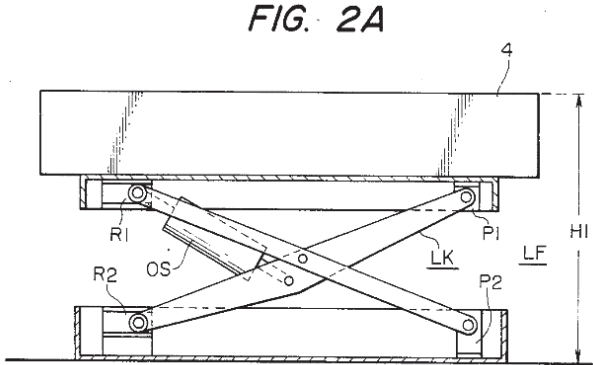
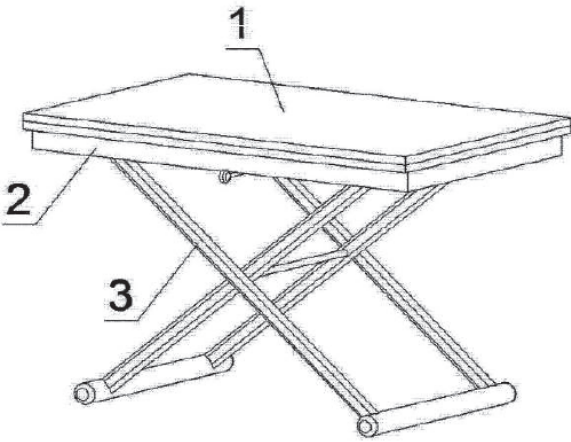
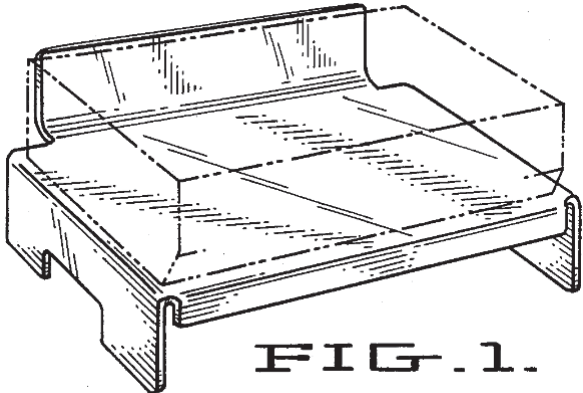


79. As will be demonstrated in the charts below, at least the Asserted Claims of the '843 patent are rendered obvious by Yamamoto in view of Zhang and in further view of Clark. I have not been asked to review additional claims as to their validity in light of this combination. However, should I be asked to do so, I will perform a validity analysis on all the claims of the '843 patent. For reference these three pieces of prior art are shown below:

		
US 4,574,785 to Yamamoto March 11, 1986	CN20393825 to Zhang May 26, 2014	US D308,537 to Clark June 12, 1991

80. I note that despite each of these references being publicly available, only one of them (Zhang) was disclosed to the examiner during the prosecution of the '843 patent. A POSITA would be motivated to combine these references in accordance with the teachings therein. For example, Yamamoto and Zhang are both vertically adjustable platforms that use a scissor linkage and cylindrical actuator. They are highly compatible with each other, but Yamamoto shows greater vertical adjustability afforded by the ability to lower to a point where the pivots points are aligned. Combining Yamamoto with Zhang would allow for greater height adjustability as well as allowing the Zhang table to store more compactly. When combined, the gas springs of Zhang will also be aligned with the links as in Yamamoto leading to maximum compactness for storage.

81. A POSITA would further be motivated to combine the locking gas springs of Zhang with the Yamamoto linkage, for instance, to create a scissor lift platform that is simpler in its construction and more suitable for lighter duty loading applications. Yamamoto uses a fluid power cylinder to actuate. Fluid power cylinders require hoses, valves, control systems, and pumps to operate. In contrast to this, the locking gas springs of Zhang have a self-contained pressure source and thus obviates the need for such additional complexity. A POSITA will recognize this as a more desirable

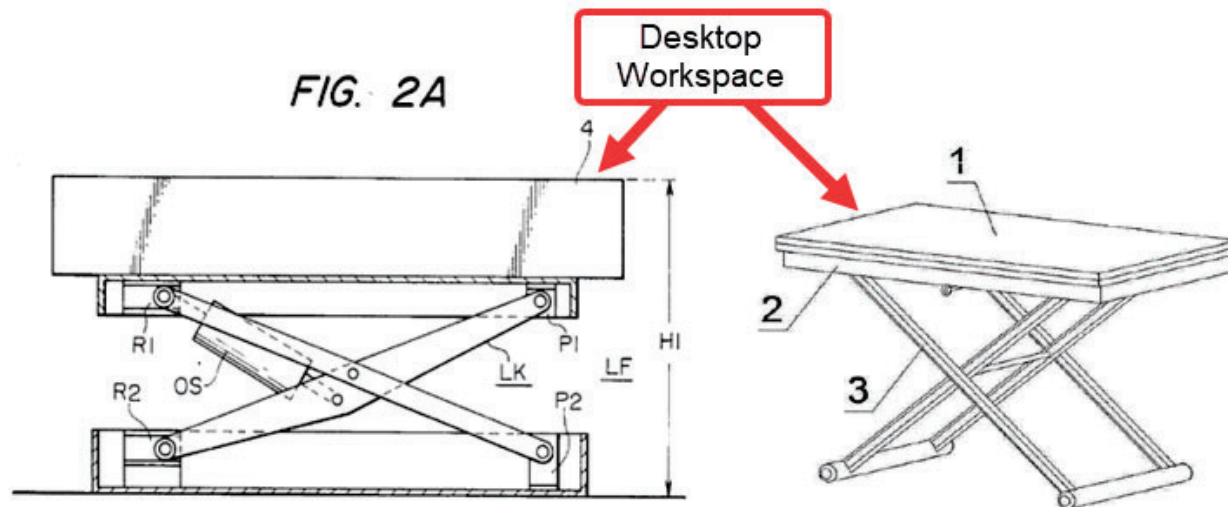
option particularly in adapting the Yamamoto arrangement to a lighter duty load application such as that taught by Zhang. Further still, a POSITA will be motivated to use a pair of gas springs as taught by Zhang as this increases the amount of lifting assistance that is provided without detracting from the overall compactness of the stowed lift assembly. A POSITA will recognize that were a single larger locking gas spring to be used instead of two locking gas springs (as Zhang teaches) the larger gas spring will prevent the scissor linkage from collapsing to the same extent as it could with a smaller diameter actuator.

82. A POSITA would be further motivated to combine the teachings of Yamamoto in view of Zhang such that the actuator is connected directly to the scissor pivot arms as taught in Yamamoto. This allows the linkage to fully collapse flat as Yamamoto teaches which makes for maximum compactness which is what Yamamoto describes.¹⁷⁵ Further, when combining the teachings of a pair of locking gas springs (as taught by Zhang) with the teachings of Yamamoto, a POSITA will be motivated to connect the opposite side of the gas spring to the platform member. Yamamoto’s hydraulic cylinder is connected to the roller end of one of the scissoring pivot arms. However, when swapping the hydraulic cylinder of Yamamoto for the locking gas spring of Zhang, a POSITA will find it more advantageous to attach the rod end of the locking gas spring to the platform. This is because the rod end of a locking gas spring typically has a lever that can selectively be operated to unlock or lock the locking gas spring. A POSITA will understand that this type of connection is an equivalent permutation of the teachings of Yamamoto that will still allow the linkage to fully collapse (in accordance with the teachings of Yamamoto) but will also allow the lock lever of the gas spring to be more easily accessible and actuatable by a user.

83. A POSITA would be further motivated to combine Clark with the combination of Yamamoto in view of Zhang as Clark discloses a printer stand which would foreseeably be placed on top of the vertically adjustable platform. It is well-known that a printer stand is not just placed on the floor. Rather it is placed on an elevated flat surface such as a table, a cabinet, or the like. This allows the printer output to be accessed without having to stoop down.

Challenged Claim '843	
1P. A desktop workspace that adjusts vertically, comprising:	YES: While the preamble is generally not considered limiting, Yamamoto in view of Zhang discloses a desktop workspace that adjusts vertically.

¹⁷⁵ Yamamoto 1:53-64



Zhang states “The utility model relates to a height adjustable table, comprising a tabletop 1...”¹⁷⁶ As shown, Zhang clearly describes a desktop workspace that is height adjustable, i.e. adjusts vertically. For example, both Yamamoto and Zhang utilize a scissor lift mechanism.

A POSITA will understand that scissor lift mechanisms adjust the vertical height of a platform surface such as a desktop workspace. For example, Yamamoto states:

“The conventional fluidized bed has a fixed height. However, there has been a demand for a fluidized bed having an adjustable height, specifically, one in which the height of the bed above the floor can be made as small as possible for ease in transferring a patient onto the bed or when a patient gets onto or off the bed, and placed at a suitable height when the patient is lying on the bed for administering treatment to the patient.” Yamamoto 1:53-60

As shown above, Yamamoto describes a vertically adjustable workspace platform (a patient support platform in this case). A POSITA would readily recognize that the Yamamoto vertical adjustment mechanism could be used for a wide variety of applications, as scissor lift mechanisms are extremely common and well-known.

It is helpful to ascertain the plain and ordinary meaning and scope of “desktop workspace” considering the common dictionary definitions as shown below:

¹⁷⁶ Zhang, abstract

Desktop: the top of a desk¹⁷⁷

Desk: A table, counter, or booth at which specified services or functions are performed¹⁷⁸

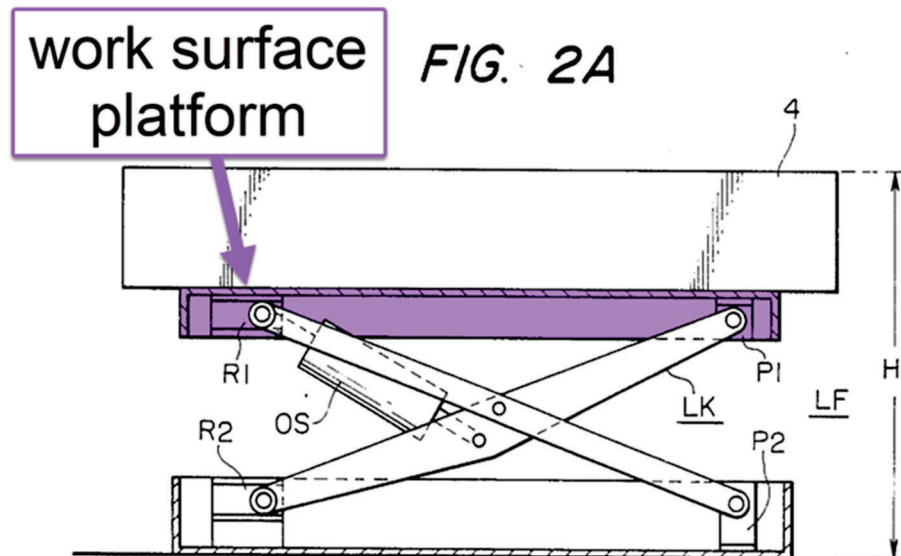
Workspace: An area used or allocated for one's work, as in an office.¹⁷⁹

The usage of the term desktop workspace within the '843 patent is consistent with the plain and ordinary meaning of the words from which this compound term is composed. For example, the desktop workspace in the '843 patent is described as having a top surface at which an operator stands to perform their work.¹⁸⁰ In just the same way, Yamamoto discloses a work surface in the form of a bed on a table at which an operator stands to perform their work. Similarly, Zhang discloses a table surface which is a dedicated space allocated for one's work should they so choose.

1a. a work surface platform;

YES: Both Yamamoto and Zhang disclose a work surface platform.

