857,225 Table.

The invention has for its object a height-adjustable work table of the type mentioned at the beginning create the comparatively easy to train infinitely variable height adjustment is suitable.

This object is achieved in that the Connection device connected to the basic device first column element and one connected to the table top has second column element which are connected to one another by means of a Parallel linkage can be pivoted through connecting axes are connected, and that at least one spring device is provided

with one end at one of the Column elements and those with their second end on the Parallel linkage is mounted such that the Direction of action of the spring device with the Parallelogram linkage in an area within the intersects connecting axes.

By appropriate dimensioning or assignment between the Parallel linkage and the spring device, it is possible, for example. Table loads in the order of 30 kp as caused by a Screen, a keyboard and other work items is given, can be lifted easily and in one desired height position locked state an additional Table load of the order of 90 kp, the Tabletop due to this additional burden of a human being drops, d. H. remains in the locked state. Of the Working table according to the invention is suitable for. B. as Computer work table, as work table of an overhead Projector, as a height-adjustable lectern or the like

A good aesthetic effect is in the invention height adjustable work table accessible when the two Column elements one compared to the width dimension of the Table top or basic equipment small width dimension have and if the connecting device in width or Table cross direction in the middle between the basic device and the Tabletop is provided. The connection device forms here is a so-called mono foot. This mono foot is against Vertical, for example, by at least approximately 10 degrees inclined, whereby the aesthetic effect can be further improved is.

Another advantage of the height adjustable according to the invention Working table consists of the fact that it consists of a few construction or Assemblies, namely the basic equipment, the table top, the first and the second column element, the Parallelogram linkage and the spring device, so that he for transportation purposes in relatively small volume and lightweight units can be dismantled.

For reasons of stability, it is useful if the work table according to the invention the parallel linkage two laterally spaced lower link elements and two upper ones parallel to each other and laterally spaced apart Has linkage elements, the two lower Linkage elements with fastening tabs for the second end the spring device can be formed. The bottom and the upper link elements are of equal length. Between two fastening tabs of the two lower link elements can extend one axis, which is used to support the second End of the spring device is provided. The spring device preferably has at least one gas spring. In the at least one gas spring is expediently a lockable gas spring. Such gas springs are also included height-adjustable office chairs for use. The extension force the at least one lockable gas spring is for the Generation of the lifting movement sufficient. Should the table top be lowered, so it is necessary the insertion forces the at least one gas spring by loading the table top overcome. The insertion forces of the at least one gas spring are greater than those mentioned by the amount of frictional force Extension forces.

The insertion and extension forces of the at least one are used arriving gas springs are linearly dependent on their stroke. By corresponding positioning of the at least one gas spring between the first column element of the connecting device and the parallel linkage is a balance of the inputs and Extension forces can be realized in such a way that one is possible uniform lifting and lowering movement of the table top achieved becomes. In addition, by at least a suitable arrangement a gas spring between the first column member and the Parallel linkage the difference in lifting forces between the top and bottom of the table top on Minimum reducible.

To actuate the at least one gas spring, it has proven to be Proven useful when using a Bowden cable an actuator is connected. The actuator is Expediently provided on the table top because of this the ease of use for the actuator and thus the Ease of use for height adjustment of the table top of the work table according to the invention is optimal.

The second column element can be the lowest Be provided tabletop position determining stop member. This stop element can be elastic for cushioning the end position be compliant, d. H. it can, for example, from a Made of rubber material.

According to the invention it is of course also possible that first column element not on the table top but on the Basic device and the second column element not on the Basic setup but on the table top, d. H. these Components of the work table, as it were, rotated by 180 ° to be provided without this leading to a Functional Impairment of the work table comes.

Further details, features and advantages result from the following description of one in the drawing illustrated embodiment of the invention height-adjustable work table, esp. Computer workbench. Show it:

Fig. 1 shows a section through the work table in its highest position along the section line I in Fig. 2,

Fig. 2 is a front view of the worktable of Fig. 1 viewed in the direction of the arrow II,

Fig. 3 is a FIG. 1, similar sectional view showing the work table at the most lowered position of the table plate,

Fig. 4 is a view of the two upper link members of the parallel linkage in sections in a view from above,

Fig. 5 is a view of the upper link members of the parallel linkage according to Fig. 4 in the direction of the arrow V, ie in the direction from the front,

Fig. 6 is a side view of the upper linkage members in the direction of the arrow VI in Fig. 4, wherein the upper linkage elements as in Fig. 4 marked only in sections in Fig. 6,

Fig. 7 is a Fig. 4 similar sections showing the lower link of said parallel linkage elements, wherein the cooperating with the lower link members pair of gas springs of the spring means are only illustrated in sections,

Fig. 8 is a side view of the partially drawn lower link members of the parallel linkage and the two sections of gas springs of the spring device illustrated in the direction of the arrow VIII in Fig. 7, and

Fig. 9 is a front view of the lower linkage elements of the parallel linkage in the direction of arrow IX in Fig. 8, wherein the two gas springs of the spring device are only shown in sections here.

Fig. 1 shows a longitudinal section of an embodiment of the height-adjustable work table 10 , which is z. B. is a computer work table. The work table 10 has a basic device 12 with height-adjustable feet 14 which serve to compensate for unevenness in a footprint. The work table 10 also has a height-adjustable table top 16 which is connected to the basic device 12 by means of a connecting device 18 . The height of the connecting device 18 can be changed for this purpose; it has a first column element 20 and a second column element 22 . The first column element 20 protrudes upward from the basic device 12 , for example it encloses an angle of the order of 80 degrees. The second column element 22 projects downward from the table top 16 ; it forms the same angle with the table top 16 as the first column element 20 with the basic device 12 . The two column elements 20 and 22 are pivotally connected to one another by means of a parallel linkage 24 . The parallel linkage 24 has two laterally spaced lower link elements 26 and two parallel and equally long, laterally spaced upper link elements 28 , of which only one link element is visible in FIG. 1. Each of the two lower linkage elements 26 is pivotally mounted on the first column element 20 by means of an axis 30 and on the second column element 22 by means of an axis 32 . Accordingly, each upper linkage element 28 is pivotally mounted on the first column element 20 by means of an axis 34 and on the second column element 22 by means of an axis 36 . The two lower linkage elements 26 are formed with fastening tabs 38 , as can also be clearly seen from FIGS. 7, 8 and 9. An axis 40 extends between the two fastening tabs 38 , on which a spring device 42 is arranged with its second end 44 . From FIGS. 7 and 9 it can be seen that the spring means 42 comprises two side by side and provided parallel to each other arranged gas springs 46 and 48, marked 7 to 9 only in sections in Figs.. The gas springs 46 , 48 are operatively connected by means of a Bowden cable 50 to an actuating member 52 which is arranged on the underside 54 of the table top 16 .

The second column element 22 of the connecting device 18 is provided with an elastically resilient stop member 58 which, in the lowest position of the table top 16, bears against the upper linkage elements 28 (see FIG. 3) and thereby defines the lowest table top position.

The spring device 42 , that is to say the two gas springs 46 and 48, are fixed at their one end 58 to a fastening element 60 so as to be pivotable by means of an axis 62 . The fastening member 60 is provided on the first column element 20 .

The axes 30 and 62 and the axes 32 and 40 are provided on the work table 10 in such a way that a uniform lifting and lowering movement of the table top 16 in relation to the basic device 12 is made possible. At the same time, this ensures that the difference in lifting forces in the uppermost and in the lowest position of the table top 16 relative to the base device 12 is as small as possible.

In FIGS. 1 to 9 identical details are respectively denoted by the same reference numerals, so that it is unnecessary to describe in detail each of all the details in connection with all these figures.

As has already been mentioned, it is also possible not to arrange the height adjustment mechanism without impairing the function of the work table as shown in the drawing figures, but rather upside down, ie to interchange the two column elements 20 and 22 . It is only important that the direction of action of the spring device 42 intersects with the direction of the parallel linkage 24 in the area within the connecting axes 30 , 32 , 34 and 36 .

Cited By (5)

Publication number	Priority date	Publication date	Assignee	Title
WO1999035936A1 *	1998-01-13	1999-07-22	Techinnovation Gmbh	Height-adjustable table or the like
EP0963716A1	1998-06-10	1999-12-15	Charlie Karlo Larsen	Height adjustable workstand or -table construction
US9668572B2	2014-04-14	2017-06-06	Ergotron, Inc.	Height adjustable desktop work surface
US10542817B2	2015-09-24	2020-01-28	Ergotron, Inc.	Height adjustable device
US10602840B2	2015-10-08	2020-03-31	Ergotron, Inc.	Height adjustable table
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
DE19700582A1	1997-07-24	Table with lifting plate, lifting table and a combination thereof
EP2260229A1	2010-12-15	Height-adjustable equipment stand
WO1992000690A1	1992-01-23	Kit for making office desks
DE4424564A1	1996-01-18	Height adjustable work table with base and table top
EP1074127A2	2001-02-07	Adjustable table for edp system
EP0070422B1	1986-04-23	Table, in particular writing table
DE4230433A1	1993-04-22	Height adjustable office desk on telescopic supports - has surface that may be slid or tilted for access to cable duct and crank handle
EP0870443A2	1998-10-14	Chair, particularly office-chair
DE4112223C2	1994-01-20	Worktop adjustment device
EP0702915B1	2002-11-13	Fitting for adjustable setting of a front panel
DE4112180A1	1992-10-15	Pivoting arm structure for writing desk - has console support mounted on two swivel arms with friction bearing links, funnel shaped trough and pivot pin
DE102013006139B4	2015-10-08	Music stand for a grand piano
DE4219875A1	1993-12-23	Folding underneath frame for table, especially in caravan - has uprights each consisting of top, middle and bottom part, with sleeves, locking pins, stop, and two hinges.
DE102018203414B3	2019-07-11	Adjustable table
DE3037375A1	1982-05-19	Height adjustable viewing screen carrying platform - has scissor linkage between top and bottom frames with rack and pinion drives
DE102009011564A1	2010-09-09	Table furniture for use as e.g. school desk, has foot rollers attached to horizontal running transverse element between horizontally running leg elements, where rollers are pivotable around vertical axis
DE4437337C1	1995-11-02	Height adjustable work table
AT524052B1	2022-02-15	KITCHEN FURNITURE
DE2638924A1	1978-03-02	WORK TABLE WITH INTEGRATED CHAIR

EP0580077B1	1998-04-29	Table with movable worktop
WO1997017868A2	1997-05-15	Height-adjustable supporting device for video screens
EP0270558B1	1990-07-25	Office desk
DE102006062384	2009-08-13	Lectern with an adjustable speaker's desk
DE3642945A1	1988-06-30	Stand
DE4403299C1	1995-03-16	Seating arrangement comprising corner bench and table

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
DE19944424564	1994-07-13	1994-07-13	Height adjustable work table with base and table top

Applications Claiming Priority (1)

Application	Filing date	Title
DE19944424564	1994-07-13	Height adjustable work table with base and table top

Legal Events

Date	Code	Title	Description
2000-09-07	8139	Disposal/non-payment of the annual fee	

Concepts

machine-extracted

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) **Offenlegungsschrift**

(10) **DE 44 24 564 A 1**

(51) Int. Cl.[6]:
A 47 B 9/02
A 47 B 27/06

(21) Aktenzeichen: P 44 24 564.5
(22) Anmeldetag: 13. 7. 94
(43) Offenlegungstag: 18. 1. 96

DE 44 24 564 A 1

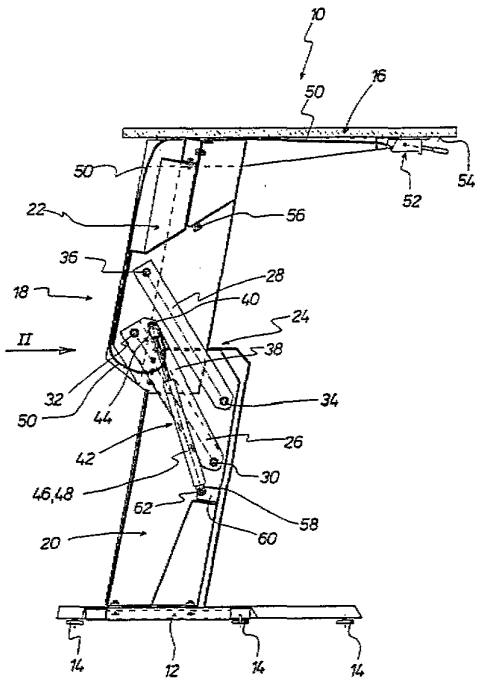
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(54) Höhenverstellbarer Arbeitstisch

(57) Es wird ein höhenverstellbarer Arbeitstisch (10) mit einer Grundeinrichtung (12) und einer Tischplatte (16) beschrieben, die miteinander mittels einer in ihrer Höhenabmessung veränderbaren Verbindungseinrichtung (18) verbunden sind. Die Verbindungseinrichtung (18) weist ein mit der Grundeinrichtung (12) verbundenes erstes Säulenelement (20) und ein zweites Säulenelement (22) auf, das mit der Tischplatte (16) verbunden ist. Das erste und das zweite Säulenelement (20, 22) sind miteinander mittels eines Parallelgestänges (24) durch Verbindungsachsen (30, 32, 34, 36) verschwenkbar verbunden. Es ist mindestens eine Federeinrichtung (42) vorgesehen, die mit ihrem einen Ende (58) an einem der Säulenelemente (20) und die mit ihrem zweiten Ende (44) am Parallelgestänge (24) derartig gelagert ist, daß sich die Wirkungsrichtung der Federeinrichtung (42) mit dem Parallelgestänge (24) in einem Bereich innerhalb der Verbindungsachsen (30, 32, 34, 36) schneidet.



DE 44 24 564 A 1

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

BUNDESDRUCKEREI 11. 95 508 063/203 10/28

Beschreibung

Die Erfindung betrifft einen höhenverstellbaren Arbeitstisch mit einer Grundeinrichtung und einer Tischplatte, die miteinander mittels einer in ihrer Höhenabmessung veränderbaren Verbindungseinrichtung verbunden sind.

Ein Schreib- oder Zeichentisch mit in der Höhe einstellbarer Arbeitsplatte, die von vier Schraubspindeln getragen wird, ist bspw. aus der DE-PS 64 229 bekannt. Die Schraubspindeln stecken in senkrechten, mit Muttergewinde und mit Zahnrädern versehenen Rohren, wobei letztere durch waagrechte Antriebswellen in gleichzeitige Drehung versetzt und hierdurch die Spindeln angehoben werden. Zur Schrägstellung der Arbeitsplatte sind die Zahnräder der vorderen Rohre durch Stellringe nach unten verschiebbar, so daß nur die rückseitigen Schraubspindeln ansteigen. Dieser bekannte Schreib- oder Zeichentisch weist also eine Anzahl Schraubspindeln und eine Anzahl zugehörige Zahnräder auf, was einen erheblichen Aufwand darstellt. Entsprechendes gilt für den aus der US-PS 1 927 598 bekannten Tisch, bei dem es sich um einen verfahrbaren Arbeitstisch handeln kann, sowie bei dem aus der US-PS 2 857 225 bekannten Tisch.

Der Erfindung liegt die Aufgabe zugrunde, einen höhenverstellbaren Arbeitstisch der eingangs genannten Art zu schaffen, der vergleichsweise einfach ausgebildet zur stufenlosen Höhenverstellung geeignet ist.

Diese Aufgabe wird erfindungsgemäß dadurch gelöst, daß die Verbindungseinrichtung ein mit der Grundeinrichtung verbundenes erstes Säulenelement und ein mit der Tischplatte verbundenes zweiten Säulenelement aufweist, die miteinander mittels eines Parallelgestänges durch Verbindungsachsen verschwenkbar verbunden sind, und daß mindestens eine Federeinrichtung vorgesehen ist, die mit ihrem einen Ende an einem der Säulenelemente und die mit ihrem zweiten Ende an dem Parallelgestänge derartig gelagert ist, daß sich die Wirkungsrichtung der Federeinrichtung mit dem Parallelogrammgestänge in einem Bereich innerhalb der Verbindungsachsen schneidet.

Durch geeignete Dimensionierung bzw. Zuordnung zwischen dem Parallelgestänge und der Federeinrichtung ist es möglich, bspw. Tischlasten in der Größenordnung um 30 kp, wie sie durch einen Bildschirm, eine Tastatur sowie weitere Arbeitsgegenstände gegeben ist, problemlos stufenlos hochzuheben und im in einer gewünschten Höhenposition arretierten Zustand eine zusätzliche Tischlast von größenordnungsmäßig 90 kp aufzunehmen, wobei die Tischplatte durch diese Zusatzlast eines Menschen nicht absinkt, d. h. im arretierten Zustand verbleibt. Der erfindungsgemäße Arbeitstisch eignet sich z. B. als Computerarbeitstisch, als Arbeitstisch eines Overhead-Projektors, als höhenverstellbares Rednerpult o. dgl.

Eine gute ästhetische Wirkung ist beim erfindungsgemäßen höhenverstellbaren Arbeitstisch erreichbar, wenn die beiden Säulenelemente eine im Vergleich zur Breitenabmessung der Tischplatte bzw. der Grundeinrichtung kleine Breitenabmessung aufweisen und wenn die Verbindungseinrichtung in Breiten- bzw. Tischquerrichtung mittig zwischen der Grundeinrichtung und der Tischplatte vorgesehen ist. Die Verbindungseinrichtung bildet hierbei also einen sog. Monofuß. Dieser Monofuß ist gegen die Vertikale bspw. um mindestens näherungsweise 10 Winkelgrad geneigt, wodurch die ästhetische Wirkung weiter verbesserbar ist.

Ein weiterer Vorteil des erfindungsgemäßen höhenverstellbaren Arbeitstisches besteht darin, daß er aus wenigen Konstruktions- bzw. Baugruppen, nämlich der Grundeinrichtung, der Tischplatte, dem ersten und dem zweiten Säulenelement, dem Parallelogrammgestänge und der Federeinrichtung besteht, so daß er zu Transportzwecken in relativ kleinvolumige und leichtgewichtige Einheiten zerlegbar ist.

Aus Stabilitätsgründen ist es zweckmäßig, wenn beim erfindungsgemäßen Arbeitstisch das Parallelgestänge zwei voneinander seitlich beabstandete untere Gestängeelemente und zwei dazu parallele, voneinander seitlich beabstandete obere Gestängeelemente aufweist, wobei die beiden unteren Gestängeelemente mit Befestigungslaschen für das zweite Ende der Federeinrichtung ausgebildet sein können. Die unteren und die oberen Gestängeelemente sind gleich lang. Zwischen den beiden Befestigungslaschen der beiden unteren Gestängeelemente kann sich eine Achse erstrecken, die zur Lagerung des zweiten Endes der Federeinrichtung vorgesehen ist. Die Federeinrichtung weist vorzugsweise mindestens eine Gasfeder auf. Bei der mindestens einen Gasfeder handelt es sich zweckmäßigerweise um eine blockierbare Gasfeder. Solche Gasfedern kommen auch bei höhenverstellbaren Bürostühlen zur Anwendung. Die Ausschubkraft der mindestens einen blockierbaren Gasfeder ist für die Erzeugung der Hubbewegung ausreichend. Soll die Tischplatte abgesenkt werden, so ist es erforderlich, die Einschubkräfte der mindestens einen Gasfeder durch Belasten der Tischplatte zu überwinden. Die Einschubkräfte der mindestens einen Gasfeder sind um den Betrag der Reibungskraft größer als die erwähnten Ausschubkräfte.

Die Ein- und Ausschubkräfte der mindestens einen zum Einsatz gelangenden Gasfeder sind von ihrem Hub linear abhängig. Durch entsprechende Positionierung der mindestens einen Gasfeder zwischen dem ersten Säulenelement der Verbindungseinrichtung und dem Parallelgestänge ist ein Ausgleich der Ein- und Ausschubkräfte dahingehend realisierbar, daß eine möglichst gleichmäßige Hebe- und Absenkbewegung der Tischplatte erreicht wird. Außerdem ist durch geeignete Anordnung der mindestens einen Gasfeder zwischen dem ersten Säulenelement und dem Parallelgestänge die Differenz der Hubkräfte zwischen der obersten und der untersten Stellung der Tischplatte auf ein Minimum reduzierbar.

Zur Betätigung der mindestens einen Gasfeder hat es sich als zweckmäßig erwiesen, wenn sie mittels eines Bowdenzugs mit einem Betätigungsorgan verbunden ist. Das Betätigungsorgan ist zweckmäßigerweise an der Tischplatte vorgesehen, weil hierdurch der Bedienungskomfort für das Betätigungsorgan und somit der Bedienungskomfort zur Höheneinstellung der Tischplatte des erfindungsgemäßen Arbeitstisches optimal ist.

Das zweite Säulenelement kann mit einem die niedrigste Tischplattenposition festlegenden Anschlagorgan versehen sein. Dieses Anschlagorgan kann zur Endlagendämpfung elastisch nachgiebig ausgebildet sein, d. h. es kann bspw. aus einem Gummimaterial bestehen.

Erfindungsgemäß ist es selbstverständlich auch möglich, das erste Säulenelement nicht an der Tischplatte sondern an der Grundeinrichtung und das zweite Säulenelement nicht an der Grundeinrichtung sondern an der Tischplatte, d. h. diese Komponenten des Arbeitstisches gleichsam um 180° verdreht vorzusehen, ohne daß es hierdurch zu einer Funktionsbeeinträchtigung des Arbeitstisches kommt.

Weitere Einzelheiten, Merkmale und Vorteile ergeben sich aus der nachfolgenden Beschreibung eines in der Zeichnung dargestellten Ausführungsbeispieles des erfindungsgemäßen höhenverstellbaren Arbeitstisches, insbes. Computerarbeitstisches. Es zeigen:

Fig. 1 einen Schnitt durch den Arbeitstisch in seiner höchsten Stellung entlang der Schnittlinie I-I in **Fig.** 2,

Fig. 2 eine Vorderansicht des Arbeitstisches gemäß **Fig.** 1 in Blickrichtung des Pfeiles II,

Fig. 3 eine der **Fig.** 1 ähnliche Schnittdarstellung, die den Arbeitstisch in der am weitesten abgesenkten Stellung der Tischplatte zeigt,

Fig. 4 eine Ansicht der beiden oberen Gestängeelemente des Parallelgestänges abschnittweise in einer Ansicht von oben,

Fig. 5 eine Ansicht der oberen Gestängeelemente des Parallelgestänges gemäß **Fig.** 4 in Blickrichtung des Pfeiles V, d. h. in Blickrichtung von vorne,

Fig. 6 eine Seitenansicht der oberen Gestängeelemente in Blickrichtung des Pfeiles VI in **Fig.** 4, wobei die oberen Gestängeelemente wie in **Fig.** 4 auch in **Fig.** 6 nur abschnittweise gezeichnet sind,

Fig. 7 eine der **Fig.** 4 ähnliche abschnittweise Darstellung der unteren Gestängeelemente des Parallelgestänges, wobei die mit den unteren Gestängeelementen zusammenwirkenden beiden Gasfedern der Federeinrichtung nur abschnittweise verdeutlicht sind,

Fig. 8 eine Seitenansicht der abschnittweise gezeichneten unteren Gestängeelemente des Parallelgestänges sowie der beiden abschnittweise dargestellten Gasfedern der Federeinrichtung in Blickrichtung des Pfeiles VIII in **Fig.** 7, und

Fig. 9 eine Vorderansicht der unteren Gestängeelemente des Parallelgestänges in Blickrichtung des Pfeiles IX in **Fig.** 8, wobei auch hier die beiden Gasfedern der Federeinrichtung nur abschnittweise verdeutlicht sind.

Fig. 1 zeigt längsgeschnitten eine Ausbildung des höhenverstellbaren Arbeitstisches **10**, bei dem es sich z. B. um einen Computerarbeitstisch handelt. Der Arbeitstisch **10** weist eine Grundeinrichtung **12** mit in der Höhe verstellbaren Standfüßen **14** auf, die zum Ausgleich von Unebenheiten einer Standfläche dienen. Der Arbeitstisch **10** weist außerdem eine in der Höhe verstellbare Tischplatte **16** auf, die mit der Grundeinrichtung **12** mittels einer Verbindungseinrichtung **18** verbunden ist. Die Verbindungseinrichtung **18** ist zu diesem Zweck in ihrer Höhenabmessung veränderbar, sie weist ein erstes Säulenelement **20** und ein zweites Säulenelement **22** auf. Das erste Säulenelement **20** ragt von der Grundeinrichtung **12** nach oben, es schließt mit ihr bspw. einen Winkel von größenordnungsmäßig 80 Winkelgrad ein. Das zweite Säulenelement **22** steht von der Tischplatte **16** nach unten, es schließt mit der Tischplatte **16** denselben Winkel ein, wie das erste Säulenelement **20** mit der Grundeinrichtung **12**. Die beiden Säulenelemente **20** und **22** sind miteinander mittels eines Parallelgestänges **24** verschwenkbar verbunden. Das Parallelgestänge **24** weist zwei voneinander seitlich beabstandete untere Gestängeelemente **26** und zwei dazu parallele und gleich lange, voneinander seitlich beabstandete obere Gestängeelemente **28** auf, von welchen in **Fig.** 1 jeweils nur ein Gestängeelement sichtbar ist. Jedes der beiden unteren Gestängeelemente **26** ist mittels einer Achse **30** am ersten Säulenelement **20** und mittels einer Achse **32** am zweiten Säulenelement **22** schwenkbeweglich gelagert. Entsprechend ist jedes obere Gestängeelement **28** mittels einer Achse **34** am ersten Säulenelement **20** und mittels einer Achse **36** am zweiten Säulenelement **22** schwenkbeweglich gelagert. Die beiden unteren Gestängeelemente **26** sind mit Befestigungslaschen **38** ausgebildet, wie auch aus den **Fig.** 7, 8 und 9 deutlich ersichtlich ist. Zwischen den beiden Befestigungslaschen **38** erstreckt sich eine Achse **40**, an welcher eine Federeinrichtung **42** mit ihrem zweiten Ende **44** angeordnet ist. Aus den **Fig.** 7 und 9 ist ersichtlich, daß die Federeinrichtung **42** zwei nebeneinander vorgesehene und zueinander parallel angeordnete Gasfedern **46** und **48** umfaßt, die in den **Fig.** 7 bis 9 nur abschnittweise gezeichnet sind. Die Gasfedern **46**, **48** sind mittels eines Bowdenzuges **50** mit einem Betätigungsorgan **52** wirkverbunden, das an der Unterseite **54** der Tischplatte **16** angeordnet ist.

Das zweite Säulenelement **22** der Verbindungseinrichtung **18** ist mit einem elastisch nachgiebigen Anschlagorgan **56** versehen, das in der tiefsten Stellung der Tischplatte **16** an den oberen Gestängeelementen **28** anliegt (sh. **Fig.** 3) und hierdurch die niedrigste Tischplattenposition festlegt.

Die Federeinrichtung **42**, d. h. die beiden Gasfedern **46** und **48** sind mit ihrem einen Ende **58** an einen Befestigungsorgan **60** mittels einer Achse **62** verschwenkbar festgelegt. Das Befestigungsorgan **60** ist am ersten Säulenelement **20** vorgesehen.

Die Achsen **30** und **62** sowie die Achsen **32** und **40** sind beim Arbeitstisch **10** derartig vorgesehen, daß eine gleichmäßige Hub- und Absenkbewegung der Tischplatte **16** in bezug auf die Grundeinrichtung **12** ermöglicht wird. Gleichzeitig wird hierdurch sichergestellt, daß die Differenz der Hubkräfte in der obersten und in der untersten Stellung der Tischplatte **16** relativ zur Grundeinrichtung **12** möglichst gering ist.

In den **Fig.** 1 bis 9 sind gleiche Einzelheiten jeweils mit denselben Bezugsziffern bezeichnet, so daß es sich erübrigt, in Verbindung mit allen diesen Figuren alle Einzelheiten jeweils detailliert zu beschreiben.

Wie bereits erwähnt worden ist, ist es auch möglich, den Höhenverstellmechanismus ohne Funktionsbeeinträchtigung des Arbeitstisches nicht wie in den Zeichnungsfiguren dargestellt sondern verkehrt herum anzuordnen, d. h. die beiden Säulenelemente **20** und **22** zu vertauschen. Von Wichtigkeit ist nur, daß die Wirkungsrichtung der Federeinrichtung **42** sich mit der Richtung des Parallelgestänges **24** im Bereich innerhalb der Verbindungsachsen **30, 32, 34** und **36** schneidet.

Patentansprüche

1. Höhenverstellbarer Arbeitstisch mit einer Grundeinrichtung (**12**) und einer Tischplatte (**16**), die miteinander mittels einer in ihrer Höhenabmessung veränderbaren Verbindungseinrichtung (**18**) verbunden sind, **dadurch gekennzeichnet,** daß die Verbindungseinrichtung (**18**) ein mit der Grundeinrichtung (**12**) verbundenes erstes Säulenelement (**20**) und ein mit der Tischplatte (**16**) verbundenes zweites Säulenelement (**22**) aufweist, die miteinander mittels eines Parallelgestänges (**24**) durch Verbindungsachsen (**30, 32, 34, 36**) verschwenkbar verbunden sind, und daß mindestens eine Federeinrichtung (**42**) vorgesehen ist, die mit ihrem einen Ende (**58**) an einem der Säulenelemente und die mit ihrem zweiten Ende (**44**) an dem Parallelgestänge (**24**) derartig gelagert ist, daß sich die Wirkungsrichtung der Federeinrichtung (**42**) mit dem Parallelgestänge (**24**) in einem Bereich innerhalb der Verbindungsachsen (**30, 32, 34, 36**) schneidet.

2. Tisch nach Anspruch 1, dadurch gekennzeichnet, daß die beiden Säulenelemente (20, 22) eine im Vergleich zur Breitenabmessung der Tischplatte (16) bzw. der Grundeinrichtung (12) kleine Breitenabmessung aufweisen und daß die Verbindungseinrichtung (18) mittig zwischen der Grundeinrichtung (12) und der Tischplatte (16) vorgesehen ist.

3. Tisch nach Anspruch 1, dadurch gekennzeichnet, daß das Parallelgestänge (24) zwei voneinander seitlich beabstandete untere Gestängeelemente (26) und zwei dazu parallele, voneinander seitlich beabstandete obere Gestängeelemente (28) aufweist, wobei die beiden unteren Gestängeelemente (26) mit Befestigungslaschen (38) für das zweite Ende (44) der Federeinrichtung (42) ausgebildet sind.

4. Tisch nach Anspruch 3, dadurch gekennzeichnet, daß sich zwischen den beiden Befestigungslaschen (38) eine Achse (40) erstreckt, die zur Lagerung des zweiten Endes (44) der Federeinrichtung (42) vorgesehen ist.

5. Tisch nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Federeinrichtung (42) mindestens eine Gasfeder (46, 48) aufweist.

6. Tisch nach Anspruch 5, dadurch gekennzeichnet, daß die mindestens eine Gasfeder (46, 48) mittels eines zugehörigen Bowdenzuges (50) mit einem Betätigungsorgan (52) verbunden ist.

7. Tisch nach Anspruch 6, dadurch gekennzeichnet, daß das Betätigungsorgan (52) an der Tischplatte (16) vorgesehen ist.

8. Tisch nach Anspruch 1, dadurch gekennzeichnet, daß das zweite Säulenelement (22) mit einem die niedrigste Tischplattenposition festlegenden Anschlagorgan (56) versehen ist.

9. Tisch nach Anspruch 8, dadurch gekennzeichnet, daß das Anschlagorgan (56) zur Endlagendämpfung elastisch nachgiebig ausgebildet ist.

Hierzu 6 Seite(n) Zeichnungen

Nummer: DE 44 24 564 A1
Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

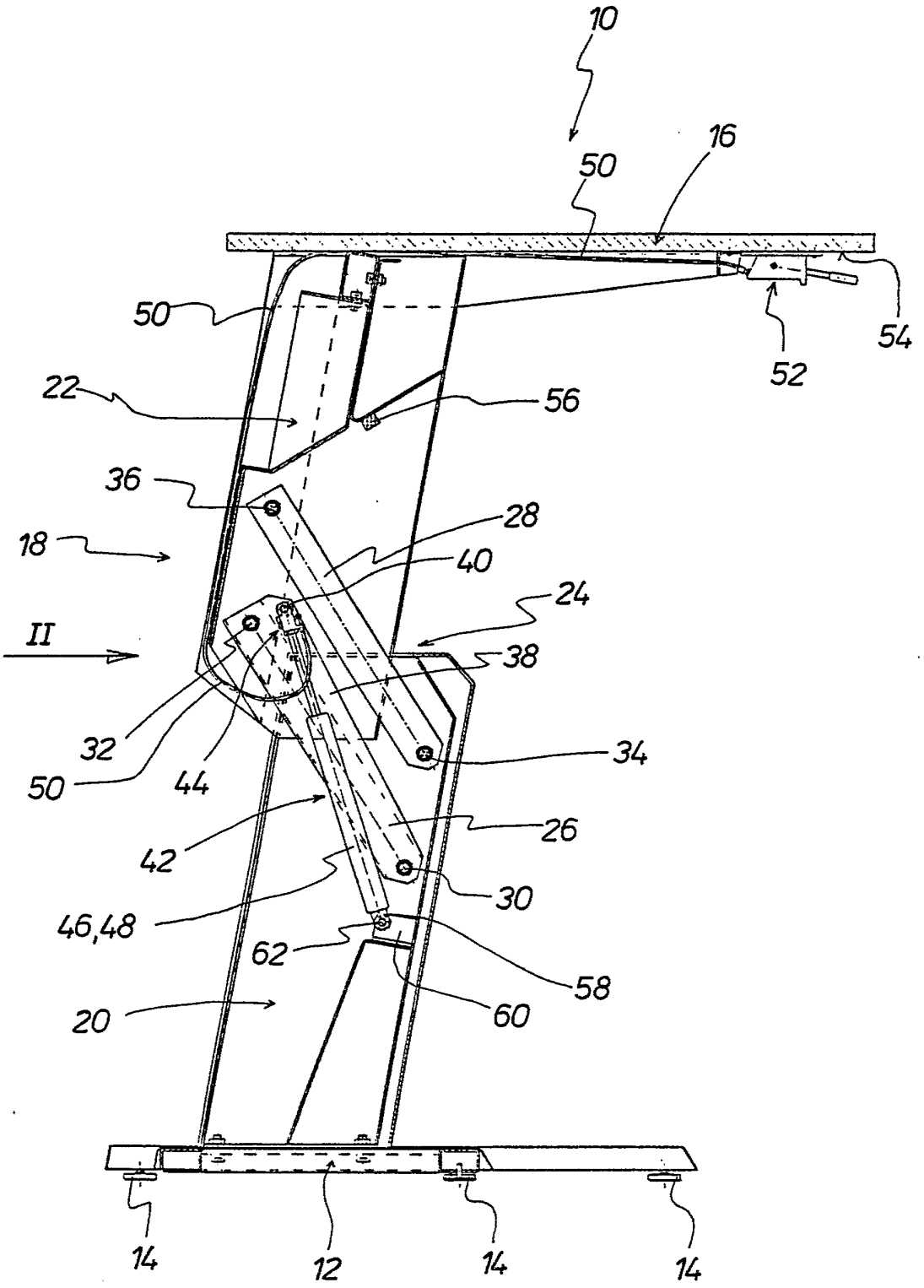


FIG.1

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Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

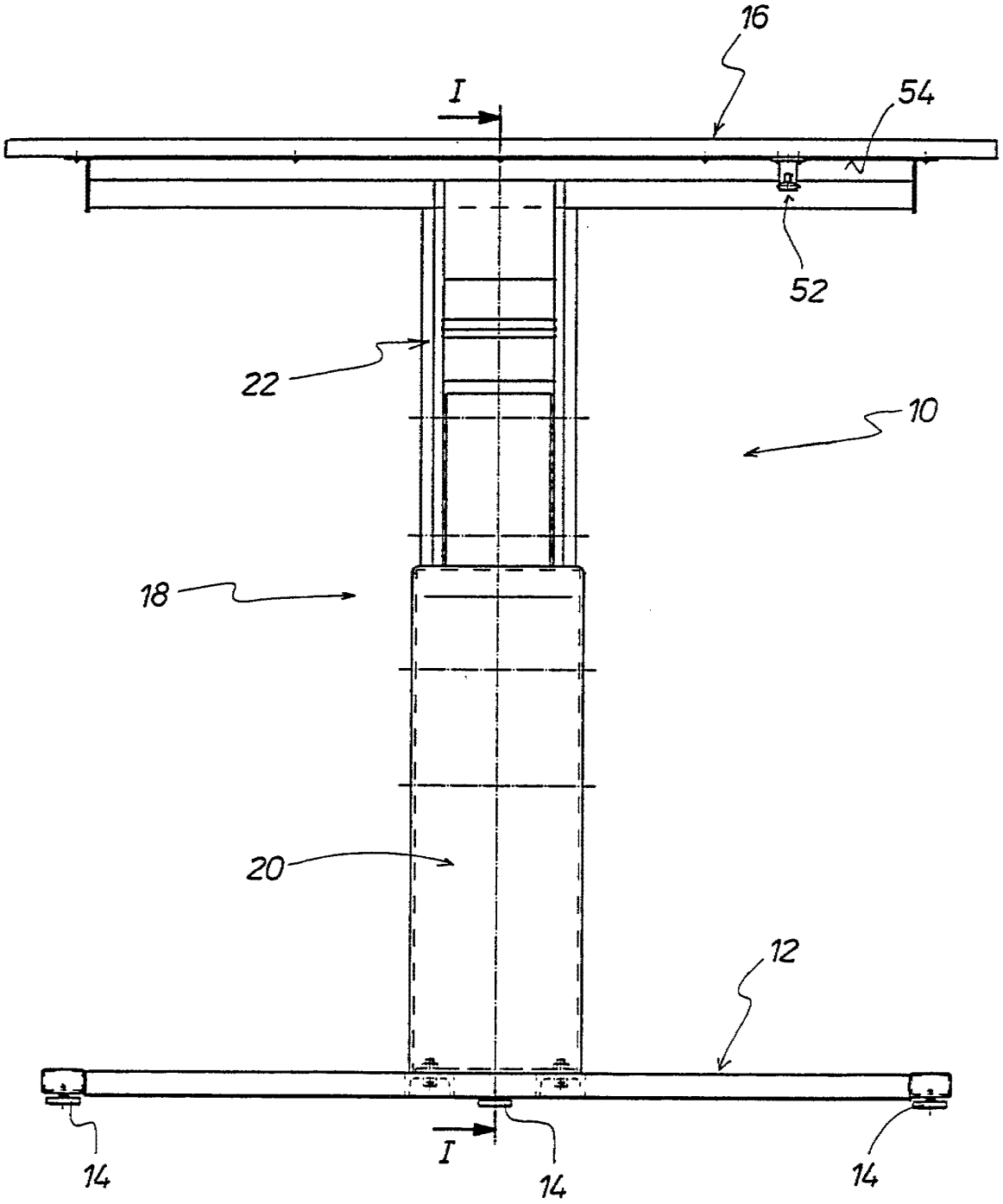


FIG. 2

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Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

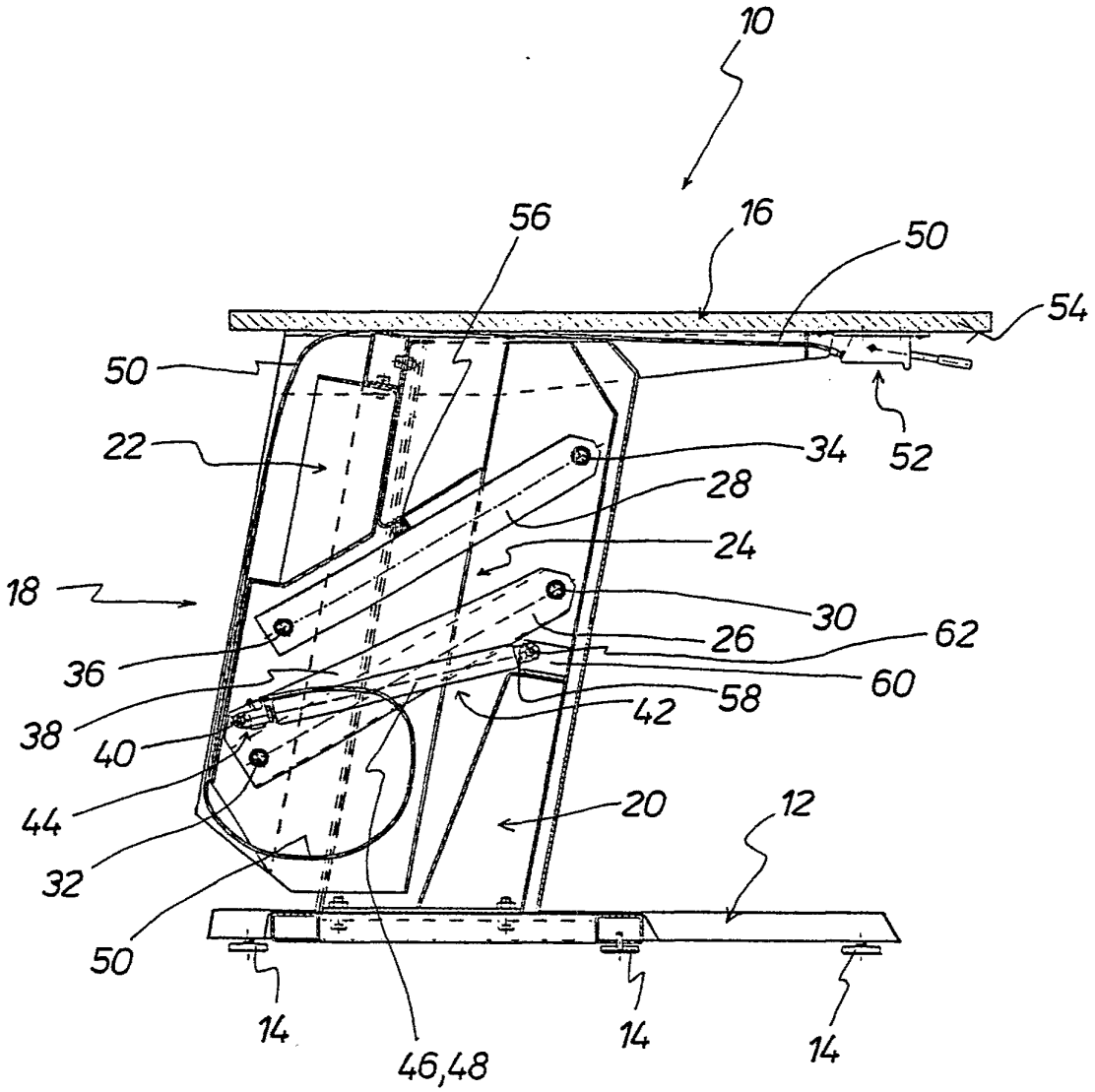
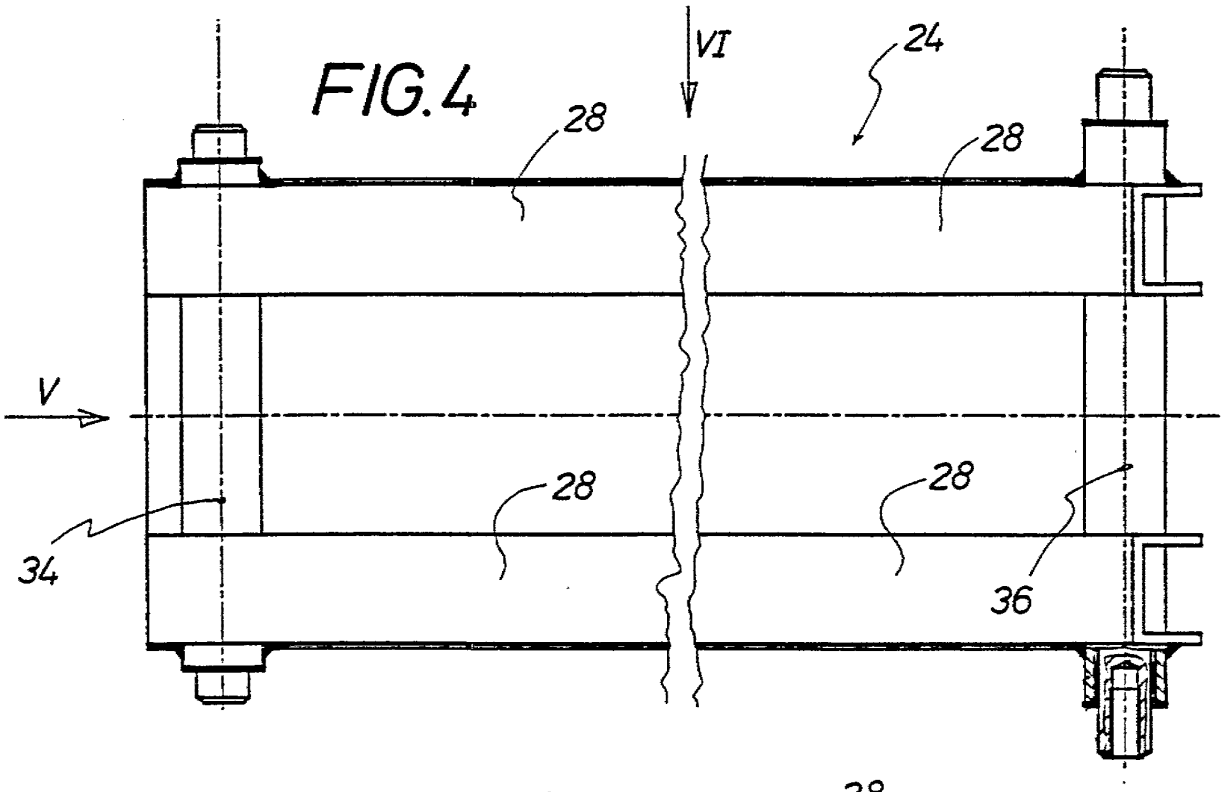


FIG. 3

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Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

FIG.4



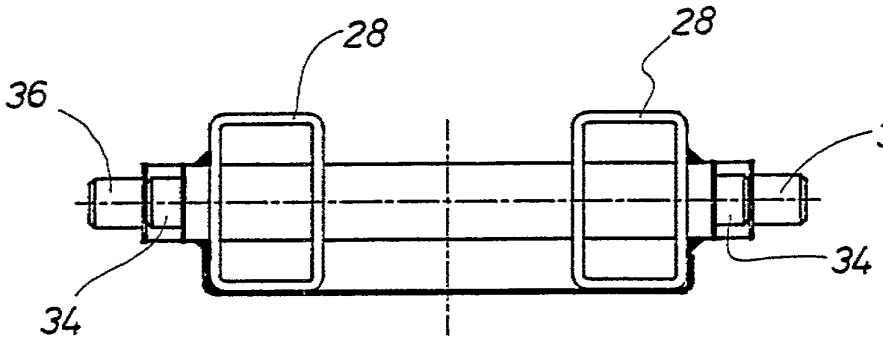


FIG.5

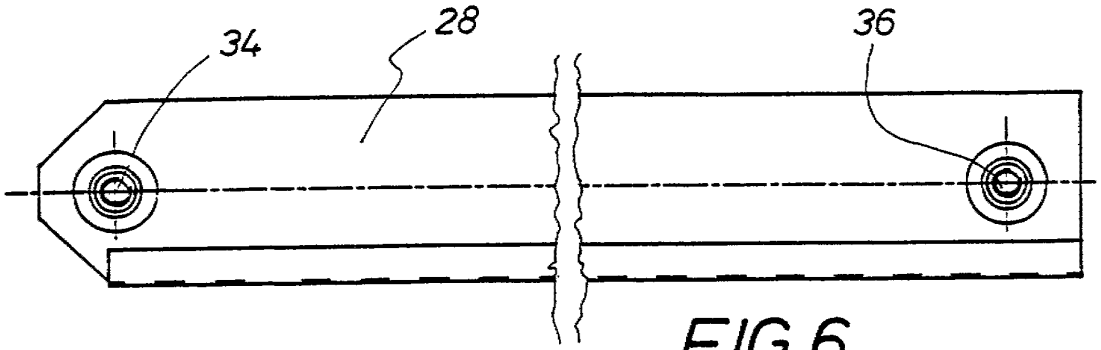


FIG.6

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Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

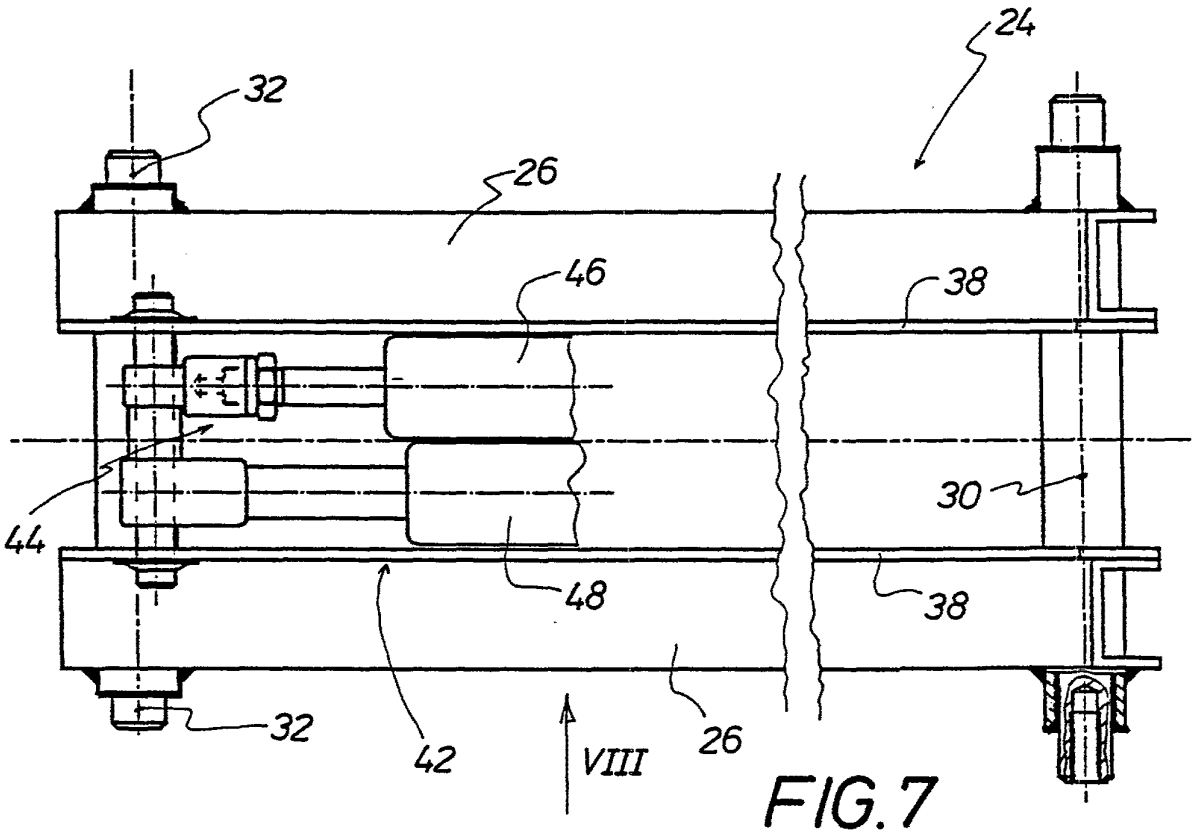


FIG. 7

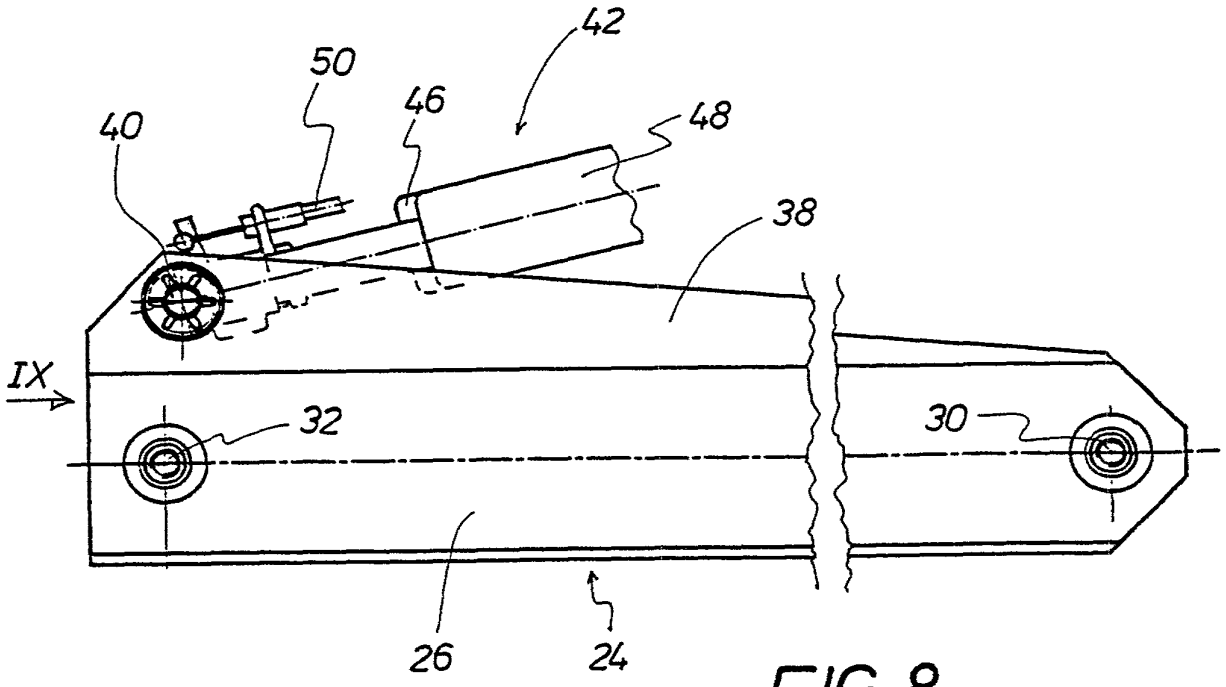


FIG. 8

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Int. Cl.[6]: A 47 B 9/02
Offenlegungstag: 18. Januar 1996

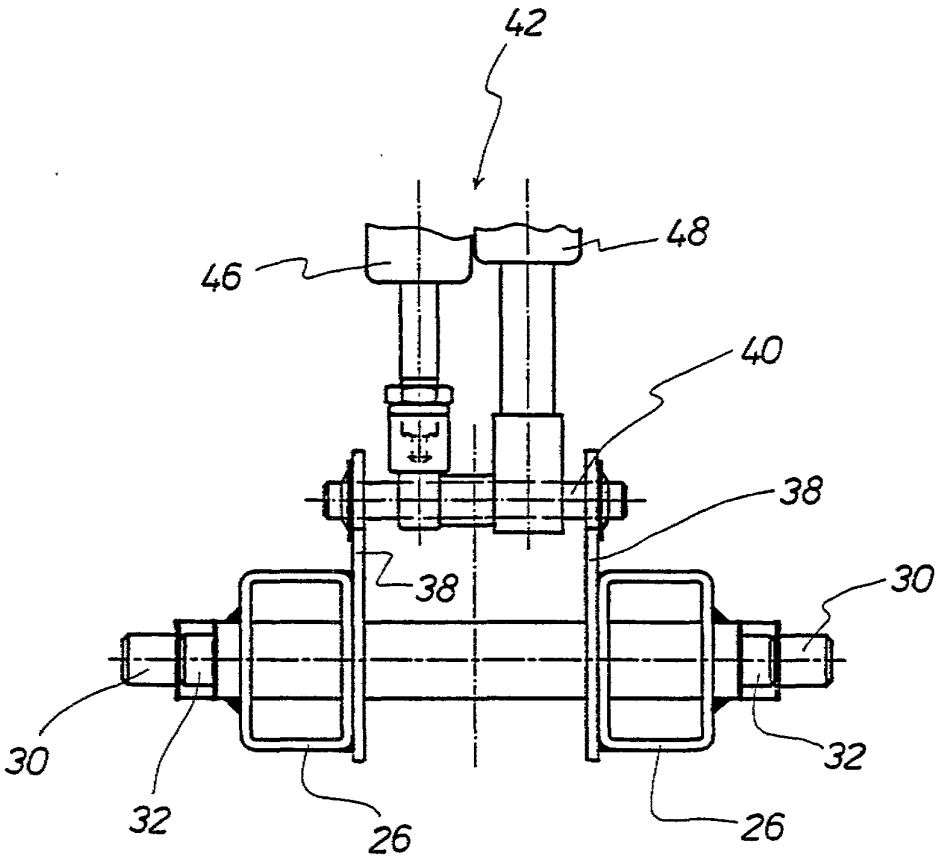


FIG. 9

508 063/203

Patents

Scissors type lifting platform - has angle piece on roller spindle engaging in horizontal guide recess

Abstract

The scissors-type lifting platform has the top rollers at the discharge end running under a flat rail underneath the platform. An angle-piece (3) is mounted on the spindle (1) of each roller (2), its vertical flange (4) being secured to the spindle. The horizontal flange (5) engages in a horizontal guide recess (6) between the platform and the rail (8). The rail can be of U-section (9) open to the side, the angle-piece flange fitting over its lower one (10).

Classifications

- B66F7/065 Scissor linkages, i.e. X-configuration

View 2 more classifications

DE2851555A1

Germany

Find Prior Art Similar

Other languages: German

Inventor: Heinz Adler, Axel Woerner

Current Assignee : Trepel AG

Worldwide applications

1978 DE

Application DE19782851555 events

1978-11-29	Application filed by Trepel AG
1978-11-29	Priority to DE19782851555
1980-06-04	Publication of DE2851555A1
1983-11-03	Application granted
1983-11-03	Publication of DE2851555C2
Status	Expired

Info: Patent citations (2), Cited by (5), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, DPMA, Discuss

Claims (4)

Hide Dependent
translated from German

Tl 4586 / Ge P at en t claims 1. 1 Scissor lift table with the upper rollers at the loose end A of the table run under a level rail arranged under the upper platform, characterized in that on the axis (1) of the roller (2) an angle flange (3) is arranged, whose vertical leg (4) is connected to the axis (1) of the roller (2) and its horizontal leg (5) engages in a horizontal guide recess (6) between the upper platform (7) and rail (8) is arranged. 2. Scissor lift table according to claim 1, characterized in that the rail 6) through a laterally open U-profile (9) is formed, the rollers on the outer surface of the run the lower leg (la) of the U-profile and the horizontal leg (5) of the angle flange (3) the lower Legs (la) of the U-profile (9) overlaps. 3. Scissor lift table according to claim 1 and / or 2, characterized in that that the guide recess (6) is open to the outside and the angle flange (3) on the scissors (11)

remote side of the rollers (2) is arranged on the axis (1). 4. Scissor lift table according to one or more of claims 1-3, characterized in that the angle flange (3) is arranged laterally adjustable on the axis (1). 0300 2 3/0 37 4

Description

translated from German

Tl 4586 / Ge

Applicant: Trepel AG, 62oo Wiesbaden-Schierstein, Alte Schmelze 18-22, Trepel-Haus

Scissor lift table

The invention relates to a viewer lifting table in which the upper castors at the loose end of the table under a level rail located under the upper platform to run.

If the upper platform of such a visionary lifting table, especially in the upper position of the upper platform at the fixed end outside the points of attack of the scissors loaded, there is a risk with such scissor lift tables that the upper platform at the loose end of the rollers lifts - Depending on how much the upper platform lifts off the rollers at the loose end, it then continues to exist the risk of the load slipping off the upper platform.