Yamamoto discloses a work surface platform as shown below:



¹⁷⁷ <<https://www.ahdictionary.com/word/search.html?q=desktop>> accessed Dec 29, 2024

¹⁷⁸ <<https://www.ahdictionary.com/word/search.html?q=desk>> accessed Dec 29, 2024

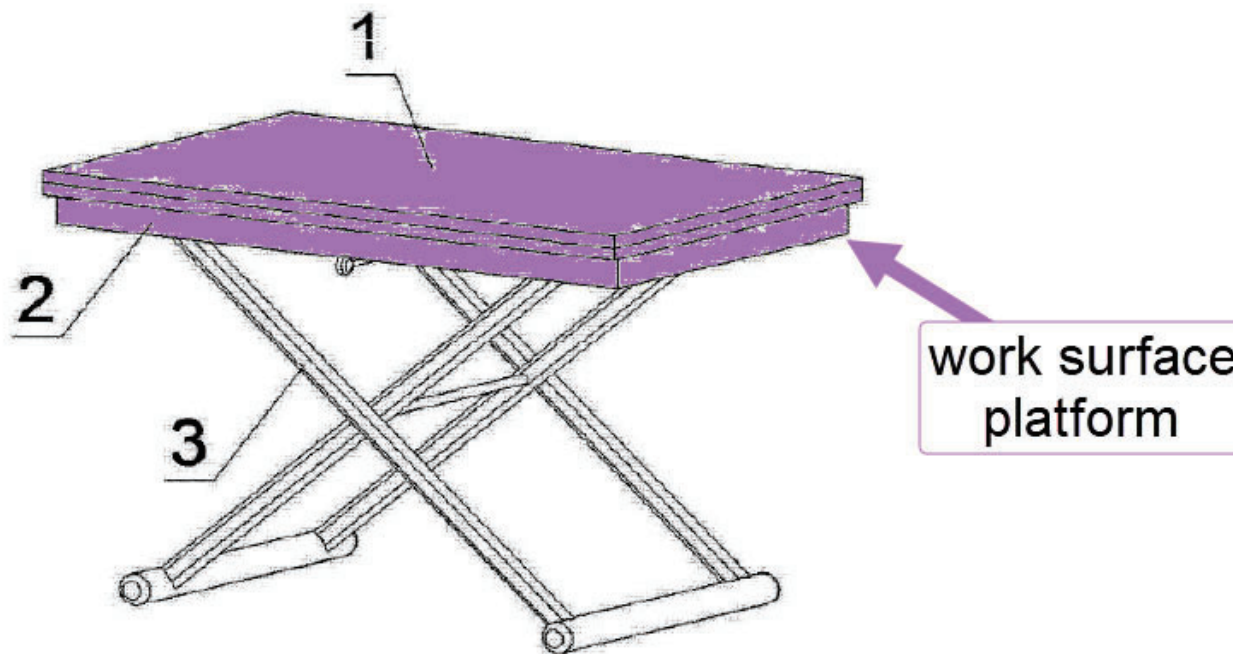
¹⁷⁹ <<https://www.ahdictionary.com/word/search.html?q=workspace>> accessed Dec 29, 2024

¹⁸⁰ '843 patent 1:33-66

“The conventional fluidized bed has a fixed height. However, there has been a demand for a fluidized bed having an adjustable height, specifically, one in which the height of the bed above the floor can be made as small as possible for ease in transferring a patient onto the bed or when a patient gets onto or off the bed, and placed at a suitable height when the patient is lying on the bed for administering treatment to the patient.” Yamamoto 1:53-60 (emphasis added)

As shown above, Yamamoto discloses a platform for supporting a patient. A POSITA will understand that this is a platform where doctors and nurses perform work on patients, which is clearly an example of a work surface platform.

Zhang also describes a work surface platform as shown below.



“The purpose of the present utility model is achieved as follows: a height-adjustable table, comprising a tabletop (1), a stand (2), and an “X” - shaped cross movable metal foot (3).” Zhang [0004]

“Currently, tables on the market that are supported by “X” – shaped cross metal feet usually have a fixed height on the tabletop. As the tabletop height cannot be adjusted, it cannot be adjusted to the appropriate height according to the user’s needs, and it is also inconvenient to reduce the

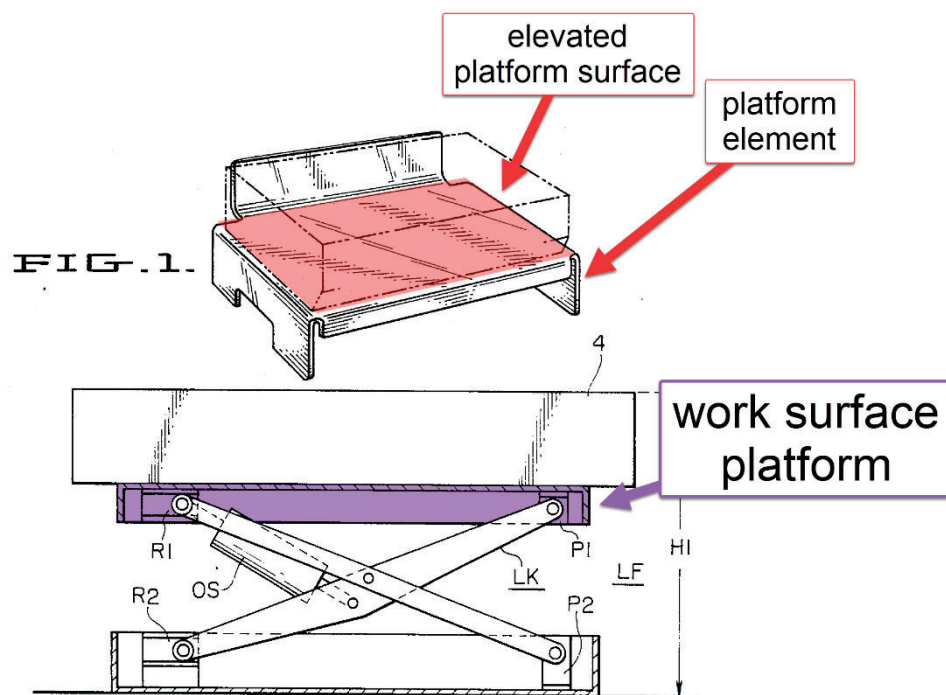
space occupied for storage after folding. ... The purpose of this utility model is to overcome the problems existing in the prior art and provide a height-adjustable table." Zhang [0002-3]

As shown above, Zhang discloses a work surface platform as the combination of the tabletop (1) and the upper frame portion of the stand (2) that supports the tabletop. Zhang describes setting the table at a height that is best suited for a user's needs. This demonstrates that the table is intended for a user to perform some type of activity or work at the work surface platform of Zhang.

1b. a platform element sitting on the work surface platform, the platform element including an elevated platform surface above the work surface platform;

YES: Yamamoto in view of Zhang, and in further view of Clark discloses a platform element sitting on the work surface platform, the platform element including an elevated platform surface above the work surface platform.

A POSITA would easily recognize that a platform element can be placed on a work surface platform. In addition to this, Clark discloses a platform element specifically as an option for being placed on another surface such as a desk, dining table, or the like.



Clark states:

“The ornamental design for a computer printer stand, as shown and described.” Clark, pg. 1

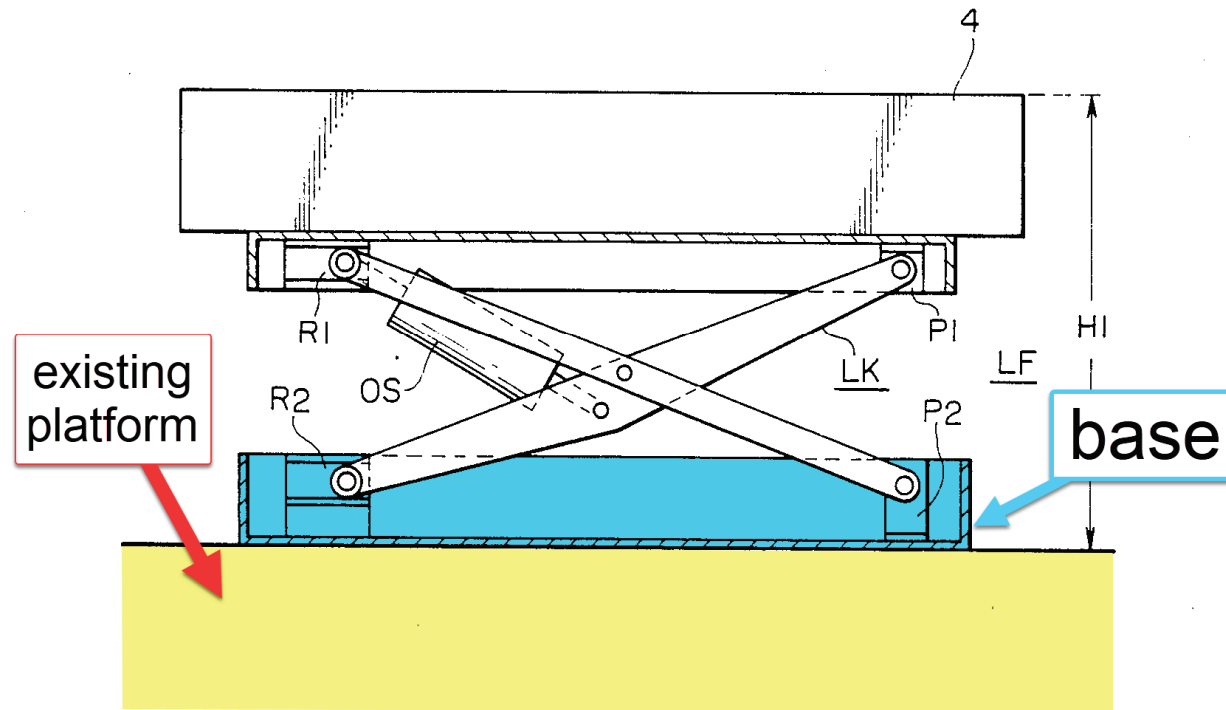
A POSITA would understand that a printer stand is commonly placed on another surface such as a desktop, table or the like. When this is done, the printer stand of Clark will include an elevated platform surface above the work surface platform. A POSITA will recognize that this elevated platform surface is configured to support a printer or other electronic device or any suitable object placed thereon. Though possible, it would be atypical to merely place a small printer stand, such as disclosed by Clark, on the floor as this would still require users to stoop in order to interact with the printer. A POSITA will be familiar with the purpose of using a small printer stand such as disclosed by Clark, which is to elevate the printer sufficient to provide easier access to printed papers it dispenses. That a printer stand such as Clark is on par with the size of a small printer make it less expensive and more versatile as an end user has greater optionality as to where to put it.

1c. a base configured to sit on an existing platform; and

YES: Yamamoto in view of Zhang discloses a base configured to sit on an existing platform.

Yamamoto discloses a base configured to sit on an existing platform.

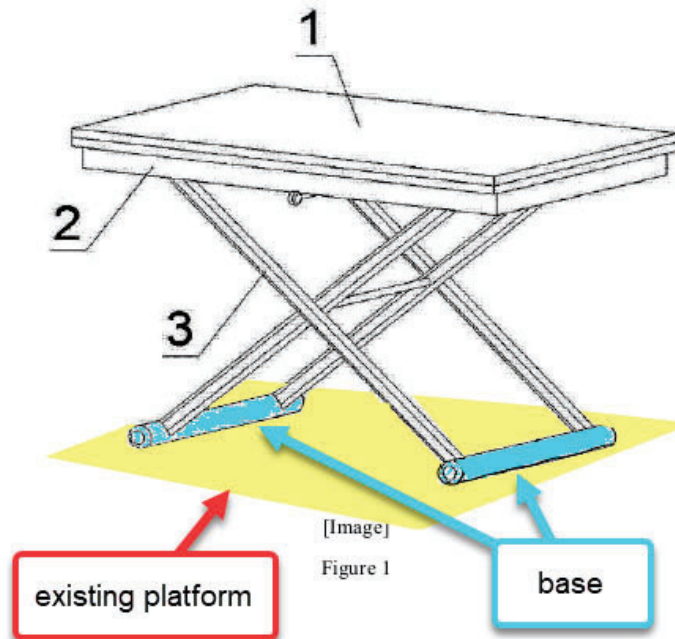
FIG. 2A



“The conventional fluidized bed has a fixed height. However, there has been a demand for a fluidized bed having an adjustable height, specifically, one in which the height of the bed above the floor can be made as small as possible for ease in transferring a patient onto the bed or when a patient gets onto or off the bed, and placed at a suitable height when the patient is lying on the bed for administering treatment to the patient.” Yamamoto 1:53-60

As shown, above, Yamamoto discloses a base which supports the Yamamoto mechanism on the floor, i.e. an existing platform. Whether the floor is the foundation of a base floor or a floor several stories up, a POSITA will easily recognize that a floor is an existing platform.