The object of the present invention is to provide a scissor lift table to create of the type mentioned, in which the risk that the platform at high load at the fixed end outside the points of application of the scissors lifts off the rollers, no longer exists.

This object is achieved in that an angle flange is arranged on the axis of the rollers, the more vertical one Leg is connected to the axles of the rollers and its horizontal leg in a horizontal guide

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engages recess, which is arranged between the upper platform and the rail.

Becomes the upper platform of such a lifting table at the fixed end very heavily loaded outside the points of application of the scissors, the platform can no longer lift off the rollers at the loose end because it is in the guide recess engaging horizontal legs of the angled flange attached to the axis of the rollers attach the platform to this prevent. The whole table can only tip over. However, this is the case even with the heaviest load on the fixed end upper platform outside the points of application of the scissors is practically inconceivable.

Further features of the invention are shown in the description of the figures and in the subclaims, whereby it is noted becomes that all individual characteristics and all combinations of individual characteristics are essential to the invention.

In Figures 1 and 2, the invention is shown in one embodiment, for example, without this embodiment to be limited.

Figure 1 shows schematically a side view of a scissors

lifting table and

Figure 2 is a vertical section through a roller assembly under the upper platform

As shown in Figure 1, the scissor lift table consists of the lower frame 12 and the upper frame 13 on which the platform 7 is arranged. A pair of scissors 11 is located on each side of the table between the upper frame and the lower frame.

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Spreading the scissors by means of a hydraulic ram 14, as shown schematically in Figure 1, [71s1] loose end of the table is arranged and directed to the free end upwardly directed piston rod of the upwardly directed arms of a scissor blade and the downwardly Cylinder base engages the downward arm of the other scissor blade. In this case, cross members, on which the cylinder 14 engages, can be arranged between the scissor blades lying in the same plane. At the fixed end one of the scissor blades is rotatably attached to a downwardly directed flange 15 under the upper frame. The other scissor blade carries a roller 2 at the upper end of the upwardly directed arm, on which the upper frame rests with a flat lower surface

If the cylinder 14 is acted upon, it spreads the scissors 11. The roller 2 then runs under the upper frame 13 in the direction of the fixed end. When the liquid comes out of the cylinder 14 drained, the scissor blades converge downwards and the roller 2 runs away in the direction of the fixed end.

As shown in Figure 2, at the loose end of the table on each upwardly directed arm of each pair of scissors there is one attached to the outward axis 1, which rotatably support a roller 2. The roller 2 runs under a rail 8, in the illustrated embodiment, under the lower leg io of an outwardly open U-profile 9 from which the lower frame 13 exists. On the side of the roller 2 facing away from the scissors 11, an angle flange 3 is on the axis 1 with the vertical leg 4 attached, the horizontal leg 5 is directed to the scissors 11 and away from the scissors directed lower leg io of the U-Prfils overlaps.

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-y-

In the exemplary embodiment shown, the interior of the U-profile forms the guide recess 6. The angle flange 3 can be arranged with its vertical leg 4 adjustable on the axis 1, so that the Rollers with axle and angle flange are prefabricated and, if necessary, adapted to the respective conditions can. An adjusting ring 16 can be used for adjustment. A spacer can also be placed between the adjusting ring 16 and the roller 2 17 may be provided, especially when the distance between the two is relatively large. Is paid the angle flange 3 on the axis 1 by means of a washer 18 which is fastened to the axis 1 with a snap ring 19. In the illustrated embodiment, the guide recess 6 is formed by the interior of a U-profile, the is open on the side facing away from the scissors 11. The guide recess 6 can of course also through other means may be formed. If necessary, it is also possible to reverse the U-profile. The chronological order of parts 2, 17, 16 and 4 is then also reversed.

030023/037 *

G- .

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Patent Citations (2)

Publication number	Priority date	Publication date	Assignee	Title
DE1957858A1 *	1969-11-18	1971-06-03	Hypro Inc	Roller pump
DE7720128U1 *	1977-06-27	1977-12-08	Trepel Ag, 6200 Wiesbaden	SCISSOR LIFT
Family To Family Citations				

* Cited by examiner, † Cited by third party

Cited By (5)

Publication number	Priority date	Publication date	Assignee	Title
CN103232007A *	2013-05-03	2013-08-07	昆山市大昌机械制造有限公司	Lifting machine
CN104787698A *	2015-03-05	2015-07-22	苏州市汉诺威升降台有限公司	Lifting platform
US11134773B1 *	2015-01-24	2021-10-05	Office Kick, Inc.	Desktop workspace that adjusts vertically
Family To Family Citations				
DE3447431A1 *	1984-12-24	1986-07-31	Trepel Ag, 6200 Wiesbaden	Drivable scissor system

CN101574196A *	2009-03-09	2009-11-11	[illegible]	Scissor type rope pulling driving stepless lift table

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
DE3337536C2	1987-07-23	
EP1375409A1	2004-01-02	Scissors lift device for a roller conveyor installation
DE4106371C2	1993-09-09	
DE2208777C3	1980-01-24	Scissor lift table
DE1580662B2	1976-08-26	BELOW A LOADING AREA, IN PARTICULAR A VEHICLE, STOWABLE LOADING PLATFORM
DE2851555A1	1980-06-04	Scissors type lifting platform - has angle piece on roller spindle engaging in horizontal guide recess
DE2165244C2	1986-12-11	Device for lifting and tipping motor vehicles
DE2231526A1	1973-01-18	JACK
DE1959981C3	1975-11-13	Working platform
DE7835353U1	1979-12-13	SCISSOR LIFT
DE2005710C3	1974-05-16	Bed frame
DE3008557A1	1981-09-17	Platform of adjustable height for use in theatre - is raised or lowered by scissor links actuated by screwed rod
DE1360883B	1962-09-06	Vehicle support device for lifting platforms
DE943320C	1956-05-17	Gripper for plates and sheet metal packages
DE1903929A1	1970-08-20	Stretcher platform for holding stretchers in ambulance vehicles
DE3735243A1	1989-04-27	DEVICE FOR NEUTRALIZING OVERLOAD LOADS
DE2511626A1	1975-10-09	Desk with height and incline adjustable top - has articulated arm displacement member allowing independent adjustment in any position
DE1534951C3	1975-01-30	Climbing hoist for sliding or climbing frames that support formwork
DE1188852B	1965-03-11	Stalk crusher with automatic adjustment of the crushing rollers
DE3412755A1	1985-10-17	Extendable running gear for a standing body
DE891090C	1953-09-24	Lid actuation device for industrial furnaces
AT304814B	1973-01-25	Mobile machine for lifting loads, in particular motor vehicles
DE2127450C3	1980-09-11	Jib crane, in particular a hydraulically operated jib crane
DE808018C	1951-07-09	Mobile foot lubrication press
DE657815C	1938-03-14	Loading countersink, which consists of a belt that runs around a liftable shaft and carries the flaps

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
DE19782851555	1978-11-29	1978-11-29	Scissor lift table

Applications Claiming Priority (1)

Application	Filing date	Title
DE19782851555	1978-11-29	Scissor lift table

Legal Events

Date	Code	Title	Description

1980-06-04	OAP	Request for examination filed	
1980-07-10	OD	Request for examination	
1983-11-03	D2	Grant after examination	
1984-05-03	8364	No opposition during term of opposition	
1987-04-23	8327	Change in the person/name/address of the patent owner	Owner name: TREPEL GMBH, HEBE- UND FOERDERTECHNIK, 6200 WIESBA
1990-11-08	8339	Ceased/non-payment of the annual fee	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
Leg		claims,description	10	0.000
lower leg		claims,description	3	0.000

Show all concepts from the description section

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(51) Int. Cl. 3 = Int. Cl. 2 Int. Cl. 2: **B 66 F 3/22**
A 47 B 9/16

(19) **BUNDESREPUBLIK DEUTSCHLAND**

DEUTSCHES PATENTAMT

[illegible]

DE 28 51 555 A 1

(11) Offenlegungsschrift 28 51 555

(21) Aktenzeichen: P 28 51 555.1-22
(22) Anmeldetag: 29. 11. 78
(43) Offenlegungstag: 4. 6. 80

(30) Unionspriorität:
(32) (33) (31) —

(54) Bezeichnung: Scherenhebetisch

(71) Anmelder: Trepel AG, 6200 Wiesbaden

(72) Erfinder: Adler, Heinz, 6204 Taunusstein; Wörner, Axel, 6200 Wiesbaden

Prüfungsantrag gem. § 28 b PatG ist gestellt

DE 28 51 555 A 1

5. 80 030 023/374 4/60

Patentansprüche

1. Scherenhebetisch, bei dem die oberen Laufrollen am Losende des Tisches unter einer unter der oberen Plattform angeordneten ebenen Schiene laufen dadurch gekennzeichnet, daß auf der Achse (1) der Laufrolle (2) ein Winkelflansch (3) angeordnet ist, dessen senkrechter Schenkel (4) mit der Achse (1) der Laufrolle (2) verbunden ist und dessen waagerechter Schenkel (5) in eine waagerechte Führungsausnehmung (6) eingreift, die zwischen oberer Plattform (7) und Schiene (8) angeordnet ist.

2. Scherenhebetisch nach Anspruch 1 dadurch gekennzeichnet, daß die Schiene (8) durch ein seitlich offenes U-Profil (9) gebildet ist, die Laufrollen auf der Außenfläche des unteren Schenkel (1o) des U-Profils laufen und der waagerechte Schenkel (5) des Winkelflansches (3) den unteren Schenkel (1o) des U-Profils (9) übergreift.

3. Scherenhebetisch nach Anspruch 1 und /oder 2 dadurch gekennzeichnet, daß die Führungsausnehmung (6) nach außen offen ist und der Winkelflansch (3) auf der den Scheren (11) abgekehrten Seite der Laufrollen (2) auf der Achse (1) angeordnet ist.

4. Scherenhebetisch nach einem oder mehreren der Ansprüche 1 - 3 dadurch gekennzeichnet, daß der Winkelflansch (3) seitlich verstellbar auf der Achse (1) angeordnet ist.

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Alte Schmelze 18 - 22, Trepel-Haus

Scherenhebetisch

Die Erfindung betrifft einen Scherenhebetisch, bei dem die oberen Laufrollen am Losende des Tisches unter einer unter der oberen Plattform angeordneten ebenen Schiene laufen.

Wird die obere Plattform eines solchen Scherenhebetisches, insbesondere in oberer Stellung der oberen Plattform am Festende außerhalb der Angrifsspunkte der Scheren hoch belastet, besteht bei solchen Scherenhebetischen die Gefahr, daß die obere Plattform am Losende sich von den Laufrollen abhebt. Abhängig davon wie stark sich die obere Plattform am Losende von den Laufrollen abhebt, besteht dann weiter die Gefahr, daß die Last von der oberen Plattform abrutscht.

Aufgabe vorliegender Erfindung ist es, einen Scherenhebetisch der eingangs genannten Art zu schaffen, bei dem die Gefahr, daß die Plattform bei hoher Belastung am Festende außerhalb der Angriffspunkte der Scheren sich von den Laufrollen abhebt,nicht mehr besteht.

Diese Aufgabe wird dadurch gelöst, daß auf der Achse der Laufrollen ein Winkelflansch angeordnet ist, dessen senkrechter Schenkel mit den Achsen der Laufrollen verbunden ist und dessen waagerechter Schenkel in eine waagerechte Führungsaus-

nehmung eingreift, die zwischen der oberen Plattform und der Schiene angeordnet ist.

Wird die obere Plattform eines solchen Hebetisches am Festende außerhalb der Angriffspunkte der Scheren sehr hoch belastet, kann die Plattform am Losende sich nicht mehr von den Laufrollen abheben, weil der in die Führungsausnehmung eingreifende waagerechte Schenkel des auf der Achse der Laufrollen befestigten Winkelflansches die Plattform hieran hindern. Es kann nur noch der ganze Tisch umkippen. Solches ist aber selbst bei stärkster Belastung des Festendes der oberen Plattform außerhalb der Angriffspunkte der Scheren praktisch nicht denkbar.

Weitere Merkmale der Erfindung sind in der Beschreibung der Figuren und in den Unteransprüchen dargestellt, wobei bemerkt wird, daß alle Einzelmerkmale und alle Kombinationen von Einzelmerkmalen erfindungswesentlich sind.

In den Figuren 1 und 2 ist die Erfindung an einer Ausführungsform beispielsweise dargestellt, ohne auf diese Ausführungsform beschränkt zu sein.

Figur 1 zeigt schematisch eine Seitenansicht eines Scherenhebetisches und

Figur 2 einen senkrechten Schnitt durch eine Laufrollenanordnung unter der oberen Plattform

Wie in Figur 1 dargestellt, besteht der Scherenhebetisch aus dem Unterrahmen 12 und dem Oberrahmen 13,auf dem die Plattform 7 angeordnet ist. Zwischen Oberrahmen und Unterrahmen befindet sich auf jeder Seite des Tisches ein Scherenpaar 11.

Das Spreizen der Scheren erfolgt mittels eines hydraulischen Arbeitszylinders 14, der wie in Figur 1 schematisch dargestellt, im Losende des Tisches angeordnet ist und mit dem freien Ende der nach oben gerichteten Kolbenstange an den nach oben gerichteten Armen des einen Scherenblattes und mit dem nach unten gerichteten Zylinderboden an dem nach unten gerichteten Arm des anderen Scherenblattes angreift. Dabei können zwischen den in gleicher Ebene liegenden Scherenblättern Quertraversen angeordnet sein, an die der Zylinder 14 angreift. Am Festende ist das eine Scherenblatt unter dem oberen Rahmen 13 an einem nach unten gerichteten Flansch 15 drehbar befestigt. Das andere Scherenblatt trägt am oberen Ende des nach oben gerichteten Armes eine Laufrolle 2, auf die der Oberrahmen 13 mit einer ebenen Unterfläche aufliegt

Wird der Zylinder 14 beaufschlagt, spreizt er die Schere 11. Die Laufrolle 2 läuft dann unter dem Oberrahmen 13 in Richtung auf das Festende. Wird die Flüssigkeit aus dem Zylinder 14 abgelassen, laufen die Scherenblätter nach unten zusammen und läuft die Laufrolle 2 in Richtung vom Festende weg.

Wie in Figur 2 dargestellt, ist am Losende des Tisches an jedem nach oben gerichteten Arm einer jeden Schere 11 eine nach außen gerichtete Achse 1 befestigt, die drehbar eine Laufrolle 2 tragen. Die Laufrolle 2 läuft unter einer Schiene 8, im dargestellten Ausführungsbeispiel unter dem unteren Schenkel 1o eines nach außen offenen U-Profils 9 aus denen der Unterrahmen 13 besteht. Auf der der Schere 11 abgekehrten Seite der Laufrolle 2 ist auf der Achse 1 ein Winkelflansch 3 mit dem senkrechten Schenkel 4 befestigt, dessen waagerechter Schenkel 5 auf die Schere 11 gerichtet ist und den von der Schere weg gerichteten unteren Schenkel 1o des U-Prfils übergreift.

Der Innenraum des U-Profils bildet im dargestellten Ausführungsbeispiel die Führungsausnehmung 6. Der Winkelflansch 3 kann dabei mit seinem senkrechten Schenkel 4 verstellbar auf der Achse 1 angeordnet sein, so daß die Laufrollen mit Achse und Winkelflansch vorgefertigt und im Bedarfsfalle den jeweiligen Gegebenheiten angepaßt werden können. Zum Verstellen kann dabei ein Stellring 16 dienen. Zwischen Stellring 16 und Laufrolle 2 kann noch ein Distanzstück 17 vorgesehen sein, insbesondere dann, wenn der Abstand zwischen beiden relativ groß ist. Gehaltert wird der Winkelflansch 3 auf der Achse 1 mittels einer Scheibe 18, die mit einem Sprengring 19 auf der Achse 1 befestigt ist. Im dargestellten Ausführungsbeispiel wird die Führungsausnehmung 6 durch den Innenraum eines U-Profils gebildet, der auf der den Scheren 11 abgekehrten Seite offen ist. Die Führungsausnehmung 6 kann selbstverständlich auch durch andere Mittel gebildet sein. Im Bedarfsfalle ist es auch möglich, das U-Profil umgekehrt anzuordnen. Die Reihenfolge der Teile 2, 17, 16 und 4 ist dann ebenfalls umgekehrt.

Leerseite

Nummer: 28 51 555
Int. Cl.²: B 66 F 3/22
Anmeldetag: 29. November 1978
Offenlegungstag: 4. Juni 1980

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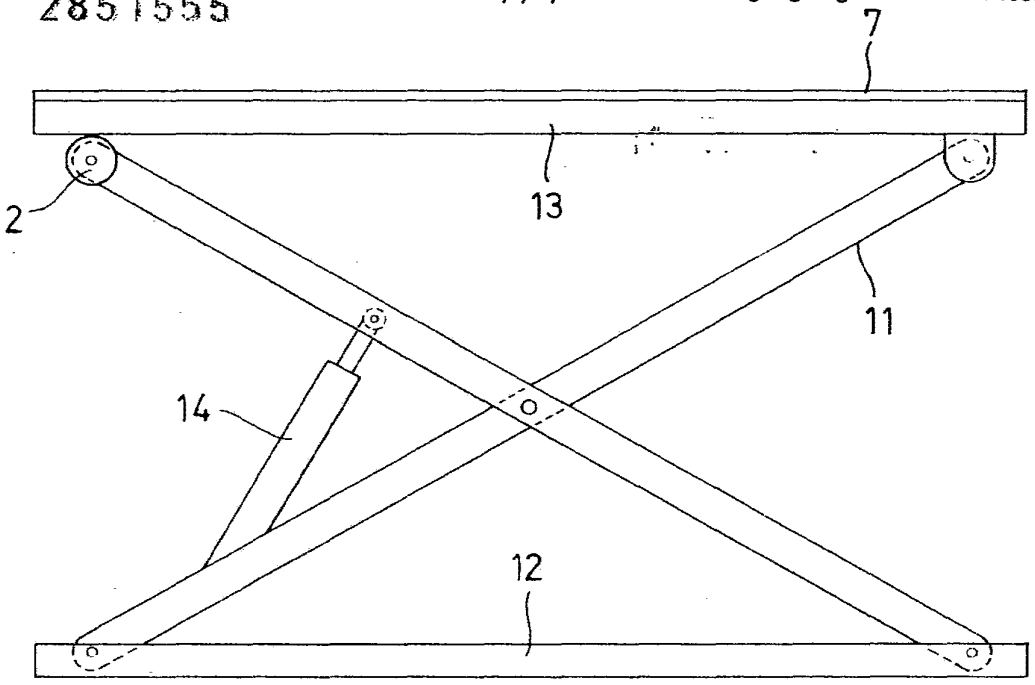


FIG. 1

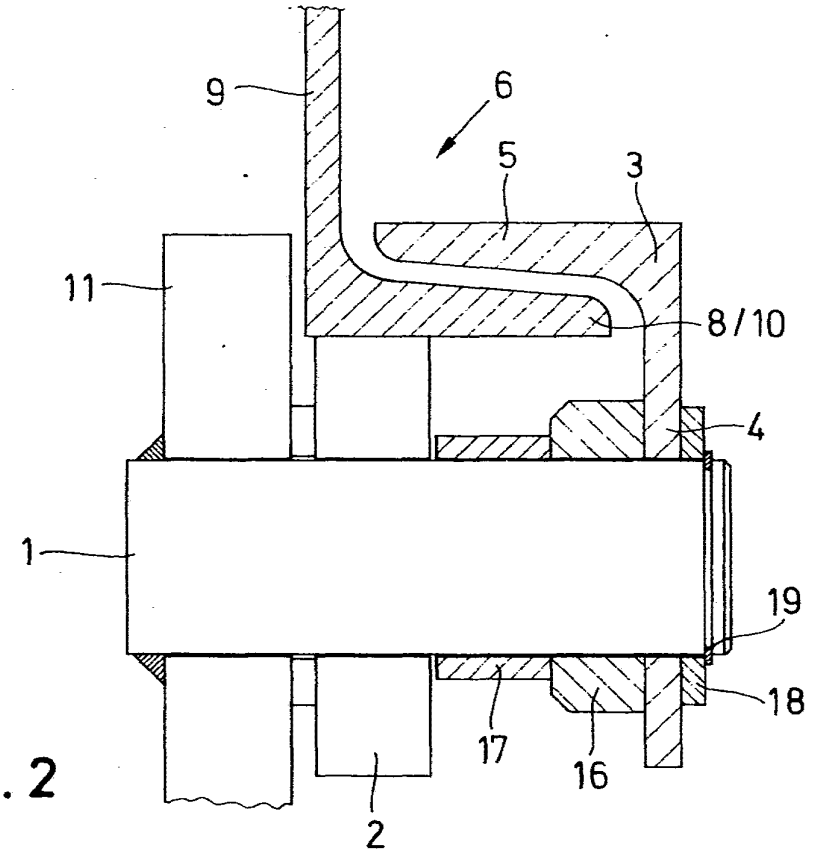


FIG. 2

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TI 4586

Patents

Crossed-strut lifting table

Abstract

The table has a base (1) and a platform (2), crossing shear arms (4,5) pivoted to each other on a shear axis (3) as inner and outer shears, each with one end fixed in a turning bearing (6,7), and the other attached movably to the base and the platform. The shear arms are drive by a motor spindle drive (10), via connecting rods (11). The connecting rods are in the form of rigid angled levers (11). The are pivoted at the apex to two axes (12) in the shear arms so that the height can be altered. Both these levers are coupled, via an axis (13), to a spindle nut (14) of the spindle drive.

Classifications

B66F7/065 Scissor linkages, i.e. X-configuration

View 2 more classifications

DE19526596A1

Germany

Find Prior Art Similar

Other languages: German

Inventor: Reinhard Clamor, Karl-Heinz Schmezer

Current Assignee : PRO HUB HEBETECHNIK GMBH, 31603 DIEPENAU, DE

Worldwide applications

1995 DE

Application DE1995126596 events

1995-07-21	Application filed by SCHMEZER KARL HEINZ
1995-07-21	Priority to DE1995126596
1997-01-23	Publication of DE19526596A1
2004-12-16	Application granted
2004-12-16	Publication of DE19526596B4
2015-07-22	Anticipated expiration
Status	Expired - Fee Related

Info: Patent citations (4), Cited by (8), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, DPMA, Discuss

Claims (7)

Hide Dependent translated from German

1. Scissor lifting table with scissor arms arranged between a base frame and a platform, crossing and articulated in a scissor axis, as inner and outer scissors, which are fixed to the base frame and the platform with one end in a swivel bearing and with the other end guided in a sliding manner are and can be moved apart and moved together by a motorized spindle drive via handlebars for lifting and lowering the platform,
characterized in that

- The handlebars are two rigid angle levers (11),
- The two angle levers (11) are vertically pivotable at their apex around an axis (12) held in two scissor arms (5),
- The two angle levers (11) with an angle leg (11 a) via a hinge axis (13) with a spindle nut (14) of the spindle drive (10) are coupled in terms of movement and
- the two angle levers (11) each have a have at the other angle leg (11 b) ends at a partial stroke of the scissor arms (4, 5) frictionally co-operating with the other two scissor arms (4) pressure point (15).

2. Scissor lift table according to claim 1, characterized in that the angle legs (11 a, 11 b) of the two angle levers (11) are at right angles to one another and are of different lengths, and the shorter angle leg (11 a) with the spindle nut (14) is articulated and the longer angle leg (11 b) has the pressure point (15) at the free end. 3. scissor lift table according to claim 1 or 2, characterized in that the pressure point (15) of the two angle levers (11 b) is formed by a roller, which provided with an adjacent inner scissor arm (4) rectilinear and / or arcuate control path (16) interacts. 4. scissor lifting table according to one of claims 1 to 3, characterized in that the spindle drive (10) with a pivot bearing (17) oscillates between the two inner scissor arms (4) and with its threaded spindle (18) and the gimbal-mounted spindle nut (14) lies in the middle between the scissor arms (4 , 5). 5. scissor lifting table according to one of claims 1 to 4, characterized in that the spindle drive (10) with its pivot bearing (17) between the fixed scissor arm mounting (6 , 7) and the scissor axis (3) is arranged. 6. Scissor lift table according to one of claims 1 to 5, characterized in that the axis (12) extending at the angular apex of the two angle levers (11) is mounted in the two outer scissor arms (5) and the two inner scissor arms (4) with its recess (20) grasp this axis (12) in the retracted position. 7. Scissor lifting table according to one of claims 1 to 6, characterized in that the axis (12) extending at the angular apex of the two angle levers (11) is arranged between the scissor axis (3) and the loose scissor arm end (8) and their distance from the scissor axis (3) is smaller than the shift-guided scissor arm end (8).

Description

translated from German

The invention relates to a scissor lift table arranged between a base and a platform, crossing and articulated in a scissors axis connected scissor arms as inner and outer scissors, which with one end each in a swivel bearing and with the at the other end guided on the base and the Are held and by a motor platform Spindle drive via

handlebars to raise and lower the platform can be moved apart and moved together.

Such a scissor lift table is such. B. from the DE 91 08 825 U1, DE-PS 35 02 641 and US-PS 3 034 765 known. Here are for together and Moving the scissor arms relatively many articulated with each other and on the scissor arms as well as on the Spindle drive articulated handlebars required what the Construction of the scissor lift table complicated and therefore more expensive.

In addition, these handlebars and their articulation points must be related on the scissor arms and the spindle drive in a certain Distance ratio can be arranged to be favorable To achieve balance of power.

The object of the invention is one after the beginning mentioned type built scissor lift table to that effect improve that the pulling force for the spreading of the Scissor arms for lifting the platform only on the one hand two favorable to the spindle drive and the scissors Handlebar and on the other hand directly into the scissors system what is introduced in simple, inexpensive and should be done safely.

This object is achieved by the characterizing Features of claim 1 solved.

The subsequent sub-claims contain Design features, which are advantageous and beneficial Represent further training in task solving.

The scissor lift table according to the invention is for the Lifting movement of the platform by moving the Scissor arms with only two rigid angle levers equipped as a handlebar, on the one hand with the threaded spindle the spindle drive are coupled in terms of movement and on the other hand, grip two scissor arms.

These two angle legs form upright, which at initial spreading of the scissor arms press these scissor arms apart and then the power connection with the scissor arms over a certain stroke release, and then the traction for the further Spread the scissor arms directly from the spindle drive introduced into the scissors system.

When the scissors are moved apart the two angle levers due to the tensile force of the spindle drive is operated and the scissors are raised while lifting the Platform spread. After sufficient spread of the Scissor arms, d. H. after a certain stroke of the platform then the flow of force directly into the scissors system in which the Angle lever no longer has a frictional connection with the Scissor arms go in, but with their joint axis on two Scissor arms via the spindle drive the further spreading of the Result in scissor arms.

The two angle levers are on a common axis with the outer scissor arms connected and act on one Pressure point on the inner scissor arms for the initial area the lifting movement and after interrupting the The connection with the inner scissor arms then pulls the spindle drive over the angle lever axis the scissors further in the lifting movement of the platform.

For this lifting movement, only two are rigid in themselves Angle levers required, which are simple and inexpensive Way with optimal force application between spindle drive and Scissors system are used.

This scissor lift table is for the powerful lifting movement the platform in a simple, inexpensive and secure way only with one spindle drive, two angle levers and two Control lanes equipped that an introductory, d. H. initial spreading of the scissor arms in Allow frictional connection on a favorable stroke and then the further stroke directly into the scissor system initiate so that the total force for the Lift movement of the platform in the scissor lift table with optimal simple and durable means is solved.

In the drawing is an embodiment of the invention shown, which is explained in more detail below. It shows:

Fig. 1 is a side view of the assembled driven scissors arms of a scissor lift with a spindle drive, and coupled thereto angle levers as Aufstellenker for the scissor arms,

Fig. 2 is a plan view of FIG. 1,

Fig. 3 is a side view of the scissor lift table in the extended scissor arm position with the platform raised.

The scissor lift table has, between an underframe (1) and a platform (2) - table top - four intersecting scissor arms (4 , 5) which are articulated in a scissor axis (3) as internal and external scissors; these scissor arms (4 , 5) are fixed at one end in a swivel bearing (6 , 7) and at the other end are guided by rollers (8 , 9) on the base frame (1) and the platform (2).

The scissor arms (4 , 5) are moved apart and moved together by a spindle drive (10) via handlebars (11) for lifting and lowering the platform (2).

The handlebars (11) are two rigid angle levers (11) which are mounted so as to be vertically pivotable at their angular apex around an axis (12) held in two scissor arms (5) forming the outer scissors.

These two angle levers (11) are coupled in terms of movement with an angle leg (11 a) via an articulated axis (13) with a spindle nut (14) of the spindle drive (10).

The two angle levers (11) have, at their other angle leg (11 b) ends a respective on to a partial stroke of the scissor arms (4, 5) frictionally co-operating with the other two scissor arms (4) pressure point (15).

The angle legs (11 a, 11 b) of the two angle levers (11) are at right angles to each other and are of different lengths; the shorter angle leg (11 a) is articulated to the spindle nut (14) and the longer angle leg (11 b) has the pressure point (15) at the free end.

The pressure point (15) of the two angle levers (11) is each formed by a roller (15) which interacts with a rectilinear and / or curved control track (16) provided on the adjacent inner scissor arm (4). This control track (16) is formed by a strip attached to the inside of the scissor arms (4).

The spindle drive (10) with a swivel bearing (17) oscillates between the two inner scissor arms (4) and lies with its threaded spindle (18) and the cardanic spindle nut (14) in the center between the scissor arms (4 , 5).

The spindle drive (10) has a geared motor (19) driving the threaded spindle (18) and flanged to the swivel bearing (17) and is connected to the swivel bearing (17) - crossbar with bearing journal - between the fixed scissor arm bearing (6 , 7) and the scissor axis (3) arranged.

The axis (12) extending at the angle apex of the two angle levers (11) is supported at the end in the two outer scissor arms (5) and the two inner scissor arms (4) have a recess (20) over this axis (12) in the closed position, as shown in Fig. 1.

The axis (12) extending at the angle apex of the two angle levers (11) lies between the scissor axis (3) and the loose scissor arm end (8) and its distance from the scissor axis (3) is smaller than the shift-guided scissor arm end (8).

The two running rollers (15) of the angle lever (11) seated on a common angular limb (11 b) through barrel axis (21).

In the lowered platform position according to FIG. 1, the scissor arms (4 , 5) are moved together, lie one inside the other in a horizontal plane and the inner scissor arms (4) engage with their recesses (20) over the hinge axis (12). The angle lever (11) with its longer angle leg (11 b) is also horizontal and the shorter angle leg (11 a) is vertical.

To raise the platform (2), the spindle drive (10) pulls via its rotating threaded spindle (18) towards the pivot bearing in the direction of the arrow "A" and the two coupled angle levers (11) are pivoted about the axis (12) in which its angle leg (11 b) is pivoted up about the axis (12). The two highly pivoting angle leg (11 b) acting on the control path (16) of the respective inner scissor arm (4) with its end roller (15), which then necessarily pivots entraining the outer scissor arm (5) upwards and all intersecting scissor arms (4 , 5) move apart and raise the platform (2).

After a certain stroke of the platform (2), ie, spreading the scissors arms (4, 5) of the longer angle leg passes (11 b) of the angle lever (11) in a vertical position and then leaves the control path (16).

When the spindle nut (14) is pulled further, the scissor arms (4 , 5) then continue via the shorter angle leg (11 a) running in the pulling direction of the threaded spindle (18) and the axle (12) in the outer scissor arms (5) while raising the platform spread apart as shown in Fig. 3.

The platform is lowered in reverse.

It is within the scope of the invention to design the two angle legs (11 a, 11 b) of the angle lever (11) to be of the same length or to make the angle leg (11 a) longer than the angle leg (11 b), that is to say in reverse aspect ratios.

Patent Citations (4)

Publication number	Priority date	Publication date	Assignee	Title
DE3442940A1 *	1984-11-24	1986-06-05	Gewerkschaft Eisenhütte Westfalia, 4670 Lünen	Lifting table
US4858888A *	1988-07-11	1989-08-22	Onelio Cruz	Platform lifting mechanism
DD284657A5 *	1989-06-06	1990-11-21	Veb Hebezeugwerk Koenigsbrueck,Dd	LIFTING TREAD WITH SCREW RAIL AND HYDRAULIC DRIVE
Family To Family Citations				
DE3436782A1 *	1984-10-06	1986-06-12	Brockerhoff, Heinrich, Ing (grad.), 4000 Düsseldorf	Lifting device having a supporting frame and shear-rod linkage

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Publication number	Priority date	Publication date	Assignee	Title
EP1044923A2 *	1999-04-13	2000-10-18	Langewellpott, Eva-Maria	Scissor type lifting table for lifting objects
DE20209407U1 *	2002-06-17	2003-07-31	Remech Systemtechnik Gmbh & Co	Lifting device, preferably for skid conveyors
EP1661490A1 *	2004-11-25	2006-05-31	Ernst Langewellpott	Height adjustable table with cross-legs
EP1772417A3 *	2005-10-04	2009-01-21	EISENMANN Fördertechnik GmbH & Co. KG	Lifting table
CN101431916B *	2006-03-08	2012-07-04	迪安·卡门	Improvements in and relating to computer tables
US10244861B1 *	2015-01-24	2019-04-02	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
US10893748B1	2017-07-08	2021-01-19	Office Kick, Inc.	Height adjustable desktop
Family To Family Citations				
WO2019000161A1 *	2017-06-26	2019-01-03	江苏大塚智能科技有限公司	Combined elevating platform and mobile robot

* Cited by examiner, † Cited by third party, ‡ Family to family citation

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EP0936119A1	1999-08-18	Pivotable sliding door for vehicles
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DE19604074B4	2007-03-15	Lifting device for care beds
DE2633683C2	1982-10-14	Transport vehicle for prefabricated garages and the like
DE3619677C1	1987-06-19	Device for lifting and lowering the head and foot sections of a bed frame
DE472610C	1929-03-11	Device for guiding the steering axis, especially on trams
DE490825C	1930-02-04	Carriages for railways, trams, rapid transit trains, etc. Like., In particular for articulated car trains
DE102012001377A1	2013-06-06	Ballast wagon for a derrick crane
DE2638566C3	1978-10-19	Outdoor conveyor with a closed track for multiple trolleys
DE3442940A1	1986-06-05	Lifting table
EP1268337B1	2005-08-31	Jack
DE2918646C3	1982-01-07	Lifting platform or platform
EP0886100A1	1998-12-23	Height adjustable chassis for a pipe system maintenance device
DE19648607C2	2001-07-12	Scissor lift table
EP1510152B1	2010-03-17	Mattress base with articulated backrest and headrest portions
DE957449C	1957-01-31	Three-axle motor vehicle for transporting railroad cars on ordinary roads
DE3519787A1	1986-12-11	Scissor lifting table

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
DE19951265961	1995-07-21	1995-07-21	Scissor

Applications Claiming Priority (1)

Application	Filing date	Title
DE19951265961	1995-07-21	Scissor

Legal Events

Date	Code	Title	Description
1997-01-23	OP8	Request for examination as to paragraph 44 patent law	
2003-07-17	8127	New person/name/address of the applicant	**Owner name:** PRO HUB HEBETECHNIK GMBH, 31603 DIEPENAU, DE
2005-06-09	8364	No opposition during term of opposition	
2008-05-15	8339	Ceased/non-payment of the annual fee	

Concepts

machine-extracted

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) **Offenlegungsschrift**

(10) **DE 195 26 596 A 1**

(51) Int. Cl.[6]:
B 66 F 3/22
A 47 B 9/16

(21) Aktenzeichen: 195 26 596.3
(22) Anmeldetag: 21. 7. 95
(43) Offenlegungstag: 23. 1. 97

DE 195 26 596 A 1

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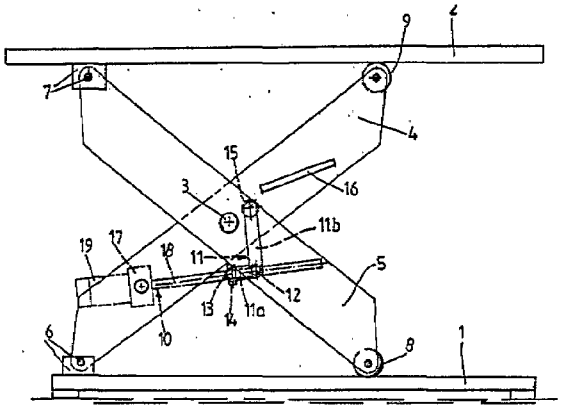
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Prüfungsantrag gem. § 44 PatG ist gestellt

(54) Scherenhubtisch

(57) Der Scherenhubtisch weist zwischen einem Untergestell (1) und einer Plattform (2) angeordnete, sich kreuzende und in einer Scherenachse (3) gelenkig miteinander verbundenen Scherenarme (4, 5) als Innen- und Außenschere auf, welche mit je einem Ende in einer Schwenklagerung (6, 7) ortsfest und mit dem anderen Ende verschiebegeführt an dem Untergestell (1) und der Plattform (2) gehalten sind und durch einen motorischen Spindelantrieb (10) über Lenker (11) zum Heben und Senken der Plattform auseinander- und zusammenfahrbar sind.
Die Lenker (11) sind von zwei in sich starren Winkelhebeln (11) gebildet und im Winkel-Scheitelpunkt um eine in zwei Scherenarmen (5) gehaltene Achse (12) höhenverschwenkbar gelagert.
Die beiden Winkelhebel (11) sind mit einem Winkelschenkel (11a) über eine Gelenkachse (13) mit einer Spindelmutter (14) des Spindelantriebes (10) bewegungsmäßig gekoppelt, und an dem anderen Winkelschenkel (11b) jedes Winkelhebels (11) ist endseitig je ein auf einem Teilhub der Scherenarme (4, 5) mit den beiden anderen Scherenarmen (4) kraftschlüssig zusammenwirkender Druckpunkt (15) in Form einer Laufrolle vorgesehen.



DE 195 26 596 A 1

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

BUNDESDRUCKEREI 11. 96 602 064/293 6/25

Beschreibung

Die Erfindung bezieht sich auf einen Scherenhubtisch mit zwischen einem Untergestell und einer Plattform angeordnete, sich kreuzende und in einer Scherenachse gelenkig miteinander verbundenen Scherenarme als Innen- und Außenschere, welche mit je einem Ende in einer Schwenklagerung ortsfest und mit dem anderen Ende verschiebegeführt an dem Untergestell und der Plattform gehalten sind und durch einen motorischen Spindelantrieb über Lenker zum Heben und Senken der Plattform auseinander- und zusammenfahrbar sind.

Ein derartig aufgebauter Scherenhubtisch ist z. B. aus dem DE 91 08 825 U1, der DE-PS 35 02 641 und der US-PS 3 034 765 bekannt geworden. Hierbei sind für das Zusammen- und Auseinanderfahren der Scherenarme verhältnismäßig viele gelenkig miteinander und an den Scherenarmen sowie an dem Spindelantrieb angelenkte Lenker erforderlich, was die Konstruktion des Scherenhubtisches kompliziert und somit verteuert.

Außerdem müssen diese Lenker und deren Anlenkpunkte in Bezug auf die Scherenarme und den Spindelantrieb in einem gewissen Abstandsverhältnis angeordnet werden, um günstige Kräfteverhältnisse zu erreichen.

Aufgabe der Erfindung ist es, einen nach der eingangs genannten Art aufgebauten Scherenhubtisch dahingehend zu verbessern, daß die Zugkraft für das Auseinanderfahren der Scherenarme zur Plattformanhebung einerseits lediglich über zwei günstig am Spindelantrieb und an der Scheren angreifende Lenker und andererseits in das Scherensystem direkt eingeleitet wird, was in einfacher, kostengünstiger und sicherer Weise erfolgen soll.

Diese Aufgabe wird erfindungsgemäß durch die kennzeichnenden Merkmale des Patentanspruches 1 gelöst.

Die sich daran anschließenden Unteransprüche beinhalten Gestaltungsmerkmale, welche vorteilhafte und förderliche Weiterbildungen der Aufgabenlösung darstellen.

Der Scherenhubtisch gemäß der Erfindung ist für die Hubbewegung der Plattform durch Auseinanderfahren der Scherenarme lediglich mit zwei in sich starren Winkelhebeln als Lenker ausgestattet, die einerseits mit der Gewindespindel des Spindelantriebes bewegungsmäßig gekoppelt sind und andererseits kraftschlüssig an zwei Scherenarmen angreifen.

Diese beiden Winkelschenkel bilden Aufstellenker, welche beim anfänglichen Auseinanderspreizen der Scherenarme kraftschlüssig diese Scherenarme auseinanderdrücken und nach einem gewissen Hubweg die Kraftverbindung mit den Scherenarmen lösen, und dann wird die Zugkraft für das weitere Auseinanderspreizen der Scherenarme vom Spindelantrieb direkt in das Scherensystem eingeleitet.

Beim Auseinanderfahren der zusammengefahrenen Schere werden durch die Zugkraft des Spindelantriebes die beiden Winkelhebel betätigt und dabei wird die Schere unter Anhebung der Plattform gespreizt. Nach ausreichender Spreizung der Scherenarme, d. h. nach einem gewissen Hub der Plattform, wirkt dann der Kraftfluß direkt in das Scherensystem, in dem die Winkelhebel keine Kraftschlußverbindung mehr mit den Scherenarmen eingehen, sondern mit ihrer Gelenkachse an zwei Scherenarmen über den Spindelantrieb die weitere Spreizung der Scherenarme ergeben.

Die beiden Winkelhebel sind über eine gemeinsame Achse mit den äußeren Scherenarmen verbunden und wirken über einen Druckpunkt auf die inneren Scherenarme für den Anfangsbereich der Hubbewegung ein und nach Unterbrechung der Kraftschlußverbindung mit den inneren Scherenarmen zieht dann der Spindelantrieb über die Winkelhebelachse die Scheren weiter in die Hubbewegung der Plattform.

Für diese Hubbewegung sind somit lediglich zwei in sich starre Winkelhebel erforderlich, die in einfacher und kostengünstiger Weise bei optimalem Kraftangriff zwischen Spindelantrieb und Scherensystem eingesetzt sind.

Dieser Scherenhubtisch ist für die kraftgünstige Hubbewegung der Plattform in einfacher, kostengünstiger und sicherer Weise lediglich mit einem Spindelantrieb, zwei Winkelhebeln und zwei Steuerbahnen ausgestattet, die eine einleitende, d. h. anfängliche Auseinanderspreizung der Scherenarme in Kraftschlußverbindung auf günstigem Hubweg ermöglichen und anschließend den weiteren Hubweg direkt in das Scherensystem einleiten, so daß die gesamte Krafteinwirkung für die Hubbewegung der Plattform im Scherenhubtisch optimal mit einfachen und dauerhaft haltbaren Mitteln gelöst ist.

Auf der Zeichnung ist ein Ausführungsbeispiel der Erfindung dargestellt, welches nachfolgend näher erläutert wird. Es zeigt:

Fig. 1 eine Seitenansicht der zusammengefahrenen Scherenarme eines Scherenhubtisches mit Spindelantrieb und damit gekoppelten Winkelhebeln als Aufstellenker für die Scherenarme,

Fig. 2 eine Draufsicht gemäß **Fig.** 1,

Fig. 3 eine Seitenansicht des Scherenhubtisches in der auseinandergefahrenen Scherenarmstellung mit angehobener Plattform.

Der Scherenhubtisch weist zwischen einem Untergestell (1) und einer Plattform (2) — Tischplatte — vier sich kreuzende und in einer Scherenachse (3) gelenkig miteinander verbundenen Scherenarme (4, 5) als Innen- und Außenschere auf; diese Scherenarme (4, 5) sind mit je einem Ende in einer Schwenklagerung (6, 7) ortsfest und mit dem anderen Ende durch Rollen (8, 9) verschiebegeführt an dem Untergestell (1) und der Plattform (2) gehalten.

Die Scherenarme (4, 5) werden durch einen Spindelantrieb (10) über Lenker (11) zum Heben und Senken der Plattform (2) auseinander- und zusammengefahren.

Die Lenker (11) sind zwei in sich starre Winkelhebel (11) und in ihrem Winkelscheitelpunkt um eine in zwei die Außenschere bildenden Scherenarmen (5) gehaltene Achse (12) höhenverschwenkbar gelagert.

Diese beiden Winkelhebel (11) sind mit einem Winkelschenkel (11a) über eine Gelenkachse (13) mit einer Spindelmutter (14) des Spindelantriebes (10) bewegungsmäßig gekoppelt.

Die beiden Winkelhebel (11) weisen an ihrem anderen Winkelschenkel (11b) endseitig je einen auf einem Teilhub der Scherenarme (4, 5) mit den beiden anderen Scherenarmen (4) kraftschlüssig zusammenwirkenden Druckpunkt (15) auf.

Die Winkelschenkel (11a, 11b) der beiden Winkelhebel (11) stehen rechtwinklig zueinander und sind unterschiedlich lang ausgebildet; der kürzere Winkelschenkel (11a) ist mit der Spindelmutter (14) gelenkig verbunden und der längere Winkelschenkel (11b) hat am freien Ende den Druckpunkt (15).

Der Druckpunkt (15) der beiden Winkelhebel (11) ist von je einer Laufrolle (15) gebildet, welche mit einer am benachbarten inneren Scherenarm (4) vorgesehenen ge-

radlinigen und/oder bogenförmigen Steuerbahn (16) zusammenwirkt. Diese Steuerbahn (16) ist von einer an der Innenseite der Scherenarme (4) befestigten Leiste gebildet.

Der Spindelantrieb (10) lagert mit einer Schwenklagerung (17) pendelnd zwischen den beiden innenliegenden Scherenarmen (4) und liegt mit seiner Gewindespindel (18) und der darauf kardanisch sitzenden Spindelmutter (14) mittig zwischen den Scherenarmen (4, 5).

Der Spindelantrieb (10) hat einen die Gewindespindel (18) antreibenden, an der Schwenklagerung (17) angeflanschten Getriebemotor (19) und ist mit der Schwenklagerung (17) — Traverse mit Lagerzapfen — zwischen der ortsfesten Scherenarmlagerung (6, 7) und der Scherenachse (3) angeordnet.

Die im Winkelscheitelpunkt der beiden Winkelhebel (11) verlaufende Achse (12) lagert endseitig in den beiden äußeren Scherenarmen (5) und die beiden inneren Scherenarme (4) fassen mit einer Aussparung (20) über diese Achse (12) in der zusammengefahrenen Stellung, wie in **Fig.** 1 gezeigt.

Die im Winkelscheitelpunkt der beiden Winkelhebel (11) verlaufende Achse (12) liegt zwischen Scherenachse (3) und losem Scherenarmende (8) und ihr Abstand zur Scherenachse (3) ist kleiner als zum verschiebegeführten Scherenarmende (8).

Die beiden Laufrollen (15) der Winkelhebel (11) sitzen auf einer gemeinsamen die Winkelschenkel (11b) durchfassenden Achse (21).

In der abgesenkten Plattformstellung gemäß **Fig.** 1 sind die Scherenarme (4, 5) zusammengefahren, liegen ineinander in waagerechter Ebene und die inneren Scherenarme (4) greifen mit ihren Aussparungen (20) über die Gelenkachse (12). Dabei liegen die Winkelhebel (11) mit ihrem längeren Winkelschenkel (11b) ebenfalls waagerecht und der kürzere Winkelschenkel (11a) steht senkrecht.

Zum Anheben der Plattform (2) zieht der Spindelantrieb (10) über seine sich drehende Gewindespindel (18) auf die Schwenklagerung in Pfeilrichtung "A" zu und dadurch werden die beiden gekoppelten Winkelhebel (11) um die Achse (12) verschwenkt, in dem ihr Winkelschenkel (11b) um die Achse (12) hochgeschwenkt wird. Die beiden hochschwenkenden Winkelschenkel (11b) wirken mit ihrer endseitigen Laufrolle (15) auf die Steuerbahn (16) des jeweiligen inneren Scherenarmes (4) ein, der dann zwangsläufig unter Mitnahme des äußeren Scherenarmes (5) nach oben schwenkt und alle sich kreuzenden Scherenarme (4, 5) fahren auseinander und heben die Plattform (2) an.

Nach einem gewissen Hub der Plattform (2), d. h. Spreizen der Scherenarme (4, 5) gelangt der längere Winkelschenkel (11b) der Winkelhebel (11) in eine vertikale Stellung und verläßt dann die Steuerbahn (16).

Beim weiteren Zug der Spindelmutter (14) werden dann die Scherenarme (4, 5) über den kürzeren in Zugrichtung der Gewindespindel (18) verlaufende Winkelschenkel (11a) und die in den äußeren Scherenarmen (5) lagernde Achse (12) unter Plattformanhebung weiter auseinandergespreizt, wie in **Fig.** 3 gezeigt.

Das Absenken der Plattform erfolgt sinngemäß umgekehrt.

Es liegt im Rahmen der Erfindung, die beiden Winkelschenkel (11a, 11b) der Winkelhebel (11) auch gleich lang auszubilden oder aber den Winkelschenkel (11a) länger als den Winkelschenkel (11b) auszuführen, also in umgekehrten Längenverhältnissen.

Patentansprüche

1. Scherenhubtisch mit zwischen einem Untergestell und einer Plattform angeordnete, sich kreuzende und in einer Scherenachse gelenkig miteinander verbundenen Scherenarme als Innen- und Außenschere, welche mit je einem Ende in einer Schwenklagerung ortsfest und mit dem anderen Ende verschiebegeführt an dem Untergestell und der Plattform gehalten sind und durch einen motorischen Spindelantrieb über Lenker zum Heben und Senken der Plattform auseinander- und zusammenfahrbar sind,
dadurch gekennzeichnet, daß
— die Lenker zwei in sich starre Winkelhebel (11) sind,
— die beiden Winkelhebel (11) im Scheitelpunkt um eine in zwei Scherenarmen (5) gehaltene Achse (12) höhenverschwenkbar lagern,
— die beiden Winkelhebel (11) mit einem Winkelschenkel (11a) über eine Gelenkachse (13) mit einer Spindelmutter (14) des Spindelantriebes (10) bewegungsmäßig gekoppelt sind und
— die beiden Winkelhebel (11) an dem anderen Winkelschenkel (11b) endseitig je einen auf einem Teilhub der Scherenarme (4, 5) mit den beiden anderen Scherenarmen (4) kraftschlüssig zusammenwirkenden Druckpunkt (15) aufweisen.

2. Scherenhubtisch nach Anspruch 1, dadurch gekennzeichnet, daß die Winkelschenkel (11a, 11b) der beiden Winkelhebel (11) rechtwinklig zueinander stehen und unterschiedlich lang ausgebildet sind, und dabei der kürzere Winkelschenkel (11a) mit der Spindelmutter (14) gelenkig verbunden ist und der längere Winkelschenkel (11b) am freien Ende den Druckpunkt (15) hat.

3. Scherenhubtisch nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß der Druckpunkt (15) der beiden Winkelhebel (11b) von je einer Laufrolle gebildet ist, welche mit einem am benachbarten inneren Scherenarm (4) vorgesehenen geradlinigen und/oder bogenförmigen Steuerbahn (16) zusammenwirkt.

4. Scherenhubtisch nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß der Spindelantrieb (10) mit einer Schwenklagerung (17) pendelnd zwischen den beiden innenliegenden Scherenarmen (4) lagert und mit seiner Gewindespindel (18) und der darauf kardanisch sitzenden Spindelmutter (14) mittig zwischen den Scherenarmen (4, 5) liegt.

5. Scherenhubtisch nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß der Spindelantrieb (10) mit seiner Schwenklagerung (17) zwischen der ortsfesten Scherenarmlagerung (6, 7) und der Scherenachse (3) angeordnet ist.

6. Scherenhubtisch nach einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß die im Winkelscheitelpunkt der beiden Winkelhebel (11) verlaufende Achse (12) in den beiden äußeren Scherenarmen (5) gelagert ist und die beiden inneren Scherenarme (4) mit seiner Aussparung (20) über diese Achse (12) in der zusammengefahrenen Stellung fassen.

7. Scherenhubtisch nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die im Winkelscheitelpunkt der beiden Winkelhebel (11) verlaufende Achse (12) zwischen Scherenachse (3) und losem Scherenarmende (8) angeordnet ist und ihr Ab-

stand zur Scherenachse (3) kleiner als zum verschiebegeführten Scherenarmende (8) ist.

Hierzu 1 Seite(n) Zeichnungen

Nummer: DE 195 26 596 A1
Int. Cl.[6]: B 66 F 3/22
Offenlegungstag: 23. Januar 1997

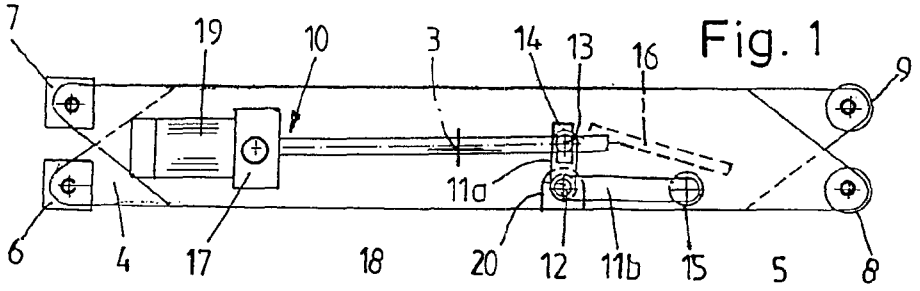


Fig. 1

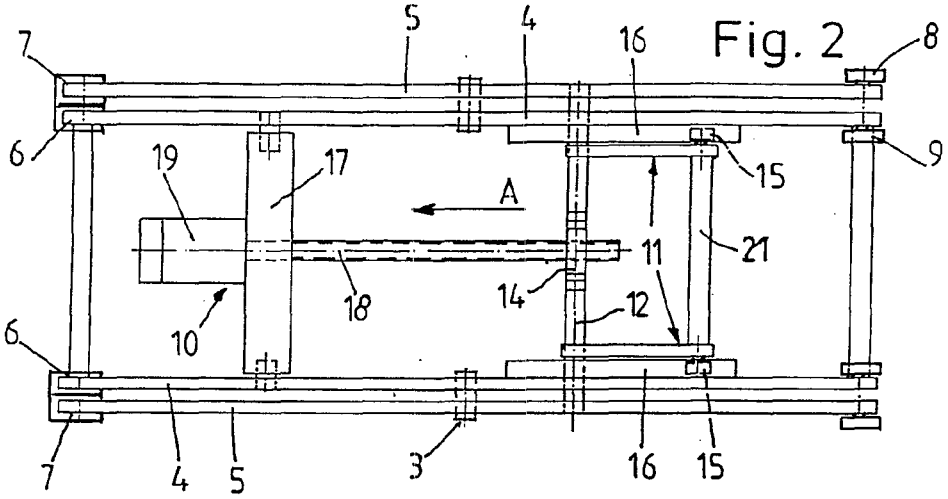


Fig. 2

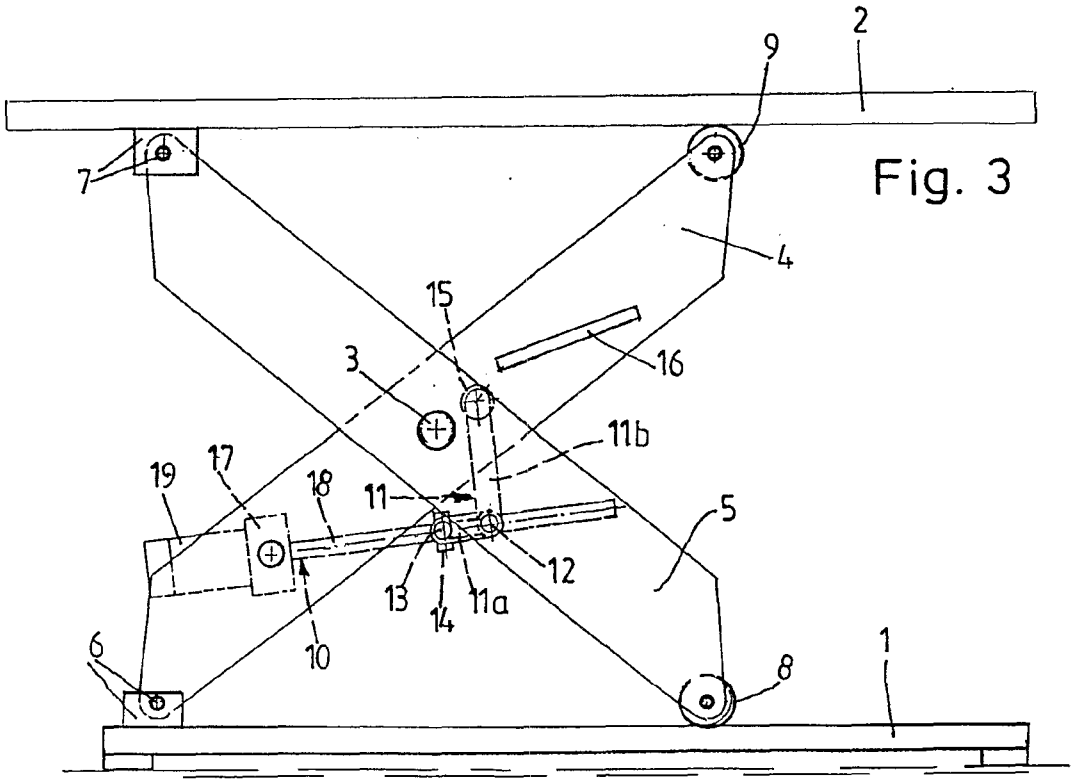


Fig. 3

602 064/293

PUB-NO: DE019526596A1
DOCUMENT-IDENTIFIER: DE 19526596 A1
TITLE: Crossed-strut lifting table
PUBN-DATE: January 23, 1997
PATENT-FAMILY-ID: 7767382

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CLAMOR REINHARD	DE

APPL-NO: DE 19526596 A
APPL-DATE: July 21, 1995

PRIORITY-DATA:

PRIORITY-NO	PRIORITY-APPL-DATE
DE 19526596 A	19950721

CPC-CURRENT:

TYPE	CPC/DATE
CPCI	A47B9/16 20130101
CPCI	B66F7/0608 20130101
CPCI	B66F7/065 20130101

INT-CL-CURRENT:

TYPE	IPC/DATE
IPCP	A47B9/16 20060101
IPCS	B66F7/06 20060101

REF-CITED:
PHASE-COUNTRY/NUMBER/KIND/DATE-NPL-INFO

SER US 4858888 A 19890822
SER DD 284657 A5 19901121
SER DE 3442940 A1 19860605

ABSTRACT:

The table has a base (1) and a platform (2), crossing shear arms (4,5) pivoted to each other on a shear axis (3) as inner and outer shears, each with one end fixed in a turning bearing (6,7), and the other attached movably to the base and the platform. The shear arms are drive by a motor spindle drive (10), via connecting rods (11). The connecting rods are in the form of rigid angled levers (11). The are pivoted at the apex to two axes (12) in the shear arms so that the height can be altered. Both these levers are coupled, via an axis (13), to a spindle nut (14) of the spindle drive.

Electronic Acknowledgement Receipt

EFS ID:	47005021
Application Number:	17985137
International Application Number:	
Confirmation Number:	1419
Title of Invention:	DESKTOP WORKSPACE THAT ADJUSTS VERTICALLY
First Named Inventor/Applicant Name:	Nathan Mark Poniatowski
Customer Number:	155431
Filer:	Daniel Thomas Lund
Filer Authorized By:	
Attorney Docket Number:	1001-001US16
Receipt Date:	10-NOV-2022
Filing Date:	
Time Stamp:	23:50:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Foreign Reference	CN107048695A.pdf	606097 edd257da2ba81e0b749b17cb95c34c5d36e7e103	no	11

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54	Non Patent Literature	FR2637165A1_translation.pdf	305315 465fbd8d8698affca9eaccde9d0af7efc0173c80	no	5
Warnings:					
Information:					
55	Foreign Reference	FR2894794A1.pdf	291833 691842ceeea0e9631fc820bf4c9c7ed5a229e1a0	no	10
Warnings:					
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56	Non Patent Literature	FR2894794A1_translation.pdf	186873 9095ee1b477bce7dc554a67aedc6342ab958a698	no	3
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57	Foreign Reference	FR3028735A1.pdf	898048 e963daa0c1cd493fe1616d67349d1e86416dddf5	no	16
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58	Non Patent Literature	FR3028735A1_translation.pdf	38361 7d0af9cc149502449fcac0b90a355ca2d10ab75d	no	4

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Patents

A kind of Adjustable computer table

Abstract

The invention discloses a kind of Adjustable computer table, plate, keyboard, which are placed, including computer places plate, connecting seat and connection sheet, and base, first, second fork-shaped rotating turret, two fork-shaped rotating turrets are slidably connected by first, second sliding groove and connecting seat positioned at connecting seat and chassis side, base formation respectively, first, second hydraulic stem is connected between chassis left side and the first fork-shaped rotating turret and between base and the second fork-shaped rotating turret, a latch fixing device is provided between first, second fork-shaped rotating turret and connecting seat; The present invention introduces hand latch position fixed structure on the basis of the computer desk that fork-shaped lifting structure, hydraulic system are constituted, the mode of operation that can be pressed by simple both sides hand, the fixation of computer desk optional position in certain stroke range can be achieved, and fixation, it is difficult to loosen, while cost is relatively low.

Classifications

- A47B21/02 Tables or desks for office equipment, e.g. typewriters, keyboards with vertical adjustable parts

View 5 more classifications

CN107212587A

China

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Other languages: Chinese

Inventor: 王[illegible]华

Worldwide applications

2017 CN

Application CN201710432670.4A events

2017-06-09 Application filed by 王[illegible]华

2017-06-09 Priority to CN201710432670.4A

2017-09-29 Publication of CN107212587A

Status Pending

Info: Patent citations (4), Cited by (1), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (3)

Hide Dependent

1. a kind of Adjustable computer table, including computer place plate, keyboard place plate, placed for fixing computer plate connecting seat, The connection sheet of plate, and a base, the first fork-shaped rotating turret and the second fork-shaped rotating turret, described first are placed to connect keyboard Fork-shaped rotating turret and the second fork-shaped rotating turret pass through the first sliding groove positioned at connecting seat and chassis side, the second sliding groove respectively it is slidably connected with the connecting seat, base formation, between the chassis left side and the first fork-shaped rotating turret and base and second The first hydraulic stem and the second hydraulic stem are connected between fork-shaped rotating turret, it is characterised in that the first fork-shaped rotating turret, Between second fork-shaped rotating turret and connecting seat be provided with a latch fixing device, the latch fixing device by dentation retaining structure, in the way of flexible fastening and disconnecting, to be formed between the first fork-shaped rotating turret, the second fork-shaped rotating turret and connecting seat Position fix and high high adjustment.

2. a kind of Adjustable computer table as claimed in claim 1, it is characterised in that the latch fixing device is included by turning Tooth form the first rack directed downwardly of dynamic pin connection, the second rack, one can and rack formation engagement fan-shaped fixture block, described the The bottom that plate is placed in one rack upper end by elastic device and computer, which is formed, to be connected, and second rack is placed by one and computer Plate bottom surface forms affixed the first turning end formation and rotates connection, while being connected with pressing plate on the outside of the second rack right-hand member; Institute State pressing plate and affixed the second turning end formation rotation connection is formed by one and computer placement plate bottom surface; The fan-shaped fixture block is slided It is connected to the outside of the first sliding groove; And the inner side of the fan-shaped fixture block and the outside of the fork-shaped rotating turret form fixed company Connect.

3. a kind of Adjustable computer table as claimed in claim 2, it is characterised in that the elastic device is a spring, or bullet Property piece, the bottom surface that spring or the flexure strip upper end and computer place plate produces and is fixedly connected, the upper end of lower end and the second rack Form a fixed connection.

Description

A kind of Adjustable computer table

Technical field

The present invention relates to a kind of computer desk, more particularly to a kind of Adjustable computer table, belong to computer peripheral product technology neck Domain.

Background technology

The structure of most domestic computer desk is to be transformed conventional desk, that is, transform as and place plate with two pieces Desk (Place plate for one piece and place computer, one block of placement plate that can be twitched is used for holding keyboard), due to being follow-on desk, because This its height is fixed, but everyone height is different, is also not quite similar using the custom of computer, thus from practice I Find, be adjustable it is desirable to the height of computer desk, that is, pass through and simple adjust up and down, you can within the specific limits, root According to the height of the use habit adjustable computer desk of oneself, therefore, someone has invented the small-size computer desk of regulating height, regulation is high Low structure is a lot, and the method such as fastened

using sliding groove and bolt realizes regulation; The side of the electronic slip of more senior use Formula realizes high high adjustment, and the experience of elevation and subsidence mechanical is referred from recent years, and also someone uses fork-shaped lifting structure and hydraulic system phase With reference to mode come realize computer desk lift purpose; Three kinds of structures of summary, the first structure operation is complex, and two Error is larger during the regulation of and, easily causes the inclination of computer; Second of use is more convenient, but cost is higher; The third lifting Be relatively easy to it is smooth, but fixation have any problem.

The content of the invention

The present invention proposes a kind of Adjustable computer table aiming above mentioned problem, and the Adjustable computer table is easy to adjust, position Fixation is put, and it is simple in construction.

To reach above-mentioned purpose, the present invention proposes a kind of Adjustable computer table, including computer is placed plate, keyboard and placed Plate, the connecting seat for fixing computer placement plate, the connection sheet to connect keyboard placement plate, and a base, the first fork-shaped Rotating turret and the second fork-shaped rotating turret, the first fork-shaped rotating turret and the second fork-shaped rotating turret respectively by positioned at connecting seat and The first sliding groove, the second sliding groove and the connecting seat of chassis side, base formation are slidably connected, the chassis left side and the The first hydraulic stem and the second hydraulic stem are connected between one fork-shaped rotating turret and between base and the second fork-shaped rotating turret, A latch fixing device is provided between the first fork-shaped rotating turret, the second fork-shaped rotating turret and connecting seat, the latch fixes dress Put by dentation retaining structure, in the way of flexible fastening and disconnecting, to form the first fork-shaped rotating turret, the second fork-shaped Position between rotating turret and connecting seat is fixed and high high adjustment.

Preferably as the present invention, the latch fixing device is included by rotating the tooth form of pin connection the first tooth directed downwardly Bar, the second rack, one can and the rack formation engagement fan-shaped fixture block, the first rack upper end passes through elastic device and electricity Connection is formed on the bottom that brain places plate, and second rack places plate bottom surface by one and computer and forms the first affixed turning end Formed and rotate connection, while being connected with pressing plate on the outside of the second rack right-hand member; The pressing plate places plate bottom by one and computer Face forms affixed the second turning end formation and rotates connection; The fan-shaped fixture block is slidably connected to the outside of the first sliding groove; And And formed a fixed connection on the outside of the inner side of the fan-shaped fixture block and the fork-shaped rotating turret.

Preferably as the present invention, the elastic device is a spring, or flexure strip, spring or the flexure strip upper end and The bottom surface generation that computer places plate is fixedly connected, and the upper end of lower end and the second rack forms a fixed connection.

The present invention introduces hand latch position on the basis of the computer desk that fork-shaped lifting structure, hydraulic system are constituted and consolidated Determine structure, the mode of operation that can be pressed by simple both sides hand, you can realize that computer desk is any in certain stroke range The fixation of position, and fixation, are difficult to loosen, while cost is relatively low.

Brief description of the drawings

Shown in Fig. 1 is side surface structure schematic diagram of the present invention;

Shown in Fig. 2 is the rear side surface structure schematic diagram of the present invention;

Wherein, 1, computer places plate; 2nd, keyboard places plate; 3rd, connecting seat; 4th, connection sheet; 5th, base; 6th, the first fork-shaped rotating turret; 7th, the second fork-shaped rotating turret; 8th, the first sliding groove; 9th, the second sliding groove; 10th, the first hydraulic stem; 11st, the second hydraulic stem; 12nd, One rack; 13rd, the second rack; 14th, fan-shaped fixture block; 15th, the first turning end; 16th, pressing plate; 17th, the second turning end; 18th, spring.

Embodiment

The present invention is described in more detail with reference to the accompanying drawings and detailed description.

Understood with reference to Fig. 1 and Fig. 2, a kind of Adjustable computer tabie, including computer places plate 1, keyboard and places plate 2, for solid Determine the connection sheet 4 that computer places the connecting seat 3 of plate 1, plate 2 is placed to connect keyboard, and a base 5, the first fork-shaped are rotated The fork-shaped rotating turret 7 of frame 6 and second.

In said structure, the first fork-shaped rotating turret 6 and the second fork-shaped rotating turret 7 are respectively by positioned at connecting seat 3 and base 5 The first sliding groove 8, the second sliding groove 9 and the connecting seat 3 of side, the formation of base 5 are slidably connected, in the left side of base 5 and the first fork Between shape rotating turret 6, and between the fork-shaped rotating turret 7 of base 5 and second, it is connected to the first hydraulic stem 10 and the second hydraulic pressure Bar 11.

In said structure, by the first fork-shaped rotating turret 6, the second fork-shaped rotating turret 7 and the first hydraulic stem 10 and The high high adjustment of two hydraulic stems 11, it is possible to achieve computer places plate 1 and keyboard places the high high adjustment of plate 2.

A latch fixing device, the card are provided between the first fork-shaped rotating turret 6, the second fork-shaped rotating turret 7 and connecting seat 3 Tooth fixing device is by dentation retaining structure, in the way of flexible fastening and disconnecting, to form the first fork-shaped rotating turret 6th, the position between the second fork-shaped rotating turret 7 and connecting seat 3 is fixed and high high adjustment.

In the present invention, it is preferred to latch fixing device include by rotating the tooth form of pin connection the first rack directed downwardly 12nd, the second rack 13, one can and the first rack 12, the second rack 13 formation engagement fan-shaped fixture block 14, the upper end of the first rack 12 Connection is formed on the bottom for placing plate 1 by elastic device and computer, and the second rack 13 is placed the bottom surface of plate 1 by one and computer and formed Affixed the first turning end 15 formation rotates connection, while being connected with pressing plate 16 on the outside of the right-hand member of the second rack 13; The pressing plate 16 place the bottom surface of plate 1 by one and computer forms affixed the second turning end 17 formation rotation connection; Fan-shaped fixture block 14, which is slided, to be connected it is connected to the outside of the first sliding groove 8; And the inner side of the fan-shaped fixture block 14 and the outside of the fork-shaped rotating turret form fixed company Connect.

Said structure is specifically so to use: , can first bimanual thumb button when needing the height of adjustable computer desk Firmly computer places the both sides of plate 1 upper end, and remaining four refers to the bottom surface for pinning pressing plate 16 and pulled upwards, now the first rack 12, the The stress of two rack 13 rises and holddown spring 18, so that rack departs from the engagement with fan-shaped fixture block 14, now passes through the first fork Shape rotating turret 6, the second fork-shaped rotating turret 7 and the first hydraulic stem 10 and the second hydraulic stem 11 high high adjustment, it is possible to achieve Computer places plate 1 and keyboard places high high adjustment of the plate 2 in certain stroke range, and when suitable height is arrived in regulation, four refer to Pressing plate 16 is unclamped, fan-shaped fixture block 14 produces engagement with the first rack 12 or the bottom of the second rack 13 again, so as to securely fix The height of regulation.

In the present invention, it is preferred to elastic device be a spring 18, or flexure strip, spring 18 or flexure strip upper end and computer The bottom surface generation for placing plate 1 is fixedly connected, and the upper end of lower end and the second rack 13 forms a fixed connection.

Generally speaking, the present invention introduces hand on the basis of the computer desk that fork-shaped lifting structure, hydraulic system are constituted Latch position fixed structure, the mode of operation that can be pressed by simple both sides hand, you can realize computer desk in certain stroke in the range of optional position fixation, and fixation is difficult to loosen, while cost is relatively low.

Described above is only the preferred embodiment of the present invention, it is noted that come for those skilled in the art Say, on the premise of the technical principle of the present invention is not departed from, some improvement and modification can also be made, these improvement and modification it should be regarded as protection scope of the present invention.

Patent Citations (4)

Publication number	Priority date	Publication date	Assignee	Title
CN203041164U *	2012-12-31	2013-07-10	温州市标标实业有限公司	Foldable turnover dining table
CN203563866U *	2013-10-25	2014-04-30	郑州利生科教设备有限公司	Adjustable lifting school chair
CN204541230U *	2015-04-01	2015-08-12	宁波市镇海拓迪工业产品设计有限公司	A kind of lifting table
CN206079596U *	2016-07-15	2017-04-12	余亦根	Liftable stand -type desk
Family To Family Citations				

* Cited by examiner, † Cited by third party

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
US10575663081 *	2015-01-24	2020-03-03	Nathan Mark Poniatowski	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN107212587A	2017-09-29	A kind of Adjustable computer table
CN202457089U	2012-10-03	Novel multifunctional table for laptop
CN103223918	2015-05-13	Tablet personal computer support
CN207693197U	2018-08-07	A kind of standing computer desk
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CN204210234U	2015-03-18	A kind of foldable drawing board for field sketching
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CN205410272U	2016-08-03	But computer support that standing position was used
CN205637653U	2016-10-12	Support for building
CN201127409Y	2008-10-08	Multifunction desk
CN203341246U	2013-12-18	Portable folding table
CN207223891U	2018-04-13	A kind of stapler with defencive function
CN202173310U	2012-03-28	Folding chopping board
CN208354953U	2019-01-11	A kind of desk that can quickly adjust height
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CN206950002U	2018-02-02	Wind-proof clothes hanger

CN208670540U	2019-03-29	A kind of lazyboot's bracket
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CN204635443U	2015-09-16	Sitting computer operation table
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CN204444732U	2015-07-08	The multi-functional teacher's lectern of language teaching
CN207535117U	2018-06-26	A kind of fire-fighting refractory material production and processing fixing device

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201710432670.4A	2017-06-09	2017-06-09	A kind of Adjustable computer table

Applications Claiming Priority (1)

Application	Filing date	Title
CN201710432670.4A	2017-06-09	A kind of Adjustable computer table

Legal Events

Date	Code	Title	Description
2017-09-29	PB01	Publication	
2017-09-29	PB01	Publication	
2017-10-27	SE01	Entry into force of request for substantive examination	
2017-10-27	SE01	Entry into force of request for substantive examination	
2020-02-11	WD01	invention patent application deemed withdrawn after publication	**Application publication date**: 20170929
2020-02-11	WD01	invention patent application deemed withdrawn after publication	

Concepts

machine-extracted

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Name	Image	Sections	Count	Query match
biosynthetic process		claims,abstract,description	12	0.000
formation reaction		claims,abstract,description	12	0.000

Show all concepts from the description section

(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 107212587 A
(43)申请公布日 2017.09.29

(21)申请号 201710432670.4

(22)申请日 2017.06.09

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(51)Int.Cl.
A47B 21/02(2006.01)
A47B 21/04(2006.01)
A47B 9/10(2006.01)
A47B 9/16(2006.01)

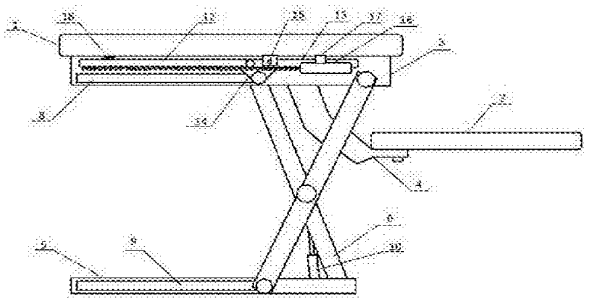
权利要求书1页 说明书3页 附图1页

(54)发明名称

一种可调式电脑桌

(57)摘要

本发明公开了一种可调式电脑桌，包括电脑放置板、键盘放置板、连接座及连接片，以及底座、第一、第二叉形转动架，两个叉形转动架分别通过位于连接座和底座侧边的第一、第二滑动槽和连接座、底座形成滑动连接，底座左侧和第一叉形转动架之间及底座和第二叉形转动架之间分别连接有第一、第二液压杆，第一、第二叉形转动架和连接座之间设有一卡齿固定装置；本发明在叉形升降结构、液压系统组成的电脑桌的基础上引入手动式卡齿位置固定结构，可通过简单的两侧手部按压的操作方式，即可实现电脑桌在一定行程范围内任意位置的固定，且固定牢固，不易松动，同时成本较低。



CN 107212587 A

1.一种可调式电脑桌，包括电脑放置板、键盘放置板、用于固定电脑放置板的连接座、用以连接键盘放置板的连接片，以及一底座、第一叉形转动架和第二叉形转动架，所述第一叉形转动架和第二叉形转动架分别通过位于连接座和底座侧边的第一滑动槽、第二滑动槽和所述连接座、底座形成滑动连接，所述底座左侧和第一叉形转动架之间以及底座和第二叉形转动架之间分别连接有第一液压杆和第二液压杆，其特征在于，所述第一叉形转动架、第二叉形转动架和连接座之间设有一卡齿固定装置，该卡齿固定装置通过齿状卡位结构，以弹性固定和断开连接的方式，用以形成第一叉形转动架、第二叉形转动架和连接座之间的位置固定及高低调节。

2.如权利要求1所述的一种可调式电脑桌，其特征在于，所述卡齿固定装置包括通过转动销连接的齿形朝下的第一齿条、第二齿条、一可和所述齿条形成啮合的扇形卡块，所述第一齿条上端通过弹性装置和电脑放置板的底部形成连接，所述第二齿条通过一和电脑放置板底面形成固接的第一转动端形成转动连接，同时所述第二齿条右端外侧固接有压板；所述压板通过一和电脑放置板底面形成固接的第二转动端形成转动连接；所述扇形卡块滑动连接于第一滑动槽的外侧；并且所述扇形卡块的内侧和所述叉形转动架的外侧形成固定连接。

3.如权利要求2所述的一种可调式电脑桌，其特征在于，所述弹性装置为一弹簧，或弹性片，所述弹簧或弹性片上端和电脑放置板的底面产生固定连接，下端和第二齿条的上端形成固定连接。

一种可调式电脑桌

技术领域

[0001] 本发明涉及一种电脑桌，尤其涉及一种可调式电脑桌，属于电脑周边产品技术领域。

背景技术

[0002] 国内大部分电脑桌的结构是将常规的桌子进行改造，即改造为带有两块放置板的桌子(一块放置板放置电脑，一块可抽动的放置板用于放置键盘)，由于是改进型的桌子，因此其高度是固定的，但是每个人的身高不同，使用电脑的习惯也不尽相同，因此从实践中我们发现，人们希望电脑桌的高低是可调的，即通过简单的上下调节，即可在一定范围内、根据自己的使用习惯调节电脑桌的高低，为此，有人发明了可调节高低的小型电脑桌，调节高低的结构很多，如采用滑动槽和螺栓紧固的方法实现调节；高级一点的采用电动滑动的方式实现高低调节，近年来借鉴于升降机械的经验，也有人采用叉形升降结构和液压系统相结合的方式来实现电脑桌升降的目的；综合上述三种结构，第一种结构操作较为复杂，且两端调节时误差较大，容易造成电脑的倾斜；第二种使用较为方便，但成本较高；第三种升降较为容易和顺滑，但固定有困难。

发明内容

[0003] 本发明就是针对上述问题，提出一种可调式电脑桌，该可调式电脑桌调节方便，位置固定牢固，且结构简单。

[0004] 为达到上述目的，本发明提出了一种可调式电脑桌，包括电脑放置板、键盘放置板、用于固定电脑放置板的连接座、用以连接键盘放置板的连接片，以及一底座、第一叉形转动架和第二叉形转动架，所述第一叉形转动架和第二叉形转动架分别通过位于连接座和底座侧边的第一滑动槽、第二滑动槽和所述连接座、底座形成滑动连接，所述底座左侧和第一叉形转动架之间以及底座和第二叉形转动架之间分别连接有第一液压杆和第二液压杆，所述第一叉形转动架、第二叉形转动架和连接座之间设有一卡齿固定装置，该卡齿固定装置通过齿状卡位结构，以弹性固定和断开连接的方式，用以形成第一叉形转动架、第二叉形转动架和连接座之间的位置固定及高低调节。

[0005] 作为本发明之优选，所述卡齿固定装置包括通过转动销连接的齿形朝下的第一齿条、第二齿条、一可和所述齿条形成啮合的扇形卡块，所述第一齿条上端通过弹性装置和电脑放置板的底部形成连接，所述第二齿条通过一和电脑放置板底面形成固接的第一转动端形成转动连接，同时所述第二齿条右端外侧固接有压板；所述压板通过一和电脑放置板底面形成固接的第二转动端形成转动连接；所述扇形卡块滑动连接于第一滑动槽的外侧；并且所述扇形卡块的内侧和所述叉形转动架的外侧形成固定连接。

[0006] 作为本发明之优选，所述弹性装置为一弹簧，或弹性片，所述弹簧或弹性片上端和电脑放置板的底面产生固定连接，下端和第二齿条的上端形成固定连接。

[0007] 本发明在叉形升降结构、液压系统组成的电脑桌的基础上引入手动式卡齿位置固

定结构，可通过简单的两侧手部按压的操作方式，即可实现电脑桌在一定行程范围内任意位置的固定，且固定牢固，不易松动，同时成本较低。

附图说明

[0008] 图1所示的是本发明侧面外观结构示意图；

图2所示的是本发明的后侧外观结构示意图；

其中，1、电脑放置板；2、键盘放置板；3、连接座；4、连接片；5、底座；6、第一叉形转动架；7、第二叉形转动架；8、第一滑动槽；9、第二滑动槽；10、第一液压杆；11、第二液压杆；12、第一齿条；13、第二齿条；14、扇形卡块；15、第一转动端；16、压板；17、第二转动端；18、弹簧。

具体实施方式

[0009] 下面结合附图和具体实施方式对本发明作进一步详细地说明。

[0010] 结合图1和图2可知，一种可调式电脑桌，包括电脑放置板1、键盘放置板2、用于固定电脑放置板1的连接座3、用以连接键盘放置板2的连接片4，以及一底座5、第一叉形转动架6和第二叉形转动架7。

[0011] 上述结构中，第一叉形转动架6和第二叉形转动架7分别通过位于连接座3和底座5侧边的第一滑动槽8、第二滑动槽9和连接座3、底座5形成滑动连接，在底座5左侧和第一叉形转动架6之间，以及底座5和第二叉形转动架7之间，分别连接有第一液压杆10和第二液压杆11。

[0012] 上述结构中，通过第一叉形转动架6、第二叉形转动架7的以及第一液压杆10和第二液压杆11的高低调节，可以实现电脑放置板1和键盘放置板2的高低调节。

[0013] 在第一叉形转动架6、第二叉形转动架7和连接座3之间设有一卡齿固定装置，该卡齿固定装置通过齿状卡位结构，以弹性固定和断开连接的方式，用以形成第一叉形转动架6、第二叉形转动架7和连接座3之间的位置固定及高低调节。

[0014] 在本发明中，优选的卡齿固定装置包括通过转动销连接的齿形朝下的第一齿条12、第二齿条13、一可和第一齿条12、第二齿条13形成啮合的扇形卡块14，第一齿条12上端通过弹性装置和电脑放置板1的底部形成连接，第二齿条13通过一和电脑放置板1底面形成固接的第一转动端15形成转动连接，同时在第二齿条13的右端外侧固接有压板16；该压板16通过一和电脑放置板1底面形成固接的第二转动端17形成转动连接；扇形卡块14滑动连接于第一滑动槽8的外侧；并且该扇形卡块14的内侧和所述叉形转动架的外侧形成固定连接。

[0015] 上述结构具体是这样使用的：需要调节电脑桌的高低时，可先用双手的大拇指扣住电脑放置板1上端的两侧，其余四指按住压板16的底面并向上扳动，此时第一齿条12、第二齿条13受力上升并压紧弹簧18，从而使齿条脱离和扇形卡块14的啮合，此时通过第一叉形转动架6、第二叉形转动架7的以及第一液压杆10和第二液压杆11的高低调节，可以实现电脑放置板1和键盘放置板2在一定行程范围内的高低调节，当调节到合适的高度时，四指松开压板16，扇形卡块14再次和第一齿条12或第二齿条13底部产生啮合，从而牢牢固定了调节的高度。

[0016] 在本发明中，优选的弹性装置为一弹簧18，或弹性片，弹簧18或弹性片上端和电脑

放置板1的底面产生固定连接，下端和第二齿条13的上端形成固定连接。

[0017] 总的来说，本发明在叉形升降结构、液压系统组成的电脑桌的基础上引入手动式卡齿位置固定结构，可通过简单的两侧手部按压的操作方式，即可实现电脑桌在一定行程范围内任意位置的固定，且固定牢固，不易松动，同时成本较低。

[0018]

以上所述仅是本发明的优选实施方式，应当指出，对于本技术领域的普通技术人员来说，在不脱离本发明的技术原理的前提下，还可以做出若干改进和变型，这些改进和变型也应视为本发明的保护范围。

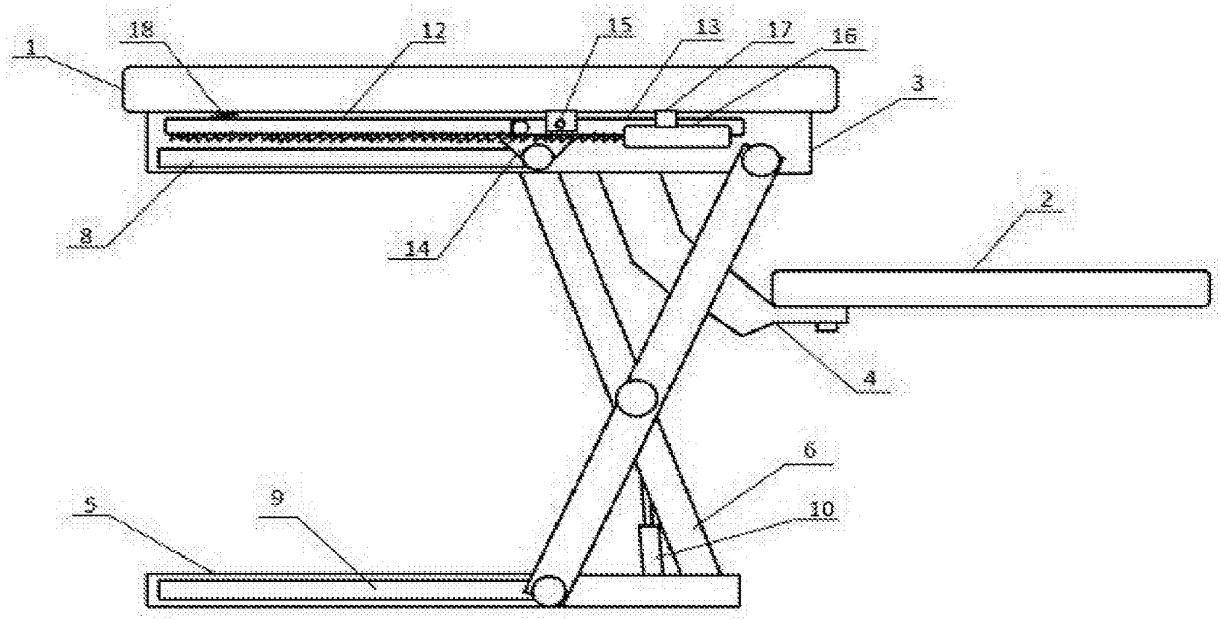


图1

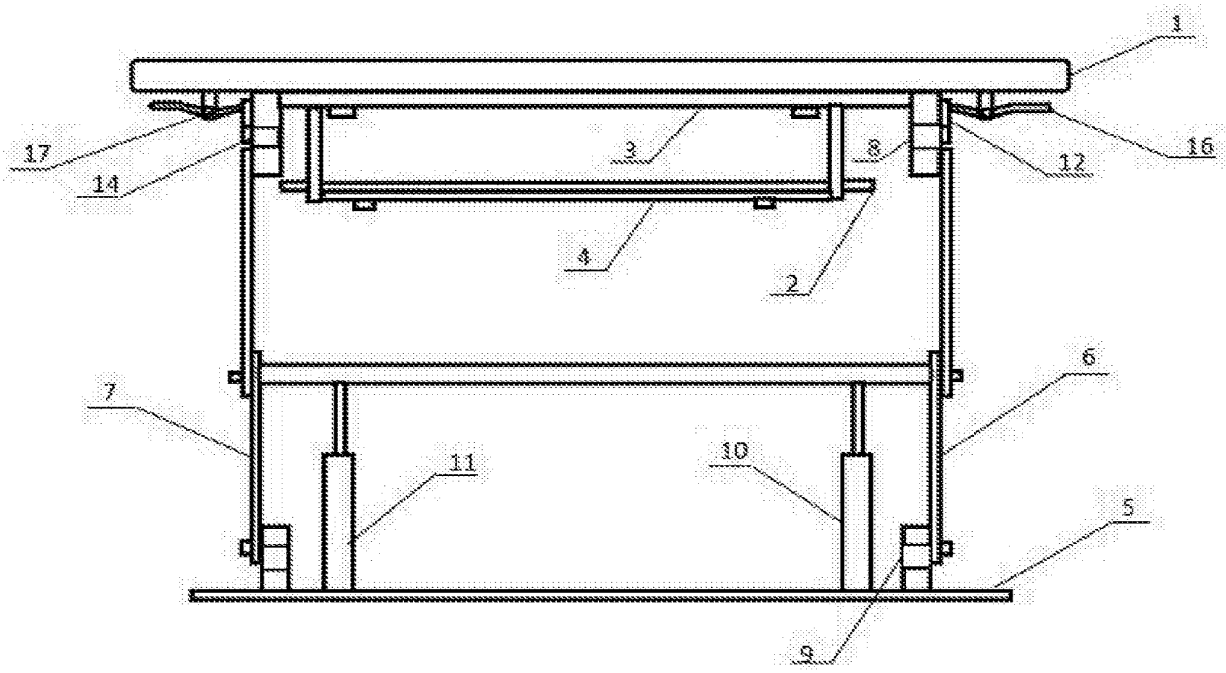


图2

Patents

A kind of workbench of liftable synchronous rotary

Abstract

The invention discloses a kind of workbench of liftable synchronous rotary, belong to mechanical equipment technical field, it is therefore intended that solve the problems, such as that work on hand platform can not flexible modulation.It includes base, platform, front and rear inner surface on the right side of base has been respectively articulated with connecting rod one, connecting rod two, connecting rod one, the other end of connecting rod two is hinged with the front and rear inner surface of platform sinistral respectively, the middle part of connecting rod one is hinged with connecting rod three, the middle part of connecting rod two is hinged with connecting rod four, one end of connecting rod three is articulated with the preceding inner surface of platform dextral, one end of connecting rod four is articulated with the rear inner surface of platform dextral, inner surface offers groove before and after chassis left side, the connecting rod that can be moved along grooved rail mark is provided with groove, connecting rod three, the other end of connecting rod four is sheathed in connecting rod, contiguous block is arranged with the middle part of connecting rod, driving hydraulic cylinder is provided with base, revolving support is also associated with the platform, rotary table top is connected with the revolving support.The present invention is applied to workbench.

Classifications

- A47B17/02 Writing-tables with vertically-adjustable parts

View 5 more classifications

CN107756350A

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Chengdu Yuanshi Information Technology Co Ltd

Worldwide applications

2017 CN

Application CN201711280795.6A events

2017-12-06	Application filed by Chengdu Yuanshi Information Technology Co Ltd
2017-12-06	Priority to CN201711280795.6A
2018-03-06	Publication of CN107756350A
Status	Withdrawn

Info: Cited by (1), Legal events, Similar documents, Priority and Related Applications

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Claims (3)

Hide Dependent

1. a kind of workbench of liftable synchronous rotary, it is characterised in that including base (1), platform (2), base (1) right side Front and rear inner surface be respectively articulated with connecting rod one (3), connecting rod two (4), connecting rod one (3), connecting rod two (4) the other end respectively with it is flat Front and rear inner surface on the left of platform (2) is hinged, and connecting rod three (5) is hinged with the middle part of connecting rod one (3), and the middle part of connecting rod two (4) is hinged There is connecting rod four (6), one end of connecting rod three (5) is articulated with the preceding inner surface on the right side of platform (2), and one end of connecting rod four (6) is articulated with Rear inner surface on the right side of platform (2), on the left of base (1) before and after inner surface offer groove, being provided with groove can move along grooved rail mark Connecting rod (7), connecting rod three (5), the other end of connecting rod four (6) be sheathed in connecting rod (7), is arranged in the middle part of connecting rod (7) There is contiguous block (8), driving hydraulic cylinder (9) is provided with base (1), the driving hydraulic cylinder (9) includes fixing end, movable end, The fixing end is connected with contiguous block (8) one end, pedestal (10) connection that the movable end is connected with base (1), is also set up There is controller, the controller is electrically connected with driving hydraulic cylinder (9), and revolving support (12), institute are also associated with the platform (2) State and rotary table top (13) is connected with revolving support (12), be additionally provided with by the revolving support (12) for driving revolving support (12) drive device of gyration is done in horizontal plane.

2. according to a kind of workbench of liftable synchronous rotary described in claim 1, it is characterised in that connecting rod one (3) with Synchronizing bar (11) is also associated between the hinged place of the hinged place of connecting rod three (5), connecting rod two (4) and connecting rod four (6).

3. according to a kind of workbench of liftable synchronous rotary described in claim 1, it is characterised in that the rotary table top (13) it is provided with skid resistant course.

Description

A kind of workbench of liftable synchronous rotary

Technical field

The invention belongs to mechanical equipment technical field, and in particular to a kind of workbench of liftable synchronous rotary.

Background technology

Workbench be widely used in constructing, fit up, the equipment in the field such as art, family expenses, for placing construction, finishing When instrument, or put drawing, the utensil of calligraphy, also or household goods etc..

Existing workbench is mostly fixed structure, and people often refer to high-rise working, mobile work in construction, finishing industry, therefore fetching tool is inconvenient up and down, draw, calligraphy when because pigment is more, be usually covered with whole table top, but work Make platform and can not adjust, it is

necessary to the pigment disk for being moved to needs dips pigment, so indirectly to increase the workload of people, shadow The operating efficiency of people is rung.

The content of the invention

It is an object of the invention to: A kind of workbench of liftable synchronous rotary is provided, solve work on hand platform without The problem of method flexible modulation.

The technical solution adopted by the present invention is as follows:

A kind of workbench of liftable synchronous rotary, including base, platform, the front and rear inner surface on the right side of base are cut with scissors respectively Connecting rod one, connecting rod two are connected to, the front and rear inner surface of connecting rod one, the other end of connecting rod two respectively with platform sinistral is hinged, connecting rod one Middle part be hinged with connecting rod three, the middle part of connecting rod two is hinged with connecting rod four, one end of connecting rod three be articulated with platform dextral it is preceding in Surface, one end of connecting rod four are articulated with the rear inner surface of platform dextral, and inner surface offers groove before and after chassis left side, is set in groove There is the connecting rod that can be moved along grooved rail mark, connecting rod three, the other end of connecting rod four are sheathed in connecting rod, are arranged in the middle part of connecting rod Have contiguous block, be provided with driving hydraulic cylinder on base, the driving hydraulic cylinder includes fixing end, movable end, the fixing end with Contiguous block one end connects, and the pedestal connection that the movable end is connected with base, is additionally provided with controller, the controller is with driving Hydrodynamic cylinder pressure electrically connects, and is also associated with revolving support on the platform, is connected with rotary table top on the revolving support, described time Turn the other drive device being additionally provided with for driving revolving support to do in horizontal plane gyration of support.

Further, the hinged place of connecting rod one and connecting rod three, it is also associated between connecting rod two and the hinged place of connecting rod four same Walk bar.

Further, the rotary table top is provided with skid resistant course.

In summary, by adopting the above-described technical solution, the beneficial effects of the invention are as follows:

1st, in the present invention, including base, platform, the front and rear inner surface on the right side of base have been respectively articulated with connecting rod one, connecting rod two, The front and rear inner surface of connecting rod one, the other end of connecting rod two respectively with platform sinistral is hinged, and the middle part of connecting rod one is hinged with connecting rod three, The middle part of connecting rod two is hinged with connecting rod four, and one end of connecting rod three is articulated with the preceding inner surface of platform dextral, one end hinge of connecting rod four The rear inner surface of platform dextral is connected to, inner surface offers groove before and after chassis left side, is provided with what can be moved along grooved rail mark in groove Connecting rod, connecting rod three, the other end of connecting rod four are sheathed in connecting rod, are arranged with contiguous block in the middle part of connecting rod, are set on base Driving hydraulic cylinder is equipped with, the driving hydraulic cylinder includes fixing end, movable end, and the fixing end is connected with contiguous block one end, institute The pedestal connection that movable end is connected with base is stated, is additionally provided with controller, the controller electrically connects with driving hydraulic cylinder, institute State and revolving support is also associated with platform, rotary table top is connected with the revolving support, is additionally provided with by the revolving support For driving revolving support to do in horizontal plane the drive device of gyration.Pass through the setting, controller control driving hydraulic cylinder it is flexible, drive connecting rod to be moved in chute, can rise when connecting rod moves right with moving platform, the revolution connected on platform Supporting drive rotary table top rises, and can decline when connecting rod is moved to the left with moving platform, the revolving support band connected on platform Dynamic rotary table top declines, and drive device drives revolving support to do gyration in horizontal plane, and revolving support drives rotary table top to do Rotary motion, solve the problems, such as that work on hand platform can not flexible modulation.

2nd, in the present invention, the hinged place of connecting rod one and connecting rod three, it is also associated between connecting rod two and the hinged place of connecting rod four Synchronizing bar.By the setting, synchronizing bar makes lifting platform more stable.

3rd, in the present invention, the rotary table top is provided with skid resistant course.By the setting, prevent caused by rotary table top rotates The article placed on rotary table top drops.

Brief description of the drawings

Fig. 1 is the structural representation of the present invention;

Marked in figure: 1- bases, 2- platforms, 3- connecting rods one, 4- connecting rods two, 5- connecting rods three, 6- connecting rods four, 7- connecting rods, 8- contiguous blocks, 9- driving hydraulic cylinders, 10- pedestals, 11- synchronizing bars, 12- revolving supports, 13- rotary table tops.

Embodiment

In order to make the purpose , technical scheme and advantage of the present invention be clearer, it is right below in conjunction with drawings and Examples The present invention is further elaborated.It should be appreciated that specific embodiment described herein is only to explain the present invention, not For limiting the present invention.

A kind of workbench of liftable synchronous rotary, including base, platform, the front and rear inner surface on the right side of base are cut with scissors respectively Connecting rod one, connecting rod two are connected to, the front and rear inner surface of connecting rod one, the other end of connecting rod two respectively with platform sinistral is hinged, connecting rod one Middle part be hinged with connecting rod three, the middle part of connecting rod two is hinged with connecting rod four, one end of connecting rod three be articulated with platform dextral it is preceding in Surface, one end of connecting rod four are articulated with the rear inner surface of platform dextral, and inner surface offers groove before and after chassis left side, is set in groove There is the connecting rod that can be moved along grooved rail mark, connecting rod three, the other end of connecting rod four are sheathed in connecting rod, are arranged in the middle part of connecting rod Have contiguous block, be provided with driving hydraulic cylinder on base, the driving hydraulic cylinder includes fixing end, movable end, the fixing end with Contiguous block one end connects, and the pedestal connection that the movable end is connected with base, is additionally provided with controller, the controller is with driving Hydrodynamic cylinder pressure electrically connects, and is also associated with revolving support on the platform, is connected with rotary table top on the revolving support, described time Turn the other drive device being additionally provided with for driving revolving support to do in horizontal plane gyration of support.

Further, the hinged place of connecting rod one and connecting rod three, it is also associated between connecting rod two and the hinged place of connecting rod four same Walk bar.

Further, the rotary table top is provided with skid resistant course.

The present invention in implementation process, stretch, and drives connecting rod to be moved in chute by controller control driving hydraulic cylinder, when Connecting rod, which moves right, to be risen with moving platform, and the revolving support connected on platform drives rotary table top to rise, and works as connecting rod Being moved to the left can decline with moving platform, and the revolving support connected on platform drives rotary table top to decline, and drive

device drives back Turn to be supported on horizontal plane and do gyration, revolving support drives rotary table top to rotate, solve work on hand platform without The problem of method flexible modulation.The hinged place of connecting rod one and connecting rod three, it is also associated between connecting rod two and the hinged place of connecting rod four same Walk bar.By the setting, synchronizing bar makes lifting platform more stable.The rotary table top is provided with skid resistant course.By the setting, Prevent because the article placed caused by rotary table top rotation on rotary table top drops.

Embodiment 1

A kind of workbench of liftable synchronous rotary, including base, platform, the front and rear inner surface on the right side of base are cut with scissors respectively Connecting rod one, connecting rod two are connected to, the front and rear inner surface of connecting rod one, the other end of connecting rod two respectively with platform sinistral is hinged, connecting rod one Middle part be hinged with connecting rod three, the middle part of connecting rod two is hinged with connecting rod four, one end of connecting rod three be articulated with platform dextral it is preceding in Surface, one end of connecting rod four are articulated with the rear inner surface of platform dextral, and inner surface offers groove before and after chassis left side, is set in groove There is the connecting rod that can be moved along grooved rail mark, connecting rod three, the other end of connecting rod four are sheathed in connecting rod, are arranged in the middle part of connecting rod Have contiguous block, be provided with driving hydraulic cylinder on base, the driving hydraulic cylinder includes fixing end, movable end, the fixing end with Contiguous block one end connects, and the pedestal connection that the movable end is connected with base, is additionally provided with controller, the controller is with driving Hydrodynamic cylinder pressure electrically connects, and is also associated with revolving support on the platform, is connected with rotary table top on the revolving support, described time Turn the other drive device being additionally provided with for driving revolving support to do in horizontal plane gyration of support.Pass through the setting, control Device control driving hydraulic cylinder is stretched, and is driven connecting rod to be moved in chute, can be risen when connecting rod moves right with moving platform, The revolving support connected on platform drives rotary table top to rise, and can decline when connecting rod is moved to the left with moving platform, on platform The revolving support of connection drives rotary table top to decline, and drive device drives revolving support to do gyration, revolution branch in horizontal plane Support drives rotary table top to rotate, and solves the problems, such as that work on hand platform can not flexible modulation.

Embodiment 2

On the basis of embodiment 1, the hinged place of connecting rod one and connecting rod three, between connecting rod two and the hinged place of connecting rod four also it is connected with synchronizing bar.By the setting, synchronizing bar makes lifting platform more stable.

Embodiment 3

On the basis of above-described embodiment, the rotary table top is provided with skid resistant course.By the setting, prevent because of turntable The article that face rotation causes to place on rotary table top drops.

The foregoing is merely illustrative of the preferred embodiments of the present invention, is not intended to limit the invention, all essences in the present invention All any modification, equivalent and improvement made within refreshing and principle etc., should be included in the scope of the protection.

Cited By (1)

Publication number	Priority date	Publication date	Assignee	Title
CN108908237A *	2018-07-16	2018-11-30	芜湖辉林奥远自动化科技有限公司	One kind being convenient for generator assembling recruitment assembling platform
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN107838891A	2018-03-27	It is a kind of can synchronous rotary Multifunctional working platform
CN107756350A	2018-03-06	A kind of workbench of liftable synchronous rotary
CN206856686U	2018-01-09	A kind of hydraulic leg automatic telescopic backing plate
CN205855849U	2017-01-04	A kind of power equipment elevator
CN207824832U	2018-09-07	It is a kind of can synchronous rotary Multifunctional working platform
CN107836827A	2018-03-27	A kind of Multifunctional working platform of synchronous rotary capable of reversing
CN107381329A	2017-11-24	Automatic hook block
CN208200130U	2018-12-07	A kind of auxiliary agent bucket lifting device of forming machine
CN207594619U	2018-07-10	Pinch-roller type engraving machine
CN207710738U	2018-08-10	A kind of workbench of liftable synchronous rotary
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CN107840268A	2018-03-27	It is a kind of it is stable can synchronous rotary Multifunctional working platform

CN207696486U	2018-08-07	A kind of workbench of stable liftable synchronous rotary
CN207792577U	2018-08-31	It is a kind of it is stable can synchronous rotary Multifunctional working platform
CN107840083A	2018-03-27	A kind of Multifunctional working platform capable of reversing
CN208485517U	2019-02-12	It is a kind of for boring the handling device of fluted disc
CN205856895U	2017-01-04	A kind of power equipment hoisting mechanism
CN205772880U	2016-12-07	A kind of hanging balancing formula hoist crab
CN208532122U	2019-02-22	Decorative panel mobile lifting device
CN205180885U	2016-04-27	Beautifying bed hydraulic pressure elevation structure
CN206484414U	2017-09-12	A kind of automatic polishing equipment for being easy to disk stone mill secure loading
CN204689546U	2015-10-07	The large-scale bell jar planer-type that hangs moves lifting machine
CN205222628U	2016-05-11	Hoisting apparatus convenient to operation
CN204689580U	2015-10-07	High-power transformer bell jar indoor vertical lifting device on the spot
CN107840269A	2018-03-27	A kind of workbench of synchronous rotary lifting capable of reversing

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN201711280795.6A	2017-12-06	2017-12-06	A kind of workbench of liftable synchronous rotary

Applications Claiming Priority (1)

Application	Filing date	Title
CN201711280795.6A	2017-12-06	A kind of workbench of liftable synchronous rotary

Legal Events

Date	Code	Title	Description
2018-03-06	PB01	Publication	
2018-03-06	PB01	Publication	
2018-03-30	SE01	Entry into force of request for substantive examination	
2018-03-30	SE01	Entry into force of request for substantive examination	
2019-02-01	WW01	Invention patent application withdrawn after publication	
2019-02-01	WW01	Invention patent application withdrawn after publication	Application publication date: 20180306

Concepts

machine-extracted

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synchronised		title,claims,abstract,description	11	0.000
modifying		abstract,description	5	0.000

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(19)中华人民共和国国家知识产权局

(12)发明专利申请

(10)申请公布号 CN 107756350 A
(43)申请公布日 2018.03.06

(21)申请号 201711280795.6

(22)申请日 2017.12.06

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(51)Int.Cl.
B25H 1/02(2006.01)
B25H 1/14(2006.01)
B25H 1/16(2006.01)
A47B 9/16(2006.01)
A47B 17/02(2006.01)
A47B 27/02(2006.01)

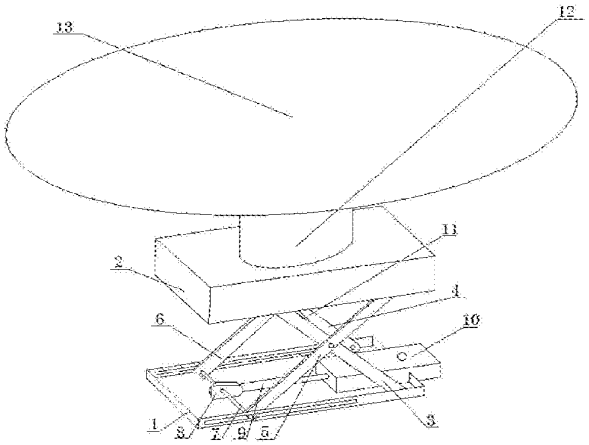
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(54)发明名称

一种可升降同步旋转的工作平台

(57)摘要

本发明公开了一种可升降同步旋转的工作平台，属于机械设备技术领域，目的在于解决现有工作平台无法灵活调节的问题。其包括底座、平台，底座右侧的前后内表面分别铰接有连杆一、连杆二，连杆一、连杆二的另一端分别与平台左侧的前后内表面铰接，连杆一的中部铰接有连杆三，连杆二的中部铰接有连杆四，连杆三的一端铰接于平台右侧的前内表面，连杆四的一端铰接于平台右侧的后内表面，底座左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆，连杆三、连杆四的另一端均套设于连接杆上，连接杆中部套设有连接块，底座上设置有驱动液压缸，所述平台上还连接有回转支撑，所述回转支撑上连接有旋转台面。本发明适用于工作平台。



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1.一种可升降同步旋转的工作平台，其特征在于，包括底座(1)、平台(2)，底座(1)右侧的前后内表面分别铰接有连杆一(3)、连杆二(4)，连杆一(3)、连杆二(4)的另一端分别与平台(2)左侧的前后内表面铰接，连杆一(3)的中部铰接有连杆三(5)，连杆二(4)的中部铰接有连杆四(6)，连杆三(5)的一端铰接于平台(2)右侧的前内表面，连杆四(6)的一端铰接于平台(2)右侧的后内表面，底座(1)左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆(7)，连杆三(5)、连杆四(6)的另一端均套设于连接杆(7)上，连接杆(7)中部套设有连接块(8)，底座(1)上设置有驱动液压缸(9)，所述驱动液压缸(9)包括固定端、活动端，所述固定端与连接块(8)一端连接，所述活动端与底座(1)上连接的基座(10)连接，还设置有控制器，所述控制器与驱动液压缸(9)电连接，所述平台(2)上还连接有回转支撑(12)，所述回转支撑(12)上连接有旋转台面(13)，所述回转支撑(12)旁还设置有用于驱动回转支撑(12)在水平面做回转运动的驱动装置。

2.按照权利要求1所述的一种可升降同步旋转的工作平台，其特征在于，连杆一(3)与连杆三(5)的铰接处，连杆二(4)与连杆四(6)的铰接处之间还连接有同步杆(11)。

3.按照权利要求1所述的一种可升降同步旋转的工作平台，其特征在于，所述旋转台面(13)设置有防滑层。

一种可升降同步旋转的工作平台

技术领域

[0001] 本发明属于机械设备技术领域，具体涉及一种可升降同步旋转的工作平台。

背景技术

[0002] 工作平台是广泛应用于施工、装修、艺术、家用等领域的设备，用于放置施工、装修时的工具，或是摆放绘图、书法的器具，亦或是家用物品等等。

[0003] 现有的工作平台大多为固定结构，人们在施工、装修时常常涉及高处作业、移动作业，因此上下取放工具十分不便，在绘图、书法时由于颜料较多，常常布满整个台面，但是工作平台无法调节，需要移动到需要的颜料盘蘸取颜料，这样间接的增大了人们的工作量，影响了人们的工作效率。

发明内容

[0004] 本发明的目的在于：提供一种可升降同步旋转的工作平台，解决现有工作平台无法灵活调节的问题。

[0005] 本发明采用的技术方案如下：

[0006] 一种可升降同步旋转的工作平台，包括底座、平台，底座右侧的前后内表面分别铰接有连杆一、连杆二，连杆一、连杆二的另一端分别与平台左侧的前后内表面铰接，连杆一的中部铰接有连杆三，连杆二的中部铰接有连杆四，连杆三的一端铰接于平台右侧的前内表面，连杆四的一端铰接于平台右侧的后内表面，底座左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆，连杆三、连杆四的另一端均套设于连接杆上，连接杆中部套设有连接块，底座上设置有驱动液压缸，所述驱动液压缸包括固定端、活动端，所述固定端与连接块一端连接，所述活动端与底座上连接的基座连接，还设置有控制器，所述控制器与驱动液压缸电连接，所述平台上还连接有回转支撑，所述回转支撑上连接有旋转台面，所述回转支撑旁还设置有用于驱动回转支撑在水平面做回转运动的驱动装置。

[0007] 进一步地，连杆一与连杆三的铰接处，连杆二与连杆四的铰接处之间还连接有同步杆。

[0008] 进一步地，所述旋转台面设置有防滑层。

[0009] 综上所述，由于采用了上述技术方案，本发明的有益效果是：

[0010] 1、本发明中，包括底座、平台，底座右侧的前后内表面分别铰接有连杆一、连杆二，连杆一、连杆二的另一端分别与平台左侧的前后内表面铰接，连杆一的中部铰接有连杆三，连杆二的中部铰接有连杆四，连杆三的一端铰接于平台右侧的前内表面，连杆四的一端铰接于平台右侧的后内表面，底座左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆，连杆三、连杆四的另一端均套设于连接杆上，连接杆中部套设有连接块，底座上设置有驱动液压缸，所述驱动液压缸包括固定端、活动端，所述固定端与连接块一端连接，所述活动端与底座上连接的基座连接，还设置有控制器，所述控制器与驱动液压缸电连接，所述平台上还连接有回转支撑，所述回转支撑上连接有旋转台面，所述回转支撑旁还设置有

用于驱动回转支撑在水平面做回转运动的驱动装置。通过该设置，控制器控制驱动液压缸伸缩，带动连接杆在滑槽内移动，当连接杆向右移动即可带动平台上升，平台上连接的回转支撑带动旋转台面上升，当连接杆向左移动即可带动平台下降，平台上连接的回转支撑带动旋转台面下降，驱动装置驱动回转支撑在水平面做回转运动，回转支撑带动旋转台面做旋转运动，解决了现有工作平台无法灵活调节的问题。

[0011] 2、本发明中，连杆一与连杆三的铰接处，连杆二与连杆四的铰接处之间还连接有同步杆。通过该设置，同步杆使平台升降更加稳定。

[0012] 3、本发明中，所述旋转台面设置有防滑层。通过该设置，防止因旋转台面旋转造成旋转台面上放置的物品掉落。

附图说明

[0013] 图1为本发明的结构示意图；

[0014] 图中标记：1-底座、2-平台、3-连杆一、4-连杆二、5-连杆三、6-连杆四、7-连接杆、8-连接块、9-驱动液压缸、10-基座、11-同步杆、12-回转支撑、13-旋转台面。

具体实施方式

[0015] 为了使本发明的目的、技术方案及优点更加清楚明白，以下结合附图及实施例，对本发明进行进一步详细说明。应当理解，此处所描述的具体实施例仅用以解释本发明，并不用于限定本发明。

[0016] 一种可升降同步旋转的工作平台，包括底座、平台，底座右侧的前后内表面分别铰接有连杆一、连杆二，连杆一、连杆二的另一端分别与平台左侧的前后内表面铰接，连杆一的中部铰接有连杆三，连杆二的中部铰接有连杆四，连杆三的一端铰接于平台右侧的前内表面，连杆四的一端铰接于平台右侧的后内表面，底座左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆，连杆三、连杆四的另一端均套设于连接杆上，连接杆中部套设有连接块，底座上设置有驱动液压缸，所述驱动液压缸包括固定端、活动端，所述固定端与连接块一端连接，所述活动端与底座上连接的基座连接，还设置有控制器，所述控制器与驱动液压缸电连接，所述平台上还连接有回转支撑，所述回转支撑上连接有旋转台面，所述回转支撑旁还设置有用于驱动回转支撑在水平面做回转运动的驱动装置。

[0017] 进一步地，连杆一与连杆三的铰接处，连杆二与连杆四的铰接处之间还连接有同步杆。

[0018] 进一步地，所述旋转台面设置有防滑层。

[0019] 本发明在实施过程中，控制器控制驱动液压缸伸缩，带动连接杆在滑槽内移动，当连接杆向右移动即可带动平台上升，平台上连接的回转支撑带动旋转台面上升，当连接杆向左移动即可带动平台下降，平台上连接的回转支撑带动旋转台面下降，驱动装置驱动回转支撑在水平面做回转运动，回转支撑带动旋转台面做旋转运动，解决了现有工作平台无法灵活调节的问题。连杆一与连杆三的铰接处，连杆二与连杆四的铰接处之间还连接有同步杆。通过该设置，同步杆使平台升降更加稳定。所述旋转台面设置有防滑层。通过该设置，防止因旋转台面旋转造成旋转台面上放置的物品掉落。

[0020] 实施例1

[0021] 一种可升降同步旋转的工作平台，包括底座、平台，底座右侧的前后内表面分别铰接有连杆一、连杆二，连杆一、连杆二的另一端分别与平台左侧的前后内表面铰接，连杆一的中部铰接有连杆三，连杆二的中部铰接有连杆四，连杆三的一端铰接于平台右侧的前内表面，连杆四的一端铰接于平台右侧的后内表面，底座左侧前后内表面开设有槽，槽内设置有可沿槽轨迹移动的连接杆，连杆三、连杆四的另一端均套设于连接杆上，连接杆中部套设有连接块，底座上设置有驱动液压缸，所述驱动液压缸包括固定端、活动端，所述固定端与连接块一端连接，所述活动端与底座上连接的基座连接，还设置有控制器，所述控制器与驱动液压缸电连接，所述平台上还连接有回转支撑，所述回转支撑上连接有旋转台面，所述回转支撑旁还设置有用于驱动回转支撑在水平面做回转运动的驱动装置。通过该设置，控制器控制驱动液压缸伸缩，带动连接杆在滑槽内移动，当连接杆向右移动即可带动平台上升，平台上连接的回转支撑带动旋转台面上升，当连接杆向左移动即可带动平台下降，平台上连接的回转支撑带动旋转台面下降，驱动装置驱动回转支撑在水平面做回转运动，回转支撑带动旋转台面做旋转运动，解决了现有工作平台无法灵活调节的问题。

[0022] 实施例2

[0023] 在实施例1的基础上，连杆一与连杆三的铰接处，连杆二与连杆四的铰接处之间还连接有同步杆。通过该设置，同步杆使平台升降更加稳定。

[0024] 实施例3

[0025] 在上述实施例的基础上，所述旋转台面设置有防滑层。通过该设置，防止因旋转台面旋转造成旋转台面上放置的物品掉落。

[0026] 以上所述仅为本发明的较佳实施例而已，并不用以限制本发明，凡在本发明的精神和原则之内所作的任何修改、等同替换和改进等，均应包含在本发明的保护范围之内。

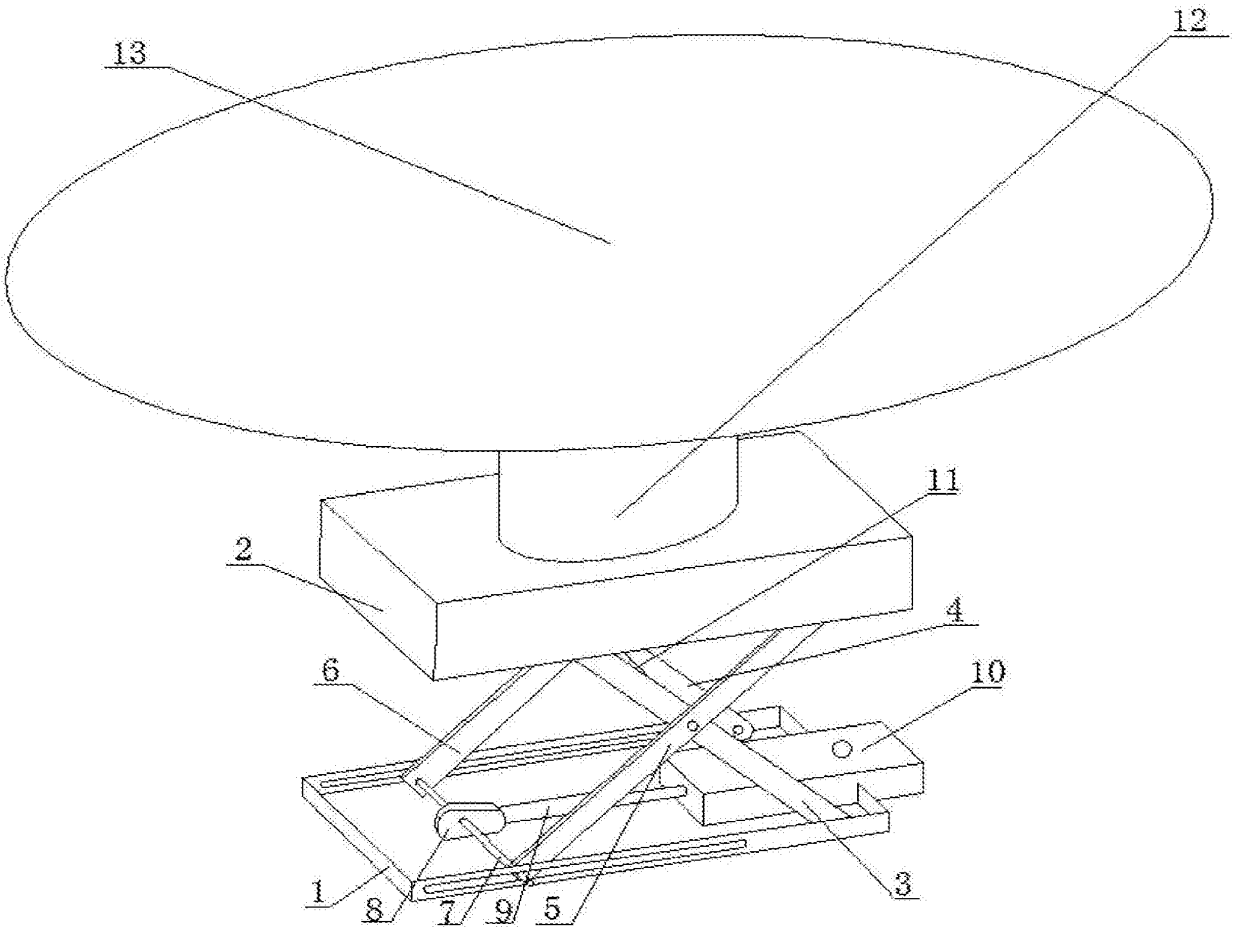


图1

Patents

Rise-fall desktop

Abstract

The utility model relates to the field of office supplies, in particular to a rise-fall desktop. The rise-fall desktop comprises a desktop cover plate, a crank, a connecting rod and two groups of support components. The two groups of the support components are installed at the bottom of the desktop cover plate, ranged in parallel and connected through the connecting rod. Each group of support components comprises an upper base, a lower base, a screw rod, a sliding rail and two support rods. The upper base is fixed at the bottom of the desktop cover plate, the screw rod is installed in the upper base, the sliding rail is installed on the lower base, the upper ends of the two support rods are connected with the upper base, the lower ends of the two support rods are connected with the lower base, and middle portions of the two support rods are hinged through connecting pieces. The crank is connected with the screw rod on a group of support components, and the crank controls linkage of the screw rods of the two groups of the support components through the connecting rod. The rise-fall desktop has the advantages of being novel in structure, small in size, and good in a rise-fall stationarity. Changing and damaging of an original desktop are not needed, and the rise-fall desktop is particularly suitable for being used in offices.