Zhang also discloses a base configured to sit on an existing platform.



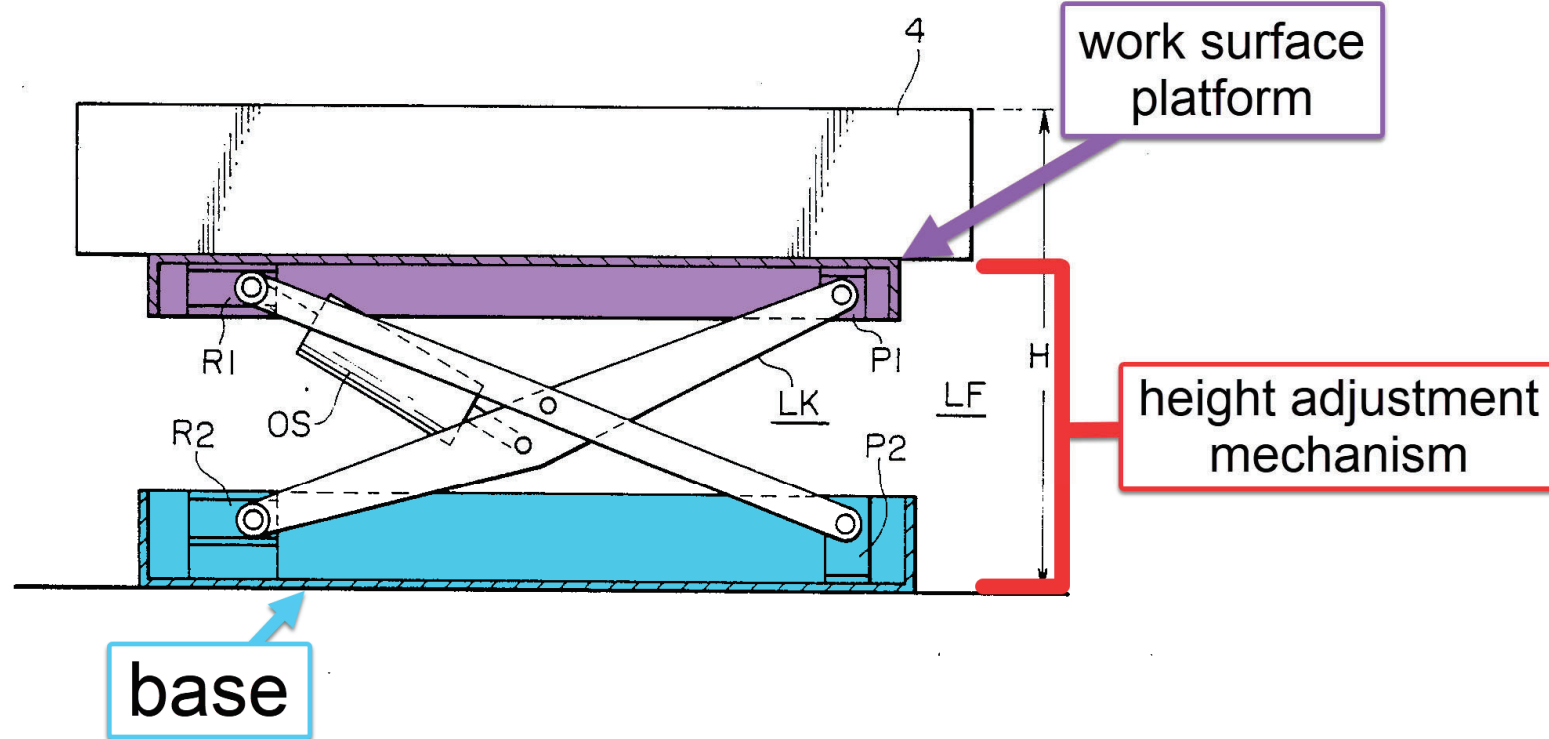
Zhang describes a height-adjustable table with “‘X’ – shaped cross metal feet.” Zhang [0002]. A POSITA would easily recognize that a desk or table requires feet, legs, or a base that are used to support the table. Additionally, a POSITA will understand that the feet are provided to support the table by coming into contact with an existing surface below. As explained above, whether the platform is a floor, a separate table or desk, a POSITA would recognize those as an existing platform.

1d. a height adjustment mechanism connecting the work surface platform and the base, the height adjustment mechanism including:

YES: Yamamoto in view of Zhang discloses a height adjustment mechanism connecting the work surface platform and the base.

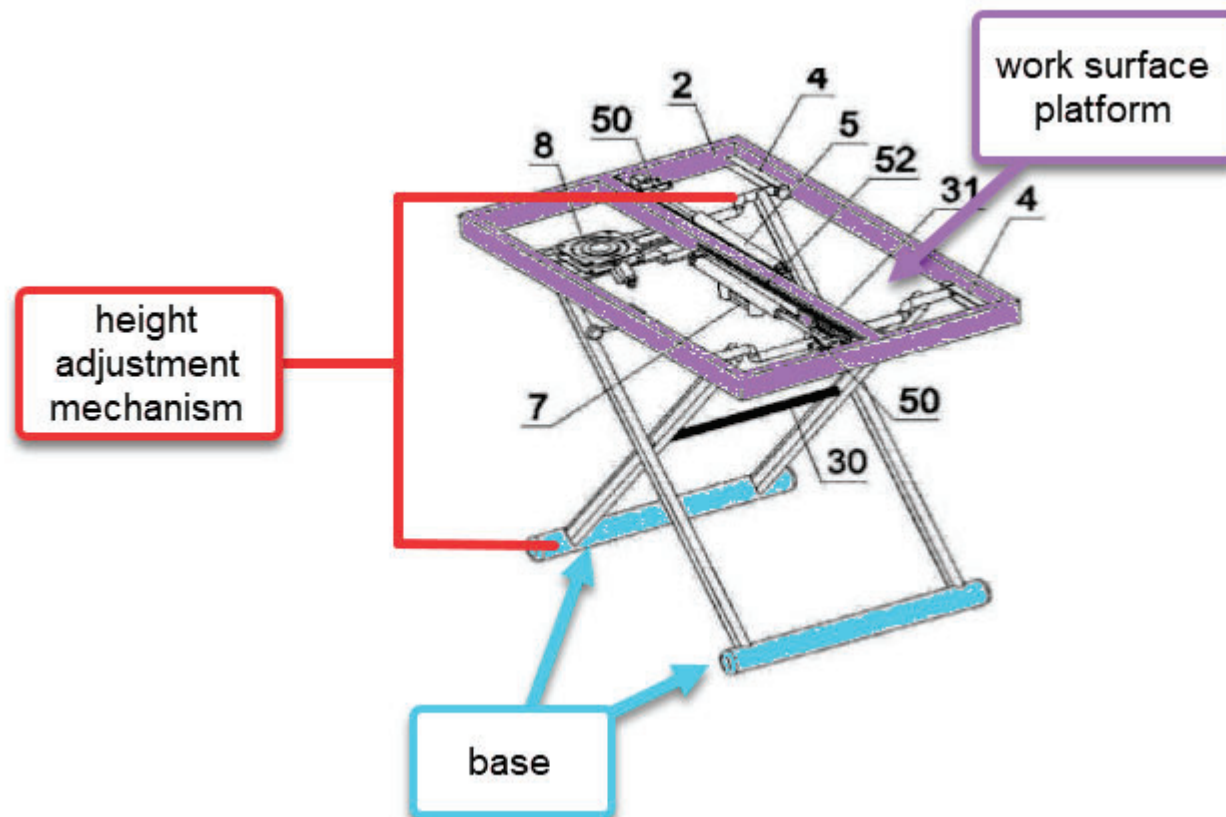
Yamamoto discloses a height adjustment mechanism:

FIG. 2A



“FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement. The height of the fluidized bed, and hence the height of the tank 4, are freely adjustable by a lifter LF between a maximum height H1 and a minimum height H2. The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail.” Yamamoto 1:63-2:3

The Zhang mechanism uses a combination of a scissor linkage and locking gas springs to serve as a height adjustment mechanism. The height adjustment mechanism connects the work surface platform to the base.



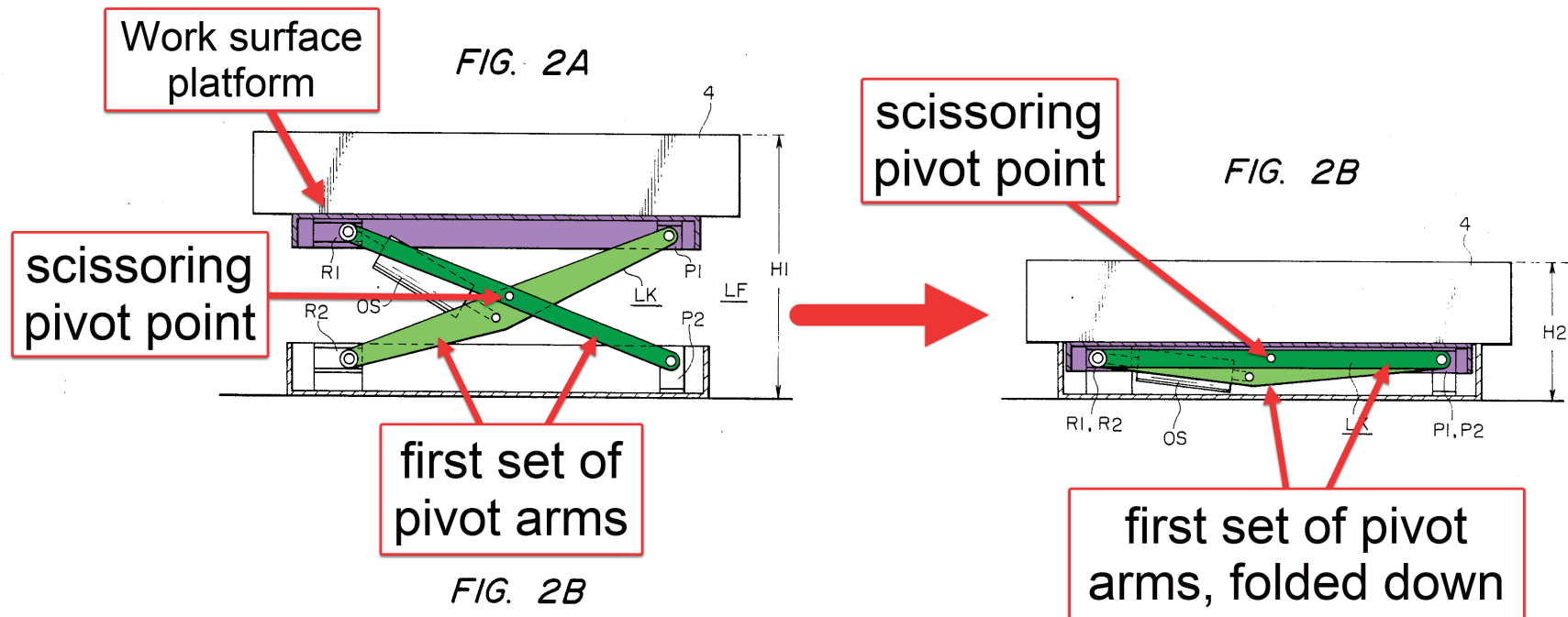
“The two upper ends of the “X” - shaped cross movable metal feet (3) are connected to the platform (2) There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the “X” - shaped cross movable metal foot (3), and the fixed end (51) of the air support rod (5) is connected to the sliding rod of the slide rail (52).” Zhang [0004]

As shown above, both Zhang and Yamamoto disclose a height adjustment mechanism that connects the work surface platform and the base. A POSITA will recognize that both Zhang and Yamamoto use a scissor linkage in combination with one or more cylinder style force actuators and that the height adjustment mechanism of Yamamoto could be used in the Zhang mechanism and vice versa.