CN202874336U

China

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Other languages: Chinese

Inventor: [redacted]

Current Assignee : Hangzhou Landa Art & Craft Product Co ltd

Worldwide applications

2012 CN

Application CN 201220537920 events

2012-10-18	Application filed by Hangzhou Landa Art & Craft Product Co ltd
2012-10-18	Priority to CN 201220537920
2013-04-17	Application granted
2013-04-17	Publication of CN202874336U
Status	Active
2022-10-18	Anticipated expiration

Info: Cited by (6), Legal events, Similar documents, Priority and Related Applications

External links: Espacenet, Global Dossier, Discuss

Claims (7)

Hide Dependent

1. lifting desk surface is characterized in that comprising desktop cover board, crank, connecting rod and two groups of supporting components, and two groups of supporting components are installed in the bottom of desktop cover board, and two groups of supporting components are arranged in parallel, and two groups of supporting components link to each other by connecting rod; Every group of supporting component includes top base, bottom base, screw mandrel, slide rail and two support bars, top base is fixed on the bottom of desktop cover board, screw mandrel is installed in the top base, slide rail is installed on the bottom base, and the upper end of two support bars connects top base, lower end connection bottom base, wherein post upper links to each other with screw mandrel in the top base, another root support bar lower end connects the slide rail on the bottom base, and two support bars are arranged in a crossed manner, and the middle part of two support bars is hinged by connector; Crank links to each other with screw mandrel on one group of supporting component, and crank is controlled two groups of screw mandrels interlocks on the supporting component by connecting rod.

2. lifting desk surface according to claim 1 is characterized in that being separately installed with bevel gear set on the two ends of connecting rod, and connecting rod connects two groups of supporting components by bevel gear set.

3. lifting desk surface according to claim 1, it is characterized in that desktop cover board is made of substrate and side frame, the height of substrate is not higher than the height of side frame, and the position of two groups of supporting components all is in the inboard of side frame, and two groups of supporting components are arranged along the center left-right symmetry of substrate; Crank one end passes the side frame and connects one group of screw mandrel on the supporting component.

4. lifting desk surface according to claim 1 is characterized in that being provided with gripper shoe between two groups of supporting components, and the gripper shoe two ends link to each other with a support bar on two groups of supporting components respectively; Two support bars also connect by torsion spring.

5. lifting desk surface according to claim 3 is characterized in that described substrate top is equipped with heating plate.

6. lifting desk surface according to claim 1 is characterized in that described crank is collapsible crank.

7. lifting desk surface according to claim 3 is characterized in that the height of described side decoration plate is between 3-30CM.

Description

Lifting desk surface

Technical field

The utility model relates to the office appliance field, the lifting desk surface that especially uses on the desk.

Background technology

Along with social development, office's occupational disease is in rising trend.In a single day existing desk height all is constant, can customize height when perhaps making, still be delivered for use rear its height or very difficult change.The clerk is in for a long time on the desk desktop of sustained height and handles official business, and very easily produces the occupational disease of waist, back, neck or shank.

Summary of the invention

Goal of the invention of the present utility model is in order to overcome the problem that above-mentioned existing desk desktop can't lifting, a kind of novel structure to be provided, need not to change with destroy former desktop be use on the common desk can table top height adjusting lifting desk surface.

In order to realize the foregoing invention purpose, the utility model has adopted following technical scheme:

Lifting desk surface comprises desktop cover board, crank, connecting rod and two groups of supporting components, and two groups of supporting components are installed in the bottom of desktop cover board, and two groups of supporting components are arranged in parallel, and two groups of supporting components link to each other by connecting rod; Every group of supporting component includes top base, bottom base, screw mandrel, slide rail and two support bars, top base is fixed on the bottom of desktop cover board, screw mandrel is installed in the top base, slide rail is installed on the bottom base, and the upper end of two support bars connects top base, lower end connection bottom base, wherein post upper links to each other with screw mandrel in the top base, another root support bar lower end connects the slide rail on the bottom base, and two support bars are arranged in a crossed manner, and the middle part of two support bars is hinged by connector; Crank links to each other with screw mandrel on one group of supporting component, and crank is controlled two groups of screw mandrels interlocks on the supporting component by connecting rod.

As preferably, be separately installed with bevel gear set on the two ends of connecting rod, connecting rod connects two groups of supporting components by bevel gear set.

As preferably, desktop cover board is made of substrate and side frame, and the height of substrate is not higher than the height of side frame, and the position of two groups of supporting components all is in the inboard of side frame, and two groups of supporting components are arranged along the center left-right symmetry of substrate; Crank one end passes the side frame and connects one group of screw mandrel on the supporting component.

As preferably, be provided with gripper shoe between described two groups of supporting components, the gripper shoe two ends link to each other with a support bar on two groups of supporting components respectively; Two support bars also connect by torsion spring.

As preferably, described substrate top is equipped with heating plate.

As preferably, described crank is collapsible crank, has effectively utilized the space.

As preferably, the height of described side decoration plate is between 3-30CM.

Adopted the lifting desk surface of technique scheme, two groups of supporting components are arranged in parallel, crank is controlled two groups of screw mandrel interlocks on the supporting component by connecting rod, namely by crank manually control be installed in the lifting of the desktop cover board at two groups of supporting component tops, the stationarity of lifting has been guaranteed in the lifting of carrying out desktop cover board by two groups of supporting components.The advantage of this lifting desk surface is that novel structure is compact, and volume is little, and the lifting stationarity need not well to change with the especially suitable office of the former desktop of destruction and uses.

Description of drawings

Fig. 1: the deployed condition perspective view of the utility model lifting desk surface.

Fig. 2: the deployed condition side structure schematic diagram of the utility model lifting desk surface.

The specific embodiment

Below in conjunction with Fig. 1 and Fig. 2 the utility model is described further.

Lifting desk surface as depicted in figs. 1 and 2 comprises desktop cover board 1, crank 2, connecting rod 3 and two groups of supporting components, and two groups of supporting components are installed in the bottom of desktop cover board 1, and two groups of supporting components are arranged in parallel, and two groups of supporting components link to each other by connecting rod 3.

Every group of supporting component includes top base 4, bottom base 5, screw mandrel 6, slide rail 7 and two support bars 8, top base 4 is fixed on the bottom of desktop cover board 1, screw mandrel 6 is installed in the top base 4, slide rail 7 is installed on the bottom base 5, two support bars 8 are arranged in a crossed manner, and the upper end of two support bars 8 connects top base 4, the lower end connects bottom base 5, wherein support bar 8 upper end link to each other with screw mandrel 6 in the top base 4, lower end and bottom base 5 are hinged, another root support bar 8 upper ends and top base 4 are hinged, and the lower end is installed on the slide rail 7.The middle part of two support bars 8 is hinged by connector 9, and connector 9 can be bolt.Be separately installed with bevel gear set 14 on the two ends of connecting rod 3, connecting rod 3 connects two groups of supporting components by bevel gear set 14.Crank 2 links to each other with screw mandrel 6 on one group of supporting component, and crank 2 is by screw mandrel 6 interlocks on two groups of supporting components of connecting rod 3 controls.The movement of support bar 8 upper end positions of screw mandrel 6 controls, simultaneously another root support bar 8 lower ends movement on slide rail 7 has realized the superimposed of two support bars 8 or has opened, namely realized the lifting of the desktop cover board 1 on the supporting component.

Desktop cover board 1 is made of substrate 11 and side frame 12, and the height of substrate 11 is not higher than the height of side frame 12, and the position of two groups of supporting components all is in the inboard of side frame 12, and two groups of supporting components are arranged along the center left-right symmetry of substrate 11.Crank 2 one ends pass the screw mandrel 6 that side frame 12 connects on one group of supporting component.Be provided with gripper shoe 13 between two groups of supporting components, gripper shoe 13 two ends link to each other with a support bar 8 on two groups of supporting components respectively, and gripper shoe 13 is with the folding condition conversion angle of inclination of support bar 8.When two groups of supporting components are distant, desktop cover board 1 easily shakes when lifting, gripper shoe 13 can well address the above problem, and after rising put in place, gripper shoe 13 can be used as baffle plate and uses simultaneously, block the sight line in dead ahead, because after user's desktop rose, the colleague's on its opposite height of table top may also be in original state, sight line just in time is between desktop cover board 1 and the bottom base 5, this moment, gripper shoe 13 can be blocked its sight line, had guaranteed a part of privacy.

The height of above-mentioned side frame 12 is between 3-30CM, and namely lifting desk surface is when rounding state, and it is the tabular of above-mentioned dimensional thickness.During use, crank 2 one shakes and has driven screw mandrel 6 rotations on one side, screw mandrel 6 rotations of another side have been driven

simultaneously by bevel gear set 14 and connecting rod 3, two groups of supporting components have been realized interlock, the screw thread of two cocainine bars 6 is left-hand thread, in order in use can easily to shake, and must be grease-added in bevel gear set 14 engagement places, prevented that namely gear from getting rusty, improved again the sensitivity of transmission.

When rounding state, the height of substrate 11, top base 4 and bottom base 5 stacks is not higher than the height of side frame 12 yet, the position of two groups of supporting components all is in the inboard of side frame 12, so lifting desk surface has been hermetic state, and pen or paper can't enter in it.

Above-mentioned two support bars 8 can also connect by torsion spring, and the position of torsion spring is in the outside of connector 9, and the torsion spring upper end is fixed on the top of support bar 8, and the torsion spring lower end is fixed on the bottom of support bar 8.Crank 2 is collapsible cranks, has effectively utilized the space.Heating plate can be installed in substrate 11 tops, and the sky can heat practicality very in the time of cold.

The advantage of above-mentioned lifting desk surface is that the lifting stationarity is good, volume is little, bearing capacity is high, need not to change and the original desktop of destruction, especially being fit to office uses, the desktop of the use differing heights that the clerk is frequent can be regulated the state of shank, waist, back, neck and shoulder, prevents that it is in for a long time an angle and state and produces occupational disease.The lifting desk surface of this product is to use at desk, have the article such as water tumbler and display and be placed on it, so the stability when its weight capacity, balance, lifting is all particularly important.During use, the lifting desk surface of this product directly is placed on the desktop of existing common desk, has guaranteed the integrality of original desk tops, need not to change and the former desktop of destruction, and cost is more economical than substituting existing desk, is convenient to promote.

Cited By (6)

Publication number	Priority date	Publication date	Assignee	Title
CN104840039A *	2015-05-15	2015-08-19	南通芯迎设计服务有限公司	Baby crib capable of being manually lifted
CN105342138A *	2015-12-11	2016-02-24	深圳米乔科技有限公司	X-shaped lifting table
CN105686346A *	2016-04-21	2016-06-22	杭州骏达工艺制品有限公司	Dual-power lifting tabletop
CN110101213A *	2019-05-06	2019-08-09	巢湖学院	A kind of liftable rotary folding dining table
US10413083B2	2012-05-24	2019-09-17	Varidesk, Llc	Adjustable desk platform
US11140977781	2015-01-24	2021-10-12	Office Kick, Inc.	Desktop workspace that adjusts vertically
Family To Family Citations				

* Cited by examiner, † Cited by third party, ‡ Family to family citation

Similar Documents

Publication	Publication Date	Title
CN202874336U	2013-04-17	Rise-fall desktop
CN202874328U	2013-04-17	Table with embedded type lifting table top
CN202681005U	2013-01-23	Lifting table top for offices
CN202874335U	2013-04-17	Lifting table top
CN102715729B	2014-05-21	Lifting table top
CN202868239U	2013-04-10	Supporting platform used at home
US20040187742A1	2004-09-30	Table with variable configuration
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CN201088271Y	2008-07-23	Foldable computer desk
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CN202714432U	2013-02-06	Lifting table top
CN202681013U	2013-01-23	Lifting desk top used on office desk

CN201481221U	2010-05-26	Bathtub with seat
CN204105253U	2015-01-21	Distortion multifunctional table and chair
CN208676805U	2019-04-02	A kind of shelf based on single double-deck conversion
CN203457981U	2014-03-05	Lifting desktop
CN206314771U	2017-07-11	A kind of lifting desk surface
CN202077861U	2011-12-21	Multifunctional bookshelf with television and computer holding area
CN102018366B	2012-05-09	Foldable computer desk

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
CN 201220537920	2012-10-18	2012-10-18	Rise-fall desktop

Applications Claiming Priority (1)

Application	Filing date	Title
CN 201220537920	2012-10-18	Rise-fall desktop

Legal Events

Date	Code	Title	Description
2013-04-17	GR01	Patent grant	
2013-04-17	C14	Grant of patent or utility model	

Concepts

machine-extracted

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substrate		claims,description	13	0.000
heat treatment		claims,description	3	0.000
decoration		claims,description	2	0.000

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(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 202874336 U
(45)授权公告日 2013.04.17

(21)申请号 201220537920.3

(22)申请日 2012.10.18

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代理人 柯奇君

(51)Int.Cl.
A47B 13/00(2006.01)
A47B 9/16(2006.01)
A47B 13/08(2006.01)

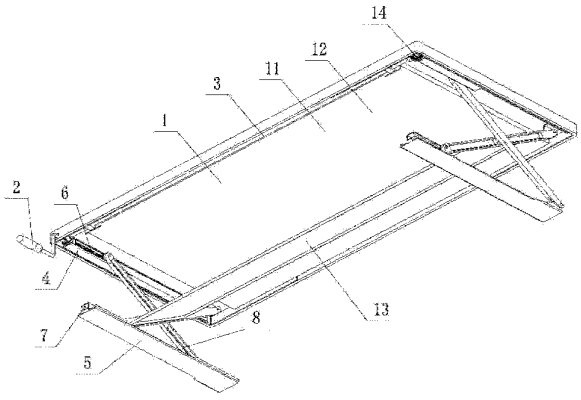
权利要求书 1 页 说明书 3 页 附图 1 页

(54)实用新型名称

升降桌面

(57)摘要

本实用新型涉及办公用品领域。升降桌面，包括桌面盖板、摇把、连杆和两组支撑组件，两组支撑组件安装在桌面盖板的底部，两组支撑组件平行排列，两组支撑组件通过连杆相连；每组支撑组件均包括上基座、下基座、丝杆、滑轨和两根支撑杆，上基座固定在桌面盖板的底部，丝杆安装在上基座内，滑轨安装在下基座上，且两根支撑杆的上端连接上基座，下端连接下基座，两根支撑杆的中部通过连接件铰接；摇把与一组支撑组件上的丝杆相连，摇把通过连杆控制两组支撑组件上的丝杆联动。该升降桌面的优点是结构新颖紧凑体积小，升降平稳性好，无需改动与破坏原桌面尤其适合办公室使用。



CN 202874336 U

1. 升降桌面，其特征在于包括桌面盖板、摇把、连杆和两组支撑组件，两组支撑组件安装在桌面盖板的底部，两组支撑组件平行排列，两组支撑组件通过连杆相连；每组支撑组件均包括上基座、下基座、丝杆、滑轨和两根支撑杆，上基座固定在桌面盖板的底部，丝杆安装在上基座内，滑轨安装在下基座上，且两根支撑杆的上端连接上基座，下端连接下基座，其中一根支撑杆上端与上基座内的丝杆相连，另一根支撑杆下端连接下基座上的滑轨，两根支撑杆交叉设置，两根支撑杆的中部通过连接件铰接；摇把与一组支撑组件上的丝杆相连，摇把通过连杆控制两组支撑组件上的丝杆联动。

2. 根据权利要求 1 所述的升降桌面，其特征在于连杆的两端上分别安装有锥齿轮组，连杆通过锥齿轮组连接两组支撑组件。

3. 根据权利要求 1 所述的升降桌面，其特征在于桌面盖板由基板和侧面框构成，基板的高度不高于侧面框的高度，两组支撑组件的位置均处于侧面框的内侧，两组支撑组件沿基板的中心左右对称排列；摇把一端穿过侧面框连接一组支撑组件上的丝杆。

4. 根据权利要求 1 所述的升降桌面，其特征在于两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连；两根支撑杆还通过扭簧连接。

5. 根据权利要求 3 所述的升降桌面，其特征在于所述基板顶部安装有加热板。

6. 根据权利要求 1 所述的升降桌面，其特征在于所述摇把是折叠式摇把。

7. 根据权利要求 3 所述的升降桌面，其特征在于所述侧面装饰板的高度在 3-30CM 之间。

升降桌面

技术领域

[0001] 本实用新型涉及办公用品领域，尤其是办公桌上使用的升降桌面。

背景技术

[0002] 随着社会发展，办公室职业病呈上升趋势。现有的办公桌高度都是恒定的，或者制造时可以定制高度，但是一旦交付使用后其高度还是很难改变的。办公室人员长期处于同一高度的办公桌桌面上办公，极易产生腰部、背部、颈部或腿部的职业病。

发明内容

[0003] 本实用新型的发明目的是为了克服上述现有办公桌桌面无法升降的问题，提供一种结构新颖，无需改动与破坏原桌面即普通办公桌上使用的可以调节桌面高度的升降桌面。

[0004] 为了实现上述发明目的，本实用新型采用了以下技术方案：

[0005] 升降桌面，包括桌面盖板、摇把、连杆和两组支撑组件，两组支撑组件安装在桌面盖板的底部，两组支撑组件平行排列，两组支撑组件通过连杆相连；每组支撑组件均包括上基座、下基座、丝杆、滑轨和两根支撑杆，上基座固定在桌面盖板的底部，丝杆安装在上基座内，滑轨安装在下基座上，且两根支撑杆的上端连接上基座，下端连接下基座，其中一根支撑杆上端与上基座内的丝杆相连，另一根支撑杆下端连接下基座上的滑轨，两根支撑杆交叉设置，两根支撑杆的中部通过连接件铰接；摇把与一组支撑组件上的丝杆相连，摇把通过连杆控制两组支撑组件上的丝杆联动。

[0006] 作为优选，连杆的两端上分别安装有锥齿轮组，连杆通过锥齿轮组连接两组支撑组件。

[0007] 作为优选，桌面盖板由基板和侧面框构成，基板的高度不高于侧面框的高度，两组支撑组件的位置均处于侧面框的内侧，两组支撑组件沿基板的中心左右对称排列；摇把一端穿过侧面框连接一组支撑组件上的丝杆。

[0008] 作为优选，所述两组支撑组件之间设有支撑板，支撑板两端分别与两组支撑组件上的一根支撑杆相连；两根支撑杆还通过扭簧连接。

[0009] 作为优选，所述基板顶部安装有加热板。

[0010] 作为优选，所述摇把是折叠式摇把，有效的利用了空间。

[0011] 作为优选，所述侧面装饰板的高度在 3-30CM 之间。

[0012] 采用了上述技术方案的升降桌面，两组支撑组件平行排列，摇把通过连杆控制两组支撑组件上的丝杆联动，即通过摇把手动控制安装在两组支撑组件顶部的桌面盖板的升降，通过两组支撑组件进行桌面盖板的升降确保了升降的平稳性。该升降桌面的优点是结构新颖紧凑，体积小，升降平稳性好无需改动与破坏原桌面尤其适合办公室使用。

附图说明

[0013] 图 1 :本实用新型升降桌面的展开状态立体结构示意图。

[0014] 图 2 :本实用新型升降桌面的展开状态侧面结构示意图。

具体实施方式

[0015] 下面结合图 1 和图 2 对本实用新型做进一步描述。

[0016] 如图 1 和图 2 所示的升降桌面，包括桌面盖板 1、摇把 2、连杆 3 和两组支撑组件，两组支撑组件安装在桌面盖板 1 的底部，两组支撑组件平行排列，两组支撑组件通过连杆 3 相连。

[0017] 每组支撑组件均包括上基座 4、下基座 5、丝杆 6、滑轨 7 和两根支撑杆 8，上基座 4 固定在桌面盖板 1 的底部，丝杆 6 安装在上基座 4 内，滑轨 7 安装在下基座 5 上，两根支撑杆 8 交叉设置，且两根支撑杆 8 的上端连接上基座 4，下端连接下基座 5，其中一根支撑杆 8 上端与上基座 4 内的丝杆 6 相连，下端与下基座 5 铰接，另一根支撑杆 8 上端与上基座 4 铰接，下端安装在滑轨 7 上。两根支撑杆 8 的中部通过连接件 9 铰接，连接件 9 可以是螺栓。连杆 3 的两端上分别安装有锥齿轮组 14，连杆 3 通过锥齿轮组 14 连接两组支撑组件。摇把 2 与一组支撑组件上的丝杆 6 相连，摇把 2 通过连杆 3 控制两组支撑组件上的丝杆 6 联动。丝杆 6 控制一根支撑杆 8 上端位置的移动，同时另一根支撑杆 8 下端在滑轨 7 上的移动实现了两根支撑杆 8 的叠合或打开，即实现了支撑组件上的桌面盖板 1 的升降。

[0018] 桌面盖板 1 由基板 11 和侧面框 12 构成，基板 11 的高度不高于侧面框 12 的高度，两组支撑组件的位置均处于侧面框 12 的内侧，两组支撑组件沿基板 11 的中心左右对称排列。摇把 2 一端穿过侧面框 12 连接一组支撑组件上的丝杆 6。两组支撑组件之间设有支撑板 13，支撑板 13 两端分别与两组支撑组件上的一根支撑杆 8 相连，支撑板 13 随支撑杆 8 的开合状态变换倾斜角度。当两组支撑组件距离较远时，在升降时桌面盖板 1 容易发生晃动，支撑板 13 可以很好的解决上述问题，同时在上升到位后，支撑板 13 可以作为挡板使用，挡住正前方的视线，因为使用者的桌面上升后，其对面的同事的桌面高度可能还处于原有的状态，视线正好处于桌面盖板 1 与下基座 5 之间，此时支撑板 13 可以挡住其视线，确保了一部分的隐私。

[0019] 上述侧面框 12 的高度在 3-30CM 之间，即升降桌面在收拢状态时，其呈上述尺寸厚度的平板状。使用时，摇把 2 一摇带动了一边的丝杆 6 转动，同时通过锥齿轮组 14 和连杆 3 带动了另一边的丝杆 6 转动，两组支撑组件实现了联动，两组丝杆 6 的螺纹为反螺纹，为了在使用过程中可轻松摇动，在锥齿轮组 14 啮合处必须加润滑脂，即防止了齿轮生锈，又提高了传动的灵敏性。

[0020] 在收拢状态时，基板 11、上基座 4 和下基座 5 叠加的高度也不高于侧面框 12 的高度，两组支撑组件的位置均处于侧面框 12 的内侧，因此升降桌面呈完全密封的状态，笔或者纸张无法进入其内。

[0021] 上述两根支撑杆 8 还可以通过扭簧连接，扭簧的位置处于连接件 9 的外侧，扭簧上端固定在支撑杆 8 的上部，扭簧下端固定在支撑杆 8 的下部。摇把 2 是折叠式摇把，有效的利用了空间。基板 11 顶部可以安装加热板，天冷的时候可以加热，非常的实用。

[0022] 上述升降桌面的优点是升降平稳性好，体积小，承载力高，无需改动与破坏原有桌面，尤其适合办公室使用，办公室人员经常的使用不同高度的桌面，可以调节腿部、腰部、背

部、颈部和肩部的状态，防止其长时间的处于一个角度和状态而产生职业病。本产品的升降桌面是在办公桌上使用，会有水杯和显示器等物品放置在其上，因此其承重能力、平衡性、升降时的稳定性都尤为重要。使用时，本产品的升降桌面直接放置在现有的普通办公桌的桌面上，保证了原有办公桌面的完整性，无需改动与破坏原桌面，成本较之更替现有办公桌更为经济，便于推广。

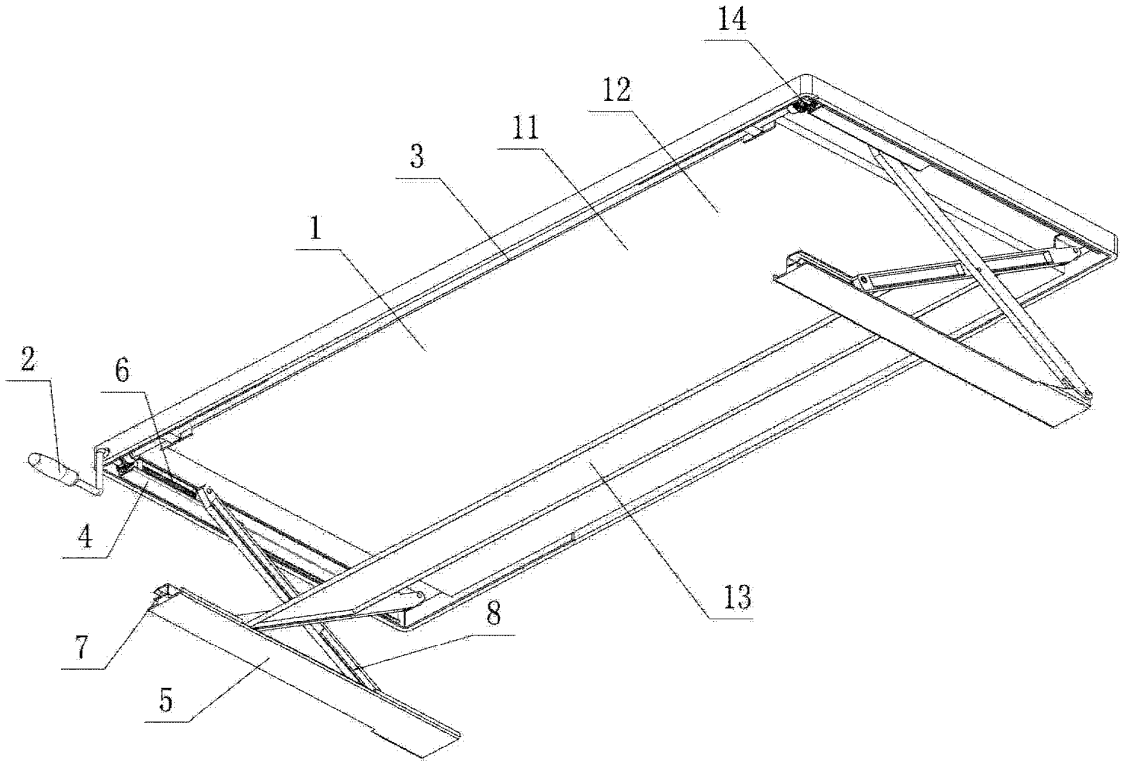


图 1

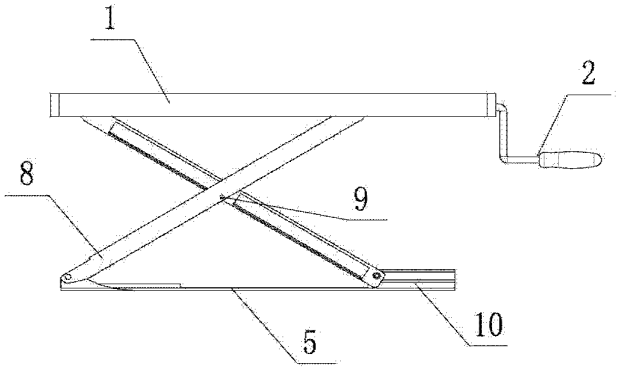


图 2

Europäisches Patentamt
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CN207186305U Stand and sit alternating lift ban tai

Applicants: CHONGQING COMFORT OFFICE FURNITURE CO LTD

Inventors: REN JIAZHONG

Classifications:
IPC ***A47B13/00; A47B17/00;***

Priorities: CN201720305914U 2017-03-24

Application: CN201720305914U·2017-03-24

Publication: CN207186305U·2018-04-06

Published as: CN207186305U

Stand and sit alternating lift ban tai

Abstract

The utility model provides a stand and sit alternating lift ban tai, includes class's playscript with stage directions physically, can dismantle on class's playscript with stage directions body is connected with the elevating platform, the lift table plate who supports through elevation structure on the elevating platform includes the base and is located the base, one side sliding connection of lift table plate has rotatable folding slave station board, elevation structure includes two sets of telescopic connecting rod, and every group link pole is the X -shaped by two telescopic rod hinge, and every flexible pipe is cup jointed by the multisection sleeve pipe and forms. Sit for a long time the official working back, the worker can adjust elevation structure according to the height of selfon arranging the elevating platform in the table of desk, be transferred to behind the suitable position again arrange the display in lift table plate on, the keyboard is arranged in on the slave station board, both can realize standing handling official business. To take off display and keyboard after tiring out in the station for a long time when the station, and fold the elevating platform anddraw in in. The utility model discloses realize that the seat station is alternative, it is motionless to sit for a long time, the new gesture of handling official business healthily.

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A standing seat alternating table

Technical field

The utility model relates to an office facility, in particular to a station sitting alternating class table.

Background technique

Most of the existing office workers are in the class for eight hours a day. When they are working, they usually sit in work. Sedentary motion can easily lead to cerebral insufficiency, slow response, compression of the cervical spine, loss of elasticity of the spine, damage to the lumbar intervertebral disc, and accelerated growth of the lumbar and abdominal fat. At the same time, the existing desk accessories are configured separately for the convenience of discarding paper dust and soot. In use, it is necessary to turn to the position of the trash can, throwing is not allowed to spill outside, and it needs to be cleaned again, resulting in inconvenience.

Utility model content

In view of the deficiencies existing in the prior art, the utility model provides a stand-seat alternating lift table, which does not need to sit at work all the time, and can adjust the lift table to adjust the lift table to perform the alternate work. The desk comes with a garbage collection mechanism for convenience and cleanliness.

In order to achieve the above purpose, the present invention adopts the following technical solutions: a stand-seat alternating lift table, including a workbench body, and a lift platform is detachably connected to the workbench body, and the lift platform includes a base and a lifting platen supported on the base by a lifting structure, a side plate of the lifting platen is rotatably and foldable;

The lifting structure includes two telescopic connecting rods, each connecting rod is hinged by two telescopic rods to form an X-shape, and each telescopic tube is formed by a plurality of sleeves and sleeves;

It also includes a garbage recycling mechanism integrated with the workbench body, the garbage recycling device includes a depositing channel on the desk body plate of the class table and a storage cavity disposed on a support leg of the desk body, the depositing channel A receiving chamber is penetrated between the receiving chamber and the receiving chamber. A piston plate whose width is matched with the piston plate is arranged in the receiving chamber. The piston plate is connected with a pushing rod. The pushing rod extends out of the receiving chamber, and elasticity is provided between the receiving chamber and the piston plate. Pieces.

Wherein, it also includes a fixing mechanism on a lifting platform plate, the fixing mechanism includes a fixing frame and a locking mechanism for connecting with an electronic display screen; the fixing frame includes a fixing plate made of metal material, and the fixing plate has one An electronic display tailgate with a metal material is vertically connected to the side, and the fixed plate is provided with serrated fixed teeth at a position away from a bottom edge of the tailgate.

Specifically, the fixing plate and the tailgate are rotatably connected by a connecting shaft.

Further, a side of the tailgate away from the fixing plate is snapped with the lifting plate.

Further, the locking mechanism includes a magnet.

Compared with the prior art, the utility model has the following beneficial effects: after a sedentary operation, the worker places the lifting platform on the desk board of the desk, and can adjust the lifting structure according to his height, and adjust the position afterwards. The monitor is placed on the lift platen and the

keyboard is placed on the sub-platen; When standing for a long time, the monitor and keyboard will be removed and the lifting table will be folded and folded. The utility model realizes the new posture of sitting and alternating, not using sedentary, and healthy office. At the same time, users can use the desk's automatic garbage collection facility to collect soot, residues, and paper scraps, and the environment, hygiene, and cleanliness of the office area.

Description of the drawings

Figure 1 is a schematic view of the overall structure of the utility model;

Figure 2 is a schematic view of the utility model lift platform;

Figure 3 is a schematic diagram of the structure of the garbage recycling mechanism in the utility model;

FIG. 4 is a schematic structural view of a display fixing mechanism according to the present invention.

detailed description

Referring to FIG. 1 to FIG. 4, a station-seat alternating lift table includes a workbench body, and a lift platform is detachably connected to the workbench body, and the lift platform includes a base 5 and a base 5 to lift the structure. 6 The supporting lifting platform 7 is fixed on the table 1 of the desk body in use, and the lifting platform 7 is used for fixing the display. One side of the lifting platform 7 is slidably connected to the substation that can be rotated and folded. The plate 8, the sub-platen 8 and the elevating platen 7 are slidably connected by the chute 10; the sub-platen 8 is used to fix the keyboard. The lifting structure 6 comprises two sets of telescopic connecting rods, each connecting rod is hinged by two telescopic rods to form an X-shape, and each telescopic tube is formed by a plurality of sleeves; the user can adjust according to his own habits. The height of the sleeve reaches the purpose of adjusting the height of the lifting plate 7 and finally achieves the adjustment of the height of the display. After sedentary work, the worker puts the lifting table on the desk plate 1 of the desk, and adjusts the lifting structure 6 according to its height, and adjusts it to a suitable position and puts the display on the lifting plate 7 again. On the sub-platen 8; When standing for a long time, the monitor and keyboard will be removed and the lifting table will be folded and folded. The utility model realizes the new posture of sitting and alternating, not using sedentary, and healthy office. The sub-platen 8 and the lifting platen 7 are connected by a 90° rotation through an articulated structure. The reversing structure 9 includes a card slot connected with the bottom of the lifting platen 7 and a rotating shaft connected with the sub-platen 8 and the rotating shaft is snapped on the card. Rotation within the slot to achieve the purpose of folding adjustment.

In addition, in order to make the display more stable after being fixed, the display may also be fixed by a fixing mechanism after being fixed on the lifting platform 7. The fixing mechanism includes a fixing frame and a locking mechanism for connecting with the electronic display screen; the fixing frame The fixing plate 11 includes a metal material. An electronic display back plate 12 made of a metal material is vertically connected to one side of the fixing plate 11, and a fixed saw plate 11 is provided with a zigzag fixed position away from a bottom surface edge of the rear baffle plate 12. Teeth 15. Specifically, the fixing plate 11 and the tailgate 12 are rotatably connected by the connecting shaft 13, and the side of the tailgate 12 remote from the fixing plate 11 is in snapping engagement with the lifting plate 7. A slot corresponding to the rear baffle 12 is opened on an edge of the lifting platen 7 opposite to the sub-board 8, and the rear baffle 12 is locked in the slot, and the rear and rear gears of the display are fixed. The plate 12 interferes, and the upper edge is secured by the serrated fixing teeth 15 . During the storage, a magnet 14 is fixed on the rear baffle plate 12, and the fixing plate 11 is rotated through the connecting shaft 13, and the folded end portion of the fixing plate 11 is sucked by the magnet 14 to achieve the purpose of locking.

It also includes a garbage recycling mechanism integrated with the workbench body, which includes a depositing channel 3 on the desk body plate 1 of the class table and a receiving cavity 4 placed on the support leg 2 of the desk body. The storage channel 3 and the receiving chamber 4 are penetrated by the receiving chamber 31. The receiving chamber 31 is provided with a piston plate 32 matching the width thereof. The piston plate 32 is connected with a pushing rod 33. The pushing rod 33 extends to the receiving chamber. 31, a spring 34 is provided between the accommodating chamber 31 and the piston plate 32. The user disposes the refuse, soot, paper waste and the like into the accommodating chamber through the storage channel 3, pushes the pushing rod 33, and pushes the piston plate 32 pushed by the rod 33 to push the garbage from the accommodating chamber 31 into the receiving chamber 4. Under the action of the elastic force of the spring 34, the push rod 33 drives the piston plate 32 to reset. After the garbage in the storage chamber 4 is accumulated,

the user can withdraw the storage chamber 4 to drain the garbage and return the storage chamber 4 to the home position. Users can use the desk's automatic garbage collection mechanism to collect soot, residues, and paper scraps, and the environment, hygiene, and cleanliness of the office area.

Finally, the above embodiments are merely used to illustrate the technical solutions of the present invention rather than limiting the present invention. Although the present invention has been described in detail with reference to the preferred embodiments, those skilled in the art should understand that the present invention can be applied to the present invention. Technical solutions are modified or equivalently replaced without departing from the purpose and scope of the technical solutions of the present invention, and they should all be covered by the scope of the claims of the present invention.

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1.A stand-seat alternating lift table, including a workbench body, is characterized in that: the lift platform is detachably connected to the workbench body, and the lift platform includes a base and a lift plate supported on the base through a lifting structure. One side of the lifting platen is slidably connected with a rotatably foldable sub-platen;

The lifting structure includes two telescopic connecting rods, each connecting rod is hinged by two telescopic rods to form an X-shape, and each telescopic tube is formed by a plurality of sleeves and sleeves;

It also includes a garbage recycling mechanism integrated with the workbench body, the garbage recycling device includes a depositing channel on the desk body plate of the workbench and a receiving cavity disposed on a support leg of the workbench body, the depositing channel A receiving chamber is penetrated between the receiving chamber and the receiving chamber. A piston plate whose width is matched with the piston plate is arranged in the receiving chamber. The piston plate is connected with a pushing rod. The pushing rod extends out of the receiving chamber, and elasticity is provided between the receiving chamber and the piston plate. Pieces.

2.The stand-seat alternating lifting table according to claim 1, characterized in that it further comprises a fixing mechanism on a lifting platform, the fixing mechanism comprises a fixing frame and a lock for connecting with the electronic display screen. The fixing frame includes a fixing plate made of metal material, one side of the fixing plate is connected with an electronic display back plate of a metal material perpendicularly, and the fixing plate is provided with zigzag-like positions away from the bottom edge of one side of the tailgate. Fixed teeth.

3.The stand-seat alternating lifting table according to claim 2, characterized in that: the fixing plate and the tailgate are rotationally connected through a connecting shaft.

4.The stand-seat alternating lifting table according to claim 2, characterized in that the side of the tailgate which is far from the fixed plate is connected with the lifting plate.

5.The stand-seat alternating lifting table according to claim 2, wherein the locking mechanism comprises a magnet.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 207186305 U
(45)授权公告日 2018.04.06

(21)申请号 201720305914.8

(22)申请日 2017.03.24

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(51)Int.Cl.
A47B 13/00(2006.01)
A47B 17/00(2006.01)

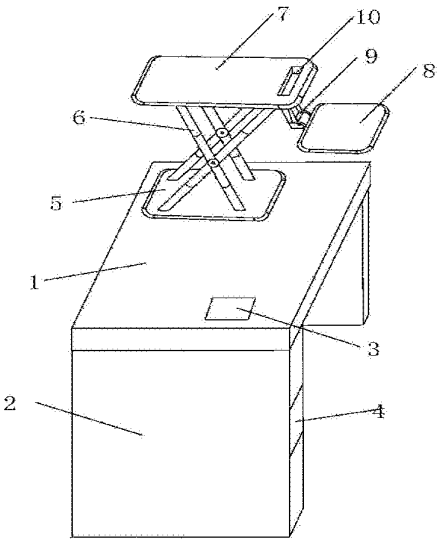
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(54)实用新型名称

一种站坐交替式升降班台

(57)摘要

一种站坐交替式升降班台，包括班台本体，所述班台本体上可拆卸连接有升降台，所述升降台包括底座及位于底座上通过升降结构支撑的升降台板，所述升降台板的一侧滑动连接有可转动折叠的副台板；所述升降结构包括两组可伸缩连接杆，每组连接杆由两根伸缩杆铰接呈X形，每根伸缩管由多节套管套接而成。久坐办公后，工作者将升降台置于办公桌的桌板上，可根据自身的身高调节升降结构，调到适合的位置后再将显示器置于升降台板上，键盘置于副台板上；既可实现站着办公。当站久站累后将取下显示器和键盘，将升降台折叠收拢。本实用新型实现坐站交替、不用久坐不动，健康办公新姿态。



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1.一种站坐交替式升降班台，包括班台本体，其特征在于：所述班台本体上可拆卸连接有升降台，所述升降台包括底座及位于底座上通过升降结构支撑的升降台板，所述升降台板的一侧滑动连接有可转动折叠的副台板；

所述升降结构包括两组可伸缩连接杆，每组连接杆由两根伸缩杆铰接呈X形，每根伸缩管由多节套管套接而成；

还包括与班台本体融为一体的垃圾回收机构，所述垃圾回收装置包括位于班台本体桌板上的存入通道及置于班台本体的支撑腿上的收纳腔，所述存入通道与收纳腔之间通过容纳腔贯通，容纳腔内设置有与其宽度匹配的活塞板，所述活塞板上连接有推动杆，推动杆延伸至容纳腔外，容纳腔与活塞板之间设有弹性件。

2.根据权利要求1所述的一种站坐交替式升降班台，其特征在于：还包括位于升降台板上的固定机构，所述固定机构包括用于与电子显示屏连接的固定架和锁紧机构；所述固定架包括金属材质的固定板，所述固定板的一侧与其垂直连接有金属材质的电子显示屏后挡板，固定板远离后挡板的一侧底面边缘位置设有锯齿状固定齿。

3.根据权利要求2所述的一种站坐交替式升降班台，其特征在于：所述固定板与后挡板通过连接轴转动连接。

4.根据权利要求2所述的一种站坐交替式升降班台，其特征在于：所述后挡板远离固定板的一侧与升降台板卡接。

5.根据权利要求2所述的一种站坐交替式升降班台，其特征在于：所述锁紧机构包磁铁。

一种站坐交替式升降班台

技术领域

[0001] 本实用新型涉及办公设施，具体涉及一种站坐交替式升降班台。

背景技术

[0002] 现有的办公室人员大都每天坐班八小时，工作时基本都是坐着上班。久坐不动易造成脑供血不足，反应变慢、颈椎受压迫、脊柱失去弹性、腰椎间盘受损、腰腹部赘肉加速滋生。同时，现有的办公桌附件为了方便丢纸屑跟烟灰都单独配置垃圾桶，在使用时，需要专门转向垃圾桶的位置投掷，投掷不准容易洒外面，需要再次去清洁，造成不便。

实用新型内容

[0003] 针对现有技术中所存在的不足，本实用新型提供了一种站坐交替式升降班台，上班不用一直坐着，根据需要通过调节升降台即可进行坐站交替式进行工作；同时，该办公桌自带垃圾回收机构，方便、整洁。

[0004] 为实现上述目的，本实用新型采用了如下的技术方案：一种站坐交替式升降班台，包括班台本体，所述班台本体上可拆卸连接有升降台，所述升降台包括底座及位于底座上通过升降结构支撑的升降台板，所述升降台板的一侧滑动连接有可转动折叠的副台板；

[0005] 所述升降结构包括两组可伸缩连接杆，每组连接杆由两根伸缩杆铰接呈X形，每根伸缩管由多节套管套接而成；

[0006] 还包括与班台本体融为一体的垃圾回收机构，所述垃圾回收装置包括位于班台本体桌板上的存入通道及置于班台本体的支撑腿上的收纳腔，所述存入通道与收纳腔之间通过容纳腔贯通，容纳腔内设置有与其宽度匹配的活塞板，所述活塞板上连接有推动杆，推动杆延伸至容纳腔外，容纳腔与活塞板之间设有弹性件。

[0007] 其中，还包括位于升降台板上的固定机构，所述固定机构包括用于与电子显示屏连接的固定架和锁紧机构；所述固定架包括金属材质的固定板，所述固定板的一侧与其垂直连接有金属材质的电子显示屏后挡板，固定板远离后挡板的一侧底面边缘位置设有锯齿状固定齿。

[0008] 具体地，所述固定板与后挡板通过连接轴转动连接。

[0009] 进一步地，所述后挡板远离固定板的一侧与升降台板卡接。

[0010] 进一步地，所述锁紧机构包磁铁。

[0011] 相比于现有技术，本实用新型具有如下有益效果：久坐办公后，工作者将升降台置于办公桌的桌板上，可根据自身的身高调节升降结构，调到适合的位置后再将显示器置于升降台板上，键盘置于副台板上；既可实现站着办公。当站久站累后将取下显示器和键盘，将升降台折叠收拢。本实用新型实现坐站交替、不用久坐不动，健康办公新姿态。同时，使用者可使用办公桌自动的垃圾回收机构进行烟灰、残渣、纸屑的回收，办公区环境、卫生、整洁。

附图说明

[0012] 图1为本实用新型整体结构示意图；

[0013] 图2为本实用新型升降台的结构示意图；

[0014] 图3为本实用新型中垃圾回收机构的结构示意图；

[0015] 图4为本实用新型显示器固定机构的结构示意图。

具体实施方式

[0016] 参见图1-图4，一种站坐交替式升降班台，包括班台本体，所述班台本体上可拆卸连接有升降台，所述升降台包括底座5及位于底座5上通过升降结构6支撑的升降台板7，使用时底座5固定在班台本体的桌板1上，升降台板7用于固定显示器，所述升降台板7的一侧滑动连接有可转动折叠的副台板8，副台板8与升降台板7通过滑槽10滑动连接；副台板8用于固定键盘。所述升降结构6包括两组可伸缩连接杆，每组连接杆由两根伸缩杆铰接呈X形，每根伸缩管由多节套管套接而成；使用者可以根据自己的习性通过调节套管的高度达到调节升降台板7高度的目的，最后实现显示器高度的调节。久坐办公后，工作者将升降台置于办公桌的桌板1上，可根据自身的身高调节升降结构6，调到适合的位置后再将显示器置于升降台板7上，键盘置于副台板8上；既可实现站着办公。当站久站累后将取下显示器和键盘，将升降台折叠收拢。本实用新型实现坐站交替、不用久坐不动，健康办公新姿态。副台板8与升降台板7之间通过铰接结构转动90°连接，所述翻转结构9包括与升降台板7底部连接的卡槽及与副台板8连接的转轴，转轴卡接在卡槽内实现转动，达到折叠调节的目的。

[0017] 另外，为了使显示器固定后更加稳定，显示器固定在升降台板7上后还可通过固定机构固定，所述固定机构包括用于与电子显示屏连接的固定架和锁紧机构；所述固定架包括金属材质的固定板11，所述固定板11的一侧与其垂直连接有金属材质的电子显示屏后挡板12，固定板11远离后挡板12的一侧底面边缘位置设有锯齿状固定齿15。具体地，所述固定板11与后挡板12通过连接轴13转动连接，所述后挡板12远离固定板11的一侧与升降台板7卡接。升降台板7上与副台板8相对的一侧的边缘位置开有与后挡板12匹配的卡槽，使用时，后挡板12卡在卡槽内，显示器固定后后侧与后挡板12抵触，上边沿通过锯齿状固定齿15卡固。收纳时，在后挡板12上固定一磁铁14，通过连接轴13转动固定板11，固定板11下折端部与磁铁14吸合，达到锁紧的目的。

[0018] 还包括与班台本体融为一体的垃圾回收机构，所述垃圾回收装置包括位于班台本体桌板1上的存入通道3及置于班台本体的支撑腿2上的收纳腔4，所述存入通道3与收纳腔4之间通过容纳腔31贯通，容纳腔31内设置有与其宽度匹配的活塞板32，所述活塞板32上连接有推动杆33，推动杆33延伸至容纳腔31外，容纳腔31与活塞板32之间设有弹簧34。使用者将残渣、烟灰、纸屑等垃圾通过存入通道3丢入容纳舱内，通过推压推动杆33，推动杆33推上的活塞板32推动垃圾从容纳腔31进入到收纳腔4，在弹簧34弹力的作用下，推动杆33带动活塞板32复位。待收纳腔4内的垃圾积攒后，使用者可抽出收纳腔4将垃圾倒掉后再将收纳腔4归位。使用者可使用办公桌自动的垃圾回收机构进行烟灰、残渣、纸屑的回收，办公区环境、卫生、整洁。

[0019] 最后说明的是，以上实施例仅用以说明本实用新型的技术方案而非限制，尽管参

照较佳实施例对本实用新型进行了详细说明，本领域的普通技术人员应当理解，可以对本实用新型的技术方案进行修改或者等同替换，而不脱离本实用新型技术方案的宗旨和范围，其均应涵盖在本实用新型的权利要求范围当中。

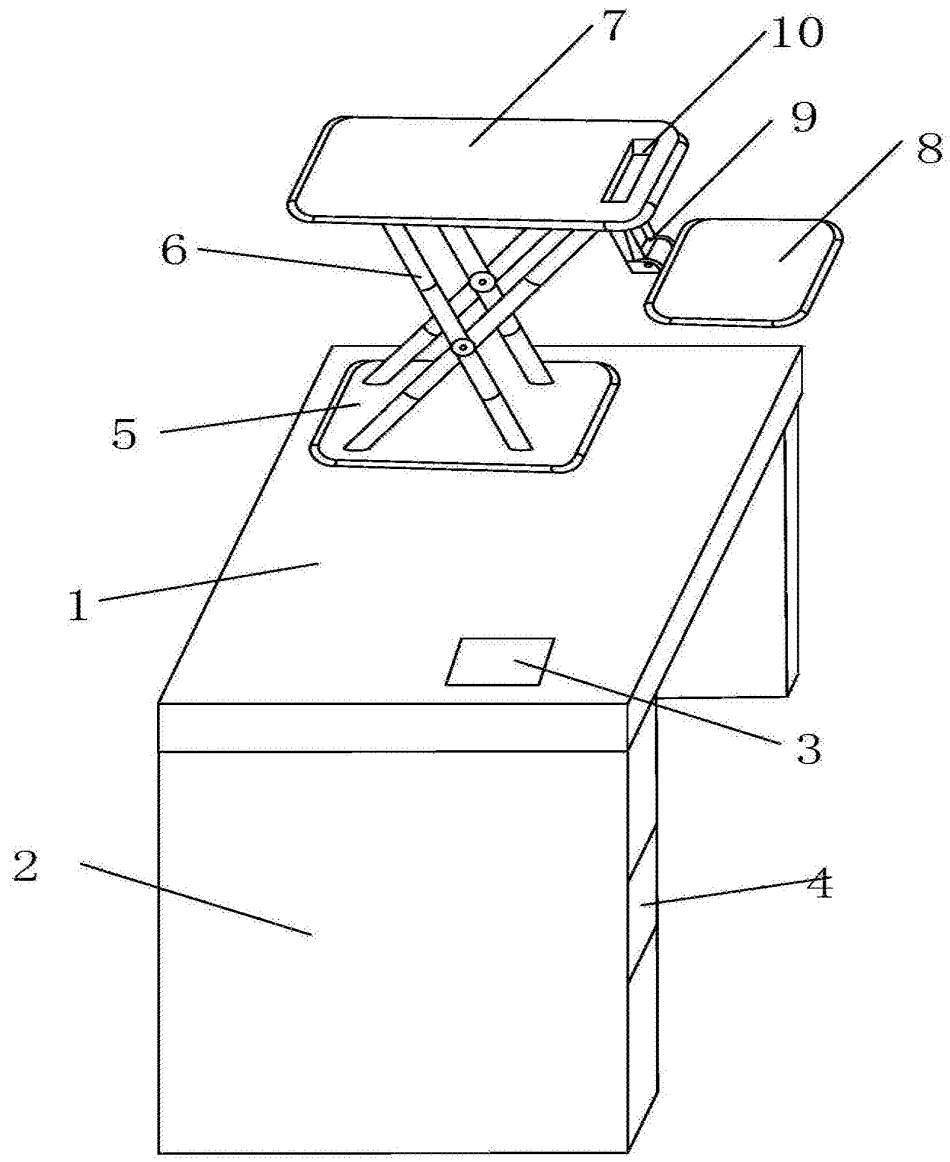


图1

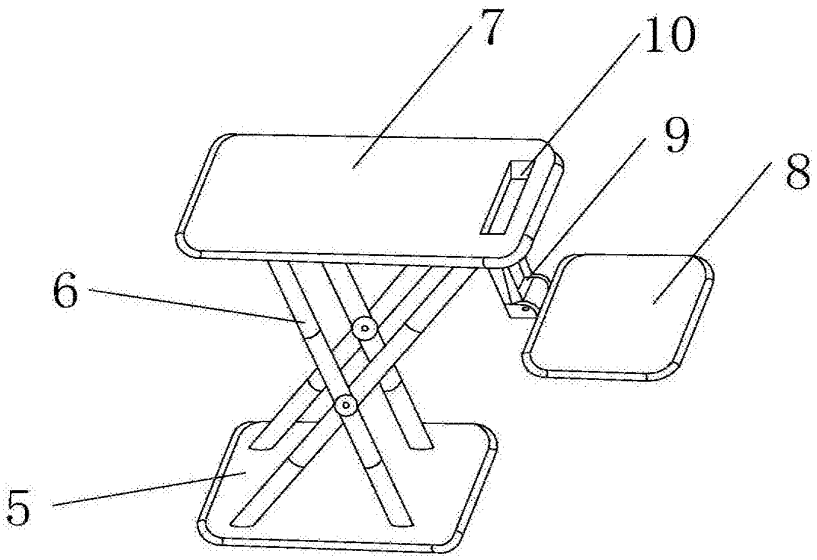


图2

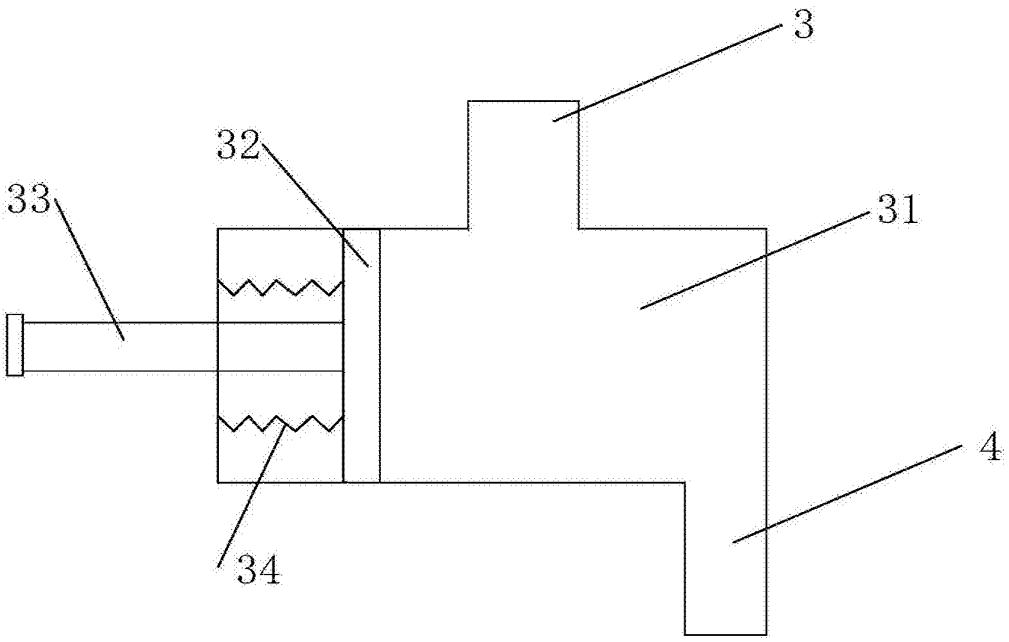


图3

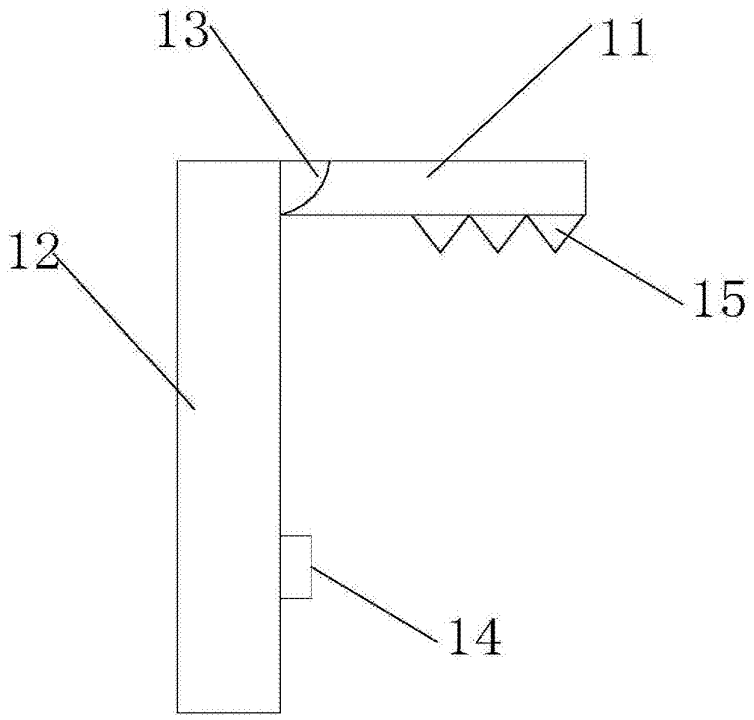


图4

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DESCRIPTION FR3028735A1

[0001]

13 1 The present invention relates to an element forming a desk intended to be placed on a desk top to receive therein, for example, a document, a computer or the like on which the user must write or edit.

[0002]

19 The present invention also relates to an assembly comprising a desk and an element forming a pad of this kind.

[0003]

24 Sitting for long periods of time leads to pathologies, in particular back pain.

25 The medical profession recommends not to sit at your desk for too long and to stand or walk as much as possible.

[0004]

30 The present invention relates to a desk pad which makes it possible to alleviate the back pain of a person working for long periods of time seated at a desk.

[0005]

35 According to the invention, an element forming a desk pad comprising a tray, in particular of rectangular shape, intended to be placed on a desk top is characterized in that means are provided for passing the tray of the element under -hand between at least two positions, one of

the at least two positions being raised relative to the at least one other position.

39 By thus providing means for raising the desk pad, the user is enabled as soon as he wishes to be able to stand while still being able to continue working and, in particular, to be able to continue writing on a document or edit on a computer.

42 As a result, the user will be able to easily stand up while working and then sit down and thus avoid prolonged sitting which is harmful to his back.

44 According to a preferred embodiment of the invention, the means for passing from one position to another comprise at least one leg, preferably two legs, comprising two mutually articulated rods and of which at least one has an upper end which can slide relative to the plate of the under-hand element. 10 According to a preferred embodiment of the invention, means are provided for controlling the raising and/or lowering of the plate of the desk pad element, for example by means of a crank. 15 Preferably, the control means comprise an electric motor. The present invention also relates to an assembly 20 comprising a desk and an element forming a desk pad placed on the desk, the top of the desk pad having an area smaller than the area of the worktop of the desk. 25 According to a preferred embodiment of the invention, the element forming a desk pad is incorporated into the desk.

54 In particular, the desk pad element is received in a housing formed in the plane of the desk and the tray of the desk pad 30 is flush with the desk plane in a first position and in a second position, the tray is raised by compared to the plan of the office. 3028735 3 According to a preferred embodiment of the invention, means are provided for controlling the raising or lowering of the tabletop of the desk pad relative to the work surface of the desk. 5 Preferably, means are provided to lock the tray in the raised position. By way of example, preferred embodiments of the invention will now be described with reference to the drawings in which: FIG. invention 15 in its raised position; Figure 2 is a perspective view of the pad of Figure 1 in its lowered position; Figure 3 is a perspective view of an assembly comprising a desk and the desk pad of Figures 1 and 2 placed on the desk; FIG. 4 is a perspective view of a desk in which a desk pad according to the invention is incorporated in the position in which the top of the desk pad is flush with the work surface of the desk; and Figure 5 is a perspective view showing the desk of Figure 4 in the position in which the desk pad top is raised relative to the work surface of the desk.

68 3028735 4 In Figure 1 a pad according to the invention is shown in the raised state. The desk pad comprises a tray 1 of substantially rectangular shape with a length of between 15 cm and 1.50 m and a width 5 of for example between 15 cm and 1 meter. Two right and left leg elements 2 and 3 each comprise two front and rear rods respectively 4, 5 and 6, 7, the ends of which are mounted to slide. 10 The desk pad also comprises a lower support base 10 of shapes and dimensions substantially identical to those of the plate 1 of the desk pad. The upper plate 1 and the lower base 10 are connected by the 15 legs 2 and 3. The upper plate 1 has two edges 8 right and 9 left which protrude downwards from the upper plate 1. the lower base 10 comprises two flanges 20 11 right and 12 left which protrude from the lower base 10 upwards. Two grooves 18, 19 are formed in the left and right 9 edges of the upper plate 1 and two grooves 28, 29 are formed in the edges 11 and 12.

79 The upper end of the rear rods 5 and 7 are slidably mounted relative to the upper plate 1. This

sliding is achieved by means of a respective cylindrical lug 20 which projects laterally from the rod 5, respectively 7, and which is imprisoned in the right groove 18, respectively left 19. 3028735 5 The lower ends of the rods 5 and 7 are pivotally mounted with respect to a fixed point 30 with respect to the lower base 10, in particular at the level of the internal faces of the flanges 11, 12 right and left. 5 The front rods 4 and 6 have their respective upper ends which are mounted to pivot with respect to a fixed point with respect to the upper plate 1, in particular at the level of the internal faces of the flanges 8, 9 right and 10 left, while their lower ends are slidably mounted relative to the lower base 10 in the same way as the rods 5 and 7 are slidably mounted relative to the upper plate 1, that is to say via a lug 40, 40 '15 respective imprisoned respectively in the grooves 28, 29.

90 These lugs 40, 40' are made by means of two transverse rods which each extend over half the length of the lower plate 10. These two lugs 40, 40' in the form of a rod each extend from a casing 41 which is mounted to slide relative to an endless screw 42 extending perpendicularly to the two rods 40 and 40'. Control means, in the form of an electric motor 43, drive the screw 42 in rotation to cause it to turn in one direction or the other, in particular under the control of a button pad 44 comprising two left-hand buttons. and right respectively to rotate the worm 42 in one direction and the other. the two rods 40, 40' are integral with the casing 41. According to another embodiment, provision can be made for the rods 40, 40', the endless screw 42 and the casing 43 to be arranged not to block the sliding of the lower ends of the front rods 4 and 6 with respect to the base 10 but in such a way as to block the sliding of the upper ends 3028735 6 of the rear rods 5 and 7 with respect to the plate 1.

101 Thus the user, by pressing the left button of the pad 44, rotates the endless screw 42 in one direction to bring the plate 1 into the raised position as shown in Figure 1. When he wants to lower the plate 1, he presses the right button of the pad 44 which has the effect of rotating the screw 42 in the other direction and thus drive the rods 40 and 40 'through the housing 41 backwards to reach the position shown in Figure 2 in which the housing 41 is in the end position along the rod 42 and the plate 1 and the base 10 are in mutual contact. The respective geometries of the front and rear rods of the two legs and of the grooves are made so as to obtain these two positions as shown in the figures, that is to say, a lowered position and a raised position. 20 In each of these end positions, the motor is switched off and the plate is thus locked in position by the blocking of the housing 41 on the screw 42 which no longer rotates.

112 25 In Figure 3, there is shown in a perspective view from the front, a system consisting of a desk 100 comprising a work surface 101 mounted on vertical uprights. The desk pad is mounted on the front of the desk. The area of the plate 1 (respectively of the base 10) is less than the area of the work surface 101 of the desk 100. The desk pad is not attached to desk 100. However, it could be envisaged to do so by means of gluing and/or screws or the like. 3028735 7 In Figures 4 and 5, there is shown another embodiment in which the desk pad is incorporated into the desk. In Figure 4, the desk pad is in its lowered position and in Figure 5, the desk pad is in its raised position. The system is substantially identical to that shown above. The upper tray is received inside a cavity hollowed out in the plane 101' of the desk 100'.

121 Rods identical to the front 10 and rear rods of the left and right legs of the embodiment of FIGS.

1 to 3 are provided as well as an identical system with endless screws and transverse bars for raising and lowering the plate. The lower plane or bottom of the cavity replaces the function of the lower base 10 of the embodiments of FIGS. 1 to 3. In Figures 4 to 5, a button 44' is incorporated into the desk for controlling motor 43'. The user, depending on the needs, presses the button 44′ to activate the ascent or the descent as he wishes of the tray 1′ and its locking in position as soon as he stops pressing the button. The embodiment of Figures 1 to 3 describes a pad comprising a base 10. However, according to another embodiment, this base 10 could be dispensed with, the lower ends of the rods being placed directly in contact on the plane of the desk.

131 In such an embodiment, the blocking means, for example also in the form of rods 40', endless screw 42 and casing 43, would not be arranged to block the sliding of the lower ends of front rods 4 and 6 by relative to the base 10 but in such a way as to block the sliding of the upper ends 3028735 8 of the rear rods 5 and 7 relative to the plate 1. According to an improvement, it is possible to provide that the 5 rods of the legs do not have the same lengths to ensure that, in the raised position, the plate 1 or 1 'is inclined with respect to the horizontal to facilitate work on the document or the computer he is carrying. 10 According to yet another embodiment, provision could be made for the upper ends of the legs to be slidably mounted not in the width direction of the plate 1 but in the length direction. 15 In addition, according to such an embodiment, provision could also be made for dispensing with the base 10.

141 Furthermore, provision could also be made for the sliding ends of the legs, whether in the widthwise sliding or lengthwise sliding embodiment of the tray 1, to slide in grooves formed in the very thickness of the tray 1, which would have the advantage especially in the case where it is also planned to dispense with the base 200 to reduce as much as possible the thickness of the desk pad as a whole in the folded state. In particular, provision could be made for the slots to be formed in the tray itself or at its respective longitudinal or transverse side edges depending on the chosen positioning of the legs. 30

(19) RÉPUBLIQUE FRANÇAISE

INSTITUT NATIONAL DE LA PROPRIÉTÉ INDUSTRIELLE

COURBEVOIE

(11) **N° de publication :** **3 028 735**

(à n'utiliser que pour les commandes de reproduction)

(21) **N° d'enregistrement national :** **14 02676**

(51) Int Cl[8] : ***A 47 B 21/02*** *(2016.01)*

(12) DEMANDE DE BREVET D'INVENTION A1

(22) **Date de dépôt :** 26.11.14.

(30) **Priorité :**

(43) **Date de mise à la disposition du public de la demande :** 27.05.16 Bulletin 16/21.

(56) **Liste des documents cités dans le rapport de recherche préliminaire :** *Se reporter à la fin du présent fascicule*

(60) **Références à d'autres documents nationaux apparentés :**

( ) **Demande(s) d'extension :** Polynésie-Fr

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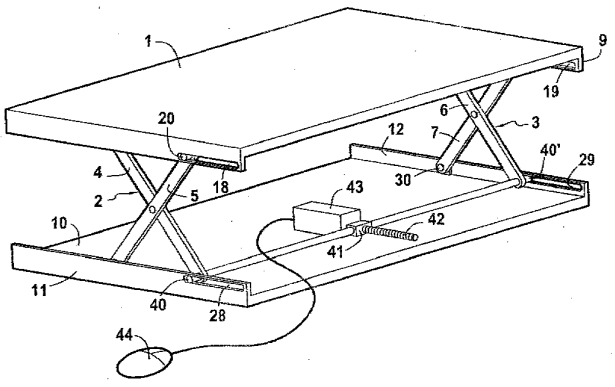
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(54) ELEMENT FORMANT SOUS-MAIN DESTINE A ETRE POSE SUR UN PLAN DE BUREAU.

(57) Elément formant sous-main comportant un plateau (1), notamment de forme rectangulaire, destiné à être posé sur un plan de bureau caractérisé en ce qu'il est prévu des moyens pour faire passer le plateau de l'élément sous-main entre au moins deux positions, l'une des au moins deux positions étant surélevée par rapport à la au moins une autre position.



FR 3 028 735 - A1

La présente invention se rapporte à un élément formant sous-main destiné à être posé sur un plan de bureau pour y recevoir, par exemple, un document, un ordinateur ou analogue sur lequel l'utilisateur doit écrire ou éditer.

La présente invention se rapporte également a un ensemble comportant un bureau et un élément formant sous-main de ce genre.

La station assise pendant de longues durées entraîne des pathologies, notamment des maux du dos. Le corps médical recommande de ne pas rester assis à son bureau pendant de trop longues durées et de prendre la station debout ou de marcher autant que possible.

La présente invention vise un sous-main qui permet d'alléger le mal de dos d'une personne travaillant pendant de longues durées assise à un bureau.

Selon l'invention, un élément formant sous-main comportant un plateau, notamment de forme rectangulaire, destiné à être posé sur un plan de bureau est caractérisé en ce qu'il est prévu des moyens pour faire passer le plateau de l'élément sous-main entre au moins deux positions, l'une des au moins deux positions étant surélevée par rapport à la au moins une autre position.

En prévoyant ainsi des moyens pour surélever le sous-main, on permet à l'utilisateur dès qu'il le souhaite, de pouvoir prendre la station debout tout en pouvant continuer à travailler et, notamment, à pouvoir continuer à écrire sur un document ou éditer sur un ordinateur. Il en résulte que l'utilisateur va pouvoir facilement prendre la station debout pendant son travail puis se

rassoire et éviter ainsi des stations assises prolongées néfastes pour son dos.

Suivant un mode de réalisation préféré de l'invention, les moyens pour passer d'une position à une autre comportent au moins un jambage, de préférence deux jambages, comportant deux tiges mutuellement articulés et dont au moins l'un a une extrémité supérieure qui peut coulisser par rapport au plateau de l'élément sous-main.

Suivant un mode de réalisation préféré de l'invention, il est prévu des moyens pour commander la montée et/ou la descente du plateau de l'élément sous-main par exemple par l'intermédiaire d'une manivelle.

De préférence, les moyens de commande comportent un moteur électrique.

La présente invention se rapporte également à un ensemble comportant un bureau et un élément formant sous-main posé sur le bureau, le plateau du sous-main ayant une superficie inférieure à la superficie du plan de travail du bureau.

Suivant un mode de réalisation préférée de l'invention, l'élément formant sous-main est incorporé au bureau.

Notamment, l'élément sous-main est reçu dans un logement formé dans le plan du bureau et le plateau du sous-main est en affleurement avec le plan du bureau dans une première position et dans une deuxième position, le plateau est surélevé par rapport au plan du bureau.

Suivant un mode de réalisation préférée de l'invention, il est prévu des moyens pour commander la montée ou la descente du plateau du sous-main par rapport au plan de travail du bureau.

De préférence, il est prévu des moyens pour bloquer le plateau dans la position surélevée.

A titre d'exemple, on décrit maintenant des modes de réalisation préférés de l'invention en se rapportant aux dessins dans lesquels :

la figure 1 est une vue en perspective d'un mode de réalisation d'un élément sous-main suivant l'invention dans sa position surélevée ;

la figure 2 est une vue en perspective du sous-main de la figure 1 en sa position rabaissée ;

la figure 3 est une vue en perspective d'un ensemble comportant un bureau et le sous-main des figures 1 et 2 posé sur le bureau ;

la figure 4 est une vue en perspective d'un bureau dans lequel est incorporé un sous-main suivant l'invention dans la position dans laquelle le plateau du sous-main est en affleurement par rapport au plan de travail du bureau ; et

la figure 5 est une vue en perspective représentant le bureau de la figure 4 dans la position dans laquelle le plateau du sous-main est surélevé par rapport au plan de travail du bureau.

A la figure 1 un sous-main suivant l'invention est représenté à l'état surélevé. Le sous-main comporte un plateau 1 de forme sensiblement rectangulaire d'une longueur comprise entre 15 cm et 1,50 m et une largeur comprise par exemple entre 15 cm et 1 mètre. Deux éléments formant jambage 2 et 3 droit et gauche comportent chacun deux tiges avant et arrière respectivement 4, 5 et 6, 7 dont des extrémités sont montées coulissantes.

Le sous-main comporte également une embase 10 inférieure de support de formes et dimensions sensiblement identiques à celles du plateau 1 du sous-main. Le plateau 1 supérieur et l'embase 10 inférieure sont reliés par les jambages 2 et 3.

Le plateau 1 supérieur comporte deux rebords 8 droit et 9 gauche qui font saillies vers le bas du plateau 1 supérieur. l'embase 10 inférieure comporte deux rebords 11 droit et 12 gauche qui font saillies de l'embase 10 inférieure vers le haut.

Il est formé dans les rebords 8 gauche et 9 droit du plateau 1 supérieur deux rainures 18, 19 et il est formé deux rainures 28, 29 dans les rebords 11 et 12.

L'extrémité supérieure des tiges 5 et 7 arrières sont montées coulissantes par rapport au plateau 1 supérieur. Ce coulissement est réalisé par l'intermédiaire d'un ergot 20 cylindrique respectif qui fait saillie latéralement de la tige 5, respectivement 7, et qui est emprisonné dans la rainure 18 droite, respectivement 19 gauche.

Les extrémités inférieures des tiges 5 et 7 sont montées à pivotement par rapport à un point fixe 30 par rapport à l'embase 10 inférieure, notamment au niveau des faces internes des rebords 11, 12 droit et gauche.

Les tiges 4 et 6 avant ont leur extrémité supérieure respective qui sont montées à pivotement par rapport à un point fixe par rapport au plateau 1 supérieur, notamment au niveau des faces internes des rebords 8, 9 droit et gauche, tandis que leurs extrémités inférieures sont montées à coulissement par rapport à l'embase 10 inférieure de la même manière que les tiges 5 et 7 sont montées coulissantes par rapport au plateau 1 supérieur, c'est-à-dire par l'intermédiaire d'un ergot 40, 40' respectif emprisonné respectivement dans les rainures 28, 29. Ces ergots 40, 40' sont réalisés par l'intermédiaire de deux tiges transversales qui s'étendent chacune sur la moitié de la longueur du plateau 10 inférieur. Ces deux ergots 40, 40' en forme de tige, s'étendent chacun à partir d'un boîtier 41 qui est monté coulissant par rapport à une vis 42 sans fin s'étendant perpendiculairement aux deux tiges 40 et 40'. Des moyens de commande, sous la forme d'un moteur 43 électrique, entraînent en rotation la vis 42 pour la faire tourner dans un sens ou dans l'autre, notamment sous la commande d'un pavé à boutons 44 comportant deux boutons gauche et droit respectivement pour faire tourner la vis sans fin 42 dans un sens et dans l'autre. les deux tiges 40, 40' sont solidaires du boîtier 41. Suivant un autre mode de réalisation, on peut prévoir que les tiges 40, 40', la vis sans fin 42 et le boîtier 43 soient agencés non pas pour bloquer le coulissement des extrémités inférieures des tiges avant 4 et 6 par rapport à l'embase 10 mais de manière à bloquer le coulissement des extrémités

supérieures des tiges arrière 5 et 7 par rapport au plateau 1.

Ainsi l'utilisateur, en appuyant sur le bouton gauche du pavé 44, fait tourner la vis sans fin 42 dans un sens pour amener le plateau 1 en position surélevé comme représenté à la figure 1. Lorsqu'il veut abaisser le plateau 1, il appuie sur le bouton droit du pavé 44 ce qui à pour effet de faire tourner la vis 42 dans l'autre sens et entraîner ainsi les tiges 40 et 40' par l'intermédiaire du boîtier 41 vers l'arrière pour atteindre la position représentée à la figure 2 dans laquelle le boîtier 41 est en position de fin de course le long de la tige 42 et le plateau 1 et l'embase 10 sont en contact mutuel. Les géométries respectives des tiges avant et arrière des deux jambages et des rainures sont réalisées de manière à obtenir ces deux positions comme représenté aux figures, c'est-à-dire, une position rabaissée et une position surélevée.

Dans chacun de ces positions d'extrémité, le moteur est coupé et le plateau est ainsi bloqué en position par le blocage du boîtier 41 sur la vis 42 qui ne tourne plus.

A la figure 3, il est représenté suivant une vue en perspective de l'avant, un système constitué d'un bureau 100 comportant un plan de travail 101 monté sur des montants verticaux. Le sous-main est monté à l'avant du bureau. La superficie du plateau 1 (respectivement de l'embase 10) est inférieure à la superficie du plan 101 de travail du bureau 100. Le sous-main n'est pas fixé au bureau 100. Cependant, on pourrait envisager de le faire par l'intermédiaire d'un collage et/ou de vis ou analogue.

Aux figures 4 et 5, il est représenté un autre mode de réalisation dans lequel le sous-main est incorporé au bureau. A la figure 4, le sous-main est dans sa position abaissée et à la figure 5, le sous-main est dans sa position surélevé. Le système est sensiblement identique à celui représenté précédemment. Le plateau 1' supérieur est reçu à l'intérieur d'une cavité creusée dans le plan 101' du bureau 100'. Des tiges identiques aux tiges avant et arrière des jambages gauche et droit du mode de réalisation des figures 1 à 3 sont prévues ainsi qu'un système identique à vis sans fin et barres transversales pour la montée et la descente du plateau. Le plan inférieur ou fond de la cavité remplace la fonction de l'embase 10 inférieure des modes de réalisation des figures 1 à 3. Aux figures 4 à 5, un bouton 44' est incorporé dans le bureau pour la commande du moteur 43'.

L'utilisateur, en fonction des besoins, appuie sur le bouton 44' pour activer la montée ou la descente comme il le souhaite du plateau 1' et son blocage en position dès qu'il cesse d'appuyer sur le bouton.

Le mode de réalisation des figures 1 à 3 décrit un sous-main comportant une embase 10. Cependant, suivant un autre mode de réalisation, on pourrait se passer de cette embase 10, les extrémités inférieures des tiges étant posées directement en contact sur le plan du bureau. Dans un tel mode de réalisation, les moyens de blocage, par exemple également sous la forme de tiges 40', vis sans fin 42 et boîtier 43, seraient agencés non pas pour bloquer le coulissement des extrémités inférieures de tiges avant 4 et 6 par rapport à l'embase 10 mais de manière à bloquer le coulissement des extrémités

supérieures des tiges arrière 5 et 7 par rapport au plateau 1.

Suivant un perfectionnement, on peut prévoir que les tiges des jambages n'aient pas les mêmes longueurs pour faire en sorte, qu'en position relevée, le plateau 1 ou 1' soit incliné par rapport à l'horizontale pour faciliter le travail sur le document ou l'ordinateur qu'il porte.

Suivant encore un autre mode de réalisation, on pourrait prévoir que les extrémités supérieures des jambages soient montées coulissantes non pas dans la direction en largeur du plateau 1 mais dans la direction en longueur. En outre, suivant un tel mode de réalisation, on pourrait également prévoir de se passer de l'embase 10. En outre, on pourrait également prévoir que les extrémités coulissantes des jambages, que ce soit dans le mode de réalisation à coulissement dans le sens de la largeur ou à coulissement dans le sens de la longueur du plateau 1, coulissent dans des rainures formées dans l'épaisseur même du plateau 1, ce qui aurait pour avantage notamment dans le cas où on prévoit également de se passer d'embase 200 de diminuer au maximum l'épaisseur du sous-main dans son ensemble à l'état replié. En particulier, on pourrait prévoir que les fentes soient formées dans le plateau même ou au niveau de ses bords latéraux respectivement longitudinaux ou transversaux suivant le positionnement choisi des jambages.

REVENDICATIONS

1. Elément formant sous-main comportant un plateau (1), notamment de forme rectangulaire, destiné à être posé sur un plan de bureau caractérisé en ce qu'il est prévu des moyens pour faire passer le plateau de l'élément sous-main entre au moins deux positions, l'une des au moins deux positions étant surélevée par rapport à la au moins une autre position.

2. Elément suivant la revendication 1, caractérisé en ce que les moyens pour passer d'une position à une autre comportent au moins un jambage (2 ; 3) comportant deux tiges (4, 5 ; 6, 7) mutuellement articulés et dont au moins l'une (5 ; 7) a une extrémité supérieure qui peut coulisser par rapport au plateau de l'élément sous-main.

3. Elément suivant la revendication 1 ou 2, caractérisé en ce qu'il est prévu des moyens (41, 42, 43, 44) pour commander la montée et/ou la descente du plateau de l'élément sous-main par exemple par l'intermédiaire d'une manivelle.

4. Elément suivant la revendication 3, caractérisé en ce que les moyens de commande comportent un moteur électrique.

5. Ensemble comportant un bureau et un élément formant sous-main suivant l'une des revendications précédentes posé sur le bureau, le plateau du sous-main ayant une superficie inférieure à la superficie du plan de travail du bureau.

6. Ensemble suivant la revendication 5, caractérisé en ce que l'élément formant sous-main est incorporé au bureau.

7. Ensemble suivant la revendication 6, caractérisé en ce que l'élément sous-main est reçu dans un logement formé dans le plan du bureau et le plateau du sous-main est en affleurement avec le plan du bureau dans une première position et dans une deuxième position, le plateau est surélevé par rapport au plan du bureau.

8. Ensemble suivant l'une des revendications 5 à 7, caractérisé en ce qu'il est prévu des moyens pour commander la montée ou la descente du plateau du sous-main par rapport au plan de travail du bureau.

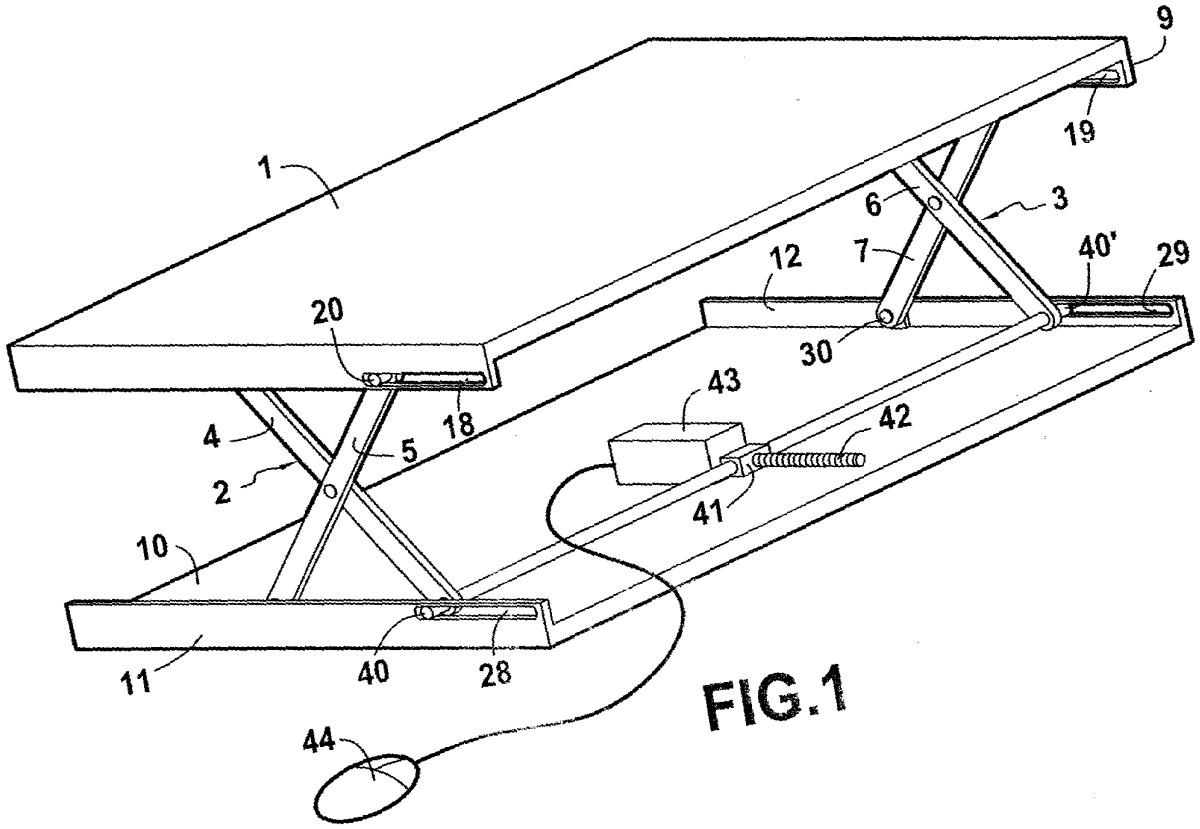

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44

FIG.1

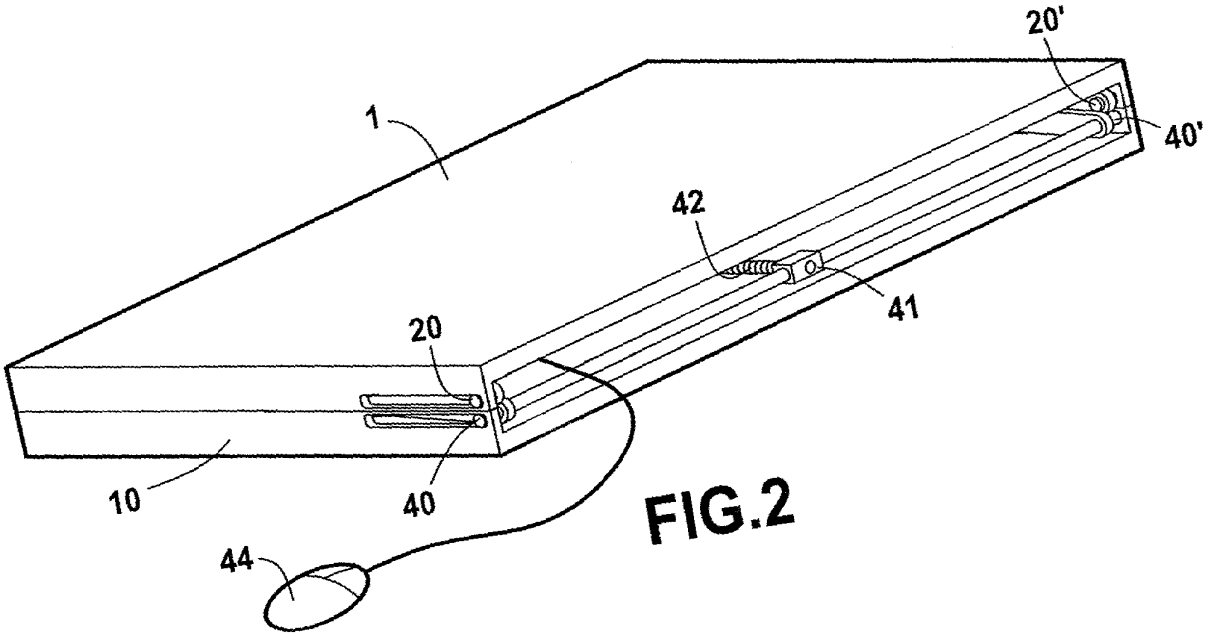

20'
1
40'
42
41
20
10
40
44

FIG.2

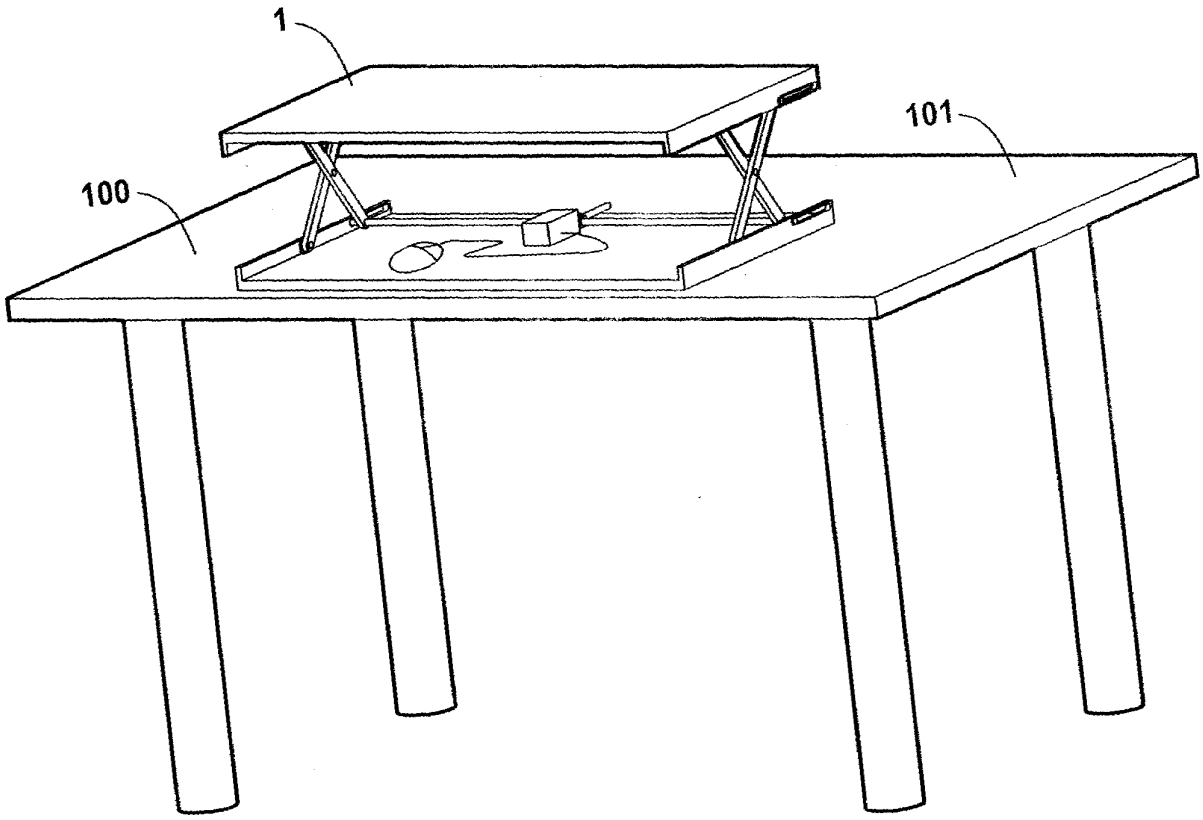


FIG.3

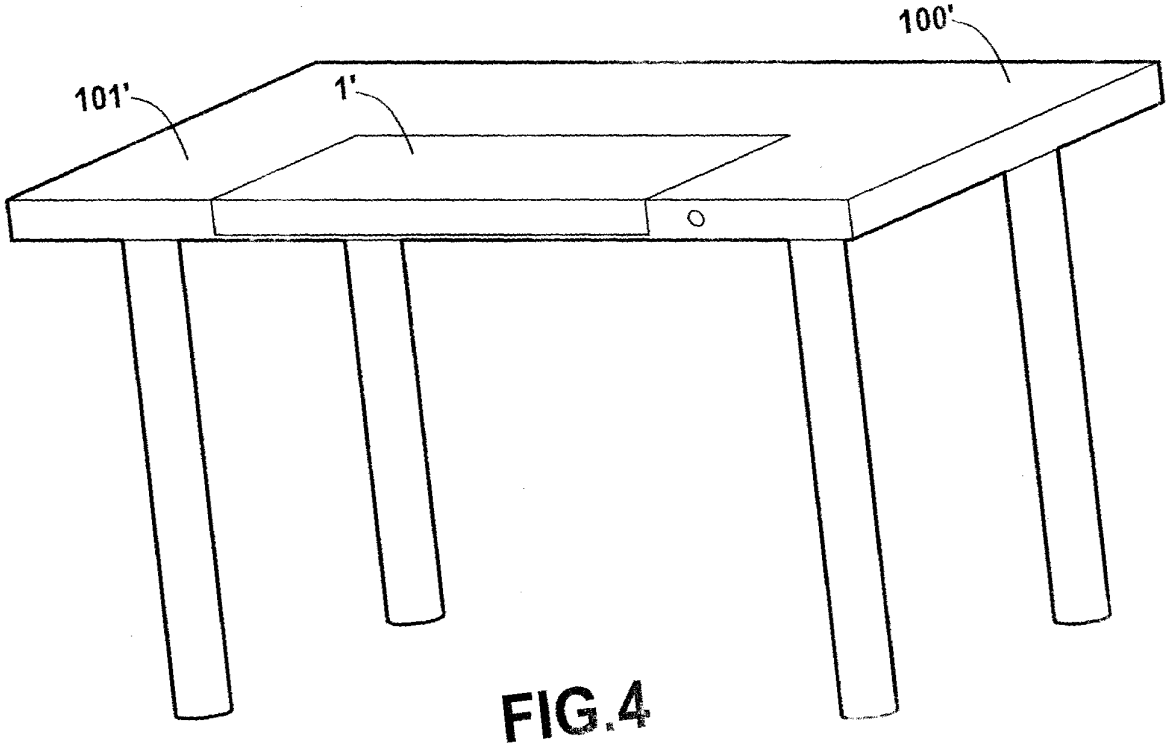


FIG.4

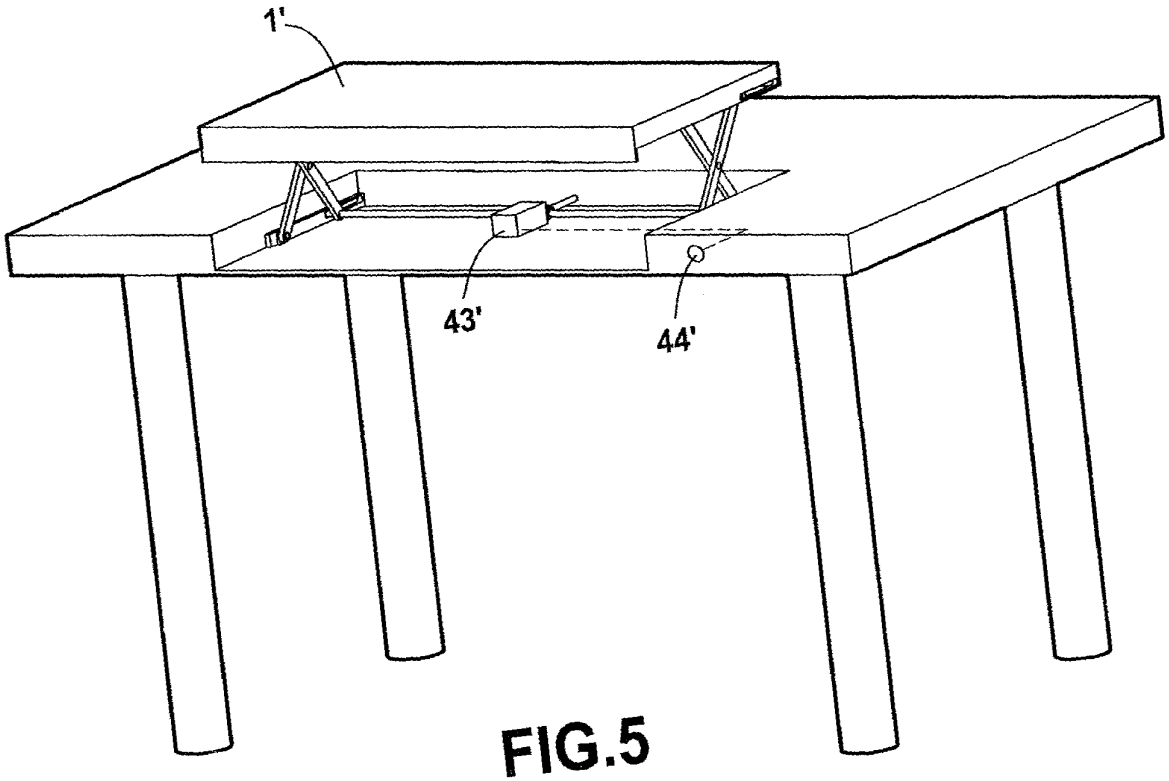


FIG.5

RÉPUBLIQUE FRANÇAISE

INSTITUT NATIONAL DE LA PROPRIÉTÉ INDUSTRIELLE

RAPPORT DE RECHERCHE PRÉLIMINAIRE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

N° d'enregistrement national

FA 803491
FR 1402676

DOCUMENTS CONSIDÉRÉS COMME PERTINENTS		Revendication(s) concernée(s)	Classement attribué à l'invention par l'INPI
Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes		
X	US 2011/168062 A1 (DELLAVECCHIA MICHAEL [US]) 14 juillet 2011 (2011-07-14) * alinéa [0003] - alinéa [0039]; figures 1-3 *	1-8	A47B21/02
X	US 2 531 880 A (HERRING WAYLAND F) 28 novembre 1950 (1950-11-28) * colonne 1, ligne 23 - colonne 3, ligne 16; figures 1-4 *	1-3,5-8	
X	US 2014/144352 A1 (ROBERTS CHRISTOPHER JOHN [US]) 29 mai 2014 (2014-05-29) * alinéa [0008] - alinéa [0040]; figures 1-5b *	1-3,5,8	
X	US 2002/078866 A1 (PALMER EDNA H [US]) 27 juin 2002 (2002-06-27) * alinéa [0006] - alinéa [0030]; figures 1-7 *	1-3,5,8	
			DOMAINES TECHNIQUES RECHERCHÉS (IPC)
			A47B

Date d'achèvement de la recherche	Examinateur
7 août 2015	Kohler, Pierre

CATÉGORIE DES DOCUMENTS CITÉS

X : particulièrement pertinent à lui seul
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A : arrière-plan technologique
O : divulgation non-écrite
P : document intercalaire

T : théorie ou principe à la base de l'invention
E : document de brevet bénéficiant d'une date antérieure à la date de dépôt et qui n'a été publié qu'à cette date de dépôt ou qu'à une date postérieure.
D : cité dans la demande
L : cité pour d'autres raisons

& : membre de la même famille, document correspondant

1

EPO FORM 1503 12.99 (P04C14)

ANNEXE AU RAPPORT DE RECHERCHE PRÉLIMINAIRE RELATIF A LA DEMANDE DE BREVET FRANÇAIS NO. FR 1402676 FA 803491

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche préliminaire visé ci-dessus.
Les dits membres sont contenus au fichier informatique de l'Office européen des brevets à la date du 07-08-2015
Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets, ni de l'Administration française

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
US 2011168062 A1	14-07-2011	AUCUN	
US 2531880 A	28-11-1950	AUCUN	
US 2014144352 A1	29-05-2014	AUCUN	
US 2002078866 A1	27-06-2002	AUCUN	

EPO FORM P0465

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82

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DESCRIPTION DE102013008020A1

[0001]

13 The present invention relates to a loading device, suitable in particular for transporting freight on a traffic area and loading it into or unloading it from a transport vehicle, comprising a base structure, a loading structure with a freight receptacle and a lifting device that acts double-acting between the base structure and the loading structure.

[0002]

20 In the state of the art, there are a number of proposals for loading devices of the type specified above, which all serve the purpose of making loading and unloading easier.

22 Facilitate the unloading of transport vehicles with freight, so that this - including the transport of the freight on a traffic area - can be done by a single person if possible. In this way, for example, the personnel costs for delivering freight are to be reduced by making a co-driver who only works for a short time during the loading process superfluous. Since the lifting device is double-acting, it can not only be used for lifting or Lowering the loading structure (including the loaded freight) are used, but in the same way - when the loading structure is placed on the loading area of the transport vehicle - for raising the base structure in order to stow the loading device on the loading area of the transport vehicle.

[0003]

33 The relevant prior art is represented in particular by publications such as FR 1506606, DE 25 30 634, US 4061237, WO 83/04226, US 4613272, WO 92/07746, EP 889000, US 2005/0042068 and CN 201896055 U

[0004]

39 Although there is clearly an (increasing) need for charging devices of the type mentioned at the outset, the various proposals have not been able to establish themselves in practice, with one exception.

42 And the loading device sold under the trade name “Innolift” according to WO 92/07746 or CN 201896055 U also does not meet the expectations placed on it.

[0005]

47 The object of the present invention is to provide a charging device of the type specified at the outset, which is characterized by improved suitability for practical use.

[0006]

52 This problem is solved according to the present invention in that, in a loading device of the type specified at the outset, the loading structure has a lifting frame, on which the lifting device acts, and a freight carrier, which is mounted on the lifting frame via a pull-out guide with a pull-out direction oriented transversely to the lifting direction and which Freight pick-up comprises, wherein a chassis serving to move the loading device on the traffic area is part of the freight carrier.

58 In a synergetic functional interaction with one another, the features that determine the charging device according to the invention in combination with one another result in a number of serious practical advantages, which in particular substantially expand the possible uses of the charging device, facilitate its handling and increase safety by a decisive degree, while at the same time all of these Advantages having loading device structurally comparatively simple - and can be designed as light and compact - and thus reliable.

64 Especially with regard to safety - in conjunction with the other characteristic features of the loading device according to the invention - it is responsible that the loading structure is constructed in several parts in the sense that the freight pick-up is arranged on a freight carrier, which is mounted on a lifting frame via a pull-out guide , which in turn is attacked by the lifting device which causes the lifting and lowering of the loading structure when the base unit is standing on the traffic area.

70 Because in this way the cargo can be moved relative to the traffic area (departure area) into the loading space or onto the loading area (destination area) of the transport vehicle without simultaneous movement of the base structure. The loading device, i. H. whose basic structure is moved on the traffic area. This is an invaluable advantage, especially with regard to applications in which there is a comparatively uneven traffic surface or other comparatively uneven subsoil (e.g. when operating construction sites), because such an uneven subsoil when using known loading devices (particularly those loaded with heavy freight) their method much more difficult and also represents a significant safety risk, especially when the loading device is moved with a raised load due to the risk of tipping over.

79 Unlike the prior art (US 4613272, WO 92/07746 and CN 201896055 U), in which the base

structure is pushed a little way under the transport vehicle, the loading device according to the invention can also be used in the (often actually present) Use situation that the transport vehicle is driven up to a curb, typically so far that it is about under the loading sill. The workflow, as is possible using the invention, is more homogeneous and characterized by fewer interruptions than is the case with the prior art (in particular using charging devices according to WO 92/07746 and CN 201896055 U), namely in particular in view of the fact that the charging device is typically still maneuvered on the loading area of the transport vehicle after charging. According to the state of the art, this requires the load to be transferred again - by partially lifting the loading structure - to the base structure that has the running gear, whereas with loading devices according to the invention the load is immediately deposited on the running gear arranged on the freight carrier (in particular on wheels, which together with the load-bearing structural portions of the cargo carrier are part of the undercarriage used to move the loader).

92 A number of other advantages will become apparent from the following detailed explanation of the present invention and specific preferred further developments.

[0007]

97 The above explanations of the present invention, as well as the following ones, show that the features defining the charging device according to the invention are to be understood broadly, unless otherwise stated.

100 Thus, the base structure can have any desired constructive and static shape, by means of which the relevant function of supporting the lifting structure on the traffic area can be fulfilled. Any device is suitable as a lifting device, by means of which the loading structure can be raised (and lowered) when the base structure is supported on the traffic area and by means of which it can be lifted (and lowered) when it is fixed, i.e. H. For example, on the bed of a transport vehicle supported loading structure can raise (and lower) the base structure. The term “traffic area” is also to be interpreted broadly and includes any viable, i. H. accessible or navigable subsoil. Furthermore, “lifting frame” is to be understood as meaning any structure that is suitable for being connected to the lifting device and for introducing the forces transmitted from the freight carrier (including the freight that has been picked up) onto the lifting frame via the pull-out guide into the lifting device. There are also no design restrictions with regard to the “pull-out guide”; on the contrary, such a “pull-out guide” can be implemented by any essentially linearly variable-length structure that is capable of transmitting forces transversely to the pull-out direction.

114 Even the statement that the pull-out direction is oriented "transversely" to the lifting direction means, in the broadest sense, no more than that the pulling-out direction is oriented more or less at right angles to the lifting direction, i.e. more or less horizontally in particular in the case of a more or less vertical lifting direction.

[0008]

121 Also and especially with regard to the "chassis" there are hardly any design restrictions.

122 While the present invention can advantageously be implemented for most applications with wheeled undercarriages, which preferably have four wheels, this is by no means mandatory. Other suitable chassis that can be used advantageously for certain applications are, for example, crawler chassis, skid chassis, air cushion chassis, magnetic levitation chassis and the like. The sole decisive factor is that movement on solid ground such as the traffic area and/or the loading area of a transport vehicle is possible. If the present invention is explained in the following using an embodiment variant in which the running gear is designed as a wheeled running gear, this serves solely to facilitate understanding, without being associated with a restriction to wheeled running gears. Unless otherwise stated, the points shown apply in the same way to other types of running gear.

[0009]

135 According to a first preferred development of the invention, the running gear—which forms part of the freight receptacle—comprises (preferably four) wheels, which are particularly preferably arranged on the edge of the freight carrier, ideally directly under the lateral boundaries of the freight carrier or directly outside next to them.

139 This results in a large track width of the chassis, which represents an important safety-related aspect. In addition, wheels with a comparatively large diameter can be used in this case in particular, which makes handling easier and—once again with regard to using the loading device on an uneven surface—is also a safety-relevant aspect. In the interests of good handling, at least some of the wheels are preferably steerable, i. H. the wheels in question are z. B. designed as castors (possibly lockable for driving straight ahead); this facilitates the maneuvering of the loading device on the traffic area and/or the loading area of the transport vehicle. In addition, at least some of the wheels are preferably equipped with brakes, which are then applied during the loading process, for example, when the freight carrier has been placed on the loading area of the transport vehicle and - using the lifting device - the base structure has to be raised in order to then be pushed back under the loading structure will.

150 (In view of the possibility of accommodating the lifting device as flatly as possible under the loading structure to save space, the use of a scissor lift, which is explained in detail below, is particularly preferable. For the handling of the loading device it is advantageous if the brakes can be operated remotely, for example from a handle which is arranged at the rear end of the loading device and is equipped with appropriate operating elements.

[0010]

158 Since the base structure does not have to be moved on the ground when the load is raised, sufficient security against tipping can typically be achieved with a base structure that does not extend laterally beyond the track width of the wheels.

161 This enables a compact construction of the loading device, whereby in general the base structure even fits completely in the space between the wheels. However, it can also have support feet on the side opposite the pull-out direction, the overhang of which essentially

corresponds to the track of the wheels. For extreme applications, according to yet another development of the invention, it is also possible to equip the base structure with extendable, extendable and foldable support legs in order to further increase stability.

[0011]

170 Since the running gear suitable for transporting the loading device (possibly together with the freight that has been picked up) on the traffic area is part of the freight carrier, no wheels need to be arranged on the base structure.

173 This saves weight and is a great advantage from a static point of view. Absolutely mandatory is the absence of wheels or However, no rollers on the base structure. For example, (small) rollers can be provided, which only serve to support the weight of the base structure when moving the loading device on the traffic area, so that it does not have to be lifted by the lifting device.

[0012]

181 According to yet another preferred development of the present invention, the lifting device comprises a scissor lift.

183 This is favorable with regard to the kinematics as well as with regard to the statics and the possibility of designing the loading device according to the invention to be extremely compact and light. In particular, if a scissor lift is used as part of the lifting device, the latter can be folded up particularly flat and space-savingly, so that it can be accommodated under the loading structure in this configuration. A particular advantage in this respect is that at least one of the links of the scissor lift is cranked and/or a drive element engages on one of the links offset from the pivot point of the scissor lift, which makes it possible to provide sufficiently high lifting forces with particularly flat scissor lifts when the loading structure is lowered. In terms of favorable kinematic conditions, the bearing of the scissor lifter on the base structure in the direction of extraction (the pick-up of freight) is particularly preferably designed as a fixed bearing; i.e. H. the bearing of the scissor lifter on the base structure opposite the pull-out direction is designed as a floating bearing (with a support element guided in at least one linear guide).

[0013]

199 Another preferred development of the present invention is characterized in that the lifting device comprises an electric or an electro-hydraulic drive unit.

201 This enables compact and at the same time very powerful loading devices, with the use of electro-hydraulic drive units for the lifting devices being particularly advantageous, specifically in the case of larger loading devices intended for lifting particularly heavy freight. An electrical storage unit of the drive unit that is provided in this respect is particularly preferably arranged on the loading structure, specifically particularly preferably on the lifting frame on its front side

in the extension direction. This contributes to a comparatively favorable weight distribution, in particular with regard to the phase of lifting or Lowering the base structure when the freight carrier is placed on the loading area of the transport vehicle. If the electrical storage unit has a charging connection which can be connected to the electrical system of a transport vehicle (designed as a motor vehicle), then a comparatively small electrical storage unit is sufficient for typical applications.

212 This is advantageous in terms of cost, weight and size of the loading device. It is also favorable to design the electrical storage unit of the drive unit as a replaceable battery. This allows the memory unit to be made very small in size to fit into a relatively compact charger without limiting the uses of the charger. A removable battery removed from the charging device can be charged on the electrical system of a transport vehicle.

[0014]

220 In yet another preferred development of the present invention, a further drive unit brings about the extension and retraction of the freight carrier relative to the lifting frame.

222 Such an extension drive can, for example, be designed electrically. Such an extension drive could also include a hydraulic cylinder, for example, which is supplied by the hydraulic unit of the electro-hydraulic drive unit of the lifting device. From the point of view of operational safety, it is advantageous if a controller acts on the extension drive, which controls the extension movement, taking into account safety-relevant parameters. For example, the signal from at least one sensor arranged on the freight carrier, preferably in the area of the front wheels, and used to detect the position of the freight carrier relative to a loading area can be processed in the controller in such a way that the (continued over a fixed extension path of, for example, 400 mm)) Extension of the cargo carrier is prevented if the chassis is not at least partially over a loading area. The height of the chassis of the freight carrier above the loading area can also be taken into account in the controller in such a way that (further) extension of the freight carrier is prevented if the chassis is above a permissible value above a loading area.

234 Furthermore, in the control of the extension drive, signals from load sensors, which are assigned to support feet of the base structure and/or wheels of the chassis, can be evaluated in the sense that (further) extension of the freight carrier is omitted if a load situation indicating an increasing risk of tipping is determined . The safety-relevant parameters mentioned can also (or alternatively) also be used to generate a notification or warning are used.

[0015]

242 From a static point of view, it can be advantageous if the base structure has a comparatively large, continuous bearing surface for its support on the traffic area.

244 Conversely, however, it can also be advantageous for certain applications to arrange pronounced support feet on the base structure. This applies in particular if at least one support leg is assigned a load sensor (see above) that monitors the load situation and, for example, triggers a signal when the load distribution approaches a point that is critical in terms of

stability. Such load sensors can also be assigned to at least one of the wheels arranged on the freight carrier with the same advantage.

[0016]

253 The freight carrier and the lifting frame can particularly preferably be locked relative to one another.

255 And the lifting device can preferably be locked in a partially raised position of the loading structure. This makes it possible to secure the loading device on the loading area for the journey of the transport vehicle in that the loading structure is raised by means of the lifting device so far that the wheels arranged on the freight carrier are lifted off the loading area, with the locking of the freight carrier relatively to the lifting frame, the position of the cargo carrier and thus the cargo is secured relative to the base structure. Advantageously, such a (partially raised) position of the lifting device is permanently specified, for example via a corresponding setting in a controller of the loading device, in which the chassis of the freight carrier is just brought out of contact with the ground, so that the entire weight of the loading device and load - with the lowest possible center of gravity - is supported exclusively via the base structure on the ground.

266 To secure the freight on or on the freight carrier, the latter preferably has holders suitable for attaching fastening and/or securing means for the freight, for example eyelets, bores, openings or hooks.

[0017]

272 For the operation of the loading device including its maneuvering or

273 For maneuvering and the actuation of drives provided, the loading device preferably has a handle at its rear end opposite the pull-out direction, which handle is equipped with corresponding operating elements that serve to actuate the drives. Such a handle is preferably arranged on the base structure or the lifting frame. The arrangement and design of the handle is preferably such that it neither prevents a (preferably complete) sliding of the base structure under the loading structure nor constantly protrudes significantly beyond the minimum contour of the main components of the loading device (with the loading structure lowered and the freight carrier retracted). In this sense, the handle can be attached to the base structure or to the lifting frame so that it can be pivoted or folded and/or pushed in, for example in an articulated manner. The handle and/or its attachment to the base structure or the lifting frame is preferably designed in such a way that handles arranged on it can also be used if the height of the base structure or

285 Lift frames do not change their own height above the ground, or only change it slightly. Against the same background, according to another preferred development, it is particularly advantageous if the handle is an extendable, e.g. B. telescopic extendable or shortenable drawbar; because this facilitates the operation of the loading device in its intended use, during which the height of the lifting frame and the base structure changes over the traffic area. It is

particularly convenient if the length of the drawbar can be changed using a length adjustment drive. In the interest of further increased user-friendliness, this can be coupled in phases with the lifting drive in the sense that the length of the drawbar is automatically shortened when the component (base structure or lifting frame) to which it is attached is lifted by means of the lifting device. If the drawbar is attached to the lifting frame, a (phased) inverse coupling of the length adjustment drive of the drawbar with the drive of the lifting device must be provided for this.

297 From an ergonomic point of view, it is also advantageous if the extension direction of the drawbar is oriented at an angle to the lifting direction, i. H. in particular is slightly inclined backwards.

[0018]

303 For the greatest possible variety of usability of the loading device according to the invention, in this case, according to yet another preferred development, the freight carrier has an exchangeable, function-specific or application-specific attachment.

306 Such an attachment can, for example, be a (level) loading platform, a bulk goods receptacle or a special mount (e.g. B. for a cable drum).

[0019]

311 Especially large loading devices can be equipped with an additional drive acting on at least one of the wheels, which can be used to support the operator when moving the loading devices on the (possibly uneven) traffic area or the loading area of the transport vehicle (including maneuvering).

[0020]

318 In terms of the above explanations of the invention, the process that takes place when it is used is as follows: freight or

320 Load is carried on a cargo carrier, which is part of a liftable loading structure and has undercarriage serving for locomotion, received on an exit surface.

322 A base structure is set down on the starting surface, and the loading structure—supported on the base structure—is raised to such an extent that the chassis of the freight carrier is above the level of a target surface that is elevated relative to the starting surface. The freight carrier is extended transversely to the lifting direction and is moved over the target area, without the base structure being moved at the same time, with the freight carrier being supported with its chassis on the target area during that process (possibly after being lowered). When the cargo carrier is fully seated on the target surface, the base structure is fully raised and retracted toward the cargo receptacle and traversed over the target surface. A movement of the freight or Load on the target area by means of the chassis of the freight carrier can follow, as well as securing the position by lifting the freight carrier chassis from the target area while placing the

base structure on the target area.

[0021]

336 The loading device according to the invention can have at least one auxiliary roller that can be variably positioned and is arranged on the front side of the freight carrier, although this is not necessary for typical applications.

339 If necessary, this can be used when transferring the freight carrier onto the loading area of the transport vehicle, for example if the base structure is unstable due to an unstable subsoil or if the loading device could not be driven directly to the transport vehicle for any reason.

[0022]

345 It can be seen from the above explanations that the loading or

346 Unloading of transport vehicles using the loading device according to the invention is just one example of many conceivable applications. The loading device according to the invention, which in this respect could also be referred to as a combined conveying and lifting device, can also be used in various other application environments, for example in picking and storage technology.

[0023]

354 The present invention is explained in more detail below using two exemplary embodiments illustrated in the drawing.

356 while showing

[0024]

360 1 in side view a first embodiment of a charging device according to the invention in a first configuration,

[0025]

365 FIG. 2 in a perspective view the embodiment according to FIG. 1 in its first configuration,

[0026]

369 3 in side view the embodiment according to FIGS. 1 and 2 in a second configuration,

[0027]

373 4 shows a perspective view of the embodiment according to FIGS. 1 to 3 in its second

configuration,

[0028]

378 5 in side view the embodiment according to FIGS. 1 to 4 in a third configuration,

[0029]

382 6 shows a perspective view of the embodiment according to FIGS. 1 to 5 in its third configuration,

[0030]

387 7 shows a perspective view of a second embodiment of a charging device according to the invention in a first configuration,

[0031]

392 8 shows the embodiment according to FIG. 7 in a second configuration,

[0032]

396 9 shows the embodiment according to FIGS. 7 and 8 in a third configuration

[0033]

400 10 shows the embodiment according to FIGS. 7 to 9 in a fourth configuration and

[0034]

404 11 in an enlarged representation in a vertical section a loading device with a lifting device having a preferred scissor lifter.