1d1. a first set of pivot arms that connect at a scissoring pivot point creating a scissoring motion when raising and lowering the work surface platform to various heights;

YES: Both Yamamoto and Zhang have a first set of pivot arms that connect at a scissoring pivot point creating a scissoring motion when raising and lowering the work surface platform to various heights.

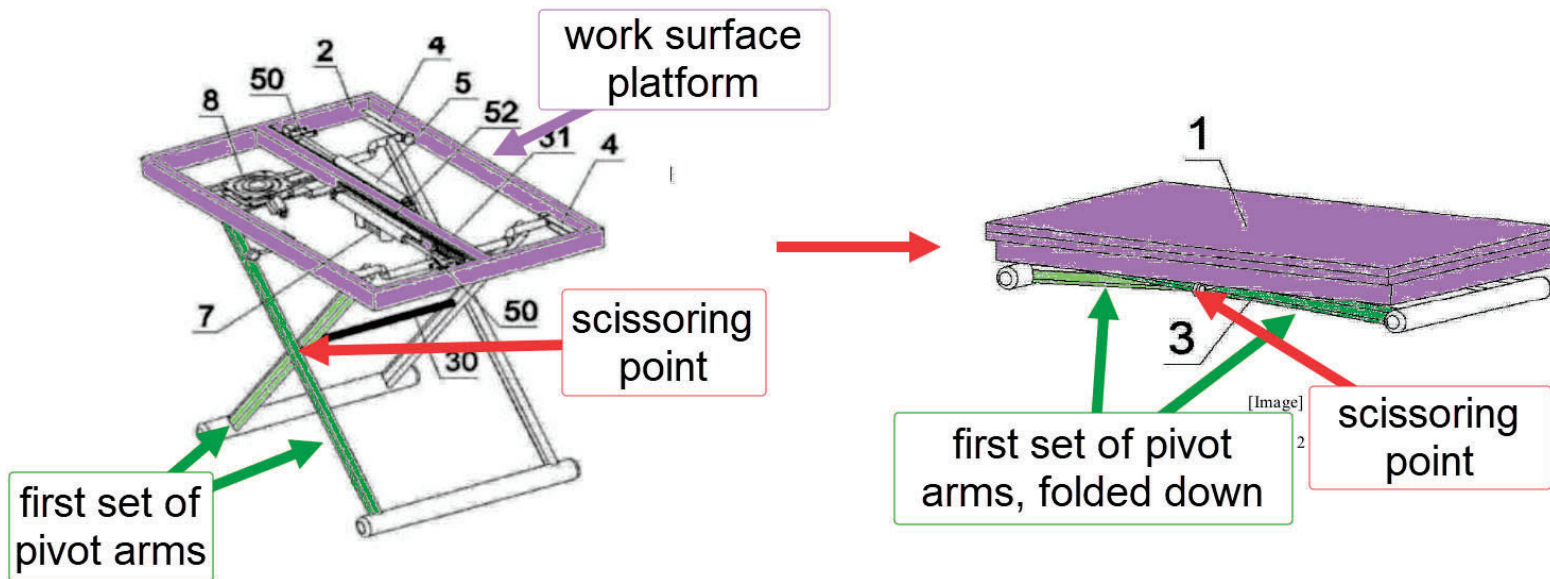
Yamamoto discloses a first set of pivot arms that connect at a scissoring pivot point creating a scissoring motion when raising and lowering the work surface platform to various heights. For example, the pivots arms and scissoring pivot point are shown below:



“FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement. The height of the fluidized bed, and hence the height of the tank 4, are freely adjustable by a lifter LF between a maximum height H1 and a minimum height H2. The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail.” Yamamoto 1:63-2:3

As shown above, Yamamoto discloses a first set of pivot arms. These are connected in a linkage making a scissor mechanism which is used to lift the patient bed and to set it at various heights. As the lifting mechanism is moved up and down, the pivot arms move with a scissoring motion. Between Figures 2A and 2B the same mechanism is shown in two different states of lift. By comparing the positions of the pivot arms, it

can clearly be seen that scissoring motion takes place to move the lift mechanism from the position shown in Figure 2A to the position shown in Figure 2B.



As shown above, Zhang has a first set of pivot arms, shown as item 3 above. These legs connect at a scissoring point. Together, these legs create a scissoring motion when raising and lowering the work surface to various heights. The figure on the left shows a raised position, and the figure on the right shows a lowered position.

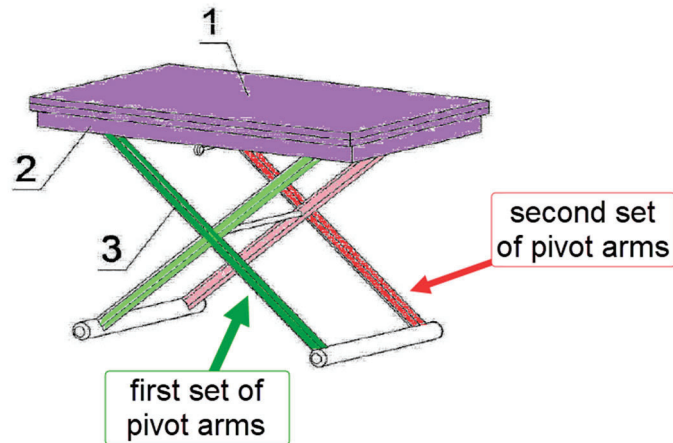
"The platform (2) has not yet opened the upper ends of the "X" - shaped cross movable metal feet (3) to both sides to prevent the rapid lowering of the desktop (1), and the elastic buffering mechanism (7) is fixed in the middle of the platform (2), with the lower end facing the pivot shaft (30) in the middle of the "X" - shaped cross movable metal feet (3)." Zhang [0005] (emphasis added)

As shown in the citations above, the Zhang mechanism has a first set of pivot arms that connect at a scissoring point. These leg members form a scissor mechanism that adjusts the work surface platform to various heights.

A POSITA would understand that scissor mechanisms are suitable for vertical lifting applications such as Yamamoto and Zhang. Scissor mechanisms are well-known and are very commonly built with two sets of pivots arms.

1d2. a second set of pivot arms;

YES: Yamamoto in view of Zhang discloses a second set of pivot arms.



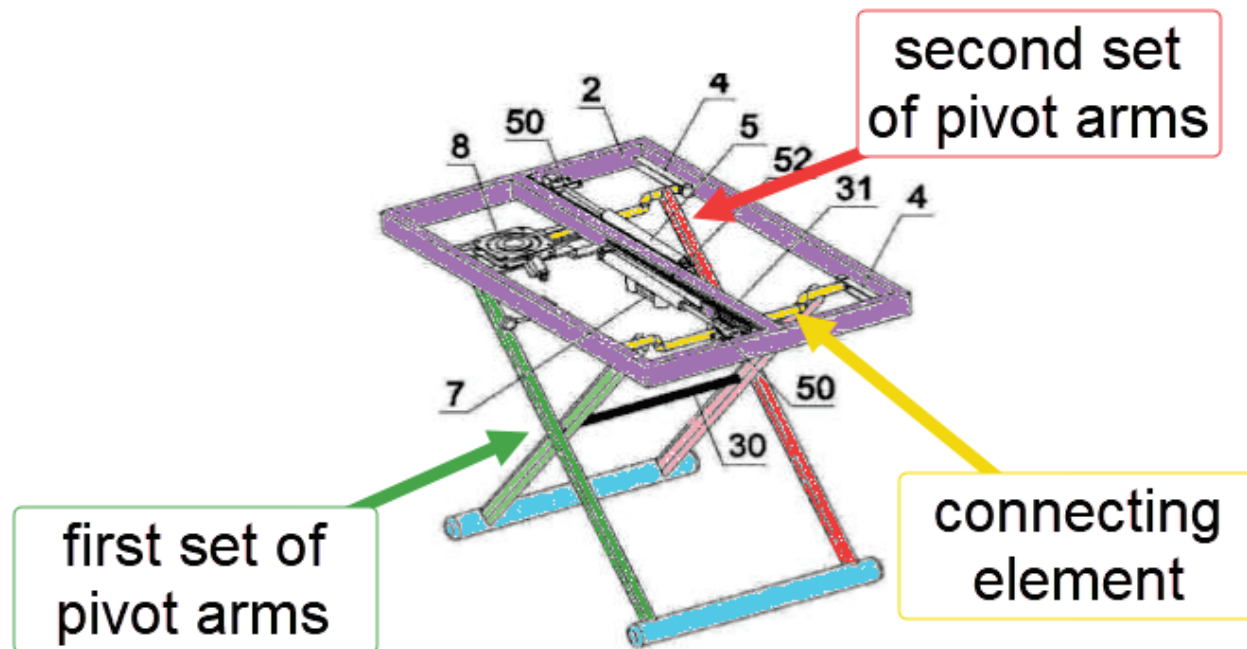
As shown in the figure above, Zhang discloses a second set of pivot arms. He references one set as an “X-shaped movable foot”, and when referencing two sets he uses the term “X-shaped movable feet.” See description below:

“The positive effect of this utility model is that the height adjustable table using this structure can control the opening angle of the "X" - shaped cross movable metal feet through the joint action of horizontal guide rails, air support rods, pull switches and other components to adjust the height of the desktop and perform height positioning, making it very convenient to adjust the desktop height.” Zhang [0009]

As shown above Zhang has a first and a second set of pivot arms. They are connected to each other and move in a scissor-like fashion. A POSITA will understand that this is a scissor lift mechanism of typical and ordinary design. A POSITA will further understand and be familiar with the fact that scissor lift mechanisms such as a common scissor lift machine or even this small table as disclosed by Zhang are commonly built with a pair of scissoring links. This provides lateral stability to the machine over what would be typical of a single set of scissoring links. As such, although Yamamoto doesn’t explicitly show a second set of pivot arms in its figures, a POSITA will understand that it is very common for a second set of arms to be included.

1d3. an element that connects the first set of pivot arms to the second set of pivot arms;

YES: Yamamoto in view of Zhang discloses an element that connects the first set of pivot arms to the second set of pivot arms.

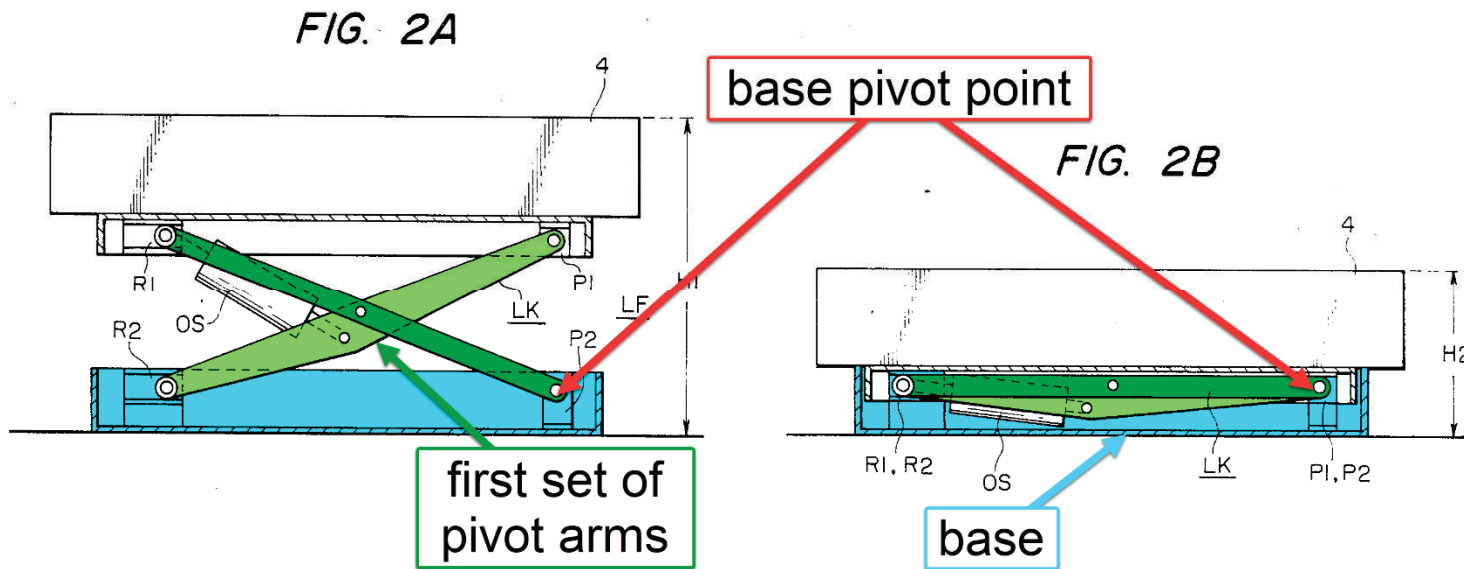


“The platform (2) has not yet opened the upper ends of the “X” - shaped cross movable metal feet (3) to both sides to prevent the rapid lowering of the desktop (1), and the elastic buffering mechanism (7) is fixed in the middle of the platform (2), with the lower end facing the pivot shaft (30) in the middle of the “X” - shaped cross movable metal feet (3).” Zhang [0005] (emphasis added)

As shown above, Zhang discloses multiple elements that connect the first set of pivot arms to the second set of pivot arms. For example, pivot shaft 30 connects the first and second set of pivot arms to each other. Further the figures of Zhang show cross members at the top (highlighted in yellow) which connect the first and second sets of pivot arms together. Further still, the cross members that form the base of the Zhang mechanism also connect the first and second set of pivot arms together. A POSITA will understand that this is typical and ordinary design for scissor lift mechanisms and any one of these components are elements that connect the first set of pivot arms to the second set of pivot arms.