[0035]

409 The components shown in Figures 1 through 6 in various configurations (i.e.

410 Operating situations) and views shown loading device 1 is used to transport freight F on a traffic area V and the loading of freight into a transport vehicle or unloading from this.

[0036]

415 The loading device comprises three main components, namely a base structure 2 , a loading

structure 3 and a lifting device 4 which acts between the base structure 2 and the loading structure 3 and serves to raise and lower the loading structure 3 .

418 The lifting device 4 is double-acting in the sense that it is also suitable for lifting the base structure 2 when the loading structure 3 is stationary.

[0037]

423 The base structure 2 is designed as a base frame 5 with two longitudinal members 6 and two transverse members 7 extending between them and transversely thereto.

425 On both sides are from the longitudinal beams 6 from two stiffened support feet 8 sideways.

426 In terms of a modification of the base structure 2, which may be expedient for reasons of stability, it is also possible to use extendable, extendable or fold-out support feet with a wider overhang when in use.

[0038]

432 The loading structure 3 , which has a freight receptacle 10 - here designed as a loading platform 9 - comprises a lifting frame 11 , a freight carrier 12 with the loading platform 9 and a pull-out guide 13 , by means of which the freight carrier 12 can be pulled out on the lifting frame 11 (arrow A). is.

436 The lifting frame 11 comprises longitudinal beams 14 and transverse beams 15 extending between them and transversely thereto.

438 The lifting device 4 acts on it.

439 The extension direction A, in which the freight carrier 12 can be extended from its position essentially aligned with the lifting frame 11 into a position offset with respect to the lifting frame 11, is oriented transversely to the lifting direction (arrow B), which is defined by the lifting and lowering movement of the Loading structure 3 is defined relative to the base structure 2.

443 By using an intermediate rail 16, the pull-out guide 13 is designed as a full extension, so that the freight carrier 12 is completely offset in relation to the lifting frame 11 in its extended position.

446 The freight carrier 12 has holders (not shown in detail) that are suitable for attaching fastening and/or securing means for the freight F.

448 In terms of an application-related modification, the freight carrier 12, adapted to the respective specific use, could also have a bulk goods receptacle (such as a trough or the like) or a special mount (such as a cable drum mount or the like) instead of a loading platform 9.

[0039]

454 The lifting device 4 comprises a scissor lift 17 with two crossed pairs of links 19 , 20 which are connected to one another in an articulated manner at the crossing point 18 .

456 Each link pair 19 , 20 is articulated at one end to the relevant component via a fixed bearing 21 , 22 and is guided at its other end to the other component along a linear guide 23 , 24 so as to

be displaceable.

459 The first pair of links 19 is at its lower end 25, which is at the front in the extension direction A, and is articulated to the base frame 5 via a fixed bearing 21, and is guided at its upper end 26 on the lifting frame 11 so that it can be displaced along a linear guide 23; and the second pair of links 20 is articulated at its upper end 27 to the lifting frame 11 via a fixed bearing 22 and is guided at its lower end 28 on the base frame 5 along a linear guide 24 so as to be displaceable.

465 The crossing point 18 of the two pairs of links 19, 20 moves accordingly when the loading structure 3 is raised on a circular path around the fixed bearing 21 of the first pair of links 19 and moves (also) with a movement component in the extension direction A. In the sense of a - for kinematic reasons possibly expedient - modification of the scissor lifter 17 can also (known as such) cranked handlebars are used.

[0040]

473 Four wheels 29 , 30 for moving the loading device 1 on the traffic area V—for transporting the freight F thereon—are arranged on the freight carrier 12 , specifically on the edge thereof directly below the side edges 31 .

476 They form a chassis 43 with the frame parts 42 of the freight carrier 12 .

477 The front wheels 29 - in extension direction A - are designed as fixed castors, the rear wheels 30 on the other hand as swivel castors, although other wheel designs (e.g.

479 B. four castors) are possible.

480 The wheels 29 , 30 have (lockable) brakes, by means of which the freight carrier 12 or the loading device 1 can be prevented from unintentionally rolling away. In contrast, no wheels are arranged on the base structure 2 in the present case. The support feet 8 of the base structure 2 are dimensioned in such a way that they fit between the rear wheels 30 of the freight carrier 12 . As a modification, however, the rear support feet 8 could also be moved backwards behind the rear wheels 30 and in this case be dimensioned such that their outreach essentially corresponds to the track of the wheels 29 , 30 . However, the base structure 2 should not extend laterally beyond the track width of the wheels 29 , 30 - in the interest of easy handling of the loading device 1 .

[0041]

492 The loading device 1 has several drives.

493 In particular, the lifting device 4 is equipped with a drive unit. This comprises two hydraulic cylinders 32 arranged parallel to one another, which, articulated to one of the crossbeams 15 of the lifting frame 11, extend between the lifting frame 11 and the pivot pin arranged at the crossing point 18 of the link pairs 19, 20 of the scissor lift 17. The loading of the hydraulic cylinder 32 is a - not shown - hydraulic unit whose pump is electrically operated. The electrical storage unit of the drive unit is arranged on the freight carrier 12 . It has a charging connection that can be connected to the electrical system of a transport vehicle designed as a motor

vehicle. Alternatively, in particular for charging devices with reduced power, for example the purely electric design of the drive unit of the lifting device 4 would be possible.

[0042]

505 By means of a further drive, namely an electric extension drive acting between the lifting frame 11 and the freight carrier 12, the freight carrier 12 can be extended into its extended position and retracted into its position aligned with the lifting frame 11.

508 Furthermore, for example by locking the extension guide 13 or blocking the extension drive, the freight carrier 12 can be locked relative to the lifting frame 11 and the lifting device 4 can be locked in a partially raised position of the loading structure 3 . In this way, the loading device 1 (and the freight F picked up) is secured on the loading area of the transport vehicle during transport, namely by locking the freight carrier 12 relative to the lifting frame 11 and lifting the loading structure 3 as a whole so far that the wheels 29 , 30 no longer lie on the loading area, so that the entire weight of freight F and loading device 1 is supported on the loading area via their base frame 5 .

[0043]

519 The service or

520 In the embodiment according to FIGS. 1 to 6 , the various drives are actuated by an operator using operating elements which are integrated into the handles 33 attached to the freight carrier 12 . In this respect in particular, the second embodiment illustrated in FIGS. 7 to 10 takes a different approach. Because in this case, a handle 35 is arranged on the lifting frame 11 at its end 34 opposite the extension direction A, which has operating elements 36 for actuating the various drives and which also serves to hold the loading device 1 during its movement on the traffic area or the loading area to direct or maneuver the transport vehicle.

[0044]

530 The handle 35 has a drawbar 37 which is inclined slightly backwards and can be extended telescopically from its stowed position (FIG. 7) into an operating position (FIG. 8).

532 The length adjustment drive that brings about the adjustment of the length of the drawbar 37 is inversely coupled to the drive unit of the lifting device 4 via the control of the loading device 1 in the sense that when the loading structure 3 is raised, the length of the drawbar 37 is essentially shortened to the extent , as the loading structure 3 is lifted, so that as a result the handles 38 of the handle 35 remain at least substantially at a constant height when lifting the loading structure 3. The same applies when lowering the loading structure 3 . In this embodiment, the brakes assigned to the wheels 29 , 30 can also be actuated via operating elements 36 arranged on the handle 35 .

[0045]

543 Other significant deviations of the embodiment according to FIGS. 7 to 10 from that according to FIGS basic function, so that the above explanations of the first embodiment essentially also apply to the second.

546 The wheels 29 , 30 in the second embodiment are also designed differently than in the first embodiment. These are arranged laterally on the freight carrier 12 so that they can have a comparatively large diameter—in the interests of increased suitability for use on uneven traffic surfaces.

[0046]

553 Incidentally, load sensors in particular, which are associated with the wheels 29 , 30 and/or the support feet 8 of the base structure 2 , can be connected to the controller of the loading device.

556 By monitoring the load situation on the support legs 8 and/or the wheels 29, 30, load conditions that could become critical for the stability of the loading device 1 can be identified at an early stage, and a (e.g. B. acoustic) warning and / or automatic locking of one or more drives.

[0047]

562 As for the embodiment illustrated in Figure 11, this is readily explained from the above explanations of Figures 1 to 10.

564 It should be noted, however, that the easily recognizable slight offset of the links 19 and 20 of the scissor lift 17 is such that the joint provided at the crossing point 18 is not exactly on the connecting lines VL19 and VL20 of the two bearings arranged at the ends of the links 19, 20, but rather slightly offset above these connecting lines. Conversely, the articulation point 40 of the hydraulic cylinder 32 on the links 19 is slightly offset from the connecting line VL19 from its end bearings downwards. This results in a scissor lift 17 that is so flat in its (shown) fully retracted configuration that it does not only fit under the loading structure 3 (projecting slightly upwards between the pull-out guides 13), but also has sufficient ground clearance 41 remains, and that with a sufficiently strong dimensioning of the links 19, 20 for lifting heavy loads and a kinematics of the drive adapted to lifting heavy loads.

574 It can also be seen in FIG. 11 that the lifting frame 11 and the two frame parts 42 of the freight carrier 12 connected to it via the pull-out guides 13, as already illustrated in FIGS. 1 to 6, lie essentially in the same plane. wherein in the retracted position of the freight carrier 12 the lifting frame 11 takes place between the frame parts 42 of the freight carrier.

[0048]

581 In both embodiments, the procedure for loading a transport vehicle with freight F (including transporting the freight to the transport vehicle) is typically as follows: The loading device 1 is lowered with the loading structure 3 and on its retracted freight carrier 12 recorded freight F -

on the at the Cargo carrier 12 arranged wheels 29, 30 - moved on the traffic area V to the transport vehicle, the pull-out guide locked and base structure 2 is completely raised by means of the lifting device 4.

[0049]

590 The loading device 1 is positioned adjacent to the transport vehicle, near the access opening to its loading area, with the extension direction A pointing towards the transport vehicle.

[0050]

595 Depending on the terrain, the wheels 29, 30 can or should be braked in this situation.

596 To set down the base structure 2 on the traffic area and then raise the loading structure 3, the lifting device 4 is actuated until the wheels 29, 30 of the freight carrier 12 are slightly above the level of the loading area of the transport vehicle.

599 Possibly applied brakes of the wheels 29, 30 can be released again.

[0051]

603 After the pull-out guide 13 has been unlocked, the freight carrier 12 is moved in the pull-out direction A using the pull-out guide 13 (and the extension drive that may be present) and in the process increasingly moves over the loading area of the transport vehicle.

[0052]

609 As soon as the front wheels 29 of the freight carrier 12 are above the loading area of the transport vehicle, the loading structure 3 is lowered by means of the lifting device 4 so far that the front wheels 29 of the freight carrier 12 touch down on the loading area of the transport vehicle.

[0053]

616 The freight carrier 12 is - with continued use of the extension guide 13 (and possibly the extension drive) - moved further in the extension direction A, with the rear wheels 30 of the freight carrier 12 touching down on the loading area of the transport vehicle.

[0054]

622 The brakes of the wheels 29, 30 are applied.

[0055]

626 The lifting device 4 is actuated to lift the base structure 2 .

[0056]

630 When the base structure 2 is completely raised, it is retracted using the pull-out guide 13 (and the extension drive, if applicable), i. H. pushed under the loading structure 3.

632 The pull-out guide 13 is then locked.

[0057]

636 The brakes are released and the loading device 1 can be maneuvered into its final position on the loading area of the transport vehicle.

[0058]

641 Depending on the standing conditions of the carrier vehicle, the wheels 29, 30 can or should be braked when the final position is reached.

[0059]

646 The loading structure 3 is raised slightly by means of the lifting device 4, namely until the wheels 29, 30 lift off the loading area of the transport vehicle.

648 In this position, the lifting device 4 is locked.

[0060]

652 Depending on requirements, the freight F remaining on the loading device 1 can be secured against slipping etc. directly on the transport vehicle by means of separate securing means.

[0061]

657 The procedure for unloading cargo from the transport vehicle is reversed.

658 QUOTES INCLUDED IN DESCRIPTION

[0062]

662 This list of the documents cited by the applicant was generated automatically and is included solely for the better information of the reader.

664 The list is not part of the German patent or

665 utility model application.

666 The DPMA assumes no liability for any errors or omissions.

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(19) Deutsches Patent- und Markenamt

(10) **DE 10 2013 008 020 A1** 2014.11.13

(12) # Offenlegungsschrift

(21) Aktenzeichen: **10 2013 008 020.7**
(22) Anmeldetag: **08.05.2013**
(43) Offenlegungstag: **13.11.2014**

(51) Int Cl.: ***B66F 9/06*** (2006.01)

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(56) Ermittelter Stand der Technik:

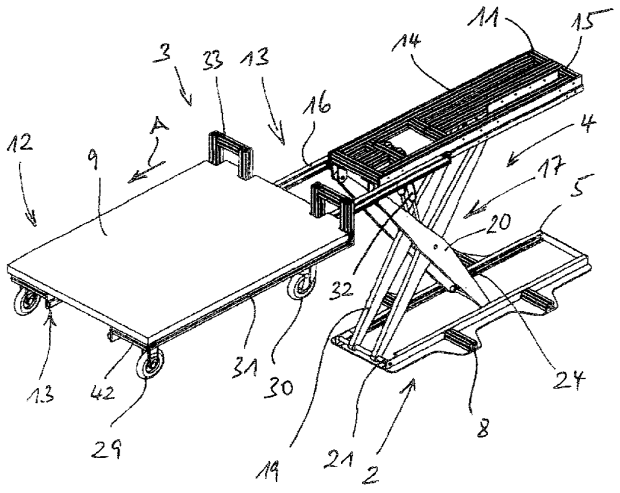
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Prüfungsantrag gemäß § 44 PatG ist gestellt.

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: **Ladevorrichtung**

(57) Zusammenfassung: Eine Ladevorrichtung, insbesondere um Frachtgut auf einer Verkehrsfläche zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfasst eine Basisstruktur (2), eine Ladestruktur (3) mit einer Frachtgutaufnahme und eine zwischen der Basisstruktur (2) und der Ladestruktur (3) doppelt wirkende Hubeinrichtung (4). Dabei umfasst die Ladestruktur (3) einen Hubrahmen (11), an welchem die Hubeinrichtung (4) angreift, und einen Frachtgutträger (12), der an dem Hubrahmen (11) über eine Ausziehführung (13) mit einer quer zur Hubrichtung orientierten Ausziehrichtung (A) gelagert ist und die Frachtgutaufnahme aufweist. Ein der Fortbewegung der Ladevorrichtung auf der Verkehrsfläche dienendes Fahrwerk ist Teil des Frachtgutträgers (12).



Beschreibung

[0001] Die vorliegende Erfindung betrifft eine Ladevorrichtung, geeignet insbesondere um Frachtgut auf einer Verkehrsfläche zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfassend eine Basisstruktur, eine Ladestruktur mit einer Frachtgutaufnahme und eine zwischen der Basisstruktur und der Ladestruktur doppelt wirkende Hubeinrichtung.

[0002] Im Stand der Technik gibt es eine Reihe von Vorschlägen für Ladevorrichtungen der vorstehend angegebenen Art, welche übereinstimmend der Zielsetzung dienen, das Be- bzw. Entladen von Transportfahrzeugen mit Frachtgut zu erleichtern, damit dies – samt dem Befördern des Frachtguts auf einer Verkehrsfläche – möglichst durch eine einzige Person erledigt werden kann. Auf diese Weise soll beispielsweise der Personalaufwand beim Ausliefern von Frachtgut reduziert werden, indem ein Beifahrer, der ausschließlich kurzfristig beim Ladevorgang tätig wird, überflüssig wird. Indem die Hubeinrichtung doppelt-wirkend ausgeführt ist, kann sie nicht nur zum Anheben bzw. Absenken der Ladestruktur (samt dem geladenen Frachtgut) verwendet werden, sondern in gleicher Weise – bei auf die Ladefläche des Transportfahrzeugs aufgesetzter Ladestruktur – zum Anheben der Basisstruktur, um die Ladevorrichtung auf der Ladefläche des Transportfahrzeugs verstauen zu können.

[0003] Repräsentiert wird der einschlägige Stand der Technik insbesondere durch Veröffentlichungen wie die FR 1506606, DE 25 30 634, US 4061237, WO 83/04226, US 4613272, WO 92/07746, EP 889000, US 2005/0042068 und CN 201896055 U.

[0004] Obwohl ersichtlich ein (zunehmender) Bedarf für Ladevorrichtungen der eingangs angegebenen Art besteht, konnten sich – mit einer Ausnahme – die diversen Vorschläge nicht in der Praxis etablieren. Und auch die – unter dem Handelsnamen "Innolift" – vertriebene Ladevorrichtung gemäß der WO 92/07746 bzw. der CN 201896055 U erfüllt die in sie gesetzten Erwartungen nicht.

[0005] Der vorliegenden Erfindung liegt die Aufgabe zugrunde, eine Ladevorrichtung der eingangs angegebenen Art bereitzustellen, die sich durch eine verbesserte Praxistauglichkeit auszeichnet.

[0006] Gelöst wird diese Aufgabenstellung gemäß der vorliegenden Erfindung, indem bei einer Ladevorrichtung der eingangs angegebenen Art die Ladestruktur einen Hubrahmen, an welchem die Hubeinrichtung angreift, und einen Frachtgutträger, der an dem Hubrahmen über eine Ausziehführung mit einer quer zur Hubrichtung orientierten Ausziehrichtung gelagert ist und die Frachtgutaufnahme aufweist, umfasst, wobei ein der Fortbewegung der Ladevorrichtung auf der Verkehrsfläche dienendes Fahrwerk Teil des Frachtgutträgers ist. In einer synergetischen funktionalen Wechselwirkung miteinander resultieren die in Kombination miteinander für die erfindungsgemäße Ladevorrichtung bestimmenden Merkmale in einer Reihe gravierender praxisrelevanter Vorzüge, welche insbesondere die Einsatzmöglichkeiten der Ladevorrichtung substantiell erweitern, deren Handhabung erleichtern und die Sicherheit um ein entscheidendes Maß erhöhen, wobei zugleich eine all diese Vorzüge aufweisende Ladevorrichtung konstruktiv vergleichsweise einfach – und somit zuverlässig – sowie leicht und kompakt ausgeführt sein kann. Gerade im Hinblick auf die Sicherheit ist – im Zusammenwirken mit den übrigen für die erfindungsgemäße Ladevorrichtung charakteristischen Merkmalen – verantwortlich, dass die Ladestruktur in dem Sinne mehrteilig aufgebaut ist, dass die Frachtgutaufnahme an einem Frachtgutträger angeordnet ist, welcher über eine Ausziehführung an einem Hubrahmen gelagert ist, an welchem wiederum die – das Heben und Senken der Ladestruktur bei auf der Verkehrsfläche aufstehender Basiseinheit bewirkende – Hubeinrichtung angreift. Denn auf diese Weise kann das Frachtgut ohne gleichzeitige Bewegung der Basisstruktur relativ zu der Verkehrsfläche (Ausgangsfläche) in den Laderaum bzw. auf die Ladefläche (Zielfläche) des Transportfahrzeugs verschoben werden. Weder beim Beladen des Transportfahrzeugs mit dem Frachtgut, noch beim Entladen des Frachtguts aus dem Transportfahrzeug muss bei angehobener Last bzw. angehobenem Frachtgut die Ladevorrichtung, d. h. deren Basisstruktur auf der Verkehrsfläche verfahren werden. Dies ist gerade im Hinblick auf Anwendungen, bei denen eine vergleichsweise unebene Verkehrsfläche bzw. ein vergleichsweise unebener sonstiger Untergrund existiert (beispielsweise beim Baustellenbetrieb) ein unschätzbarer Vorteil, weil ein solcher unebener Untergrund bei Verwendung von bekannten (insbesondere mit schwerer Fracht beladenen) Ladevorrichtungen deren Verfahren erheblich erschwert und darüber hinaus insbesondere bei einem Verfahren der Ladevorrichtung mit angehobener Last wegen einer Kippgefahr ein erhebliches Sicherheitsrisiko darstellt. Anders, als dies für jenen Stand der Technik (US 4613272, WO 92/07746 und CN 201896055 U) gilt, bei welchem die Basisstruktur ein Stück weit unter das Transportfahrzeug geschoben wird, lässt sich die erfindungsgemäße Ladevorrichtung auch in der (oft tatsächlich vorliegenden) Situation einsetzen, dass das Transportfahrzeug an eine Bordsteinkante herangefahren wird, und zwar typischerweise so weit, dass sich diese etwa unter der Ladekante befindet. Auch ist der Arbeitsablauf, wie er in Anwendung der Erfindung möglich ist, homogener und durch weniger Unterbrechungen geprägt, als dies für den Stand der Technik (insbesondere unter Verwendung von Ladevorrichtungen nach

der WO 92/07746 und der CN 201896055 U) gilt, nämlich insbesondere in Anbetracht dessen, dass die Ladevorrichtung nach dem Aufladen typischerweise noch auf der Ladefläche des Transportfahrzeugs rangiert wird. Hierfür ist nach dem Stand der Technik erforderlich, die Last – durch teilweises Anheben der Ladestruktur – erneut auf die das Fahrwerk aufweisende Basisstruktur zu übergeben, wohingegen bei erfindungsgemäßen Ladevorrichtungen die Last sogleich auf das an dem Frachtgutträger angeordnete Fahrwerk abgesetzt wird (insbesondere auf Räder, die zusammen mit den lasttragenden strukturellen Bereichen des Frachtgutträgers Teil des der Fortbewegung der Ladevorrichtung dienenden Fahrwerks sind). Eine Reihe weiterer Vorteile werden aus der nachfolgenden detaillierten Erläuterung der vorliegenden Erfindung und spezifischer bevorzugter Weiterbindungen ersichtlich.

[0007] Die vorstehenden – wie auch die noch folgenden – Erläuterungen der vorliegenden Erfindung zeigen, dass die die erfindungsgemäße Ladevorrichtung definierenden Merkmale, soweit nichts anderes angegeben ist, breit zu verstehen sind. So kann die Basisstruktur jede beliebige konstruktive und statische Gestalt aufweisen, mittels derer sich die maßgebliche Funktion, die Hubstruktur auf der Verkehrsfläche abzustützen, erfüllen lässt. Als Hubeinrichtung ist wiederum jede Einrichtung geeignet, mittels derer sich, bei auf der Verkehrsfläche abgestützter Basisstruktur die Ladestruktur anheben (und absenken) und bei fixierter, d. h. beispielsweise auf der Ladefläche eines Transportfahrzeugs abgestützter Ladestruktur die Basisstruktur anheben (und absenken) lässt. Ebenfalls ist der Begriff der "Verkehrsfläche" weit auszulegen und beinhaltet jeden tragfähigen, d. h. begehbaren bzw. befahrbaren Untergrund. Weiterhin ist unter "Hubrahmen" jede Struktur zu verstehen, die geeignet ist, mit der Hubeinrichtung verbunden zu werden und die von dem Frachtgutträger (samt aufgenommenem Frachtgut) über die Ausziehführung auf den Hubrahmen übertragenen Kräfte in die Hubeinrichtung einzuleiten. Auch hinsichtlich der "Ausziehführung" existieren keine konstruktiven Beschränkungen; vielmehr kann eine solche "Ausziehführung" durch jede im Wesentlichen linear längenveränderbare Struktur realisiert werden, die imstande ist, quer zur Ausziehrichtung Kräfte zu übertragen. Auch die Angabe, wonach die Ausziehrichtung "quer" zur Hubrichtung orientiert wird, besagt im weitesten Sinne nicht mehr, als dass die Ausziehrichtung mehr oder weniger rechtwinklig zur Hubrichtung orientiert ist, also insbesondere bei einer mehr oder weniger vertikalen Hubrichtung mehr oder weniger horizontal.

[0008] Auch und gerade hinsichtlich des "Fahrwerks" gibt es kaum konstruktive Einschränkungen. Während sich die vorliegende Erfindung für die meisten Anwendungen mit Vorteil mit Räderfahrwerken realisieren lässt, welche bevorzugt vier Räder aufweisen, so ist dies keinesfalls zwingend. Andere geeignete Fahrwerke, die für bestimmte Anwendungen mit Vorteil einsetzbar sind, sind beispielsweise Raupenfahrwerke, Kufenfahrwerke, Luftkissenfahrwerke, Magnetschwebefahrwerke und dergleichen. Entscheidend ist allein, dass eine Fortbewegung auf festen Untergrund wie der Verkehrsfläche und/oder der Ladefläche eines Transportfahrzeugs möglich ist. Wenn im Folgenden die vorliegende Erfindung anhand einer Ausführungsvariante erläutert wird, bei der das Fahrwerk als Räderfahrwerk ausgebildet ist, so dient dies allein der Erleichterung des Verständnisses, ohne dass hiermit eine Beschränkung auf Räderfahrwerke verbunden wäre. Die aufgezeigten Gesichtspunkte gelten, sofern sich nichts anderes ergibt, in gleicher Weise für andere Fahrwerkstypen.

[0009] Gemäß einer ersten bevorzugten Weiterbildung der Erfindung umfasst das – einen Teil der Frachtgutaufnahme bildende – Fahrwerk (vorzugsweise vier) Räder, welche besonders bevorzugt randseitig an dem Frachtgutträger angeordnet sind, und zwar idealerweise direkt unter den seitlichen Begrenzungen des Frachtgutträgers bzw. unmittelbar außerhalb neben diesen. So ergibt sich eine große Spurweite des Fahrwerks, was einen bedeutenden sicherheitsrelevanten Aspekt darstellt. Zudem lassen sich insbesondere in diesem Falle Räder mit einem vergleichsweise großem Durchmesser einsetzen, was die Handhabung erleichtert und – wiederum im Hinblick auf die Verwendung der Ladevorrichtung auf einem unebenen Untergrund – ebenfalls ein sicherheitsrelevanter Aspekt ist. Im Interesse einer guten Handhabbarkeit ist bevorzugt mindestens ein Teil der Räder lenkbar, d. h. die betreffenden Räder sind z. B. als Lenkrollen (ggf. feststellbar für Geradeausfahrt) ausgeführt; dies erleichtert das Manövrieren der Ladevorrichtung auf der Verkehrsfläche und/oder der Ladefläche des Transportfahrzeugs. Zudem ist bevorzugt zumindest ein Teil der Räder mit Bremsen ausgestattet, die beispielsweise beim Ladevorgang dann angezogen werden, wenn der Frachtgutträger auf der Ladefläche des Transportfahrzeugs abgesetzt wurde und – unter Verwendung der Hubeinrichtung – die Basisstruktur anzuheben ist, um anschließend wieder unter die Ladestruktur geschoben zu werden. (Im Hinblick auf die Möglichkeit, die Hubeinrichtung raumsparend möglichst flach unter der Ladestruktur unterzubringen, ist die weiter unten eingehend erläuterte Verwendung eines Scherenhebers besonders zu bevorzugen.) Für die Handhabung der Ladevorrichtung ist dabei günstig, wenn die Bremsen fernbetätigbar sind, beispielsweise von einer am rückwärtigen Ende der Ladevorrichtung angeordneten, mit entsprechenden Bedienelementen ausgestatteten Handhabe aus.

[0010] Nachdem die Basisstruktur bei angehobener Last nicht auf dem Untergrund bewegt zu werden braucht, wird sich typischerweise eine hinreichende

Kippsicherheit mit einer Basisstruktur erzielen lassen, die sich seitwärts nicht über die Spurbreite der Räder hinaus erstreckt. Dies ermöglicht einen kompakten Aufbau der Ladevorrichtung, wobei im Allgemeinen die Basisstruktur sogar vollständig in dem Zwischenraum zwischen den Rädern Platz findet. Sie kann allerdings auch auf der der Ausziehrichtung entgegen gesetzten Seite Stützfüße aufweisen, deren Ausladung im Wesentlichen der Spur der Räder entspricht. Für extreme Einsätze kommt, gemäß einer abermals anderen Weiterbildung der Erfindung, auch in Betracht, die Basisstruktur mit ausfahrbaren, ausziehbaren und ausklappbaren Stützfüßen auszustatten, um die Standsicherheit nochmals zu steigern.

[0011] Nachdem das zum Befördern der Ladevorrichtung (ggfs. samt aufgenommenem Frachtgut) auf der Verkehrsfläche geeignete Fahrwerk Teil des Frachtgutträgers ist, brauchen an der Basisstruktur keine Räder angeordnet zu sein. Dies spart Gewicht und ist unter statischen Gesichtspunkten von großem Vorteil. Absolut zwingend ist die Abwesenheit von Rädern bzw. Rollen an der Basisstruktur indessen nicht. So können beispielsweise (kleine) Rollen vorgesehen sein, welche allein dazu dienen, beim Verfahren der Ladevorrichtung auf der Verkehrsfläche das Gewicht der Basisstruktur zu stützen, so dass diese nicht von der Hubeinrichtung angehoben zu werden braucht.

[0012] Gemäß einer abermals anderen bevorzugten Weiterbildung der vorliegenden Erfindung umfasst die Hubeinrichtung einen Scherenheber. Dies ist günstig im Hinblick auf die Kinematik als auch im Hinblick auf die Statik sowie die Möglichkeit, die erfindungsgemäße Ladevorrichtung äußerst kompakt und leicht auszuführen. Namentlich lässt sich im Falle der Verwendung eines Scherenhebers als Teil der Hubeinrichtung letztere besonders flach und raumsparend zusammenlegen, so dass sie in dieser Konfiguration unter der Ladestruktur untergebracht werden kann. Mit insoweit besonderem Vorteil ist dabei mindestens einer der Lenker des Scherenhebers gekröpft ausgeführt und/oder greift ein Antriebselement versetzt zum Gelenkpunkt des Scherenhebers an einem der Lenker an, was die Bereitstellung ausreichend hoher Hubkräfte bei – bei abgesenkter Ladestruktur – besonders flachen Scherenhebern ermöglicht. Im Sinne günstiger kinematischer Verhältnisse ist die in Ausziehrichtung (der Frachtgutaufnahme) gelegene Lagerung des Scherenhebers an der Basisstruktur besonders bevorzugt als Festlager ausgeführt; d. h. die der Ausziehrichtung entgegengesetzt gelegene Lagerung des Scherenhebers an der Basisstruktur ist als Loslager (mit in mindestens einer Linearführung geführtem Stützelement) ausgeführt.

[0013] Eine andere bevorzugte Weiterbildung der vorliegenden Erfindung zeichnet sich dadurch aus, dass die Hubeinrichtung eine elektrische oder eine elektro-hydraulische Antriebseinheit umfasst. Dies ermöglicht kompakte und gleichwohl sehr leistungsfähige Ladevorrichtungen, wobei namentlich bei größeren, zum Heben besonders schwerer Frachtgüter bestimmten Ladevorrichtungen der Einsatz elektrohydraulischer Antriebseinheiten für die Hubeinrichtungen besonders vorteilhaft ist. Eine insoweit vorgesehene elektrische Speichereinheit der Antriebseinheit ist besonders bevorzugt an der Ladestruktur angeordnet, und zwar besonders bevorzugt am Hubrahmen an dessen in Ausziehrichtung vorne liegender Frontseite. Dies trägt, ohne dass eine (bei Anordnung der Speichereinheit an dem Frachtgutträger erforderliche) aufwändige Verlegung von elektrischen Leitungen notwendig ist, zu einer vergleichsweise günstigen Gewichtsverteilung bei, insbesondere im Hinblick auf die Phase des Anhebens bzw. Absenkens der Basisstruktur bei auf die Ladefläche des Transportfahrzeugs aufgesetztem Frachtgutträger. Wenn dabei die elektrische Speichereinheit einen Ladeanschluss aufweist, welcher an die elektrische Anlage eines (als Kraftfahrzeugs ausgeführten) Transportfahrzeugs anschließbar ist, so genügt für typische Anwendungen eine vergleichsweise kleine elektrische Speichereinheit. Dies ist vorteilhaft im Hinblick auf Kosten, Gewicht und Baugröße der Ladevorrichtung. Günstig ist auch, die elektrische Speichereinheit der Antriebseinheit als Wechselakku auszuführen. Dies gestattet die sehr kleinformatige Ausführung der Speichereinheit, damit diese in eine vergleichsweise kompakte Ladevorrichtung passt, ohne dass die Nutzungsmöglichkeiten der Ladevorrichtung hierdurch beschränkt würden. Ein der Ladevorrichtung entnommener Wechselakku kann an der elektrischen Anlage eines Transportfahrzeuges aufgeladen werden.

[0014] Eine weitere Antriebseinheit bewirkt in einer abermals anderen bevorzugten Weiterbildung der vorliegenden Erfindung das Ausfahren und Einfahren des Frachtgutträgers relativ zum Hubrahmen. Ein solcher Ausfahrantrieb kann beispielsweise elektrisch ausgeführt sein. Ebenfalls könnte ein solcher Ausfahrantrieb beispielsweise einen Hydraulikzylinder umfassen, der von dem Hydraulikaggregat der elektro-hydraulischen Antriebseinheit der Hubeinrichtung versorgt wird. Unter Aspekten der Betriebssicherheit ist vorteilhaft, wenn auf den Ausfahrantrieb eine Steuerung einwirkt, welche die Ausfahrbewegung unter Berücksichtigung von sicherheitsrelevanten Kenngrößen steuert. So kann in der Steuerung beispielsweise das Signal mindestens eines an dem Frachtgutträger, bevorzugt im Bereich frontseitiger Räder, angeordneten, der Erfassung der Position des Frachtgutträgers relativ zu einer Ladefläche dienenden Sensors dergestalt verarbeitet werden, dass das (über einen festgesetzten Ausfahrweg von beispielsweise 400 mm fortgesetzte) Ausfahren des Frachtgutträgers unterbunden wird, wenn sich das Fahrwerk nicht zumindest teilweise über ei-

ner Ladefläche befindet. Auch die Höhe des Fahrwerks des Frachtgutträgers oberhalb der Ladefläche kann in der Steuerung dergestalt berücksichtigt werden, dass ein (weiteres) Ausfahren des Frachtgutträgers unterbunden wird, wenn sich das Fahrwerk in einer oberhalb eines zulässigen Werts liegenden Höhe über einer Ladefläche befindet. Weiterhin können in der Steuerung des Ausfahrantriebs Signale von Lastsensoren, welche Stützfüßen der Basisstruktur und/oder Rädern des Fahrwerks zugeordnet sind, in dem Sinne ausgewertet werden, dass ein (weiteres) Ausfahren des Frachtgutträgers unterbleibt, wenn eine auf eine zunehmende Kippgefahr hindeutende Belastungssituation ermittelt wird. Die besagten sicherheitsrelevanten Kenngrößen können zusätzlich (oder alternativ) auch für die Erzeugung einer Benachrichtigung bzw. Warnung verwendet werden.

[0015] Unter statischen Gesichtspunkten kann es günstig sein, wenn die Basisstruktur zu ihrer Abstützung auf der Verkehrsfläche eine vergleichsweise große, durchgehende Auflagefläche aufweist. Umgekehrt kann es indessen für bestimmte Anwendungen auch vorteilhaft sein, an der Basisstruktur ausgeprägte Stützfüße anzuordnen. Dies gilt namentlich dann, wenn zumindest einem Stützfuß ein Lastsensor (s. o.) zugeordnet wird, der die Lastsituation überwacht und beispielsweise ein Signal auslöst, wenn sich die Lastverteilung einem im Hinblick auf die Standsicherheit kritischen Punkt annähert. Derartige Lastsensoren können mit dem gleichen Vorteil auch mindestens einem der an dem Frachtgutträger angeordneten Räder zugeordnet sein.

[0016] Der Frachtgutträger und der Hubrahmen sind besonders bevorzugt relativ zueinander verriegelbar. Und die Hubeinrichtung ist bevorzugt in einer teilweise angehobenen Stellung der Ladestruktur sperrbar. Dies ermöglicht es, für die Fahrt des Transportfahrzeuges die Ladevorrichtung auf der Ladefläche dadurch zu sichern, dass die Ladestruktur mittels der Hubeinrichtung so weit angehoben wird, dass die an dem Frachtgutträger angeordneten Räder von der Ladefläche abgehoben werden, wobei zudem über die Verriegelung des Frachtgutträgers relativ zum Hubrahmen die Lage des Frachtgutträgers und somit des Frachtguts relativ zur Basisstruktur gesichert wird. Vorteilhafterweise ist dabei, beispielsweise über einen entsprechende Einstellung in einer Steuerung der Ladevorrichtung, eine solche (teilweise angehobene) Stellung der Hubeinrichtung fest vorgegebenen, in der das Fahrwerk des Frachtgutträgers gerade außer Kontakt mit dem Untergrund gebracht wird, so dass sich das gesamte Gewicht von Ladevorrichtung und Last – bei möglichst niedrigem Schwerpunkt – ausschließlich über die Basisstruktur auf dem Untergrund abstützt. Zur Sicherung des Frachtguts an bzw. auf dem Frachtgutträger weist Letzterer bevorzugt zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut geeignete Halterungen auf, beispielsweise Ösen, Bohrungen, Durchbrüche oder Haken.

[0017] Für die Bedienung der Ladevorrichtung samt deren Rangieren bzw. Manövrieren sowie die Betätigung vorgesehener Antriebe weist die Ladevorrichtung bevorzugt an ihrem rückwärtigen, der Ausziehrichtung entgegengesetzten Ende eine Handhabe auf, die mit entsprechenden, der Betätigung der Antriebe dienenden Bedienelementen ausgestattet ist. Bevorzugt ist eine solche Handhabe an der Basisstruktur oder dem Hubrahmen angeordnet. Die Anordnung und Ausgestaltung der Handhabe erfolgt dabei bevorzugt dergestalt, dass sie weder ein (vorzugsweise vollständiges) Unterschieben der Basisstruktur unter die Ladestruktur behindert, noch ständig nennenswert über die Minimalkontur der Hauptkomponenten des Ladegeräts (bei abgesenkter Ladestruktur und eingefahrenem Frachtgutträger) übersteht. In diesem Sinne kann die Handhabe beispielsweise gelenkig schwenk- bzw. klappbar und/oder einschiebbar an der Basisstruktur oder am Hubrahmen angebracht sein. Die Handhabe und/oder ihre Anbringung an der Basisstruktur bzw. dem Hubrahmen ist dabei vorzugsweise so ausgeführt, dass an ihr angeordnete Griffe auch bei einer bestimmungsgemäß beim Betrieb des Ladevorrichtung erfolgenden Veränderung der Höhe von Basisstruktur bzw. Hubrahmen über dem Untergrund ihre eigene Höhe nicht oder nur geringfügig verändern. Vor dem gleichen Hintergrund ist, gemäß einer anderen bevorzugten Weiterbildung, besonders vorteilhaft, wenn die Handhabe eine ausfahrbare, z. B. teleskopische verlänger- bzw. verkürzbare Deichsel aufweist; denn dies erleichtert die Bedienung der Ladevorrichtung bei ihrer bestimmungsgemäßen Verwendung, während derer sich die Höhe des Hubrahmens und der Basisstruktur über der Verkehrsfläche ändert. Besonders komfortabel ist es, wenn die Länge der Deichsel mittels eines Längenverstellantriebs veränderbar ist. Dieser kann, im Interesse einer weiter gesteigerten Bedienfreundlichkeit, mit dem Hubantrieb phasenweise in dem Sinne koppelbar sein, dass sich die Länge der Deichsel automatisch verkürzt, wenn die Komponente (Basisstruktur oder Hubrahmen), an der sie angebracht ist, mittels der Hubeinrichtung angehoben wird. Im Falle der Anbringung der Deichsel an dem Hubrahmen ist hierfür eine (phasenweise) inverse Koppelung des Längenverstellantriebs der Deichsel mit dem Antrieb der Hubeinrichtung vorzusehen. Unter ergonomischen Gesichtspunkten ist im Übrigen vorteilhaft, wenn die Ausfahrrichtung der Deichsel schräg zur Hubrichtung orientiert, d. h. insbesondere leicht nach hinten geneigt ist.

[0018] Für eine möglichst vielfältige Nutzbarkeit der erfindungsgemäßen Ladevorrichtung weist bei dieser, gemäß einer abermals anderen bevorzugten Weiterbildung, der Frachtgutträger einen austauschbaren, funktions- bzw. anwendungsspezifischen Auf-

satz auf. Ein solcher Aufsatz kann beispielsweise eine (ebene) Ladeplattform, eine Schüttgutaufnahme oder eine Spezialhalterung (z. B. für eine Kabeltrommel) umfassen.

[0019] Namentlich besonders große Ladevorrichtungen können mit einem zusätzlichen, auf mindestens eines der Räder wirkenden Fahrantrieb ausgestattet sein, der zur Unterstützung der Bedienperson beim Bewegen der Ladevorrichtungen auf der (ggf. unebenen) Verkehrsfläche bzw. der Ladefläche des Transportfahrzeugs (einschließlich des Rangierens) einsetzbar ist.

[0020] Im Sinne der vorstehenden Erläuterungen der Erfindung stellt sich der bei deren Nutzung vollziehender Ablauf wie folgt dar: Frachtgut bzw. Last wird auf einem Frachtgutträger, der Teil einer anhebbaren Ladestruktur ist und über ein der Fortbewegung dienendes Fahrwerk verfügt, aufgenommen auf einer Ausgangsfläche befördert. Eine Basisstruktur wird auf der Ausgangsfläche abgesetzt, und die Ladestruktur wird – auf der Basisstruktur abgestützt – so weit angehoben, dass das Fahrwerk des Frachtgutträgers sich oberhalb des Niveaus einer gegenüber der Ausgangsfläche erhöhten Zielfläche befindet. Der Frachtgutträger wird quer zur Hubrichtung ausgefahren und dabei über die Zielfläche verfahren, und zwar ohne dass gleichzeitig die Basisstruktur bewegt wird, wobei sich der Frachtgutträger bei jenem Verfahren (ggf. nach einem Absenken) mit seinem Fahrwerk auf der Zielfläche abstützt. Die Basisstruktur wird, wenn der Frachtgutträger vollständig auf der Zielfläche aufsteht, vollständig angehoben und in Richtung auf die Frachtgutaufnahme eingefahren und über die Zielfläche verfahren. Eine Fortbewegung der Fracht bzw. Last auf der Zielfläche mittels des Fahrwerks des Frachtgutträgers kann sich anschließen, ebenso ein Lagesichern durch Abheben des Frachtgutträger-Fahrwerks von der Zielfläche unter Aufsetzen der Basisstruktur auf der Zielfläche.

[0021] Die erfindungsgemäße Ladevorrichtung kann, was allerdings für typische Anwendungen nicht erforderlich ist, mindestens eine frontseitig an dem Frachtgutträger angeordnete veränderlich positionierbare Behelfsrolle aufweisen. Diese kann notfalls im Rahmen des Übersetzens des Frachtgutträgers auf die Ladefläche des Transportfahrzeugs eingesetzt werden, beispielsweise bei instabilen Stand der Basisstruktur aufgrund eines nicht tragfähigen Untergrunds oder aber wenn die Ladevorrichtung aus irgend welchen Gründen nicht unmittelbar an das Transportfahrzeug heran gefahren werden konnte.

[0022] Aus den vorstehenden Erläuterungen ist ersichtlich, dass die Be- bzw. Entladung von Transportfahrzeugen mittels der erfindungsgemäßen Ladevorrichtung nur eine beispielhafte von vielen denkbaren Anwendungen darstellt. Einsetzbar ist die erfindungsgemäße Ladevorrichtung, die insoweit auch als kombinierte Beförder- und Hubvorrichtung bezeichnet werden könnte, auch in diversen anderen Anwendungsumgebungen, beispielsweise in der Kommissionier- und Lagertechnik.

[0023] Im Folgenden wird die vorliegende Erfindung anhand zweier in der Zeichnung veranschaulichter Ausführungsbeispiele näher erläutert. Dabei zeigt

[0024] **Fig.** 1 in Seitenansicht eine erste Ausführungsform einer erfindungsgemäßen Ladevorrichtung in einer ersten Konfiguration,

[0025] **Fig.** 2 in perspektivischer Ansicht die Ausführungsform nach **Fig.** 1 in ihrer ersten Konfiguration,

[0026] **Fig.** 3 in Seitenansicht die Ausführungsform nach den **Fig.** 1 und **Fig.** 2 in einer zweiten Konfiguration,

[0027] **Fig.** 4 in perspektivischer Ansicht die Ausführungsform nach den **Fig.** 1 bis **Fig.** 3 in ihrer zweiten Konfiguration,

[0028] **Fig.** 5 in Seitenansicht die Ausführungsform nach den **Fig.** 1 bis **Fig.** 4 in einer dritten Konfiguration,

[0029] **Fig.** 6 in perspektivischer Ansicht die Ausführungsform nach den **Fig.** 1 bis **Fig.** 5 in ihrer dritten Konfiguration,

[0030] **Fig.** 7 in perspektivischer Ansicht eine zweite Ausführungsform einer erfindungsgemäßen Ladevorrichtung in einer ersten Konfiguration,

[0031] **Fig.** 8 die Ausführungsform nach **Fig.** 7 in einer zweiten Konfiguration,

[0032] **Fig.** 9 die Ausführungsform nach den **Fig.** 7 und **Fig.** 8 in einer dritten Konfiguration

[0033] **Fig.** 10 die Ausführungsform nach den **Fig.** 7 bis **Fig.** 9 in einer vierten Konfiguration und

[0034] **Fig.** 11 in vergrößerter Darstellung in einem Vertikalschnitt eine Ladevorrichtung mit einer über einen bevorzugten Scherenheber verfügende Hubeinrichtung.

[0035] Die in den **Fig.** 1 bis **Fig.** 6 in verschiedenen Konfigurationen (d. h. Betriebssituationen) und Ansichten gezeigte Ladevorrichtung **1** dient der Beförderung von Frachtgut F auf einer Verkehrsfläche V sowie dem Einladen des Frachtguts in ein Transportfahrzeug bzw. dem Ausladen aus diesem.

[0036] Die Ladevorrichtung umfasst drei Hauptkomponenten, nämlich eine Basisstruktur **2**, eine Lade-

struktur **3** und eine zwischen der Basisstruktur **2** und der Ladestruktur **3** wirkende, dem Anheben und Absenken der Ladestruktur **3** dienende Hubeinrichtung **4**. Die Hubeinrichtung **4** ist dabei in dem Sinne doppelt-wirkend ausgeführt, dass sie auch geeignet ist, bei ortsfester Ladestruktur **3** die Basisstruktur **2** anzuheben.

[0037] Die Basisstruktur **2** ist als Grundrahmen **5** ausgeführt mit zwei Längsträgern **6** und zwei sich zwischen und quer zu diesen erstreckenden Querträgern **7**. Beidseits stehen von den Längsträgern **6** zwei ausgesteifte Stützfüße **8** seitwärts ab. Im Sinne einer – aus Gründen der Standsicherheit ggf. zweckmäßigen – Modifikation der Basisstruktur **2** können auch ausfahrbare, ausziehbare oder ausklappbare Stützfüße mit einer im Einsatz breiteren Ausladung zum Einsatz kommen.

[0038] Die Ladestruktur **3**, die eine – vorliegend eine als Ladeplattform **9** ausgeführte – Frachtgutaufnahme **10** aufweist, umfasst einen Hubrahmen **11**, einen Frachtgutträger **12** mit der Ladeplattform **9** und eine Ausziehführung **13**, mittels derer der Frachtgutträger **12** an dem Hubrahmen **11** ausziehbar (Pfeil A) gelagert ist. Der Hubrahmen **11** umfasst Längsträger **14** und sich zwischen und quer zu diesen erstreckende Querträger **15**. An ihm greift die Hubeinrichtung **4** an. Die Ausziehrichtung A, in welcher der Frachtgutträger **12** aus seiner zu dem Hubrahmen **11** im Wesentlichen fluchtenden Stellung in eine gegenüber dem Hubrahmen **11** versetzte Stellung ausfahrbar ist, ist dabei quer zu der Hubrichtung (Pfeil B) orientiert, welche durch die Hub- und Senkbewegung der Ladestruktur **3** gegenüber der Basisstruktur **2** definiert ist. Durch Einsatz einer Zwischenschiene **16** ist die Ausziehführung **13** als Vollauszug ausgeführt, so dass der Frachtgutträger **12** in seiner ausgefahrenen Stellung vollständig gegenüber dem Hubrahmen **11** versetzt ist. Der Frachtgutträger **12** weist (nicht näher dargestellte) Halterungen auf, die zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut F geeignet sind. Im Sinne einer – anwendungsbezogenen – Modifikation könnte der Frachtgutträger **12**, an den jeweiligen spezifischen Einsatz angepasst, im Übrigen statt einer Ladeplattform **9** beispielsweise eine Schüttgutaufnahme (wie einen Trog oder dergl.) oder eine Spezialhalterung (wie eine Kabeltrommelhalterung oder dergl.) aufweisen.

[0039] Die Hubeinrichtung **4** umfasst einen Scherenheber **17** mit zwei gekreuzten, im Kreuzungspunkt **18** gelenkig miteinander verbundenen Lenkerpaaren **19**, **20**. Jedes Lenkerpaar **19**, **20** ist an seinem einem Ende mit dem betreffenden Bauteil über ein Festlager **21**, **22** gelenkig verbunden und an seinem anderen Ende an dem anderen Bauteil längs einer Linearführung **23**, **24** verschiebbar geführt. So ist das erste Lenkerpaar **19** an seinem unteren – und in Ausziehrichtung A vorderen – Ende **25** mit dem Grundrahmen **5** über ein Festlager **21** gelenkig verbunden und an seinem oberen Ende **26** an dem Hubrahmen **11** längs einer Linearführung **23** verschiebbar geführt; und das zweite Lenkerpaar **20** ist an seinem oberen Ende **27** mit dem Hubrahmen **11** über ein Festlager **22** gelenkig verbunden und an seinem unteren Ende **28** an dem Grundrahmen **5** längs einer Linearführung **24** verschiebbar geführt. Der Kreuzungspunkt **18** der beiden Lenkerpaare **19**, **20** wandert demgemäß beim Anheben der Ladestruktur **3** auf einer Kreisbahn um das Festlager **21** des ersten Lenkerpaares **19** und bewegt sich dabei (auch) mit einer Bewegungskomponente in Ausziehrichtung A. Im Sinne einer – aus kinematischen Gründen ggf. zweckmäßigen – Modifikation des Scherenhebers **17** können auch (als solches bekannte) gekröpfte Lenker zum Einsatz kommen.

[0040] Vier der Fortbewegung der Ladevorrichtung **1** auf der Verkehrsfläche V – für das Befördern des Frachtguts F auf dieser – dienende Räder **29**, **30** sind an dem Frachtgutträger **12** angeordnet, und zwar randseitig an diesem unmittelbar unterhalb der Seitenränder **31**. Sie bilden mit den Rahmenteilen **42** des Frachtgutträgers **12** ein Fahrwerk **43**. Die – in Ausziehrichtung A – vorderen Räder **29** sind vorliegend als Bockrollen ausgeführt, die hinteren Räder **30** demgegenüber als Lenkrollen, wobei ersichtlich auch andere Ausführungen der Räder (z. B. vier Lenkrollen) möglich sind. Die Räder **29**, **30** weisen (feststellbare) Bremsen auf, mittels derer sich ein unbeabsichtigtes Wegrollen des Frachtgutträgers **12** bzw. der Ladevorrichtung **1** unterbinden lässt. An der Basisstruktur **2** sind demgegenüber vorliegend keine Räder angeordnet. Die Stützfüße **8** der Basisstruktur **2** sind so dimensioniert, dass sie zwischen den hinteren Rädern **30** des Frachtgutträgers **12** hindurchpassen. Im Sinne einer Modifikation könnten die hinteren Stützfüße **8** allerdings auch nach hinten hinter die hinteren Räder **30** versetzt und in diesem Falle so dimensioniert werden, dass ihre Ausladung im Wesentlichen der Spur der Räder **29**, **30** entspricht. Seitwärts über die Spurbreite der Räder **29**, **30** hinaus sollte sich die Basisstruktur **2** indessen – im Interesse einer guten Handhabbarkeit der Ladevorrichtung **1** – nicht erstrecken.

[0041] Die Ladevorrichtung **1** weist mehrere Antriebe auf. So ist insbesondere die Hubeinrichtung **4** mit einer Antriebseinheit ausgerüstet. Diese umfasst zwei parallel zueinander angeordnete Hydraulikzylinder **32**, die sich, gelenkig an einem der Querträger **15** des Hubrahmens **11** angelenkt, zwischen dem Hubrahmen **11** und dem im Kreuzungspunkt **18** der Lenkerpaare **19**, **20** des Scherenhebers **17** angeordneten Gelenkbolzen erstrecken. Der Beaufschlagung der Hydraulikzylinder **32** dient ein – nicht dargestelltes – Hydraulikaggregat, dessen Pumpe elektrisch betrieben wird. Die elektrische Speichereinheit der

Antriebseinheit ist an dem Frachtgutträger **12** angeordnet. Sie weist einen Ladeanschluss auf, der an die elektrische Anlage eines als Kraftfahrzeug ausgeführten Transportfahrzeugs anschließbar ist. Alternativ wäre, insbesondre für Ladevorrichtungen mit reduzierter Leistung, beispielsweise die rein elektrische Ausführung der Antriebseinheit der Hubeinrichtung **4** möglich.

[0042] Mittels eine weiteren Antriebs, nämlich eines zwischen dem Hubrahmen **11** und dem Frachtgutträger **12** wirkenden elektrischen Ausfahrantriebs ist der Frachtgutträger **12** in seine ausgefahrene Stellung aus- und seine zu dem Hubrahmen **11** fluchtende Stellung einfahrbar. Weiterhin ist – beispielsweise durch Arretieren der Ausziehführung **13** oder Blockieren des Ausfahrantriebs – der Frachtgutträger **12** relativ zum Hubrahmen **11** verriegelbar und die Hubeinrichtung **4** in einer teilweise angehobenen Stellung der Ladestruktur **3** sperrbar. Auf diese Weise erfolgt eine Sicherung der Ladevorrichtung **1** (und des aufgenommenen Frachtguts F) auf der Ladefläche des Transportfahrzeugs während des Transports, indem nämlich der Frachtgutträger **12** relativ zu dem Hubrahmen **11** gesperrt und die Ladestruktur **3** als ganzes so weit angehoben wird, dass die Räder **29**, **30** nicht mehr auf der Ladefläche aufliegen, so dass das gesamte Gewicht von Frachtgut F und Ladevorrichtung **1** über deren Grundrahmen **5** auf der Ladefläche abgestützt wird.

[0043] Die Bedienung bzw. Betätigung der verschiedenen Antriebe durch eine Bedienperson erfolgt bei der Ausführungsform nach den **Fig.** 1 bis **Fig.** 6 durch Bedienelemente, die in die an dem Frachtgutträger **12** angebrachten Griffe **33** integriert sind. Namentlich in dieser Hinsicht verfolgt die zweite, in den **Fig.** 7 bis **Fig.** 10 illustrierte Ausführungsform einen anderen Ansatz. Denn bei dieser ist an dem Hubrahmen **11** an dessen der Ausziehrichtung A entgegengesetztem Ende **34** eine Handhabe **35** angeordnet, welche Bedienelemente **36** für die Betätigung der verschiedenen Antriebe aufweist und die weiterhin dazu dient, die Ladevorrichtung **1** bei deren Fortbewegung auf der Verkehrsfläche bzw. der Ladefläche des Transportfahrzeuges zu dirigieren bzw. zu manövrieren.

[0044] Die Handhabe **35** weist eine leicht nach hinten geneigte, aus ihrer Verstaustellung (**Fig.** 7) teleskopisch in eine Betriebsstellung (**Fig.** 8) ausfahrbare Deichsel **37** auf. Der die Verstellung der Länge der Deichsel **37** bewirkende Längenverstellantrieb ist dabei – über die Steuerung der Ladevorrichtung **1** – in dem Sinne invers mit der Antriebseinheit der Hubeinrichtung **4** gekoppelt, dass sich beim Anheben der Ladestruktur **3** die Länge der Deichsel **37** im Wesentlichen in dem Maße verkürzt, wie die Ladestruktur **3** angehoben wird, so dass im Ergebnis die Griffe **38** der Handhabe **35** beim Heben der Ladestruktur **3** zumindest im Wesentlichen auf einer konstanten Höhe verbleiben. Entsprechendes gilt beim Absenken der Ladestruktur **3**. Über an der Handhabe **35** angeordnete Bedienelemente **36** sind bei dieser Ausführungsform im Übrigen auch die den Rädern **29**, **30** zugeordneten Bremsen betätigbar.

[0045] Andere markante Abweichungen der Ausführungsform nach den **Fig.** 7 bis **Fig.** 10 von derjenigen nach den **Fig.** 1 bis **Fig.** 6 bestehen in konstruktiven Details des Scherenhebers **17** sowie der Ausziehführung **13** für den Frachtgutträger **12**, wobei die Abweichungen allerdings ohne Auswirkung sind auf die grundsätzliche Funktion, so dass die vorstehenden Erläuterungen der ersten Ausführungsform im Wesentlichen auch für die zweite gelten. Anders gestaltet als bei der ersten Ausführungsform sind bei der zweiten im Übrigen auch die Räder **29**, **30**. Diese sind seitlich an dem Frachtgutträger **12** angeordnet, so dass sie – im Interesse einer gesteigerten Tauglichkeit für die Nutzung auf unebenen Verkehrsflächen – einen vergleichsweise großen Durchmesser aufweisen können.

[0046] Mit der Steuerung der Ladevorrichtung können im Übrigen insbesondere Lastsensoren verbunden sein, die den Rädern **29**, **30** und/oder den Stützfüßen **8** der Basisstruktur **2** zugeordnet sind. Durch Überwachung der Belastungssituation an den Stützfüßen **8** und/oder den Rädern **29**, **30** können Belastungszustände, die für die Standsicherheit der Ladevorrichtung **1** kritisch werden könnten, frühzeitig erkannt werden, und es kann eine (z. B. akustische) Warnung und/oder ein automatisches Sperren eines oder mehrerer Antriebe erfolgen.

[0047] Was die in **Fig.** 11 veranschaulichte Ausführungsform angeht, so erklärt sich diese ohne weiteres aus den vorstehenden Erläuterungen der **Fig.** 1 bis **Fig.** 10. Hinzuweisen ist allerdings auf die gut erkennbare leichte Kröpfung der Lenker **19** und **20** des Scherenhebers **17** dergestalt, dass das im Kreuzungspunkt **18** vorgesehene Gelenk nicht exakt auf den Verbindungslinien VL_{19} und VL_{20} der beiden jeweils endseitig an den Lenkern **19**, **20** angeordneten Lager liegt, sondern vielmehr geringfügig gegenüber diesen Verbindungslinien nach oben versetzt. Umgekehrt ist der Anlenkungspunkt **40** der Hydraulikzylinder **32** an den Lenkern **19** geringfügig gegenüber der Verbindungslinie VL_{19} von dessen endseitigen Lagern nach unten versetzt. Auf diese Weise ergibt sich ein Scherenheber **17**, der in seiner (gezeigten) vollständig eingefahrenen Konfiguration so flach ist, dass er nicht (geringfügig nach oben zwischen die Ausziehführungen **13** ragend) nur unter der Ladestruktur **3** Platz findet, sondern auch noch eine hinreichende Bodenfreiheit **41** verbleibt, und das bei einer für das Heben schwerer Lasten hinreichend starken Dimensionierung der Lenker **19**, **20** und einem auf das Heben schwerer Lasten abgestimmten Kinematik des Antriebs. Zu erkennen ist in **Fig.** 11 auch, dass der

Hubrahmen **11** und die beiden mit diesem über die Ausziehführungen **13** verbundenen Rahmenteile **42** des Frachtgutträgers **12**, wie bereits in den **Fig.** 1 bis **Fig.** 6 veranschaulicht, im Wesentlichen in der selben Ebene liegen, wobei in der eingefahrenen Stellung des Frachtgutträgers **12** der Hubrahmen **11** zwischen den Rahmenteilen **42** des Frachtgutträgers Platz findet.