1d4. a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms;

YES: Yamamoto discloses a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms.

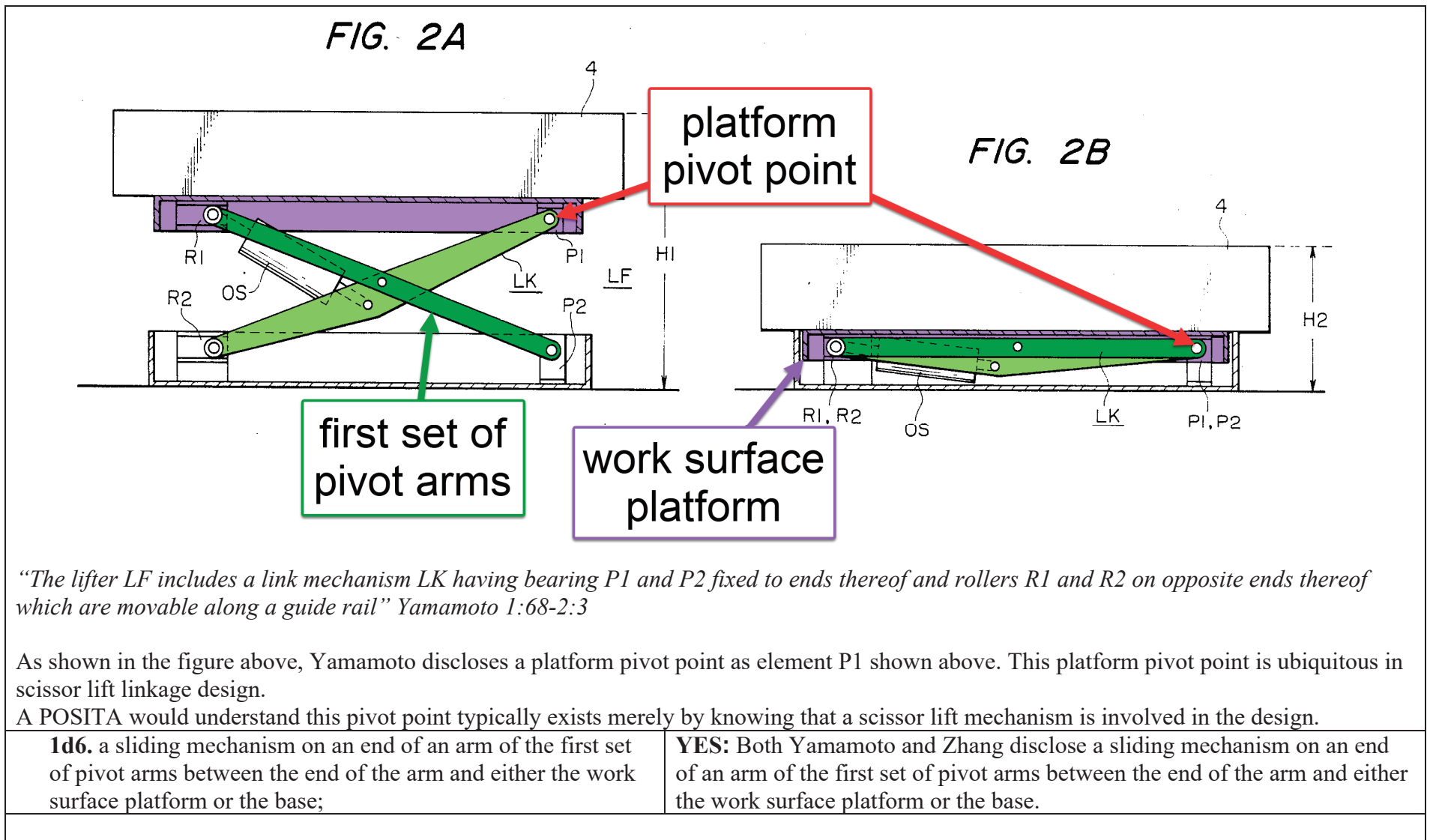


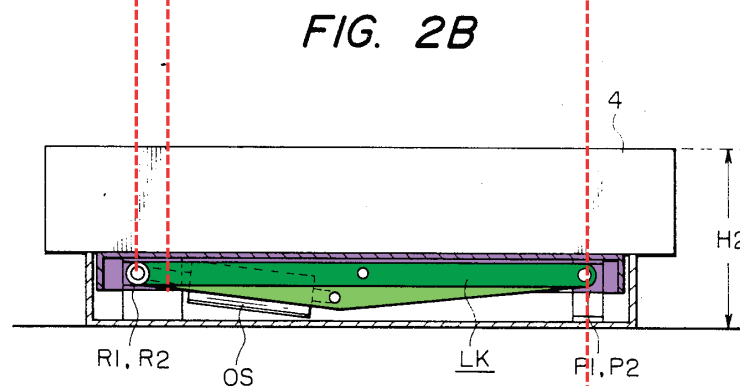
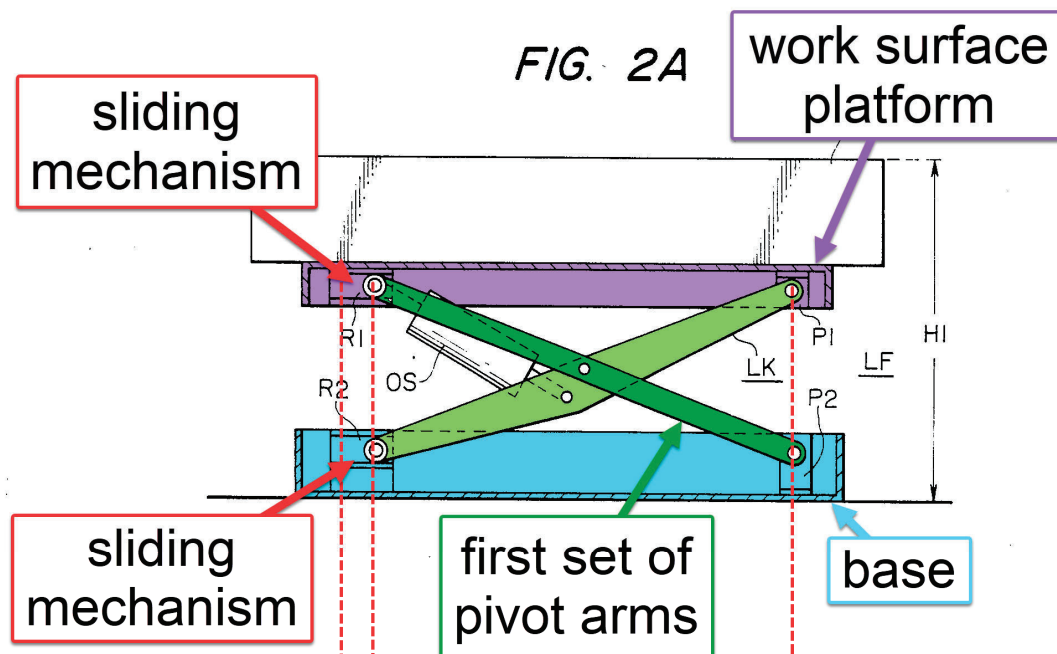
“FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement. The height of the fluidized bed, and hence the height of the tank 4, are freely adjustable by a lifter LF between a maximum height H1 and a minimum height H2. The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail.” Yamamoto 1:63-2:3

As shown above, Yamamoto discloses a base pivot point which connects the base and the first set of pivot arms. A POSITA will understand that this is ubiquitous with scissor lift mechanism design. It is a required part of any scissor lift mechanism that is fixed to a base as it is one of the main supports for the entire lift mechanism. Thus, Yamamoto would include this pivot point as is so typical in design.

1d5. a platform pivot point fixed relative to the work surface platform and connecting the work surface platform and the first set of pivot arms;

YES: Yamamoto discloses a platform pivot point fixed relative to the work surface platform and connecting the work surface platform and the first set of pivot arms.

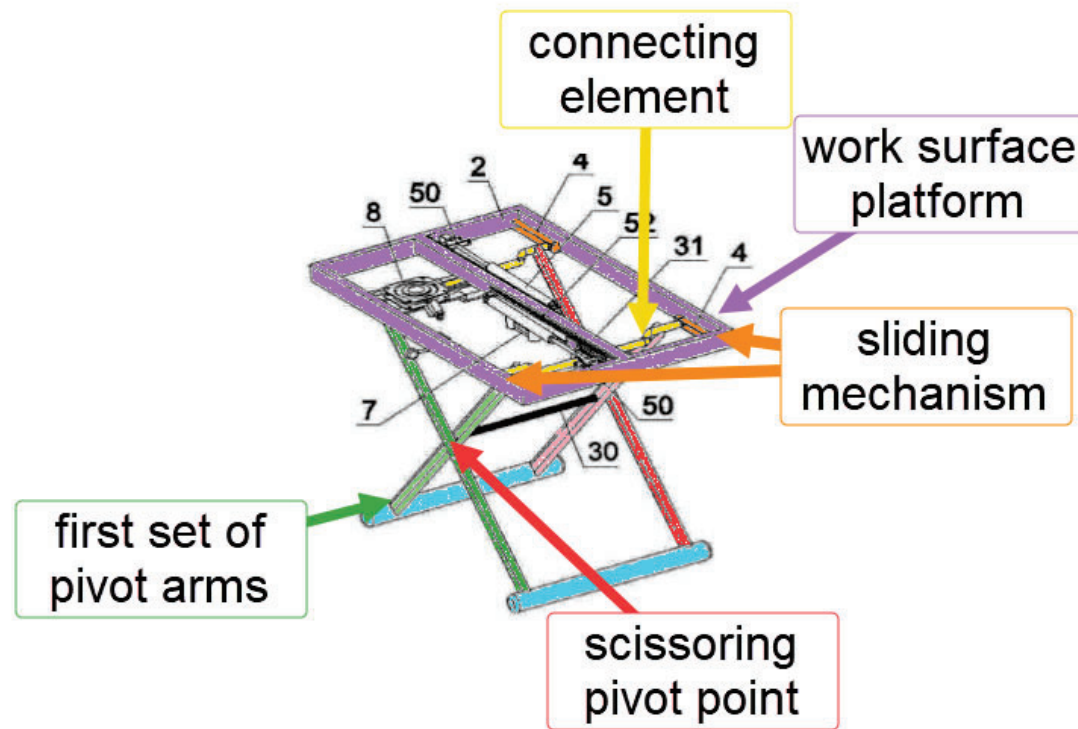




"The lifter LF includes a link mechanism LK having bearing P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail" Yamamoto 1:68-2:3