[0048] Bei beiden Ausführungsformen stellt sich der Ablauf beim Beladen eines Transportfahrzeugs mit Frachtgut F (einschließlich des Beförderns des Frachtguts zum Transportfahrzeug) typischerweise wie folgt dar: Die Ladevorrichtung **1** wird mit abgesenkter Ladestruktur **3** und auf deren eingefahrenen Frachtgutträger **12** aufgenommenem Frachtgut F – auf den an dem Frachtgutträger **12** angeordneten Rädern **29**, **30** – auf der Verkehrsfläche V zum Transportfahrzeug bewegt, wobei die Ausziehführung verriegelt und Basisstruktur **2** mittels der Hubeinrichtung **4** vollständig angehoben ist.

[0049] Die Ladevorrichtung **1** wird benachbart zum Transportfahrzeug, nahe der Zugangsöffnung zu dessen Ladefläche positioniert, und zwar mit der Ausziehrichtung A zum Transportfahrzeug weisend.

[0050] Je nach den Geländeverhältnissen können bzw. sollten in dieser Situation die Räder **29**, **30** gebremst werden. Zum Absetzen der Basisstruktur **2** auf der Verkehrsfläche und anschließendem Anheben der Ladestruktur **3** wird die Hubeinrichtung **4** betätigt, und zwar so lange, bis sich die Räder **29**, **30** des Frachtgutträgers **12** geringfügig über dem Niveau der Ladefläche des Transportfahrzeugs befinden. Ggf. angezogenen Bremsen der Räder **29**, **30** können wieder gelöst werden.

[0051] Nach dem Entriegeln der Ausziehführung **13** wird der Frachtgutträger **12** unter Nutzung der Ausziehführung **13** (und des ggf. vorhandenen Ausfahrantriebs) in Ausziehrichtung A verfahren und gelangt dabei zunehmend über die Ladefläche des Transportfahrzeugs.

[0052] Sobald sich die frontseitigen Räder **29** des Frachtgutträgers **12** über der Ladefläche des Transportfahrzeugs befinden, wird die Ladestruktur **3** mittels der Hubeinrichtung **4** so weit abgesenkt, dass die frontseitigen Räder **29** des Frachtgutträgers **12** auf der Ladefläche des Transportfahrzeugs aufsetzen.

[0053] Der Frachtgutträger **12** wird – unter fortgesetzter Nutzung der Ausziehführung **13** (und ggf. des Ausfahrantriebs) – weiter in Ausziehrichtung A verfahren, wobei auch die rückwärtigen Räder **30** des Frachtgutträgers **12** auf der Ladefläche des Transportfahrzeugs aufsetzen.

[0054] Die Bremsen der Räder **29**, **30** werden angezogen.

[0055] Die Hubeinrichtung **4** wird im Sinne eines Anhebens der Basisstruktur **2** betätigt.

[0056] Bei vollständig angehobener Basisstruktur **2** wird diese unter Nutzung der Ausziehführung **13** (und ggf. des Ausfahrantriebs) eingefahren, d. h. unter die Ladestruktur **3** geschoben. Anschließend wird die Ausziehführung **13** verriegelt.

[0057] Die Bremsen werden gelöst, und die Ladevorrichtung **1** kann auf der Ladefläche des Transportfahrzeugs an ihre endgültige Position rangiert werden.

[0058] Je nach den Standverhältnissen des Trägerfahrzeugs können bzw. sollten bei Erreichen der endgültigen Position die Räder **29**, **30** gebremst werden.

[0059] Mittels der Hubeinrichtung **4** wird die Ladestruktur **3** geringfügig angehoben, nämlich so weit, bis die Räder **29**, **30** von der Ladefläche des Transportfahrzeugs abheben. In dieser Stellung wird die Hubeinrichtung **4** gesperrt.

[0060] Je nach Bedarf kann das – auf der Ladevorrichtung **1** verbleibende – Frachtgut F mittels gesonderter Sicherungsmittel direkt am Transportfahrzeug gegen Verrutschen etc. gesichert werden.

[0061] Zum Entladen von Frachtgut aus dem Transportfahrzeug wird in umgekehrter Reihenfolge vorgegangen.

ZITATE ENTHALTEN IN DER BESCHREIBUNG

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Zitierte Patentliteratur

- FR 1506606 [0003]
- DE 2530634 [0003]
- US 4061237 [0003]
- WO 83/04226 [0003]
- US 4613272 [0003, 0006]
- WO 92/07746 [0003, 0004, 0006, 0006]
- EP 889000 [0003]
- US 2005/0042068 [0003]
- CN 201896055 U [0003, 0004, 0006, 0006]

Patentansprüche

1. Ladevorrichtung (**1**), insbesondere um Frachtgut (F) auf einer Verkehrsfläche (V) zu befördern und in ein Transportfahrzeug ein- bzw. aus diesem auszuladen, umfassend eine Basisstruktur (**2**), eine Ladestruktur (**3**) mit einer Frachtgutaufnahme (**10**) und eine zwischen der Basisstruktur (**2**) und der Ladestruktur (**3**) doppelt wirkende Hubeinrichtung (**4**), gekennzeichnet durch die folgenden Merkmale:
die Ladestruktur (**3**) umfasst einen Hubrahmen (**11**), an welchem die Hubeinrichtung (**4**) angreift, und
einen Frachtgutträger (**12**), der an dem Hubrahmen (**11**) über eine Ausziehführung (**13**) mit einer quer zur Hubrichtung (B) orientierten Ausziehrichtung (A) gelagert ist und die Frachtgutaufnahme (**10**) aufweist;
ein der Fortbewegung der Ladevorrichtung (**1**) auf der Verkehrsfläche (V) dienendes Fahrwerk (**43**) ist Teil des Frachtgutträgers (**12**).

2. Ladevorrichtung nach Anspruch 1, **dadurch gekennzeichnet,** dass das Fahrwerk (**43**) Räder (**29**, **30**), bevorzugt vier Räder (**29**, **30**) umfasst, welche besonders bevorzugt randseitig an dem Frachtgutträger (**12**) angeordnet sind.

3. Ladevorrichtung nach Anspruch 2, **dadurch gekennzeichnet,** dass zumindest ein Teil der Räder (**29**, **30**) lenkbar ist.

4. Ladevorrichtung nach Anspruch 2 oder Anspruch 3, **dadurch gekennzeichnet,** dass zumindest ein Teil der Räder (**29**, **30**) Bremsen aufweist, welche bevorzugt fernbetätigbar sind.

5. Ladevorrichtung nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet,** dass sich die Basisstruktur (**2**) seitwärts nicht über die Breite des Fahrwerks (**43**), insbesondere die Spurbreite der Räder (**29**, **30**) hinaus erstreckt.

6. Ladevorrichtung nach Anspruch 5, **dadurch gekennzeichnet,** dass die Breite der Basisstruktur (**2**) auf deren der Ausziehrichtung (A) entgegengesetzten Seite im Wesentlichen der Breite des Fahrwerks (**43**), insbesondere die Spurbreite der Räder (**30**) entspricht.

7. Ladevorrichtung nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet,** dass an der Basisstruktur (**2**) Stützfüße (**8**) angeordnet sind.

8. Ladevorrichtung nach Anspruch 7, **dadurch gekennzeichnet,** dass zumindest einem der Stützfüße (**8**) ein Lastsensor zugeordnet ist.

9. Ladevorrichtung nach Anspruch 7 oder Anspruch 8, **dadurch gekennzeichnet,** dass zumindest einer der Stützfüße (**8**) seitwärts ausfahrbar, ausziehbar oder ausklappbar ist.

10. Ladevorrichtung nach einem der Ansprüche 1 bis 9, **dadurch gekennzeichnet,** dass an der Basisstruktur (**2**) keine Räder angeordnet sind.

11. Ladevorrichtung nach einem der Ansprüche 1 bis 10, **dadurch gekennzeichnet,** dass ein zwischen dem Hubrahmen (**11**) und dem Frachtgutträger (**12**) wirkender Ausfahrantrieb vorgesehen ist.

12. Ladevorrichtung nach Anspruch 11, **dadurch gekennzeichnet,** dass auf den Ausfahrantrieb eine Steuerung einwirkt, welche die Ausfahrbewegung unter Berücksichtigung von sicherheitsrelevanten Kenngrößen steuert.

13. Ladevorrichtung nach einem der Ansprüche 1 bis 12, **dadurch gekennzeichnet,** dass an dem Frachtgutträger (**12**), bevorzugt im Bereich frontseitiger Räder (**29**), mindestens ein Sensor zur Erfassung der Position des Frachtgutträgers (**12**) relativ zu einer Ladefläche angeordnet ist.

14. Ladevorrichtung nach einem der Ansprüche 1 bis 13, **dadurch gekennzeichnet,** dass die Hubeinrichtung (**4**) einen Scherenheber (**17**) umfasst.

15. Ladevorrichtung nach Anspruch 14, **dadurch gekennzeichnet,** dass mindestens einer der Lenker (**19**, **20**) des Scherenhebers gekröpft ist und/oder ein Antriebselement (**32**) versetzt zum Gelenkpunkt (**18**) an einem der Lenker (**19**) angreift.

16. Ladevorrichtung nach Anspruch 14 oder Anspruch 15, **dadurch gekennzeichnet,** dass die in Ausziehrichtung (A) gelegene Lagerung des Scherenhebers (**17**) an der Basisstruktur (**2**) als Festlager (**21**) ausgeführt ist.

17. Ladevorrichtung nach einem der Ansprüche 1 bis 16, **dadurch gekennzeichnet,** dass die Hubeinrichtung (**4**) eine elektrische oder eine elektro-hydraulische Antriebseinheit umfasst.

18. Ladevorrichtung nach Anspruch 17, **dadurch gekennzeichnet,** dass eine elektrische Speichereinheit der Antriebseinheit am Hubrahmen (**11**), bevorzugt an dessen in Ausziehrichtung (A) weisender Frontseite angeordnet ist.

19. Ladevorrichtung nach Anspruch 17 oder Anspruch 18, **dadurch gekennzeichnet,** dass eine elektrische Speichereinheit der Antriebseinheit als Wechselakku ausgeführt ist.

20. Ladevorrichtung nach einem der Ansprüche 17 bis 19, **dadurch gekennzeichnet,** dass eine elektrische Speichereinheit der Antriebseinheit einen an die elektrische Anlage eines als Kraftfahrzeug ausgeführten Transportfahrzeugs anschließbaren Ladeanschluss aufweist.

21. Ladevorrichtung nach einem der Ansprüche 1 bis 20, **dadurch gekennzeichnet,** dass an dem Frachtgutträger (**12**) frontseitig mindestens eine veränderlich positionierbare Behelfsrolle angeordnet ist.

22. Ladevorrichtung nach einem der Ansprüche 1 bis 21, **dadurch gekennzeichnet,** dass der Frachtgutträger (**12**) relativ zum Hubrahmen (**11**) verriegelbar ist.

23. Ladevorrichtung nach einem der Ansprüche 1 bis 22, **dadurch gekennzeichnet,** dass die Hubeinrichtung (**4**) in einer teilweise angehobenen Stellung der Ladestruktur (**3**) sperrbar ist.

24. Ladevorrichtung nach einem der Ansprüche 1 bis 23, **dadurch gekennzeichnet,** dass an dem Hubrahmen (**11**) an dessen der Ausziehrichtung (A) entgegengesetzten Ende eine Bedienelemente aufweisende Handhabe (**35**) angeordnet ist.

25. Ladevorrichtung nach Anspruch 24, **dadurch gekennzeichnet,** dass die Handhabe (**35**) schwenkbar oder einschiebbar am Hubrahmen (**11**) oder an der Basisstruktur (**2**) angebracht ist.

26. Ladevorrichtung nach Anspruch 24, **dadurch gekennzeichnet,** dass die Handhabe (**35**) eine ausfahrbare Deichsel (**37**) aufweist, wobei die Ausfahrrichtung der Deichsel (**37**) bevorzugt in rückwärtiger Richtung geneigt schräg zur Hubrichtung (B) orientiert ist.

27. Ladevorrichtung nach Anspruch 26, **dadurch gekennzeichnet,** dass die Länge der Deichsel (**37**) mittels eines Längenverstellantriebs veränderbar ist, wobei der Längenverstellantrieb bevorzugt phasenweise mit dem Hubantrieb invers koppelbar ist.

28. Ladevorrichtung nach einem der Ansprüche 1 bis 27, **dadurch gekennzeichnet,** dass der Frachtgutträger (**12**), insbesondere als Teil eines auswechselbaren Aufsatzes, eine Ladeplattform (**9**), mindestens eine Schüttgutaufnahme oder eine Spezialhalterung aufweist.

29. Ladevorrichtung nach einem der Ansprüche 1 bis 28, **dadurch gekennzeichnet,** dass der Frachtgutträger (**12**) zur Anbringung von Befestigungs- und/oder Sicherungsmitteln für das Frachtgut geeignete Halterungen aufweist.

Es folgen 6 Seiten Zeichnungen

Anhängende Zeichnungen

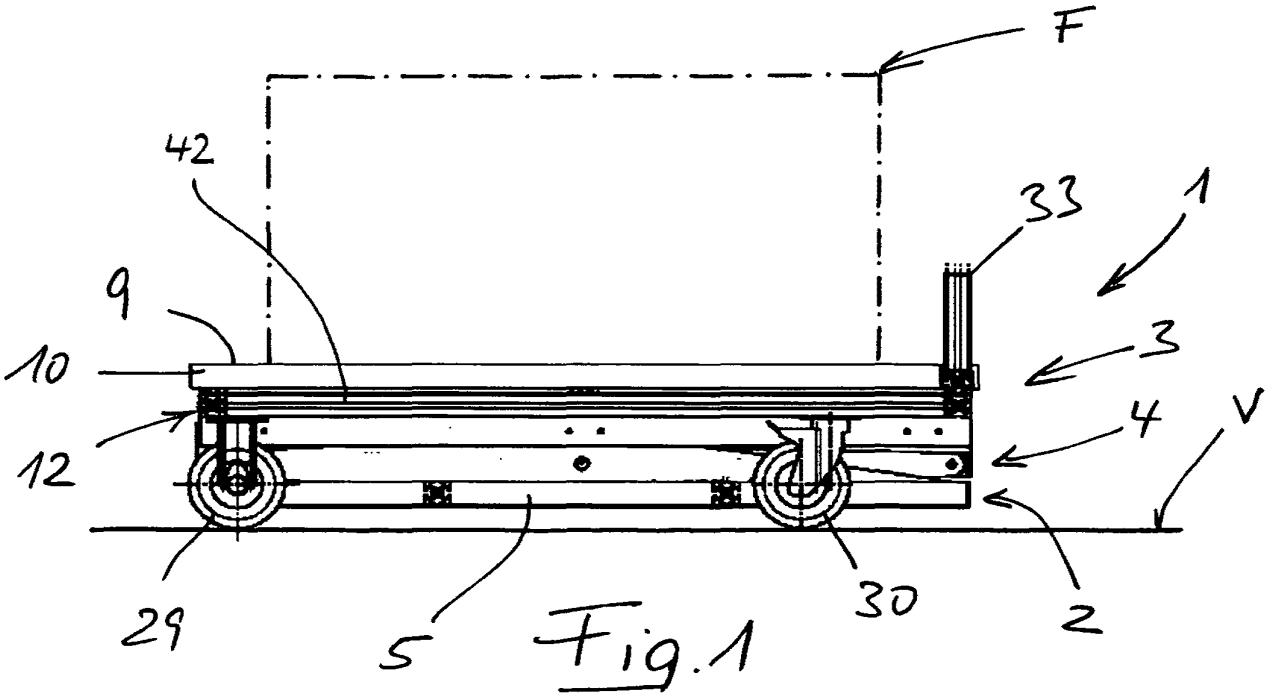


Fig. 1

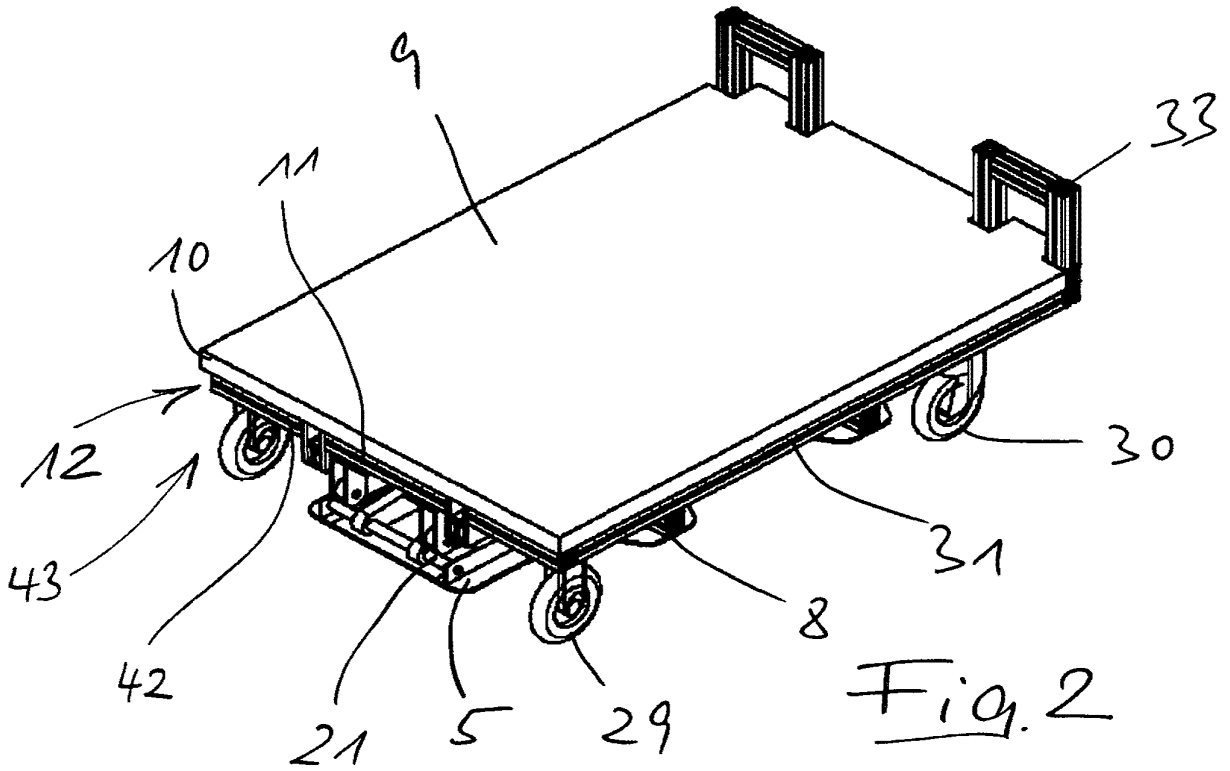


Fig. 2

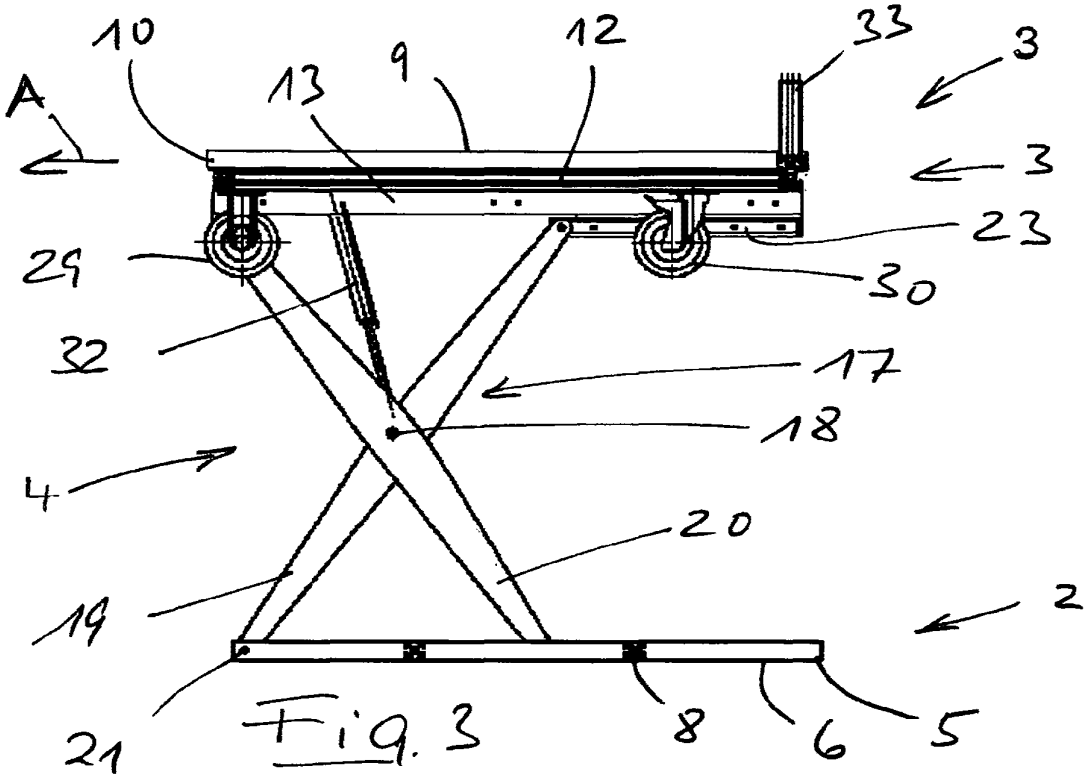

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Fig. 3

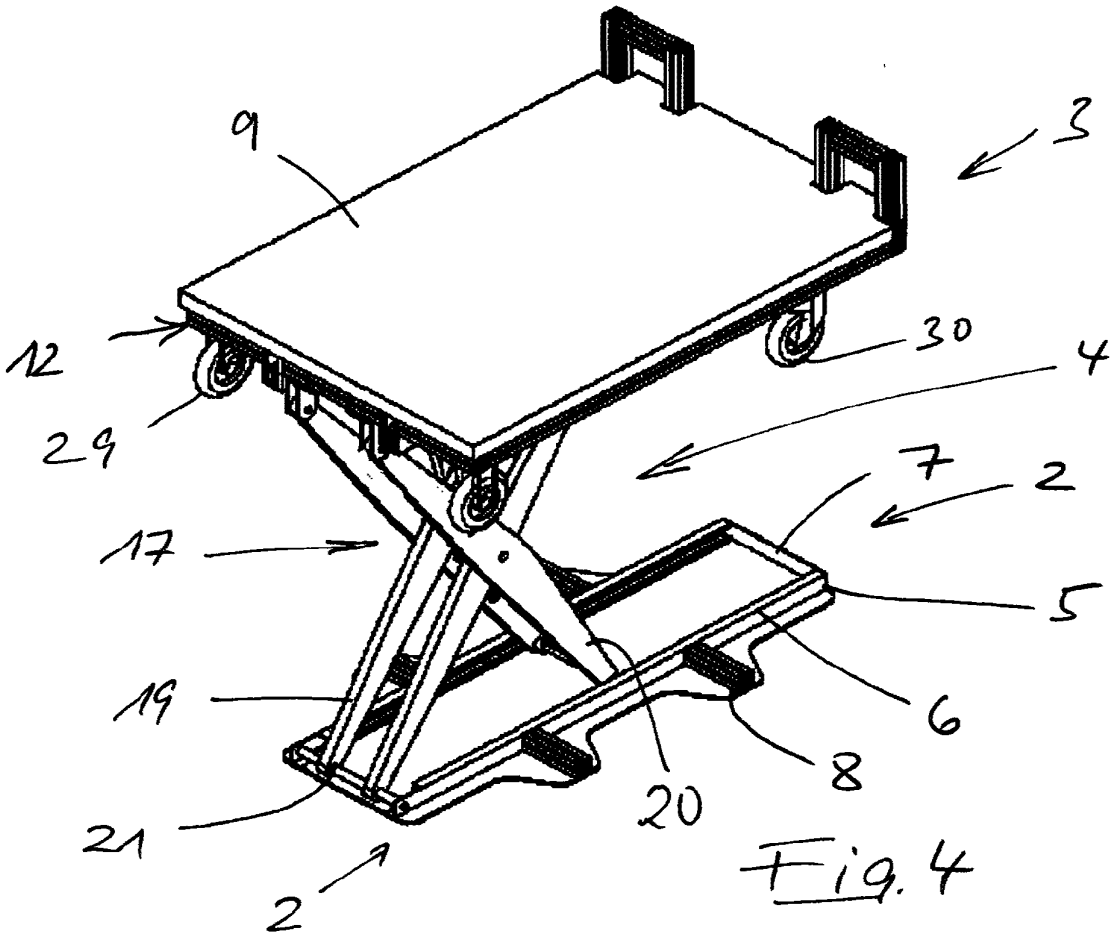

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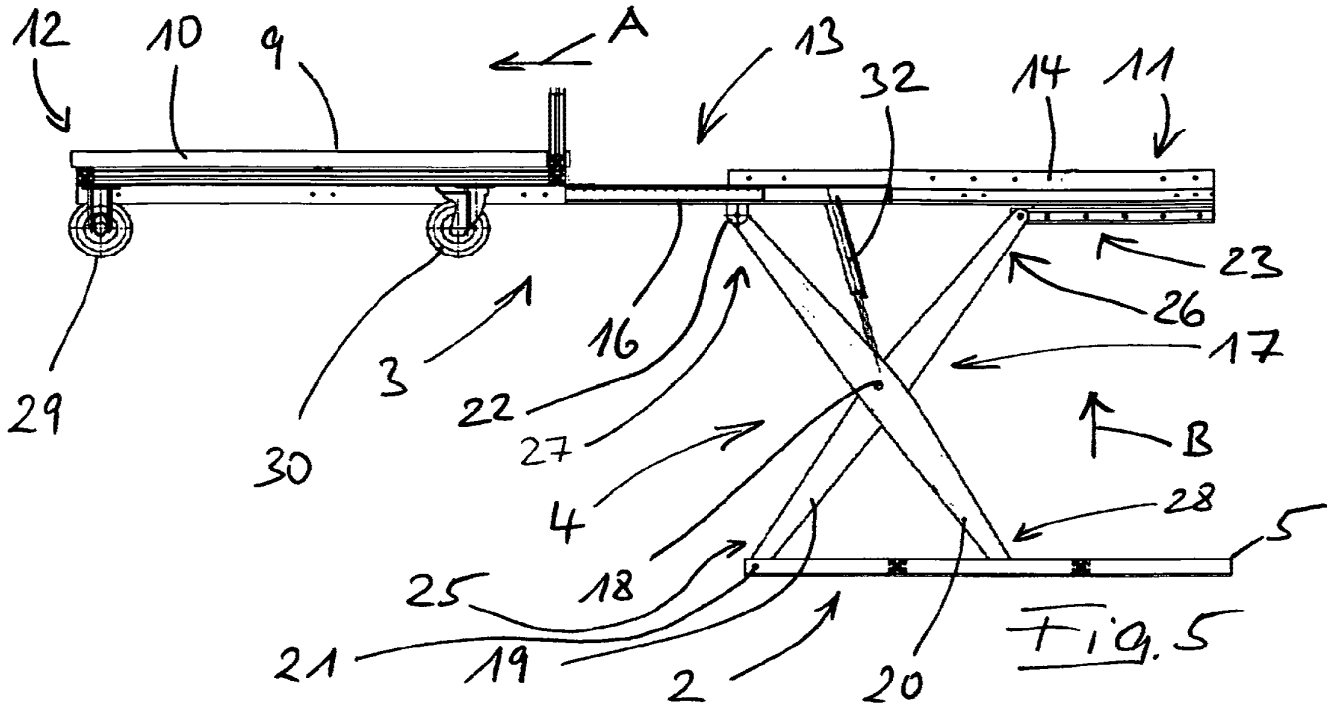

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Fig. 5

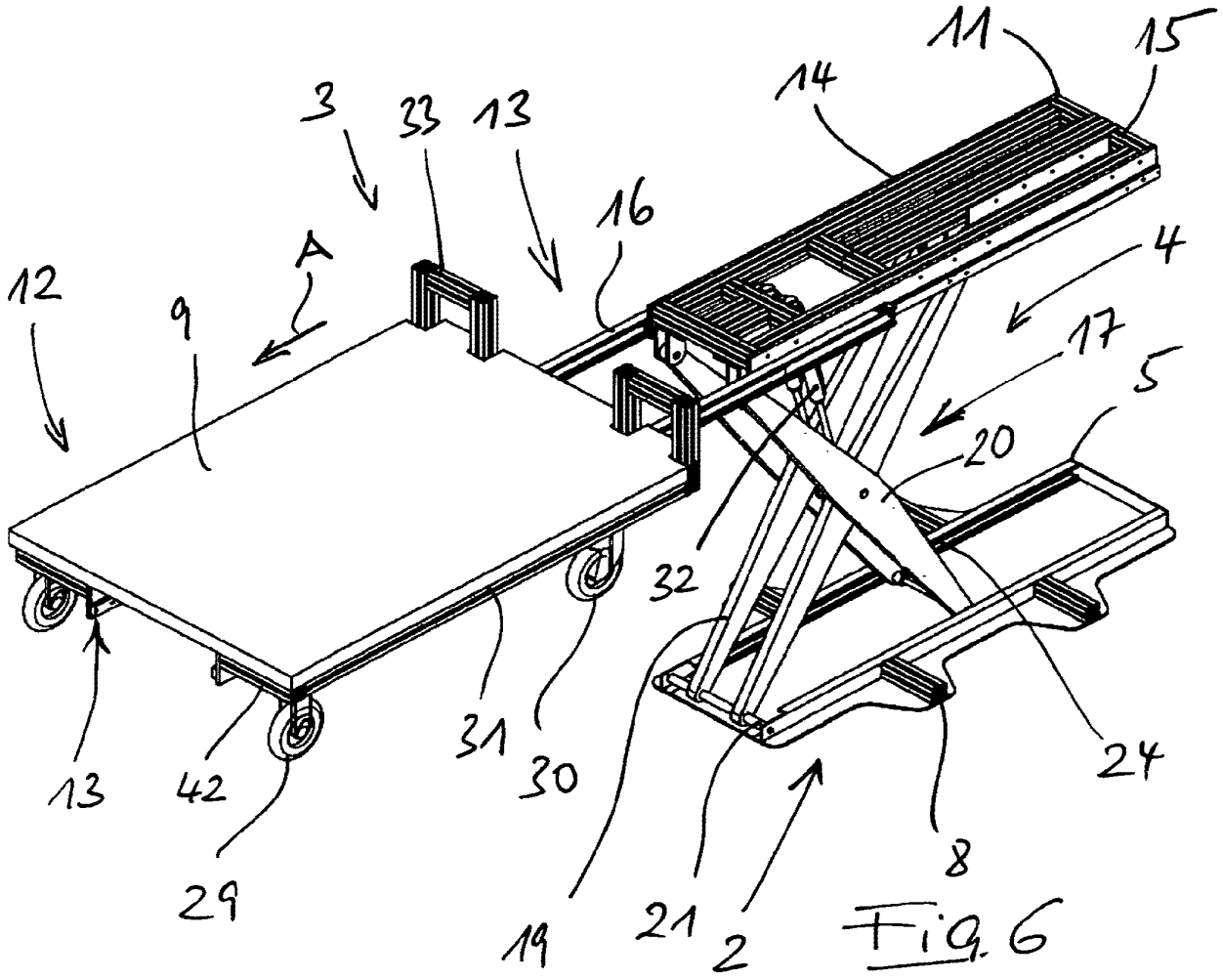

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Fig. 6

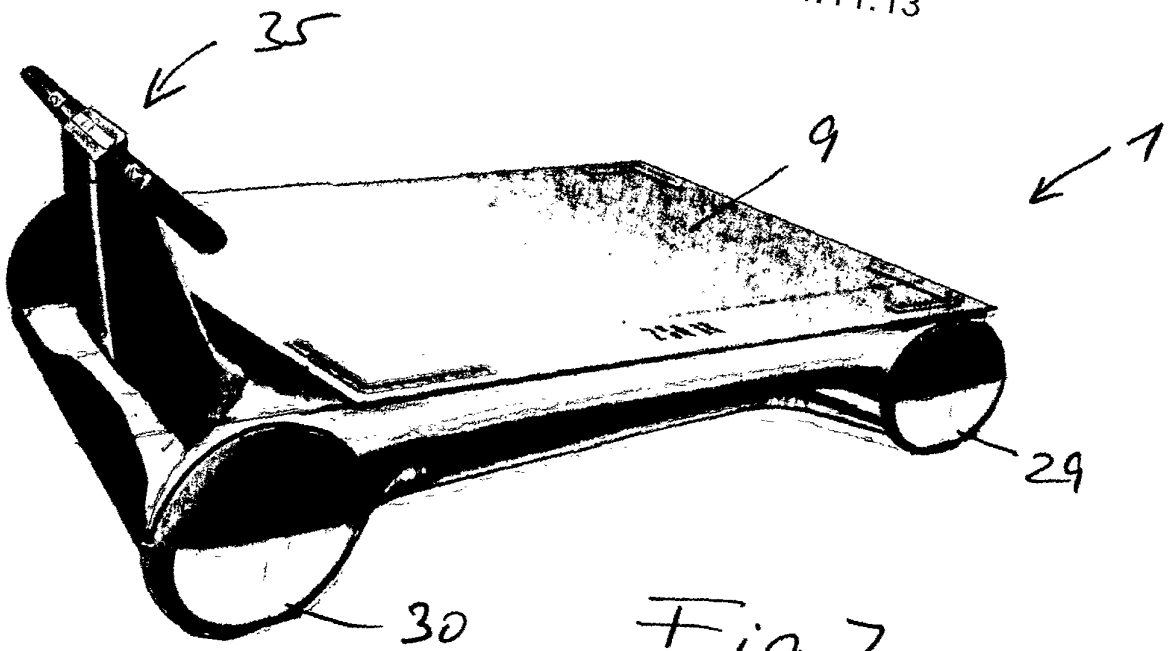


Fig. 7

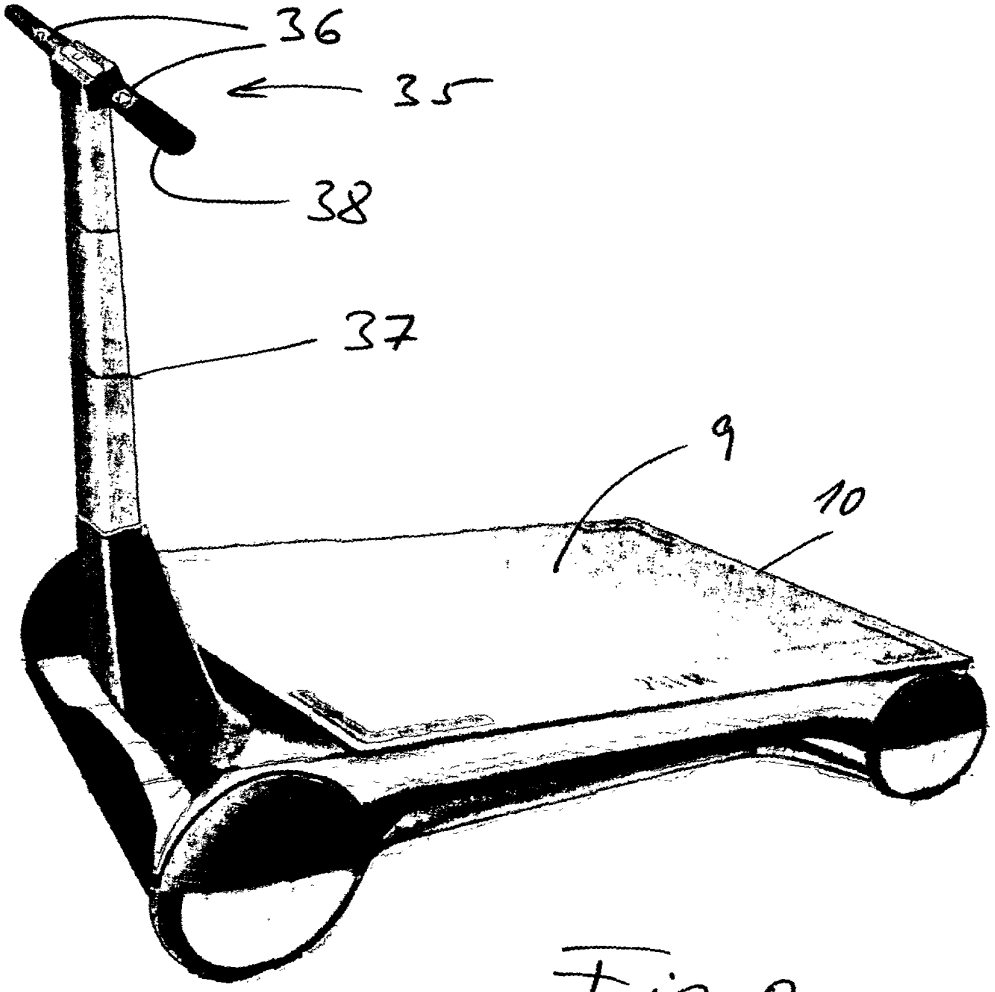


Fig. 8

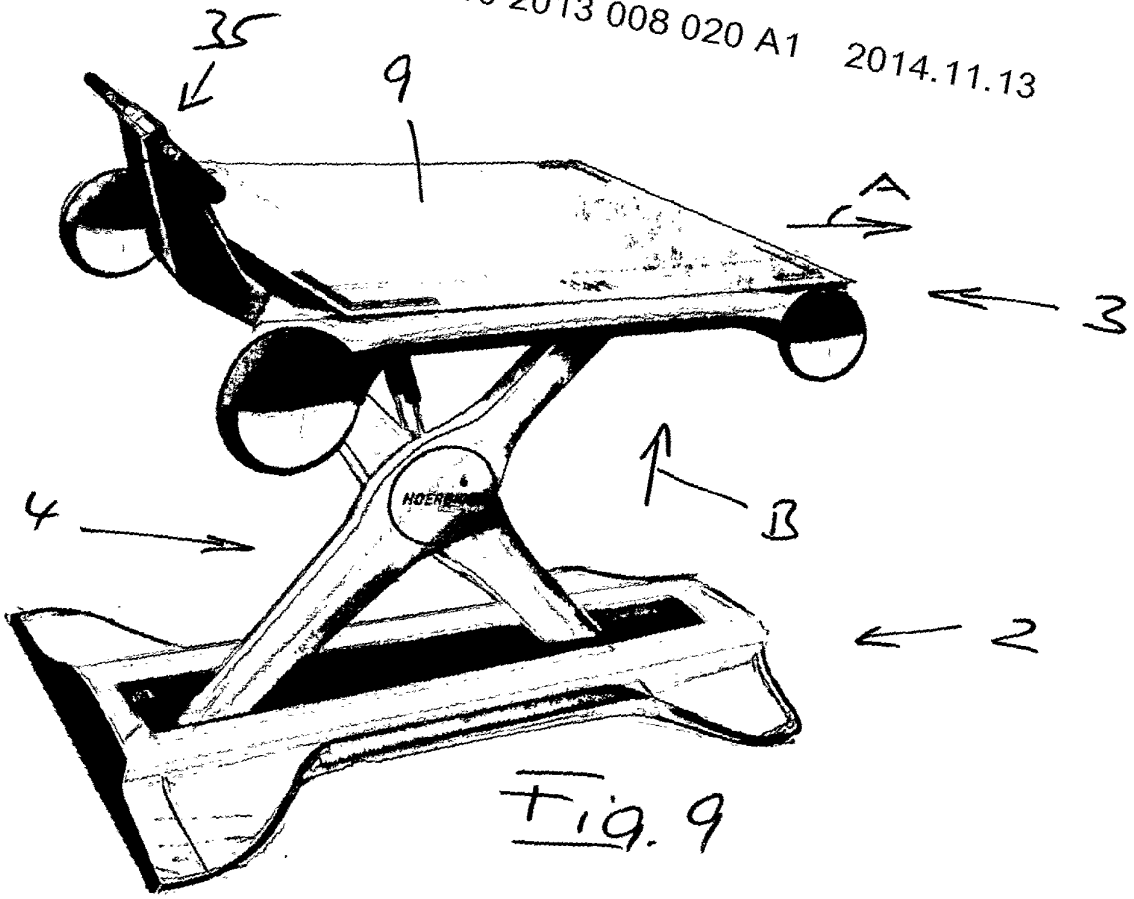


Fig. 9

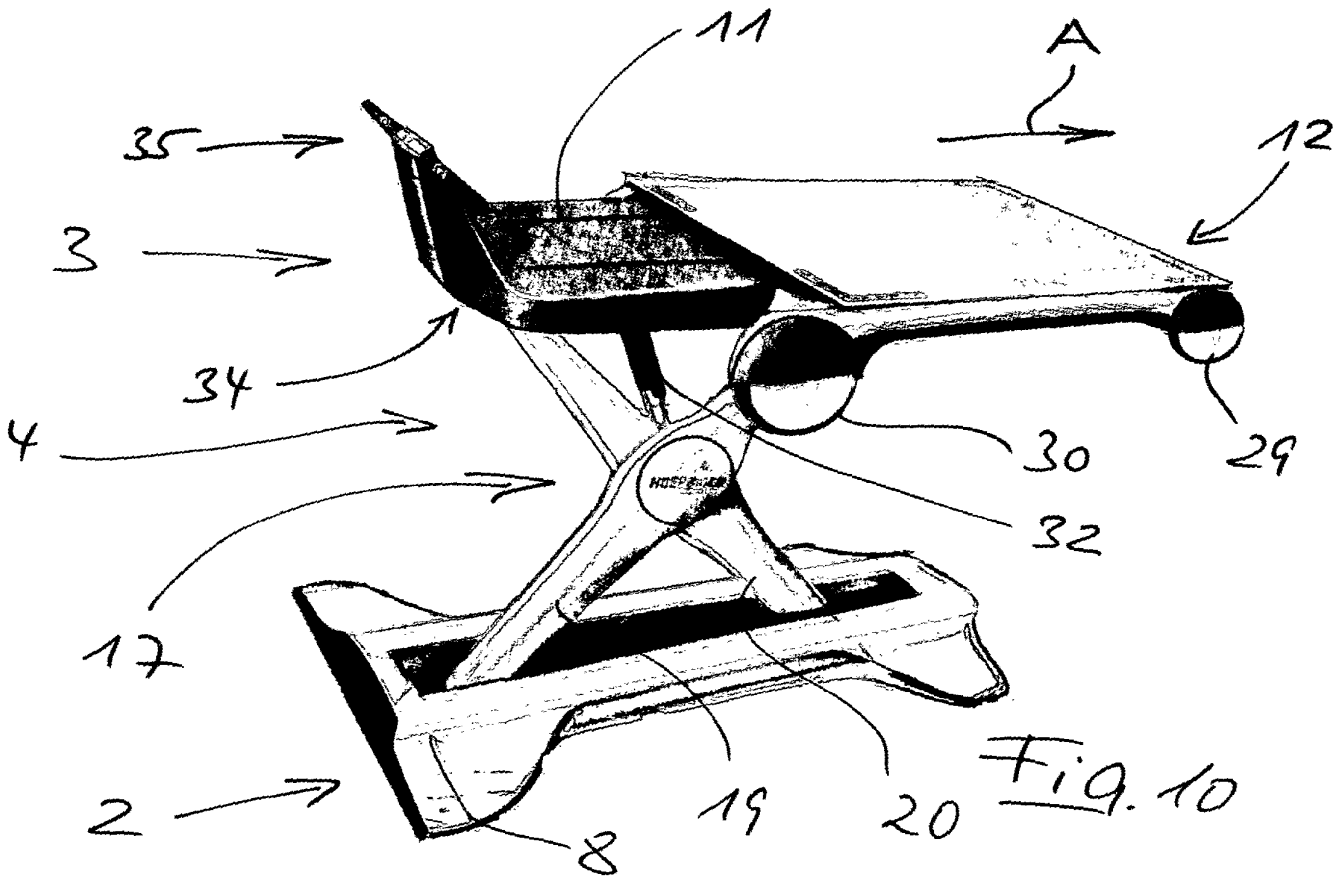


Fig. 10

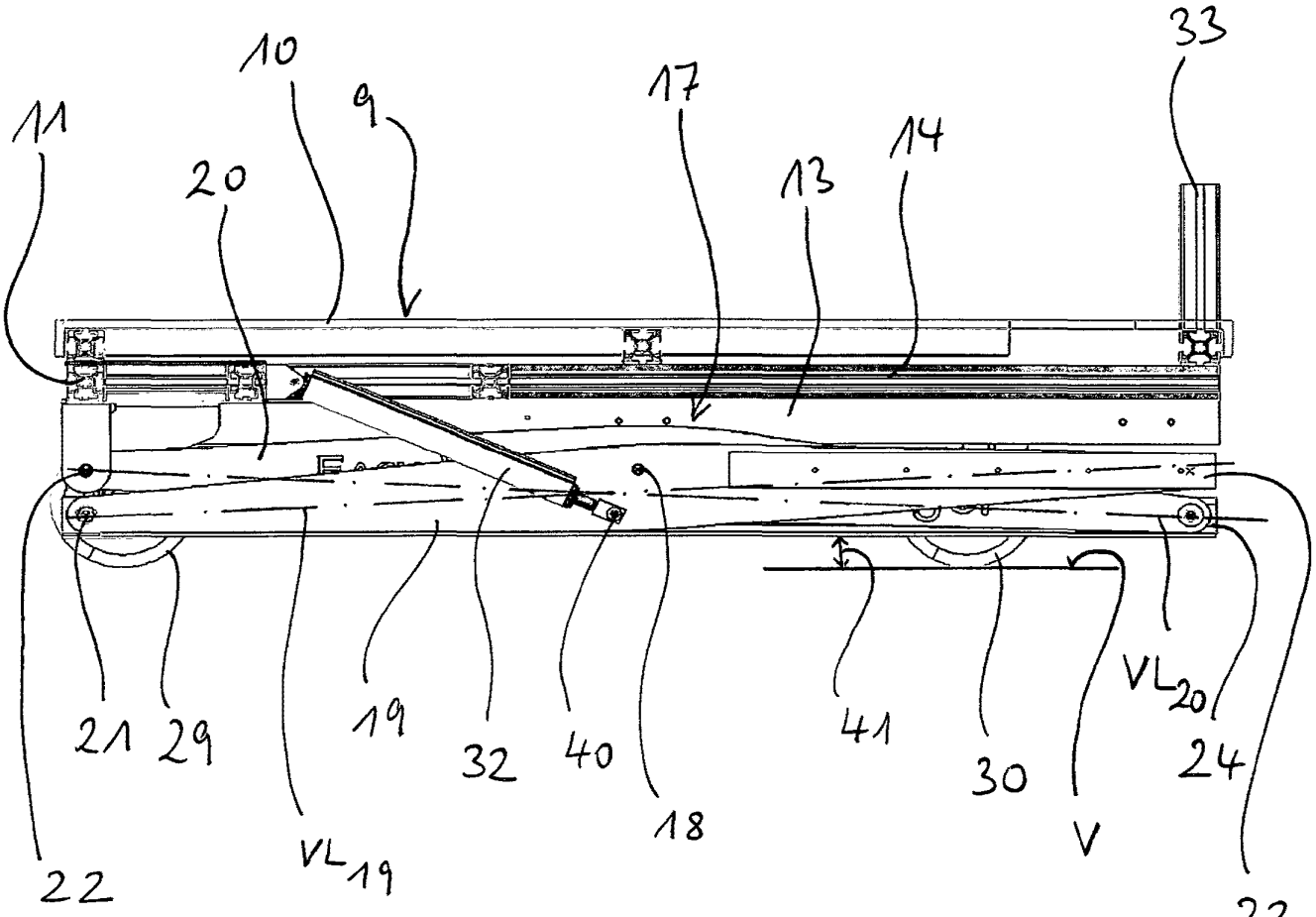


Fig. 11

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DESCRIPTION CN203934825U

10 a height-adjustable table

[0001]

14 technical field

[0002]

18 The utility model belongs to the technical field of furniture manufacturing, in particular to a table with adjustable height.

[0003]

23 Background technique

[0004]

27 At present, the table supported by "X"-shaped cross metal feet is usually a fixed height. Because the height of the desktop cannot be adjusted, it cannot be adjusted to a suitable height according to the needs of users, and it is not convenient to fold and reduce the occupied space for storage. .

[0005]

33 Utility model content

[0006]

37 The purpose of the utility model is to overcome the problems existing in the prior art and provide a height-

adjustable table.

[0007]

42 The purpose of the utility model is achieved as follows: a height-adjustable table, comprising a table top (1), a stand (2), an "X"-shaped cross movable metal foot (3), and the table top (1) is installed on the stand On (2), the "X"-shaped cross movable metal feet (3) support the platform (2) horizontally, and the middle of the "X"-shaped cross movable metal feet (3) is connected by a pivot shaft (30), which is characterized in that : A set of horizontal guide rails (4) are respectively provided at both ends of the stand (2), and the left and right upper ends of the "X"-shaped cross movable metal feet (3) are respectively slidably placed on the horizontal guide rails (4).), a beam (31) is arranged in the middle of the platform (2), and a set of slide rails (52) are fixed on both sides of the beam (31) respectively. A gas strut (5) is also connected between the upper end and the two ends of the stand (2), wherein the movable rod end (50) of the gas strut (5) and the upper end of the "X"-shaped cross movable metal foot (3) The fixed end (51) of the gas strut (5) is connected with the sliding rod of the slide rail (52), and the two gas struts (5) control the gas strut (5) through a pull-wire switch (6).) of the movable rod telescopic positioning.

[0008]

57 The stand (2) is also provided with an elastic buffer mechanism (7) for preventing the rapid lowering of the table top (1) by opening the two upper ends of the "X"-shaped cross movable metal feet (3) to both sides. The mechanism (7) is fixed in the middle of the stand (2), and the lower end is directly opposite the pivot shaft (30) in the middle of the "X"-shaped cross movable metal feet (3).

[0009]

64 A turntable (8) is also provided on one side of the stand (2), the table top (1) is two movable table tops (10, 11) spliced by hinges, and the bottom of one movable table top is mounted and fixed on the turntable (8) on.

[0010]

69 One side of the stand (2) is provided with a swing rod (12) that drives the action of the pull-wire switch (6), and the middle of the swing rod (12) is fixed on a fixed frame (12) through a rotating shaft (11), and the pull-wire switch The driving end of the cable (6) is connected to one end of the swing rod (12), when the swing rod (12) swings, the valve of the driving gas strut (5) is opened, and the movable rod end (50) is in a retractable state; the swing rod (12) W hen in the non-stressed state, the valve that drives the gas strut (5) is closed, and the movable rod is in the positioning state.

[0011]

78 The turntable (8) is provided with two limit rods (80, 81) and two positioning holes (82, 83) near the two limit rods (80. 81). The connecting line of the central rotating shaft of the turntable (8) is at an included angle of 90

degrees, one end of the pin (9) is located between the two limit rods (80, 81), and is detachable from the two positioning holes (82, 83) The other end is connected to one end of the pendulum rod (12) through a connecting rod (13). When the pendulum rod (12) swings, the bolt (9) leaves the positioning holes (82, 83), and the turntable (8) can be rotated to Adjust the size of the desktop; when the pendulum rod (12) is in a non-stressed state, the latch (9) is located in one of the positioning holes to limit the rotation of the turntable (8).

[0012]

88 The positive effect of the utility model: the height-adjustable table with this structure can control the opening angle of the "X"-shaped cross movable metal feet to adjust the tabletop through the joint action of horizontal guide rails, gas struts, pull-wire switches and other components. height and positioning, so that the table height can be adjusted very conveniently.

[0013]

95 Description of drawings

[0014]

99 1 is a perspective view of a height-adjustable table in a folded state of the table top;

[0015]

103 Figure 2 is a perspective view of a height-adjustable table in a folded state of the table top;

[0016]

107 3 is a perspective view of a height-adjustable table in an extended state of the table top;

[0017]

111 Fig. 4 is a perspective view of the assembled state of the support foot and the stand;

[0018]

115 Figure 5 is a perspective view of the assembled state of the support foot and the gas strut;

[0019]

119 6 is a perspective view of a turntable;

[0020]

123 Fig. 7 is another perspective view of the turntable;

[0021]

127 Fig. 8 is the working schematic diagram of the pull-wire switch and the latch in the unstressed state of the pendulum rod;

[0022]

132 FIG. 9 is a schematic diagram of the work of the pull-wire switch and the latch in the swinging state of the pendulum rod.

[0023]

137 Detailed ways

[0024]

141 The specific embodiments of the height-adjustable table of the present invention will be further described in detail below with reference to the accompanying drawings.

[0025]

146 As shown in Fig. 1-Fig. 9, the height-adjustable table of the present invention is mainly composed of a table top 1, a platform 2, and "X"-shaped cross movable metal feet 3. The desktop 1 is installed on the platform 2, and "X" The "X"-shaped cross movable metal feet 3 support the platform 2 horizontally, the middle of the "X"-shaped cross movable metal feet 3 is connected by a pivot shaft 30, and a set of horizontal guide rails 4 are respectively provided at both ends of the platform 2, "X" The left and right upper ends of the cross-shaped movable metal feet 3 are respectively placed in the horizontal guide rail 4 so as to be slidable left and right. A gas strut 5 is also connected between the two upper ends of the movable metal foot 3 and the two ends of the platform 2, wherein the movable rod end 50 of the gas strut 5 and the upper end of the "X"-shaped cross movable metal foot 3 are rotatable. Active connection, the fixed end 51 of the gas strut 5 is connected with the sliding rod of the slide rail 52, and the two gas struts 5 control the telescopic positioning of the movable rod through a pull-wire switch 6, so as to realize the height adjustment and positioning of the desktop.

157 The platform 2 is also provided with an elastic buffer mechanism 7 that opens the two upper ends of the "X"-shaped cross movable metal feet 3 to both sides to prevent the desktop 1 from being lowered rapidly. The elastic buffer mechanism 7 is fixed in the middle of the platform 2. The lower end is facing the pivot shaft 30 in the middle of the "X"-shaped cross movable metal feet 3. When the table top is lowered to a certain low position, the lower end of the elastic buffer mechanism 7 abuts on the pivot shaft 30, preventing the table top from rapidly dropping to the lowest position. When the desktop is to be raised, the elastic buffering mechanism 7 plays a role of assisting in the early stage.

164 In order to adjust the size of the desktop conveniently, a turntable 8 is also provided on one side of the stand 2
.

166 In order to facilitate the operation, a swing rod 12 is provided on one side of the stand 2 for driving the action of the pull-wire switch 6. The middle of the swing rod 12 is fixed on a fixed frame 12 through the rotating shaft 11, and the pull-wire driving end of the pull-wire switch 6 is connected to the swing rod. At one end of 12, when the swing rod 12 swings, the valve of the driving gas strut 5 is opened, and the movable rod end 50 is in a retractable state; when the swing rod 12 is in a non-stressed state, the valve of the driving gas strut 5 is closed, and the movable rod is in a state of retraction. Location status.

172 In order to better control the switching of the size of the desktop, a limit rod 80 and a limit rod 81 and a positioning hole 82 and a positioning hole 83 located near the two limit rods are provided on the turntable 8. The limit rod 80, the limit rod 81 and The connecting line of the central rotating shaft of the turntable 8 is at an included angle of 90 degrees. A plug 9 is arranged on the base of the turntable 8. One end of the plug 9 is located between the two limit rods 9, and can be plugged with the two positioning holes 9 in a clutchable manner. One end is connected to one end of the swing rod 12 through a connecting rod 13. When the swing rod 12 swings, the pin 9 leaves the positioning hole, and the turntable 8 can be rotated to adjust the size of the desktop; when the swing rod 12 is in a non-stressed state, the pin 9 is located in one of the In the positioning hole, the rotation of the turntable 9 is restricted.