As shown in the figure above, Yamamoto discloses a set of rollers R1 and R2 which allow for what the '843 patent considers to be sliding (i.e. translating) movement as is well-known and ubiquitous in the design of a common scissor lift linkage. It is kinematically necessary as a part of the design of a scissor lift linkage to allow these pivot points to move in this way. As will be shown later in the claim language, the term “sliding mechanism” must be interpreted to include rolling contact for example '843 patent claim element 11a reads “wherein the sliding mechanism includes a wheel mounted on the end of the arm of the first set of pivot arms.” A POSITA would understand that a wheel is used for rolling contact which is typically different from sliding contact. Nevertheless, a POSITA would understand that scissor linkages are often are made with rolling OR sliding contact and they function just the same. The only difference is that sliding contact has slightly more drag than rolling contact. This drag is commonly minimized for example through the use of low friction wear pad materials discloses an extremely common arrangement where these pivot points translate both in the top and the bottom. That is to say between the scissor links and the work surface platform as well as between the scissor links and the base. For example, the Pop Up brand Push Pro scissor lift (available at least as early as July 2014) uses a sliding contact at the movable pivot of a scissor lift as opposed to a roller.¹⁸¹

¹⁸¹ See Operators Manual - Pop Up - Push Pro.pdf, cover page, and Figures 8.14 and 8.15



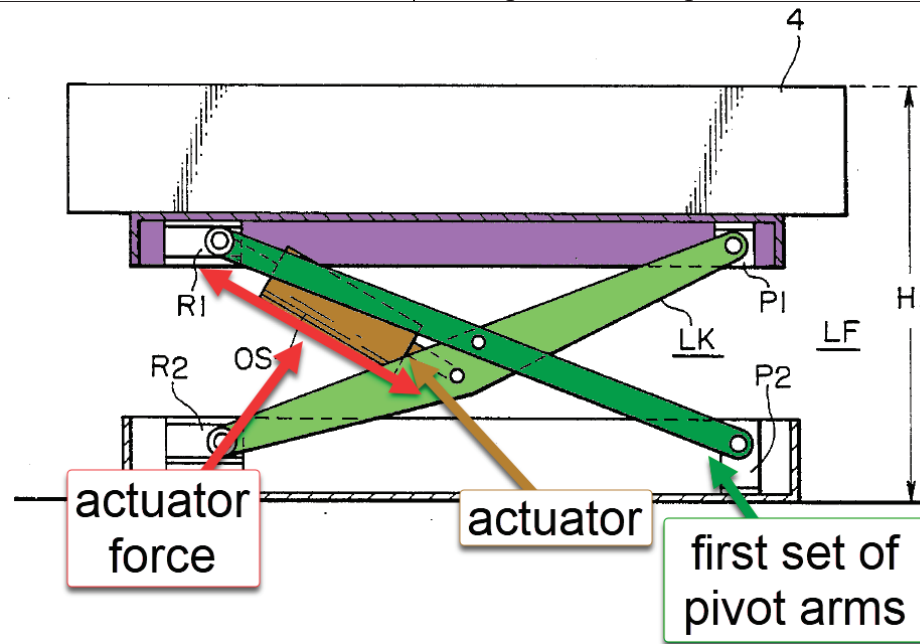
“The middle of the "X"- shaped cross movable metal foot (3) is connected by a pivot shaft (30), characterized in that: a set of horizontal guide rails (4) are respectively provided at both ends of the stand (2), and the left and right upper ends of the "X" - shaped cross movable metal foot (3) are respectively placed in the horizontal position so as to slide left and right.” Zhang [0004]

As shown in the figure and citation above, Zhang discloses guide rails (4) which are brackets fixed relative to the work surface platform that connect the work surface platform to a first set of pivots arms. There are two sets of guide rails in the Zhang mechanism, equaling four total guide rails. Only two are shown in the figure, but a POSITA would understand that the rails would be symmetrically placed on the inside of the work platform, opposite the two shown. This is necessary in order for the scissor linkage to be able to move. Thus, The Zhang sliding mechanism is a small permutation of the Yamamoto sliding and pivot mechanism. In Zhang, both arms slide inside the guide rails, rather than one arm sliding while the other merely rotates about a pivot point. A POSITA would be motivated to use the linkage layout as taught by Yamamoto as opposed to Zhang as it provides greater lateral stability at all points of vertical adjustment. The Zhang linkage will allow side-to-side movement of the work surface platform during adjustment as a result of the oppositional effects of the mutually reverse biased gas springs. A POSITA would find this less desirable than the outcome of the Yamamoto style linkage which has strictly smooth and steady up-and-down

vertical motion. Thus, in the combination of Yamamoto in view of Zhang, the linkage and actuators will be arranged more like that of Yamamoto. Additionally, as previously discussed, a POSITA will be motivated to use the pair of locking gas springs (as taught by Zhang) but in the kinematic arrangement as taught by Yamamoto.

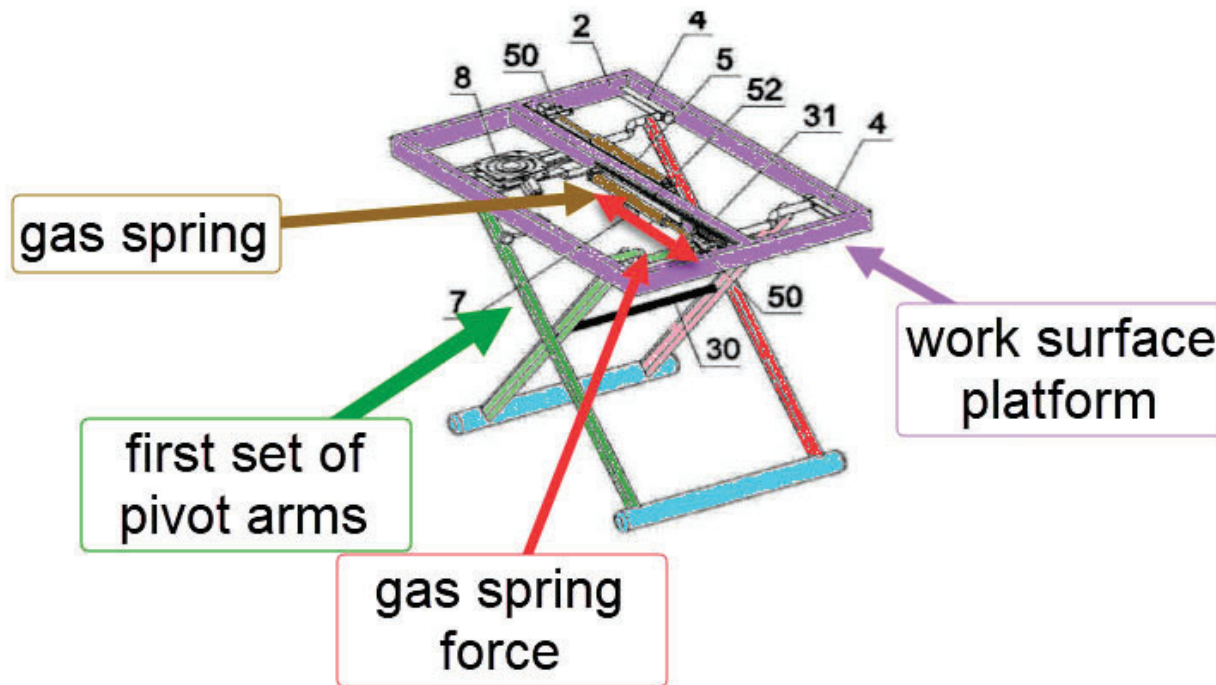
1d7. a gas spring that assists in elevation of the work surface platform by applying a force to one of the first set of pivot arms as part of the scissoring motion,

YES: Yamamoto in view of Zhang discloses a gas spring that assists in the elevation of the work surface platform by applying a force to one of the first set of pivot arms as part of the scissoring motion.



"A hydraulic cylinder OS serves as a vertical drive unit for extending and retracting the link mechanism LK." Yamamoto 2:3-5

Yamamoto discloses a hydraulic cylinder, or actuator, that assists in the elevation of the platform. It applies a force between one of the first set of pivot arms and the work surface platform. As discussed previously, a POSITA would be motivated to replace the fluid power cylinder of Yamamoto with one or more gas springs as taught by Zhang.



“The two upper ends of the “X” - shaped cross movable metal feet (3) are connected to the platform (2). There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the “X” - shaped cross movable metal foot (3), and the fixed end (51) of the air support rod (5) is connected to the sliding rod of the slide rail (52). The two air support rods (5) are controlled by a pull switch (6) to extend and retract the movable rod of the air support rod (5).” Zhang [0004]

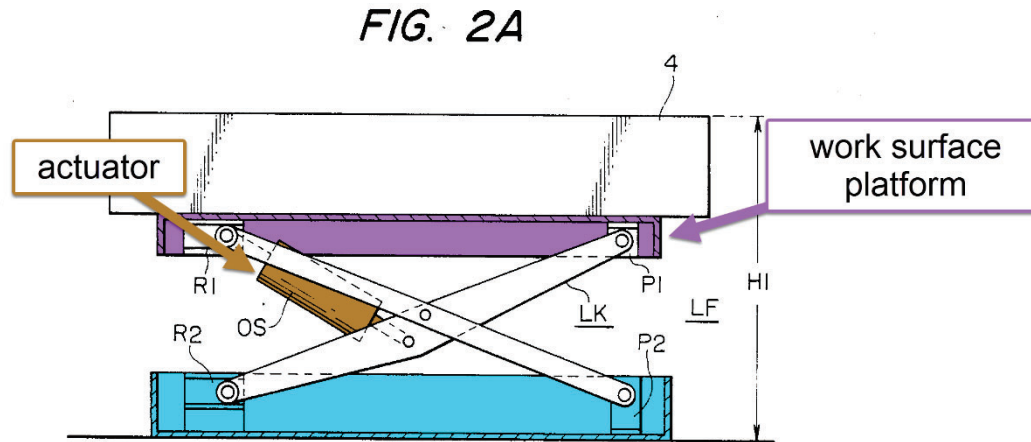
As shown in the figure and the citation above, Zhang discloses a gas spring that is used to facilitate the movement of the scissor linkage and therefore work surface platform. As previously discussed, the Zhang specification uses the term “air support rod” to refer to a common locking gas spring. A POSITA will understand that this is a locking gas spring for the reasons previously discussed. The gas springs are used to assist in the raising and lowering of the table.

Yamamoto uses a hydraulic cylinder to assist in the elevation of the work surface platform. As has been discussed previously, a POSITA would be motivated to combine a Yamamoto style linkage while substituting the hydraulic cylinder for one or more of the gas springs of Zhang in order

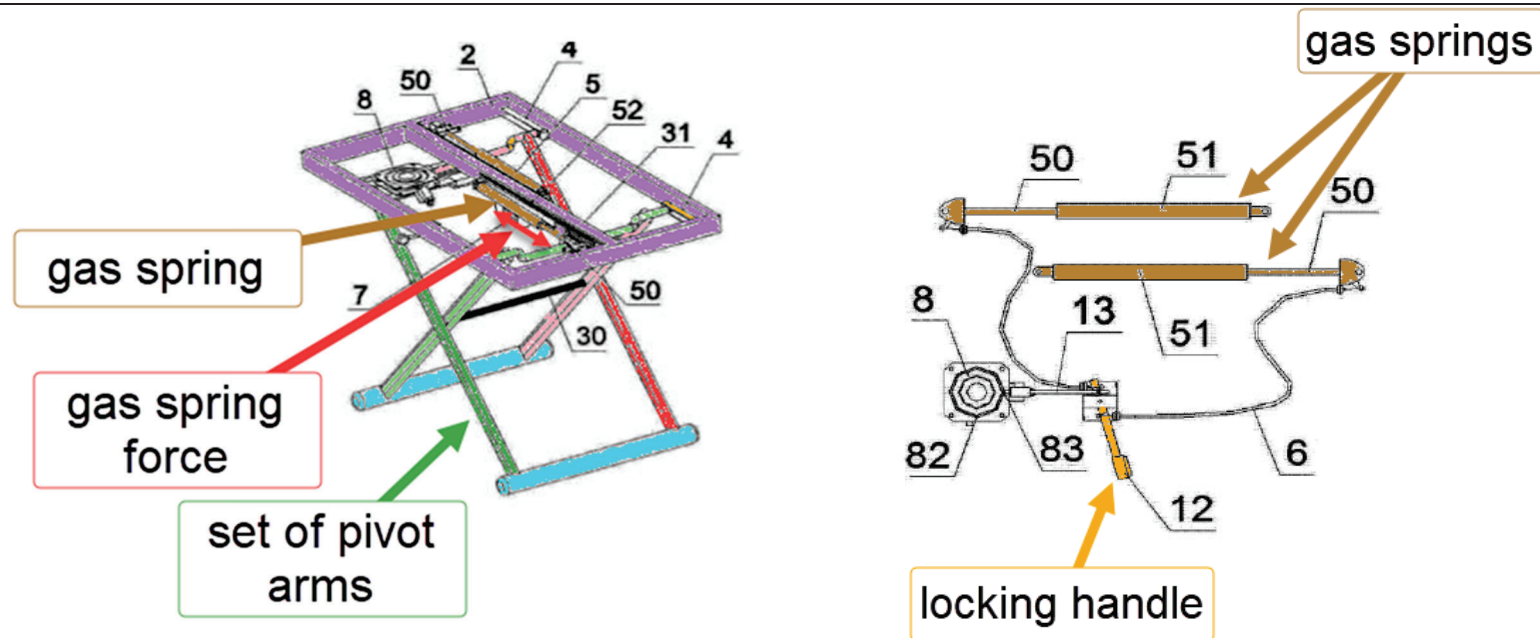
to simplify the actuation mechanism. A POSITA would understand that a lockable gas-spring is a piston cylinder device, such as the one described in Yamamoto.