(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 203934825 U
(45)授权公告日 2014.11.12

(21)申请号 201420270735.1

(22)申请日 2014.05.26

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(51)Int.Cl.
A47B 9/16(2006.01)

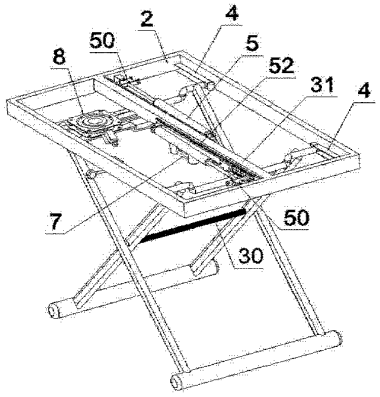
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(54)实用新型名称

一种高度可调节的桌子

(57)摘要

本实用新型涉及一种高度可调节的桌子，包括桌面 1、台架 2、“X”形交叉活动金属脚 3，桌面安装在台架上，“X”形交叉活动金属脚对台架进行水平支撑，“X”形交叉活动金属脚中部通过枢接轴 30 连接，台架的两端分别设有一组水平导轨 4，“X”形交叉活动金属脚的左右两上端部分别可左右滑动地置于水平导轨内，台架 2 的中间设有一横梁 31，横梁两侧分别固定有一组滑轨 52，“X”形交叉活动金属脚的两上端部与台架两端之间还分别连接一气撑杆 5，气撑杆的活动杆端 50 与“X”形交叉活动金属脚的上端部可转动地活动连接，气撑杆的固定端 51 与滑轨的滑杆连接，两气撑杆通过一拉线开关 6 控制。采用该结构的桌子，方便调节桌子的高度。



CN 203934825 U

1. 一种高度可调节的桌子，包括桌面（1）、台架（2）、“X”形交叉活动金属脚（3），桌面（1）安装在台架（2）上，“X”形交叉活动金属脚（3）对台架（2）进行水平支撑，“X”形交叉活动金属脚（3）中部通过枢接轴（30）连接，其特征在于：所述台架（2）的两端分别设有一组水平导轨（4），“X”形交叉活动金属脚（3）的左右两上端部分别可左右滑动地置于所述水平导轨（4）内，所述台架（2）的中间设有一横梁（31），横梁（31）两侧分别固定有一组滑轨（52），所述“X”形交叉活动金属脚（3）的两上端部与台架（2）两端之间还分别连接一气撑杆（5），其中气撑杆（5）的活动杆端（50）与“X”形交叉活动金属脚（3）的上端部可转动地活动连接，气撑杆（5）的固定端（51）与滑轨（52）的滑杆连接，两气撑杆（5）通过一拉线开关（6）控制气撑杆（5）的活动杆伸缩定位。

2. 根据权利要求 1 所述的高度可调节的桌子，其特征在于：所述台架（2）还设有使“X”形交叉活动金属脚（3）的两上端部向两侧打开的以阻止桌面（1）快速降低的弹力缓冲机构（7），该弹力缓冲机构（7）固定在台架（2）的中部，下端正对“X”形交叉活动金属脚（3）中部的枢接轴（30）。

3. 根据权利要求 1 或 2 所述的高度可调节的桌子，其特征在于：所述台架（2）的一侧上还设有一转盘（8），所述桌面（1）为通过绞链拼接的两活动桌面（10，11），其中一活动桌面底部安装固定在转盘（8）上。

4. 根据权利要求 3 所述的高度可调节的桌子，其特征在于：所述台架（2）的一侧设有驱动拉线开关（6）动作的摆杆（12），摆杆（12）的中部通过转轴（11）固定在一固定架（12）上，拉线开关（6）的拉线驱动端连接在摆杆（12）的一端，摆杆（12）摆动时，驱动气撑杆（5）的气门打开，活动杆端（50）处于可伸缩状态；摆杆（12）处于非受力状态时，驱动气撑杆（5）的气门关闭，活动杆处于定位状态。

5. 根据权利要求 4 所述的高度可调节的桌子，其特征在于：所述转盘（8）上设有两限位杆（80，81）及位于两限位杆（80，81）附近的两定位孔（82，83），两限位杆（80，81）与转盘（8）的中心旋转轴的连线呈 90 度夹角，所述转盘（8）的底座上设有一插销（9），插销（9）一端位于两限位杆（80，81）之间，并与两定位孔（82，83）可离合地插接，另一端通过一连杆（13）连接摆杆（12）的一端，摆杆（12）摆动时，插销（9）离开定位孔（82，83）内，转盘（8）可旋转以调节桌面大小；摆杆（12）处于非受力状态时，插销（9）位于其中一定位孔内，限制转盘（8）旋转。

一种高度可调节的桌子

技术领域

[0001] 本实用新型属于家具制造技术领域，具体涉及一种高度可调节的桌子。

背景技术

[0002] 目前市面上采用“X”形交叉金属脚支撑的桌子，通常桌面为固定高度，因桌面高度不可调节，因此不能根据使用者的需求调节到适合的高度，也不便于收叠后降低占用空间存放。

实用新型内容

[0003] 本实用新型的目的在于克服现有技术存在的问题，提供一种高度可调节的桌子。

[0004] 本实用新型的目的是这样实现的：一种高度可调节的桌子，包括桌面(1)、台架(2)、“X”形交叉活动金属脚(3)，桌面(1)安装在台架(2)上，“X”形交叉活动金属脚(3)对台架(2)进行水平支撑，“X”形交叉活动金属脚(3)中部通过枢接轴(30)连接，其特征在于：所述台架(2)的两端分别设有一组水平导轨(4)，“X”形交叉活动金属脚(3)的左右两上端部分别可左右滑动地置于所述水平导轨(4)内，所述台架(2)的中间设有一横梁(31)，横梁(31)两侧分别固定有一组滑轨(52)，所述“X”形交叉活动金属脚(3)的两上端部与台架(2)两端之间还分别连接一气撑杆(5)，其中气撑杆(5)的活动杆端(50)与“X”形交叉活动金属脚(3)的上端部可转动地活动连接，气撑杆(5)的固定端(51)与滑轨(52)的滑杆连接，两气撑杆(5)通过一拉线开关(6)控制气撑杆(5)的活动杆伸缩定位。

[0005] 所述台架(2)还设有使“X”形交叉活动金属脚(3)的两上端部向两侧打开的以阻止桌面(1)快速降低的弹力缓冲机构(7)，该弹力缓冲机构(7)固定在台架(2)的中部，下端正对“X”形交叉活动金属脚(3)中部的枢接轴(30)。

[0006] 所述台架(2)的一侧上还设有一转盘(8)，所述桌面(1)为通过绞链拼接的两活动桌面(10,11)，其中一活动桌面底部安装固定在转盘(8)上。

[0007] 所述台架(2)的一侧设有驱动拉线开关(6)动作的摆杆(12)，摆杆(12)的中部通过转轴(11)固定在一固定架(12)上，拉线开关(6)的拉线驱动端连接在摆杆(12)的一端，摆杆(12)摆动时，驱动气撑杆(5)的气门打开，活动杆端(50)处于可伸缩状态；摆杆(12)处于非受力状态时，驱动气撑杆(5)的气门关闭，活动杆处于定位状态。

[0008] 所述转盘(8)上设有两限位杆(80,81)及位于两限位杆(80,81)附近的两定位孔(82,83)，两限位杆(80,81)与转盘(8)的中心旋转轴的连线呈90度夹角，所述插销(9)一端位于两限位杆(80,81)之间，并与两定位孔(82,83)可离合地插接，另一端通过一连杆(13)连接摆杆(12)的一端，摆杆(12)摆动时，插销(9)离开定位孔(82,83)内，转盘(8)可旋转以调节桌面大小；摆杆(12)处于非受力状态时，插销(9)位于其中一定位孔内，限制转盘(8)旋转。

[0009] 本实用新型的积极效果：采用此结构的高度可调节的桌子，通过水平导轨、气撑杆、拉线开关等部件的共同作用，可控制“X”形交叉活动金属脚的张开角度以调节桌面的高

度并进行高度定位，从而可以非常方便地调节桌面高度。

附图说明

[0010] 图 1 为桌面折叠状态的高度可调节的桌子的立体图；

[0011] 图 2 为桌面折叠状态的高度可调节的桌子的立体图；

[0012] 图 3 为桌面扩展状态的高度可调节的桌子的立体图；

[0013] 图 4 为支撑脚与台架装配状态立体图；

[0014] 图 5 为支撑脚与气撑杆装配状态立体图；

[0015] 图 6 为转盘立体图；

[0016] 图 7 为转盘另一视角立体图；

[0017] 图 8 为摆杆不受力状态的拉线开关、插销工作示意图；

[0018] 图 9 为摆杆摆动状态的拉线开关、插销工作示意图。

具体实施方式

[0019] 下面结合附图对本实用新型的高度可调节的桌子的具体实施方式作进一步详细说明。

[0020] 如图 1- 图 9 所示，本实用新型的高度可调节的桌子，主要由桌面 1、台架 2、“X”形交叉活动金属脚 3 组成，桌面 1 安装在台架 2 上，“X”形交叉活动金属脚 3 对台架 2 进行水平支撑，“X”形交叉活动金属脚 3 中部通过枢接轴 30 连接，在台架 2 的两端分别设有一组水平导轨 4，“X”形交叉活动金属脚 3 的左右两上端部分别可左右滑动地置于水平导轨 4 内，台架 2 的中间设有一横梁 31，横梁 31 两侧分别固定有一组滑轨 52，“X”形交叉活动金属脚 3 的两上端部与台架 2 两端之间还分别连接一气撑杆 5，其中气撑杆 5 的活动杆端 50 与“X”形交叉活动金属脚 3 的上端部可转动地活动连接，气撑杆 5 的固定端 51 与滑轨 52 的滑杆连接，两气撑杆 5 通过一拉线开关 6 控制活动杆的伸缩定位，从而实现桌面的高度调节及定位。台架 2 还设有使“X”形交叉活动金属脚 3 的两上端部向两侧打开的以阻止桌面 1 快速降低的弹力缓冲机构 7，该弹力缓冲机构 7 固定在台架 2 的中部，下端正对“X”形交叉活动金属脚 3 中部的枢接轴 30，当桌面下降到一定低位时，弹力缓冲机构 7 的下端抵靠在枢接轴 30 上，防止桌面快速下降至最低位，要将桌面升高时，弹力缓冲机构 7 则起到前期的助力作用。为了方便调节桌面的大小，在台架 2 的一侧上还设有一转盘 8，桌面 1 为通过绞链拼接的活动桌面 10 和活动桌面 11，其中一活动桌面底部安装固定在转盘 8 上。为了方便操控，在台架 2 的一侧设有驱动拉线开关 6 动作的摆杆 12，摆杆 12 的中部通过转轴 11 固定在一固定架 12 上，拉线开关 6 的拉线驱动端连接在摆杆 12 的一端，摆杆 12 摆动时，驱动气撑杆 5 的气门打开，活动杆端 50 处于可伸缩状态；摆杆 12 处于非受力状态时，驱动气撑杆 5 的气门关闭，活动杆处于定位状态。为了更好地控制桌面大小的切换，在转盘 8 上设有限位杆 80 和限位杆 81 及位于两限位杆附近的定位孔 82、定位孔 83，限位杆 80、限位杆 81 与转盘 8 的中心旋转轴的连线呈 90 度夹角，转盘 8 的底座上设有一插销 9，插销 9 一端位于两限位杆 9 之间，并与两定位孔 9 可离合地插接，另一端通过一连杆 13 连接摆杆 12 的一端，摆杆 12 摆动时，插销 9 离开定位孔内，转盘 8 可旋转以调节桌面大小；摆杆 12 处于非受力状态时，插销 9 位于其中一定位孔内，限制转盘 9 旋转。

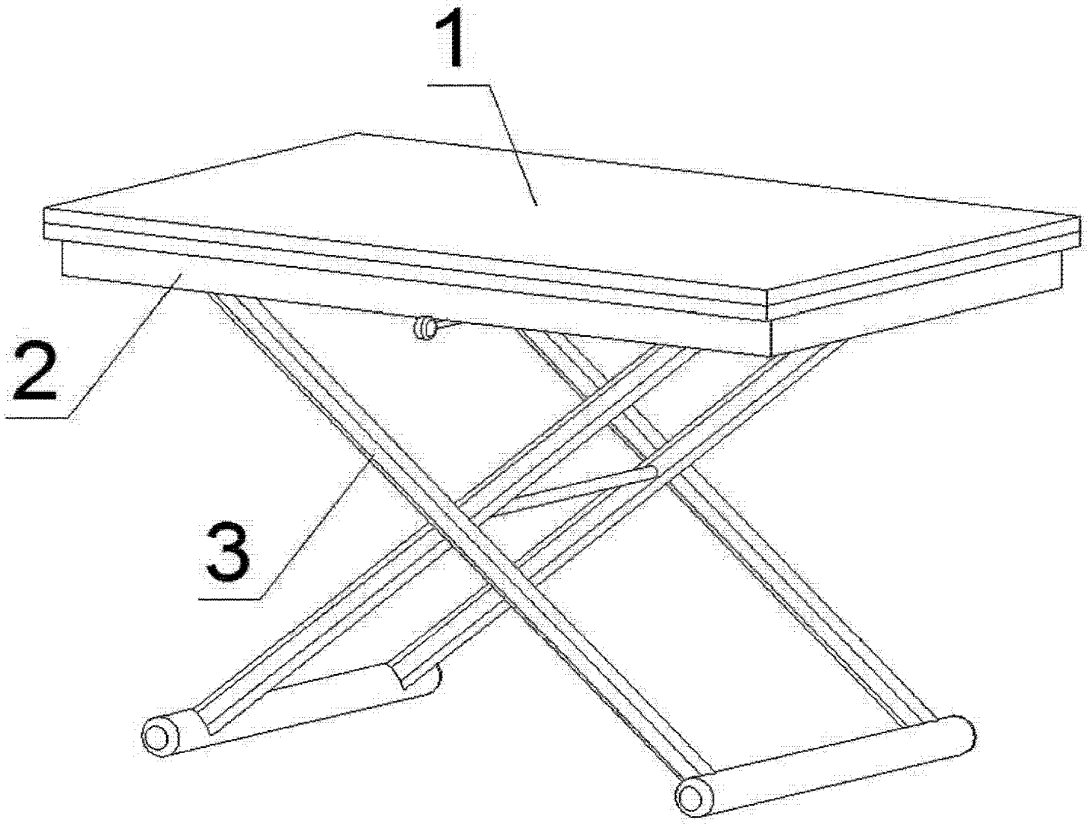


图 1

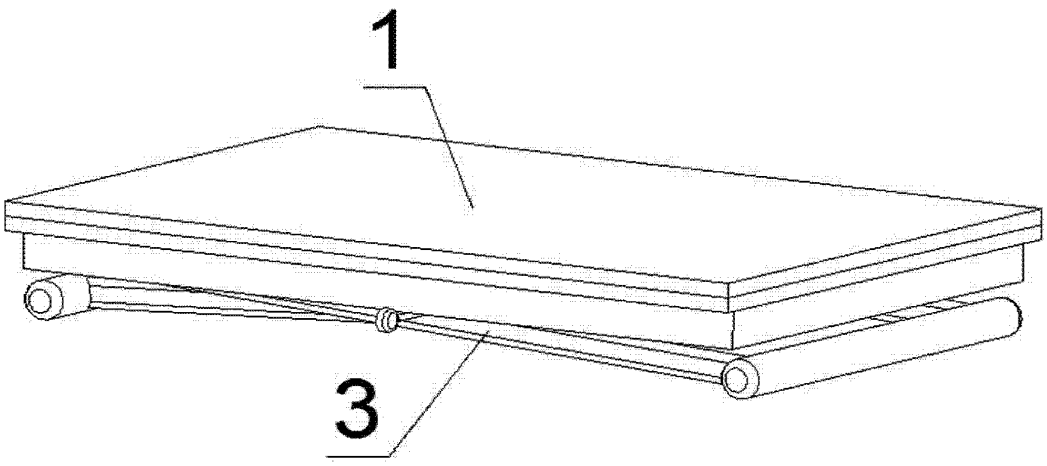


图 2

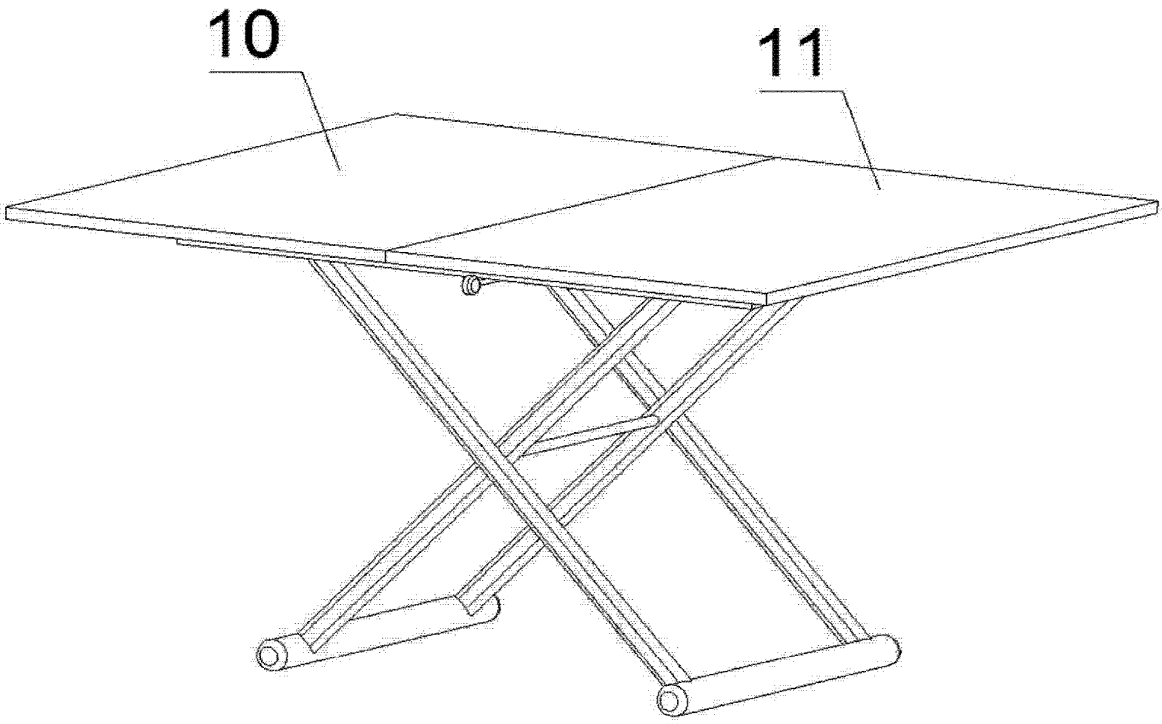


图 3

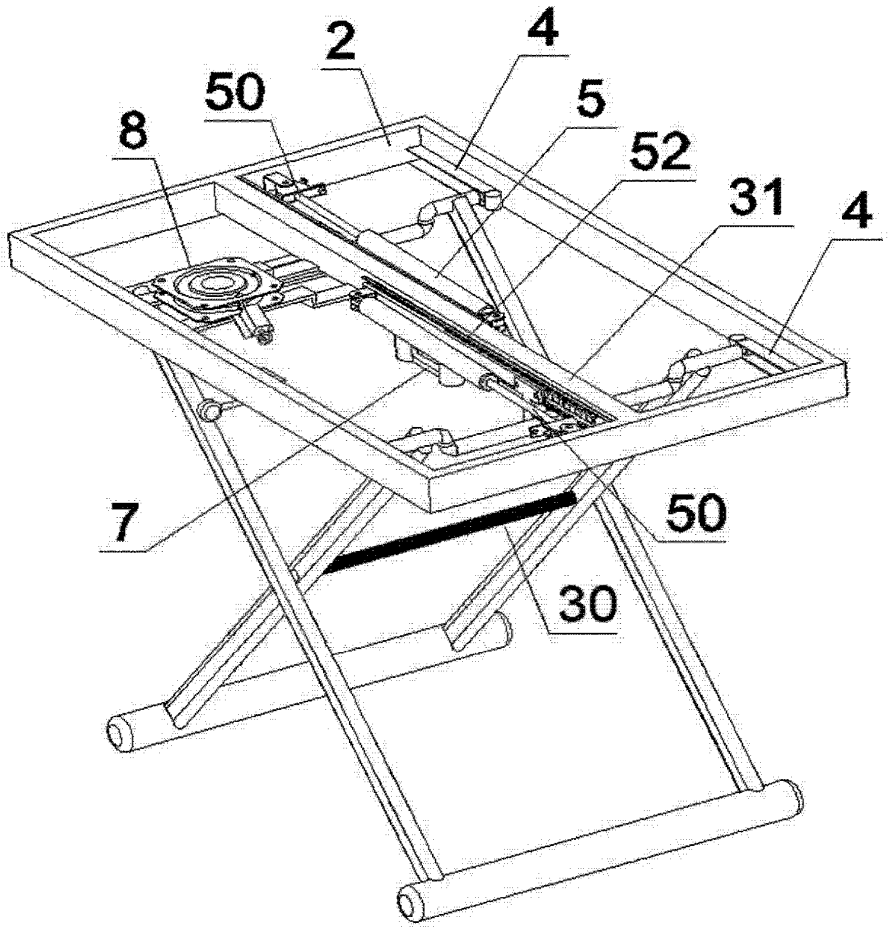


图 4

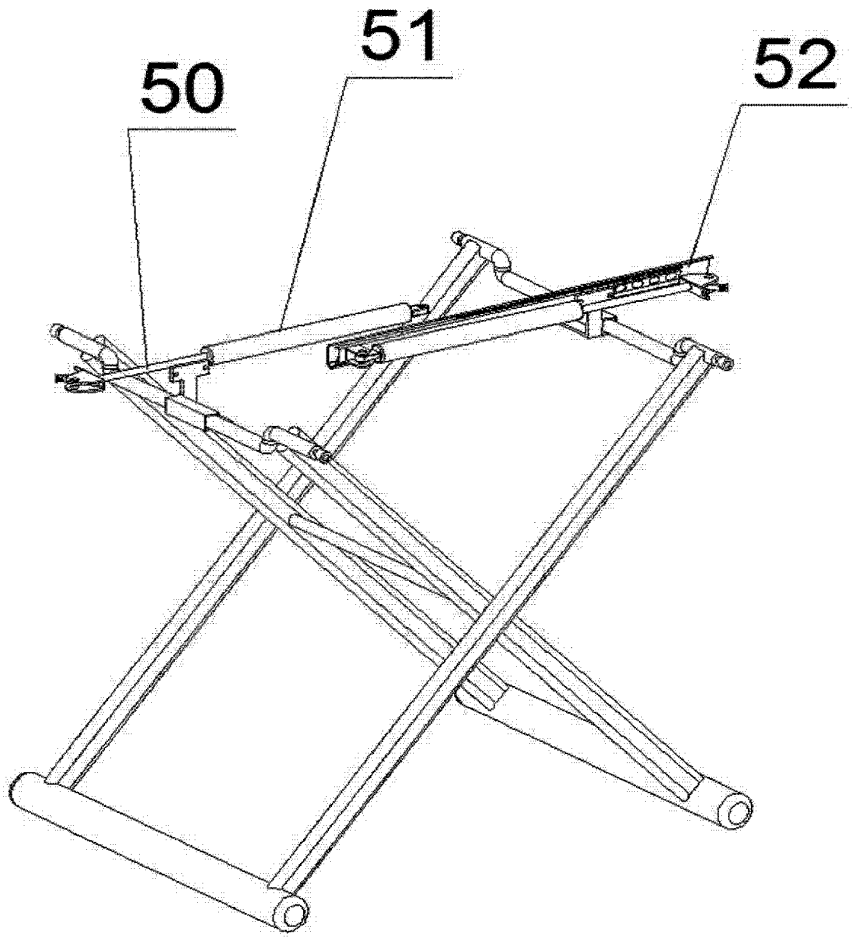


图 5

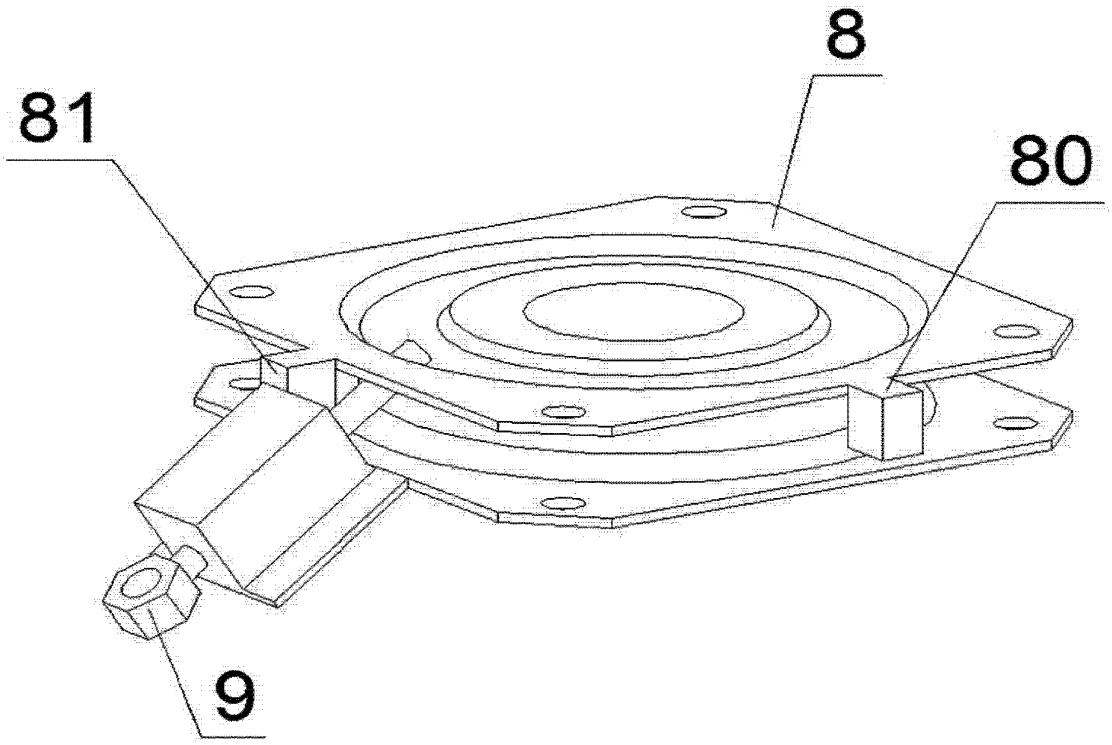


图 6

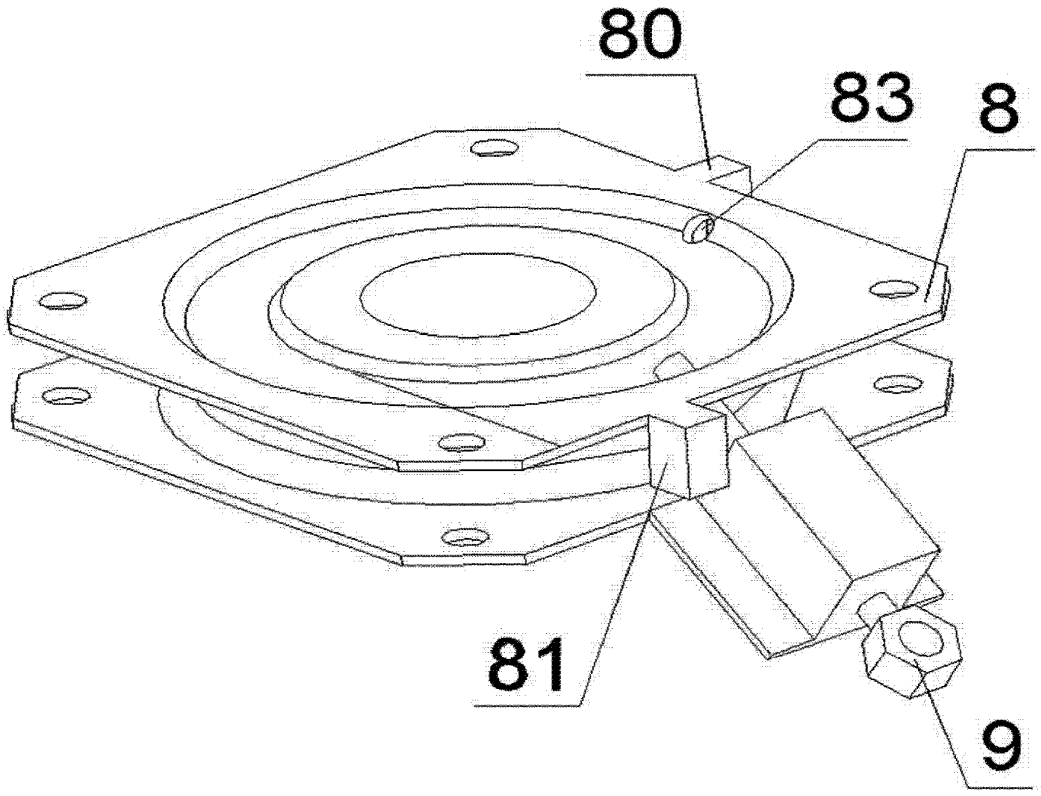


图 7

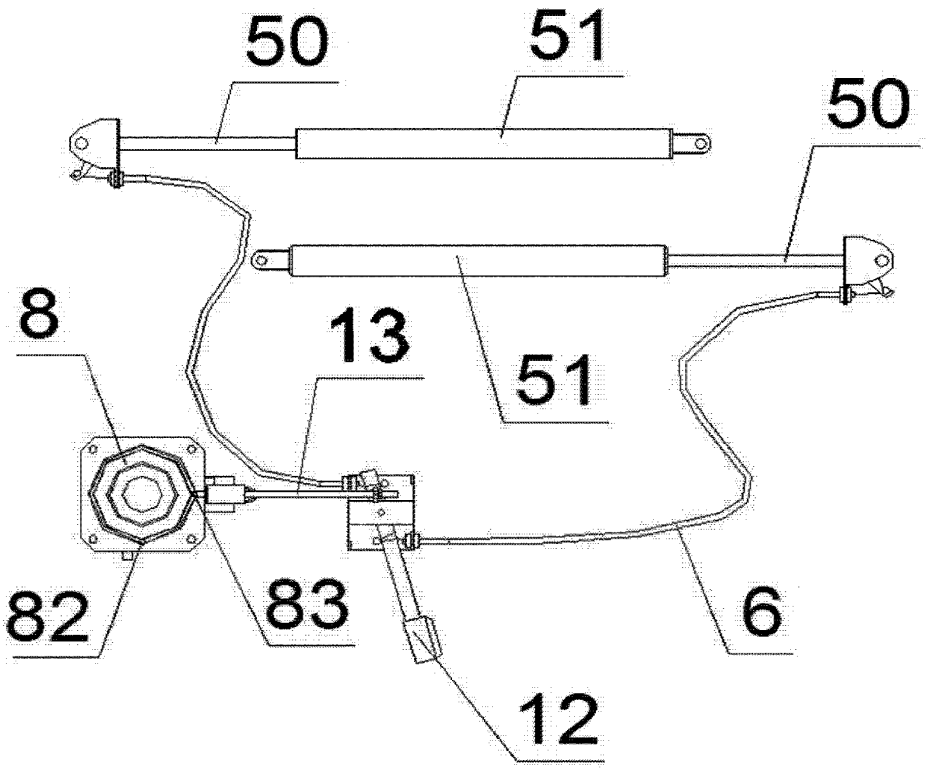


图 8

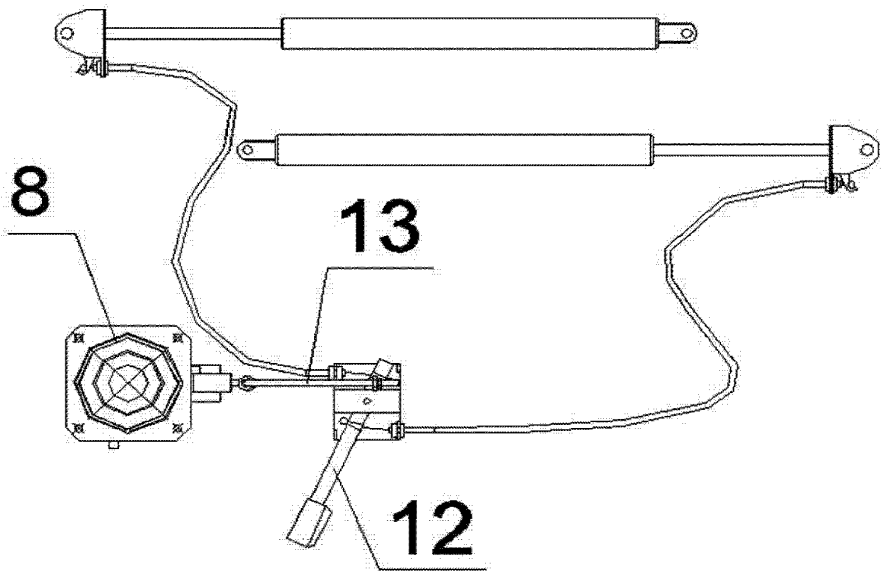


图 9

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 092 918 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.11.2016 Bulletin 2016/46

(51) Int Cl.:
A47B 9/16 *(2006.01)* ***B66F 7/06*** *(2006.01)*

(21) Application number: **15167399.3**

(22) Date of filing: **12.05.2015**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA

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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) MOBILE TRAY TABLE

(57) **Problem**

Patients physically impaired by disability or injury may be unable to transport household items. This challenge particularly affects those dependent on manually operated mobility aids such as crutches or walkers. Given a ruptured cruciate ligament, fractured metatarsal, or similar condition, even carrying a cup of coffee from kitchen to parlor may prove a major obstacle. In these and other cases, abandoning the handheld aid would aggravate the risk of additional irritation or re-injury.

Solution

The problem is solved by means of a mobile tray table (10) comprising
a tray (11) and a collapsible framework (39, 40) supporting the tray (11), a lower base frame (39) and an upper base frame (40) forming the framework (39, 40), the tray (11) being attached to the upper base frame (40),
a scissors mechanism (16-31) interconnecting the base frames (39, 40), and a deployable undercarriage (32-34) suspended by the scissors mechanism (16-31) betwixt the base frames (39, 40) such that the undercarriage (32-34) protrudes through the lower base frame (39) while the framework (39, 40) is collapsed and retracts through the lower base frame (39) when the framework (39, 40) is expanded.

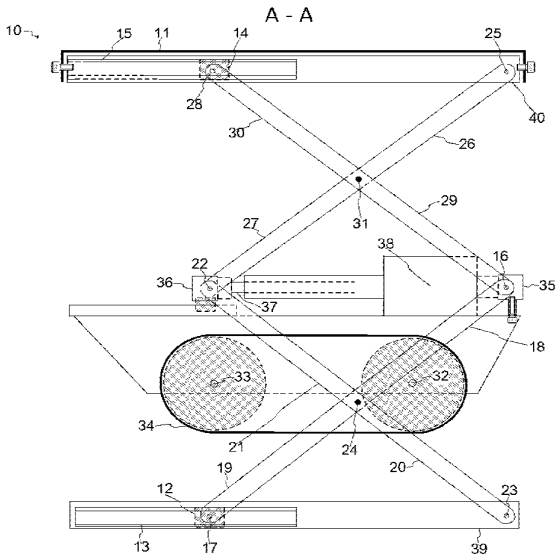


Fig. 3

EP 3 092 918 A1

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Description

Technical Field

[0001] The invention pertains to the field of home furnishings and equipment. Specifically, the invention pertains to the field of assistive domotics.

Background Art

[0002] US 3349727 A (HAMILTON COSCO INC) 31.10.1967 , upon which the preamble of Claim 1 is based, discloses a tray table comprising a first frame having a pair of legs interconnected at their upper ends by a transverse bight, a second frame having a pair of legs disposed laterally outwardly of the legs on said first frame and interconnected at their upper ends by a transverse bight, a tray removably mounted on the bights on said frames, means pivotally interconnecting the legs on said frames on a transverse axis, the distance between said means and the upper face of the bight on said first frame being less than the distance between said means and the lower face of the bight on said second frame, and the legs on said frames being curved in the same direction below said means.

Summary of invention

[0003] The present invention provides for an improved mobile tray table.

Technical Problem

[0004] Patients physically impaired by disability or injury may be unable to transport household items. This challenge particularly affects those dependent on manually operated mobility aids such as crutches or walkers. Given a ruptured cruciate ligament, fractured metatarsal, or similar condition, even carrying a cup of coffee from kitchen to parlor may prove a major obstacle. In these and other cases, abandoning the handheld aid would aggravate the risk of additional irritation or re-injury.

Solution to Problem

[0005] The problem is solved by means of the tray table according to Claim 1.

Advantageous effect of invention

[0006] The proposed tray table offers relief to the handicapped and convalescent by doubling as a remote-controlled transport vehicle for every-day items. Such apparatus may provide a tremendously increased quality of life for individuals otherwise reliant on caregivers or institutional care.

Brief description of drawings

[0007]

Figure 1 is a plan view of a mobile tray table according to the invention.
Figure 2 is a lateral view of the tray table with its framework collapsed.
Figure 3 is a lateral view of the tray table with its framework expanded.

Description of embodiments

[0008] Figure 1 illustrates a mobile tray table 10 whose framework 39, 40 is formed by a lower base frame 39 and an upper base frame 40 comprising bilateral linear motion bearings 12-15 each based on a linear slide 12, 14 guided by a sliding rail 13, 15. The tray table 10 is equipped with a camera (not depicted) and configured to establish a wireless local-area network for accessing the camera by means of a remote smartphone or tablet computer. On demand by the remote operator, a linear actuator 37, 38 serves to collapse the framework 39, 40 and deploy a remotely controlled undercarriage 32-34 (concealed in Figure 1). To this end, the linear actuator 37, 38 comprises a segmented spindle 37 and an electrical gear drive 38 for driving the spindle 37.

[0009] Figure 2 elucidates the collapsed framework 39, 40 in further detail. In this operational state, the undercarriage 32-34 protrudes through the lower base frame 39. A lower scissor linkage 16-24 and upper scissor linkage 16, 22, 25-31 connect the undercarriage 32-34 to the lower base frame 39 and upper base frame 40, respectively, thus forming a scissors mechanism 16-31 that interconnects the base frames 39, 40. Such mechanism, known in the art of kinematics as a pantograph, is described in SCHWAMB, Peter, et al. Elements of Mechanism. 2nd edition. New York: John Wiley , 1915. ISBN 1140218530. p.120-123.

[0010] A rear crossbeam 35 and a front crossbeam 36 paraxially interconnect the lower scissor linkage 16-24 and upper scissor linkage 16, 22, 25-31, the undercarriage 32-34 and aforementioned linear actuator 37, 38 being mounted between the crossbeams 35, 36. Specifically, the lower scissor linkage 16-24 comprises a first scissor link 16-19 and a second scissor link 20-23 mutually pivoted by a linkage fulcrum 24. Similarly, the upper scissor linkage 16, 22, 25-31 comprises a first scissor link 22, 25-27 and a second scissor link 16, 28-30 pivoted by a linkage fulcrum 31. The linkage fulcra 24, 31 effectively divide each scissor link into a passive lever arm 18, 20, 26, 29 and an active lever arm 19, 21, 27, 30, as will be explained hereinafter.

[0011] As to the lower scissor linkage 16-24, the first scissor link's active lever arm 19 ends in a sliding hinge joint 17 connecting the first scissor link 16-19 to the lower base frame 39. Opposite its linkage fulcrum 24, the first scissor link's passive lever arm 18 ends in a hinge joint

16 connecting the first scissor link 16-19 to the rear crossbeam 35. Conversely, the second scissor link's active lever arm 21 ends in a sliding hinge joint 22 connecting the second scissor link 20-23 to the front crossbeam 36 while, opposite its linkage fulcrum 24, the second scissor link's passive lever arm 20 ends in a hinge joint 23 connecting the second scissor link 20-23 to the lower base frame 39.

[0012] As to the upper scissor linkage 16, 22, 25-31, the first scissor link's active lever arm 27 also ends in the sliding hinge joint 22, which thus also connects the first scissor link 22, 25-27 to the front crossbeam 36. Opposite its linkage fulcrum 31, the first scissor link's passive lever arm 26 ends in a hinge joint 25 connecting the first scissor link 22, 25-27 to the upper base frame 40. Conversely, the second scissor link's active lever arm 30 ends in a sliding hinge joint 28 connecting the second scissor link 16, 28-30 to the upper base frame 40 while, opposite its linkage fulcrum 31, the second scissor link's passive lever arm 29 also ends in the hinge joint 16, which thus also connects the second scissor link 16, 28-30 to the rear crossbeam 35. Hence, the central joints 16, 22 are effectively shared among the lower scissor linkage 16-24 and upper scissor linkage 16, 22, 25-31 while each scissor linkage is connected to the corresponding base frame 39, 40 by dedicated peripheral joints 17, 23, 25, and 28.

[0013] The undercarriage 32-34 comprises bilateral rear axles 32 facing toward the rear crossbeam 35 and front axles 33 facing toward the front crossbeam 36, the rear axles 32 and front axles 33 being aligned paraxially. On each side of the undercarriage 32-34, the axles 32, 33 are interconnected by belts or chains 34.

[0014] The corresponding view of Figure 3 shows the framework 39, 40 in its expanded state. Here, the undercarriage 32-34 has retracted through the lower base frame 39, the scissors mechanism 16-31 thus suspending it betwixt the base frames 39, 40. With the tray table 10 now resting steadily upon its lower base frame 39, a detachable tray 11 attached to the upper base frame 40 may be safely extracted from the latter, accommodating a convenient dining height of approximately 75 cm above ground level. A plissé or other pleat clamped between the base frames 39, 40 covers the scissors mechanism 16-31, thus mitigating any risk of crushing or squeezing when the tray table 10 eventually returns to its collapsed state.

[0015] In an advanced embodiment, the tray table 10 may be equipped with a gyrostabilizer to compensate for the motion necessarily caused by the undercarriage 32-34. Such stabilizer would include an angular reference device such as an optical gyroscope and a servomechanism acting on the tray 11. Similar stabilizers have been employed in other continuous tracked vehicles such as for gun stabilization in tanks, as is outlined in SANDERS, Gold V. Why Our Tanks Can Score Hits on the Run. Pop. sci.. September 1944, vol.145, no.3, p.82-85.

Industrial applicability

[0016] The invention is applicable, inter alia, throughout the catering, furniture, appliance, hardware, automotive, health, leisure, and care industries.

Reference signs list

[0017] Similar reference signs denote corresponding features consistently throughout the attached drawings.

10 Tray table

11 Tray

12 Linear slide (lower base frame)

13 Sliding rail (lower base frame)

14 Linear slide (upper base frame)

15 Sliding rail (upper base frame)

16 Central joint (lower scissor linkage, first scissor link and upper scissor linkage, second scissor link)

17 Peripheral joint (lower scissor linkage, first scissor link)

18 Passive lever arm (lower scissor linkage, first scissor link)

19 Active lever arm (lower scissor linkage, first scissor link)

20 Passive lever arm (lower scissor linkage, second scissor link)

21 Active lever arm (lower scissor linkage, second scissor link)

22 Central joint (lower scissor linkage, second scissor link and upper scissor linkage, first scissor link)

23 Peripheral joint (lower scissor linkage, second scissor link)

24 Linkage fulcrum (lower scissor linkage)

25 Peripheral joint (upper scissor linkage, first scissor link)

26 Passive lever arm (upper scissor linkage, first scissor link)

27 Active lever arm (upper scissor linkage, first scissor link)

28 Peripheral joint (upper scissor linkage, second scissor link)

29 Passive lever arm (upper scissor linkage, second scissor link)

30 Active lever arm (upper scissor linkage, second scissor link)

31 Linkage fulcrum (upper scissor linkage)

32 Rear axle

33 Front axle

34 Belt or chain

35 Rear crossbeam

36 Front crossbeam

37 Segmented spindle

38 Electrical gear drive

39 Lower base frame

40 Upper base frame

Citation list

[0018] The following literature is cited throughout this document.

Patent literature

[0019] US 3349727 A (HAMILTON COSCO INC) 31.10.1967

Non-patent literature

[0020] SCHWAMB, Peter, et al. Elements of Mechanism. 2nd edition. New York: John Wiley , 1915. ISBN 1140218530. p.120-123.

[0021] SANDERS, Gold V. Why Our Tanks Can Score Hits on the Run. Pop. sci.. September 1944, vol.145, no.3, p.82-85.

Claims

1. Mobile tray table (10) comprising
a tray (11) and
a collapsible framework (39, 40) supporting the tray (11),
characterized in
a lower base frame (39) and an upper base frame (40) forming the framework (39, 40), the tray (11) being attached to the upper base frame (40), a scissors mechanism (16-31) interconnecting the base frames (39, 40), and a deployable undercarriage (32-34) suspended by the scissors mechanism (16-31) betwixt the base frames (39, 40) such that the undercarriage (32-34) protrudes through the lower base frame (39) while the framework (39, 40) is collapsed and retracts through the lower base frame (39) when the framework (39, 40) is expanded.

2. Mobile tray table (10) according to Claim 1, **characterized in that**
the scissors mechanism (16-31) comprises a lower scissor linkage (16-24) between the lower base frame (39) and the undercarriage (32-34) and an upper scissor linkage (16, 22, 25-31) between the upper base frame (40) and the undercarriage (32-34).

3. Mobile tray table (10) according to Claim 2, **characterized in**
a rear crossbeam (35) and a front crossbeam (36) paraxially interconnecting the scissor linkages (16-24; 16, 22, 25-31), the undercarriage (32-34) being mounted between the crossbeams (35, 36).

4. Mobile tray table (10) according to Claim 3, **characterized in that**
each scissor linkage comprises a first scissor link (16-19, 22, 25-27), a second scissor link (16, 20-23, 28-30), and a linkage fulcrum (24, 31) mutually pivoting the scissor links (16-19, 22, 25-27; 16, 20-23, 28-30), each scissor link comprising a central joint (16, 22) connecting the scissor link to one of the crossbeams (35, 36) and a peripheral joint (17, 23, 25, 28) connecting the scissor link to one of the base frames (39, 40).

5. Mobile tray table (10) according to Claim 4, **characterized in that**
each scissor link comprises a passive lever arm (18, 20, 26, 29) and an active lever arm (19, 21, 27, 30) separated by the linkage fulcrum (24, 31) and each bearing one of the joints (16, 17, 22, 23, 25, 28), the joint (16, 23, 25) of the passive lever arm (18, 20, 26, 29) being a hinge joint and the joint (17, 22, 28) of the active lever arm (19, 21, 27, 30) being a sliding hinge joint.

6. Mobile tray table (10) according to Claim 5, **characterized in that**
the passive lever arms (18, 20, 26, 29) connect to the rear crossbeam (35) and the active lever arms (19, 21, 27, 30) connect to the front crossbeam (36).

7. Mobile tray table (10) according to Claim 5 or Claim 6, **characterized in that**
each base frame (39, 40) comprises a linear-motion bearing (12, 13; 14, 15) bearing the sliding hinge

joint (19, 21, 27, 30) connecting to that base frame (39, 40).

8. Mobile tray table (10) according to Claim 7, **characterized in that** each linear-motion bearing (12, 13; 14, 15) comprises a linear slide (12, 14) and a sliding rail (13, 15) guiding the linear slide (12, 14).

9. Mobile tray table (10) according to any of Claim 3 to Claim 8, **characterized in** a linear actuator (37, 38) mounted between the crossbeams (35, 36) for collapsing the framework (39, 40) and deploying the undercarriage (32-34).

10. Mobile tray table (10) according to Claim 9, **characterized in that** the linear actuator (37, 38) comprises a segmented spindle (37) and an electrical gear drive (38) for driving the spindle (37).

11. Mobile tray table (10) according to any of the preceding claims, **characterized in that** the undercarriage (32-34) comprises bilateral rear axles (32) facing toward the rear crossbeam (35) and bilateral front axles (33) facing toward the front crossbeam (36), the rear axles (32) and the front axles (33) being aligned paraxially.

12. Mobile tray table (10) according to Claim 11, **characterized in that** the undercarriage (32-34) further comprises belts or chains (34), each belt or chain (34) interconnecting one of the rear axles (32) and the same-sided front axle (33).

13. Mobile tray table (10) according to any of the preceding claims, **characterized in** a camera, the tray table (10) being configured to establish a wireless local-area network for accessing the camera and controlling the undercarriage (32-34) by means of a remote smartphone or tablet computer.

14. Mobile tray table (10) according to any of the preceding claims, **characterized in that** the tray (11) is detachable and extractable from the upper base frame (40) at a dining height of approximately 75 cm above ground level.

15. Mobile tray table (10) according to any of the preceding claims, **characterized in** a pleat, preferably a plissé pleat, clamped between the base frames (39, 40) for covering the scissors mechanism (16-31).

Amended claims in accordance with Rule 137(2) EPC.

1. Mobile tray table (10) comprising
a tray (11),
a collapsible framework (39, 40) supporting the tray (11),
a lower base frame (39) and an upper base frame (40) forming the framework (39, 40), the tray (11) being attached to the upper base frame (40), a scissors mechanism (16-31) interconnecting the base frames (39, 40), and a deployable undercarriage (32-34) suspended by the scissors mechanism (16-31),
characterized in that
the undercarriage (32-34) is suspended betwixt the base frames (39, 40) such that the undercarriage (32-34) protrudes through the lower base frame (39) while the framework (39, 40) is collapsed and retracts through the
lower base frame (39) when the framework (39, 40) is expanded.

2. Mobile tray table (10) according to Claim 1, **characterized in that** the scissors mechanism (16-31) comprises a lower scissor linkage (16-24) between the lower base frame (39) and the undercarriage (32-34) and an upper scissor linkage (16, 22, 25-31) between the upper base frame (40) and the undercarriage (32-34).

3. Mobile tray table (10) according to Claim 2, **characterized in** a rear crossbeam (35) and a front crossbeam (36) paraxially interconnecting the scissor linkages (16-24; 16, 22, 25-31), the undercarriage (32-34) being mounted between the crossbeams (35, 36).

4. Mobile tray table (10) according to Claim 3, **characterized in that** each scissor linkage comprises a first scissor link (16-19, 22, 25-27), a second scissor link (16, 20-23, 28-30), and a linkage fulcrum (24, 31) mutually pivoting the scissor links (16-19, 22, 25-27; 16, 20-23, 28-30), each scissor link comprising a central joint (16, 22) connecting the scissor link to one of the crossbeams (35, 36) and a peripheral joint (17, 23, 25, 28) connecting the scissor link to one of the base frames (39, 40).

5. Mobile tray table (10) according to Claim 4, **characterized in that** each scissor link comprises a passive lever arm (18, 20, 26, 29) and an active lever arm (19, 21, 27, 30)

separated by the linkage fulcrum (24, 31) and each bearing one of the joints (16, 17, 22, 23, 25, 28), the joint (16, 23, 25) of the passive lever arm (18, 20, 26, 29) being a hinge joint and the joint (17, 22, 28) of the active lever arm (19, 21, 27, 30) being a sliding hinge joint.

6. Mobile tray table (10) according to Claim 5, **characterized in that** the passive lever arms (18, 20, 26, 29) connect to the rear crossbeam (35) and the active lever arms (19, 21, 27, 30) connect to the front crossbeam (36).

7. Mobile tray table (10) according to Claim 5 or Claim 6, **characterized in that** each base frame (39, 40) comprises a linear-motion bearing (12, 13; 14, 15) bearing the sliding hinge joint (19, 21, 27, 30) connecting to that base frame (39, 40).

8. Mobile tray table (10) according to Claim 7, **characterized in that** each linear-motion bearing (12, 13; 14, 15) comprises a linear slide (12, 14) and a sliding rail (13, 15) guiding the linear slide (12, 14).

9. Mobile tray table (10) according to any of Claim 3 to Claim 8, **characterized in** a linear actuator (37, 38) mounted between the crossbeams (35, 36) for collapsing the framework (39, 40) and deploying the undercarriage (32-34).

10. Mobile tray table (10) according to Claim 9, **characterized in that** the linear actuator (37, 38) comprises a segmented spindle (37) and an electrical gear drive (38) for driving the spindle (37).

11. Mobile tray table (10) according to any of the preceding claims, **characterized in that** the undercarriage (32-34) comprises bilateral rear axles (32) facing toward the rear crossbeam (35) and bilateral front axles (33) facing toward the front crossbeam (36), the rear axles (32) and the front axles (33) being aligned paraxially.

12. Mobile tray table (10) according to Claim 11, **characterized in that** the undercarriage (32-34) further comprises belts or chains (34), each belt or chain (34) interconnecting one of the rear axles (32) and the same-sided front axle (33).

13. Mobile tray table (10) according to any of the preceding claims, **characterized in** a camera, the tray table (10) being configured to establish a wireless local-area network for accessing the camera and controlling the undercarriage (32-34) by means of a remote smartphone or tablet computer.

14. Mobile tray table (10) according to any of the preceding claims, **characterized in that** the tray (11) is detachable and extractable from the upper base frame (40) at a dining height of approximately 75 cm above ground level.

15. Mobile tray table (10) according to any of the preceding claims, **characterized in** a pleat, preferably a plissé pleat, clamped between the base frames (39, 40) for covering the scissors mechanism (16-31).

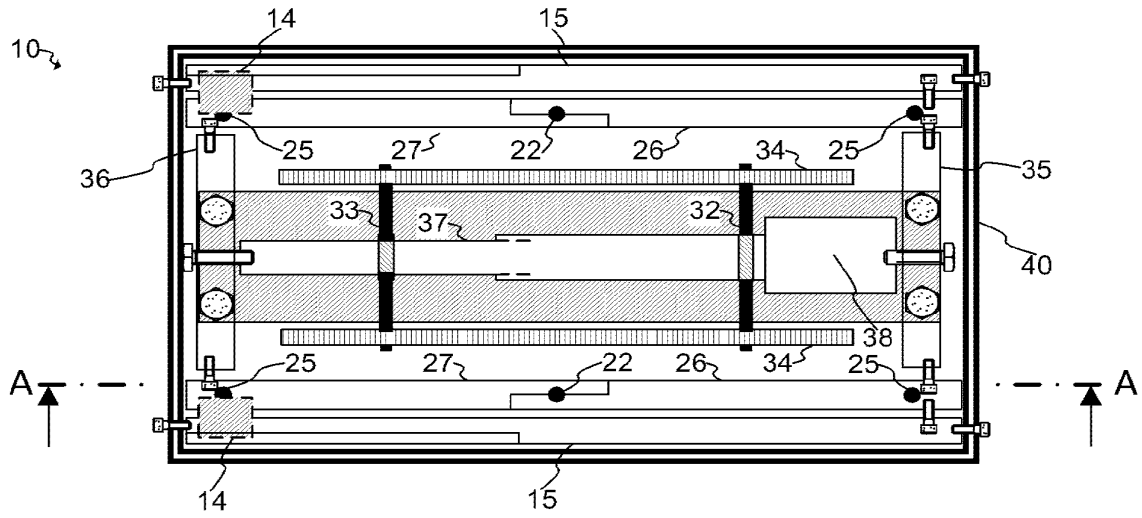

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Fig. 1

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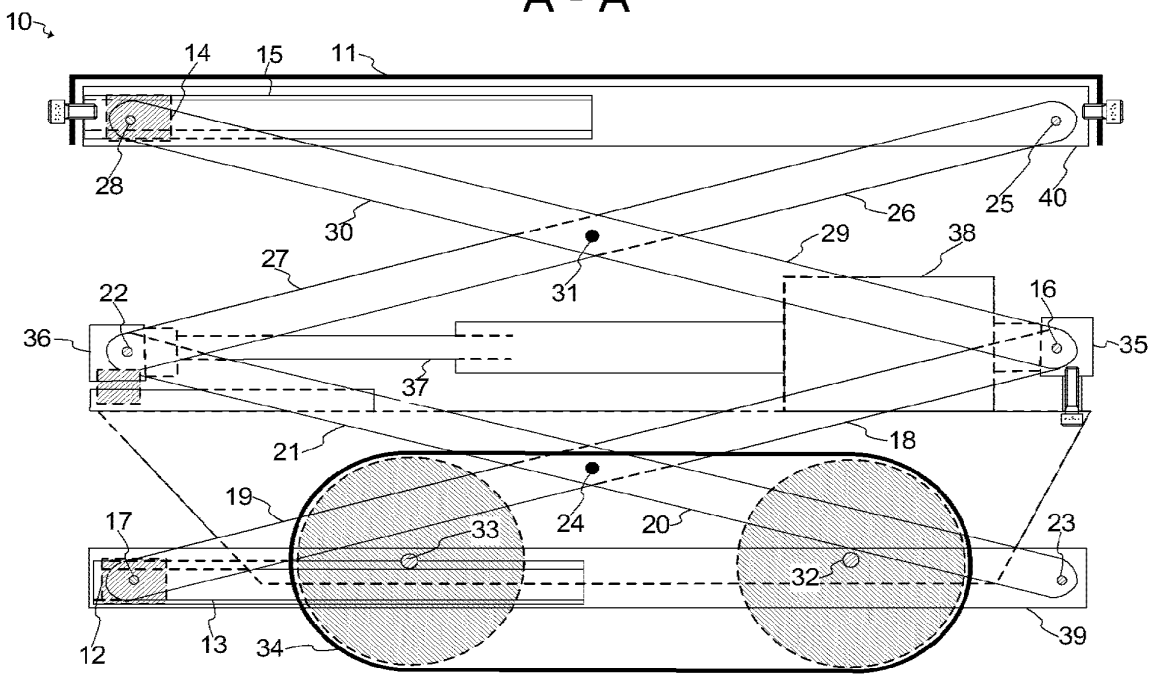

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Fig. 2

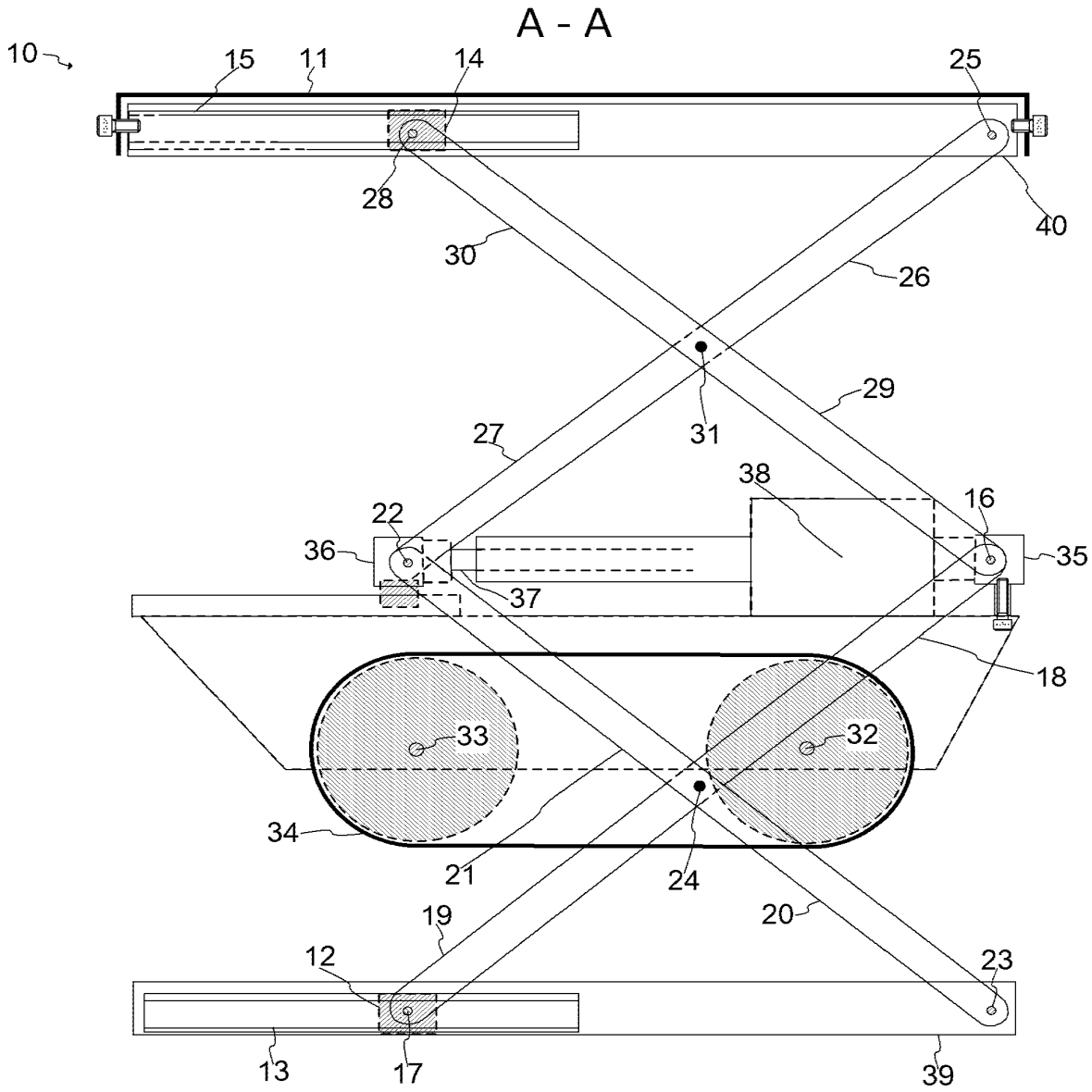

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Fig. 3

Europäisches Patentamt
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EUROPEAN SEARCH REPORT

Application Number
EP 15 16 7399

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	EP 1 281 659 A1 (BOLZONI SPA [IT]) 5 February 2003 (2003-02-05) * Double scissor, linear spindle drive; the whole document *	1-11, 13-15 12	INV. A47B9/16 B66F7/06
A	US 6 431 319 B1 (MYERS DEAN EVERETT [US] ET AL) 13 August 2002 (2002-08-13) * detachable table; the whole document *	14	
A	DE 203 16 058 U1 (LANGGUTH & CO GMBH [DE]) 8 April 2004 (2004-04-08) * the whole document *	2-10	
A	DE 10 2005 042630 A1 (HERRMANN SIEGFRIED [DE]) 15 March 2007 (2007-03-15) * (28) Faltenbalg; paragraph [0031]; figure 2 *	15	

TECHNICAL FIELDS SEARCHED (IPC)
A47B
B66F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	20 October 2015	Ottesen, Rune

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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