1d8. wherein one end of the gas spring is fixed to the work surface platform, and wherein the gas spring acts as a locking device that holds the work surface platform at various vertical heights above the base; and

YES: Yamamoto in view of Zhang and with the knowledge of a POSITA, discloses that one end of the gas spring is fixed to the work surface platform, and wherein the gas spring acts as a locking device that holds the work surface platform at various vertical heights above the base.



As shown above, the locking hydraulic cylinder in Yamamoto applies force to the work surface platform via its attachment to the sliding mechanism.



“On one side of the platform (2), there is a swing rod (12) that drives the action of the cable switch (6). The middle of the swing rod (12) is fixed to a fixed frame (12) through a rotating shaft (11). The cable drive end of the cable switch (6) is connected to one end of the swing rod (12). When the swing rod (12) swings, the valve of the driving air rod (5) is opened, and the movable rod end (50) is in a telescopic state; When the swing rod (12) is in a nonstressed state, the valve of the driving air rod (5) is closed, and the movable rod is in a positioning state.” Zhang [0007]

As shown above, Zhang discloses the use of a gas spring to facilitate the movement of the scissor linkage. Specifically, the gas-spring cited is a locking gas-spring. The lock is engaged via locking handle, element 12, and Bowden cables, element 6, as shown above in the graphic on the right. These locking gas springs, as discussed previously, are a well-known off-the-shelf component that any POSITA would be very familiar with. Engaging those locks via the use of Bowden cables is a standard mechanism used in various devices—one example is their use in bicycle brakes and gear shifters. As Zhang describes, the locking gas spring is used to set the work surface platform at various heights in ordinary usage of the Zhang apparatus. A POSITA will understand that a hydraulic cylinder, such as used by Yamamoto is also a piston cylinder device that can be used to lock the vertical position of the platform at any height within its ordinary range of motion. As discussed previously, a POSITA would be motivated to combine the locking gas springs of Zhang with the linkage of Yamamoto. Further, as discussed previously, a POSITA would be motivated to connect the rod end of the locking gas spring directly to the work surface platform as this would greatly simplify the locking

actuation method. If one end of the gas spring were mounted directly to the work surface platform, the rod end would be stationary relative to the work surface platform and would allow the use of a simple locking handle rather than the use of Bowden cables as used in Zhang.

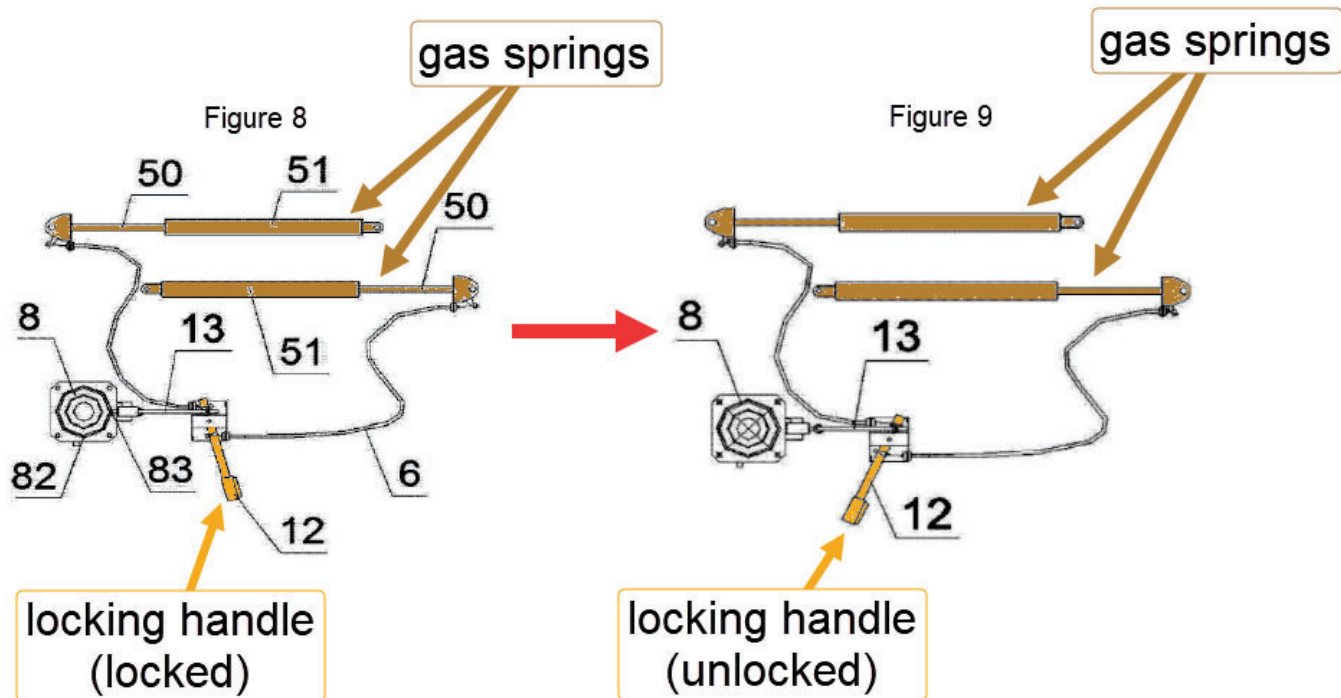
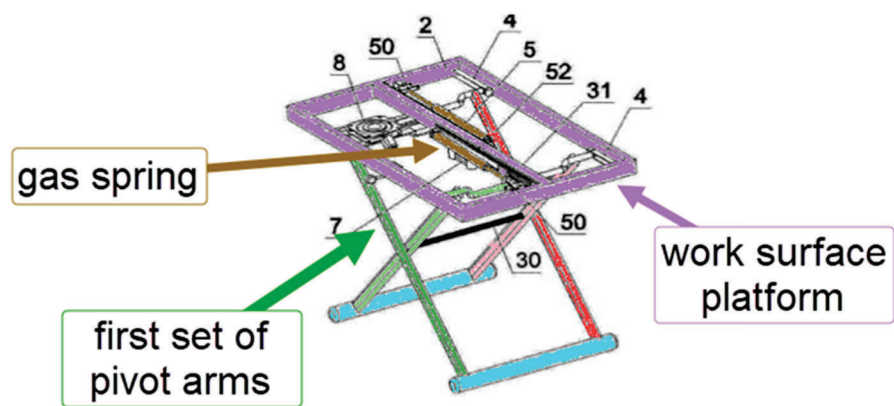
In addition, and as an example of this gas spring mounting setup, Lindahl—as discussed in this report—discloses a gas spring that is directly fixed to the work surface platform. Where both Yamamoto and Zhang use hydraulic cylinders or gas springs to transfer load to the work surface platform via slide mechanisms, a POSITA would reasonably decide to simplify the mounting of the gas spring(s) by directly fixing them to the work surface platform, as is shown in Lindahl. Fixing directly to the work surface platform allowed Lindahl to use a simple lever as its gas spring locking mechanism, rather than hydraulics or Bowden cables. See below for the description of the gas spring used in Lindahl.

“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).” Lindahl 4:5-15

A POSITA would be motivated to use the linkage of Yamamoto, one or more gas springs of Zhang, and mount the spring(s) directly to the work surface platform, as shown in the Lindahl example, in order to eliminate the need for hydraulic lines or Bowden cables, thereby simplifying the assembly.

1d9. a handle that unlocks the locking device in response to pressure applied by a user.

YES: Yamamoto in view of Zhang discloses a handle that unlocks the locking device in response to pressure applied by a user.

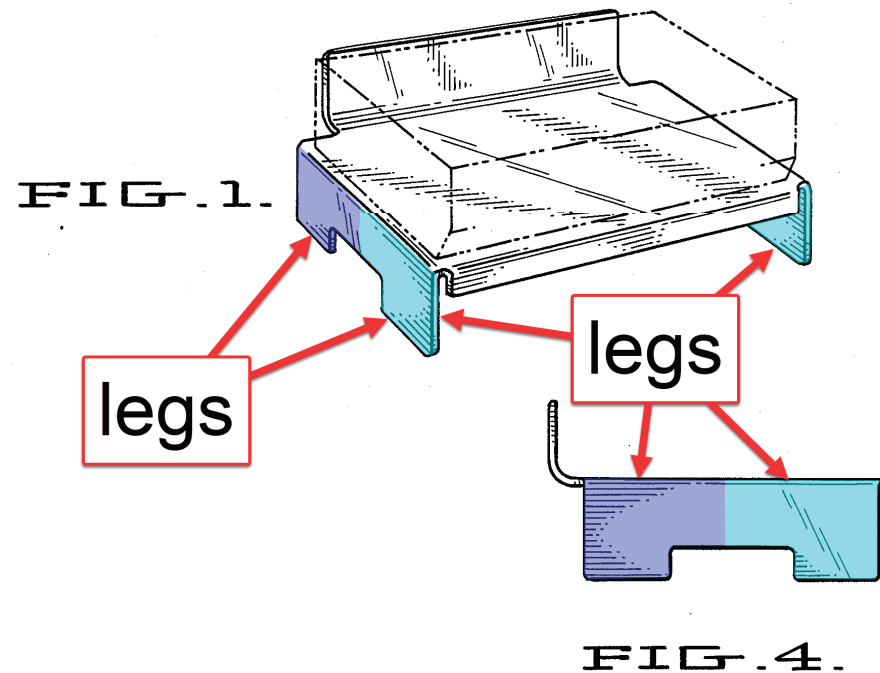


“On one side of the platform (2), there is a swing rod (12) that drives the action of the cable switch (6). The middle of the swing rod (12) is fixed to a fixed frame (12) through a rotating shaft (11). The cable drive end of the cable switch (6) is connected to one end of the swing rod (12). When the swing rod (12) swings, the valve of the driving air rod (5) is opened, and the movable rod end (50) is in a telescopic state; When the swing rod (12) is in a nonstressed state, the valve of the driving air rod (5) is closed, and the movable rod is in a positioning state” Zhang [0007]

As shown above, and as described in the citation above, the Zhang mechanism is provided with a handle (swing rod 12) that unlocks the locking device (i.e. the locking gas springs). This is in response to the pressure applied by a user to the handle portion of operating means 12. For example, Zhang figures 8 and 9 show two different states of this adjustment system. One with force applied to the handle (Figure 9) and one without force applied to the handle (figure 8). These two figures and the accompanying explanation clearly demonstrate that force is applied to the handle in order to unlock the gas springs. When they are unlocked, the gas springs will apply a force to aid in the lifting of the work surface platform. This fact will also be true in the combination of Yamamoto in view of Zhang.

A POSITA would be motivated to add a handle to actuate locking gas springs in order to easily adjust the height of the table with the assistance from the gas springs. Once the desired height is achieved, simply releasing the locking handle engages the locking device, and maintains the height of the table.

2P. The desktop workspace of claim 1,	YES: As shown above, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
2a. wherein the platform element further includes four legs that support the elevated platform surface above the work surface platform,	YES: Clark discloses that the platform element further includes four legs that support the elevated platform surface above the work surface platform.



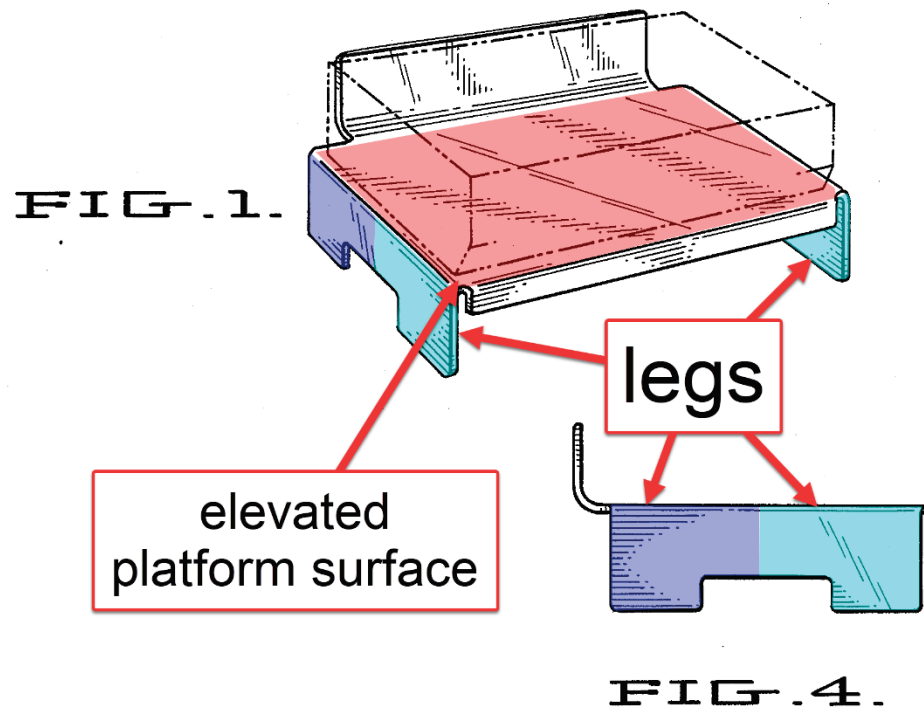
*"Fig. 4 is a left side view, the right side being a mirror image of the left side shown,"*¹⁸²

As shown above, the Clark printer stand has four legs, i.e. there are four surfaces that will come into contact with any platform or surface the printer stand is placed on. These four legs extend from those surfaces up to the supported platform as shown in the figures above. The description of Figure 4 in Clark specifies that the Clark design is symmetric, i.e. the right side of Clark is a mirror image of the left side as shown in Figure 4. This clearly shows how the two most easily visible legs of Clark as shown in Figures 1 and 4 are mirrored on the opposite side i.e. there are another two legs on the other side of the Clark printer stand making for a total of four legs.

2b. each of the four legs being proximate to one of four corners of the elevated platform surface.

YES: Clark discloses that each of the four legs being proximate to one of the four corners of the elevated platform surface.

¹⁸² US D308537, pg. 1



*"Fig. 4 is a left side view, the right side being a mirror image of the left side shown;"*¹⁸³

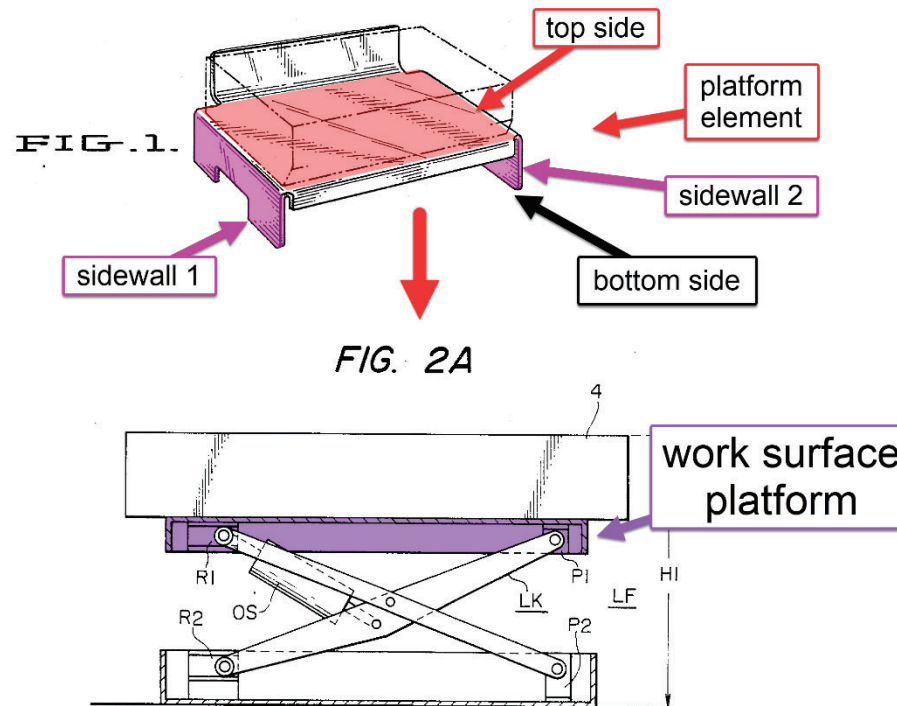
As previously discussed, the Clark printer stand has four legs. Further, as shown above, each of the four legs is proximate to one of the four corners of the elevated platform surface. In fact, each of the four legs directly abuts a corner of the elevated platform surface.

3P. The desktop workspace of claim 1,	YES: As shown above, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
3a. wherein the platform element includes four sides including a bottom side on the work surface platform,	YES: Yamamoto in view of Zhang, and in further view of Clark discloses that the platform element includes four sides including a bottom side on the work surface platform.

¹⁸³ US D308537, pg. 1

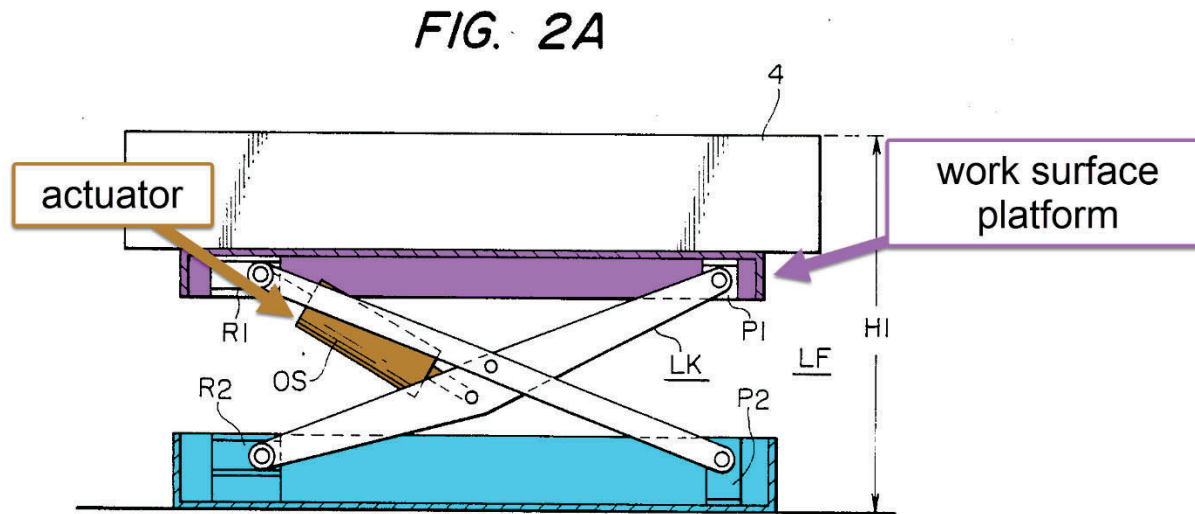
3b. a top side forming the elevated platform surface and two sidewalls that support the elevated platform surface above the bottom side and the work surface platform.

Further, the platform element has a top side forming the elevated platform surface and two sidewalls that support the elevated platform surface above the bottom side and the work surface platform.

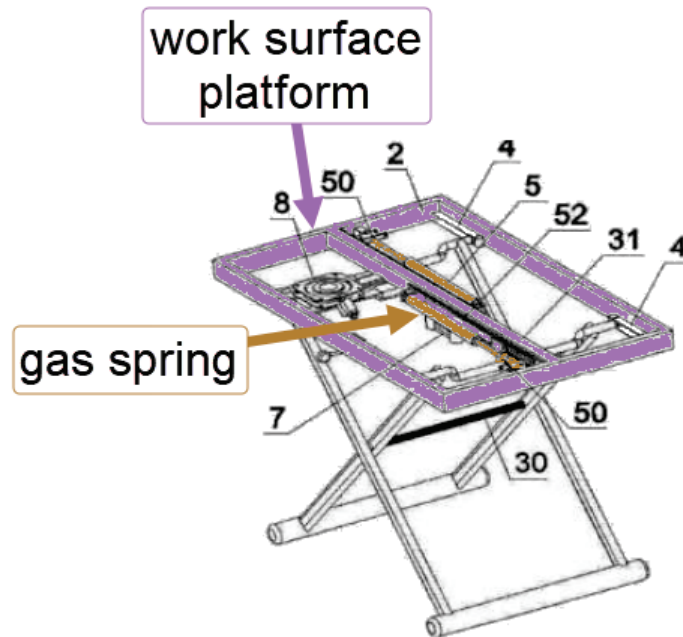


As shown above, the platform element of Clark has at least four sides. In fact it has more than four sides. For example, it has a bottom side, which is the bottom of the legs which support the platform element of Clark (aka the top side). As discussed previously, a POSITA would understand and find it obvious that the Clark style printing stand could foreseeably be placed on top of the work surface platform of Yamamoto, Zhang, or any other adequately sized horizontal surface for that matter. Further, a POSITA would understand that a printer stand is commonly placed on top of a horizontal surface such as Yamamoto or Zhang and is even directly intended so to be. When the Clark printer stand is placed on top of the work surface platform, the bottom side of the printer stand will be in direct contact with the work surface platform. Further, the Clark printer stand has a top side as already discussed. Further still, the Clark printer stand has two sidewalls that support the platform surface up of the bottom side and above the work surface platform. As shown in the figures above, the legs of Clark have outwardly facing surfaces (aka sidewalls).

6P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
6a. wherein the one end of the gas spring is fixed to the work surface platform via a bracket fixed to an underside of the work surface platform.	YES: Yamamoto in view of Zhang and with the knowledge of a POSITA, discloses that one end of the gas spring is fixed to the work surface platform via a bracket fixed to an underside of the work surface platform.



As shown above, the hydraulic cylinder in Yamamoto applies force to the underside of the work surface platform via its attachment to the sliding mechanism.



“On one side of the platform (2), there is a swing rod (12) that drives the action of the cable switch (6). The middle of the swing rod (12) is fixed to a fixed frame (12) through a rotating shaft (11). The cable drive end of the cable switch (6) is connected to one end of the swing rod (12). When the swing rod (12) swings, the valve of the driving air rod (5) is opened, and the movable rod end (50) is in a telescopic state; When the swing rod (12) is in a nonstressed state, the valve of the driving air rod (5) is closed, and the movable rod is in a positioning state.” Zhang [0007]

As shown above, Zhang discloses the use of a gas spring to facilitate the movement of the scissor linkage. Specifically, the gas-spring cited is a locking gas-spring. A POSITA will understand that a hydraulic cylinder, such as used by Yamamoto is also a piston cylinder device that can be used to lock the vertical position of the platform at any height within its ordinary range of motion. As discussed previously, a POSITA would be motivated to combine the locking gas springs of Zhang with the linkage of Yamamoto. A POSITA would be motivated to connect the rod end of the locking gas spring directly to the underside of the work surface platform as this would greatly simplify the locking actuation method. Further, a POSITA would reasonably be motivated to use a bracket as the means of attachment as this can provide greater strength to the attachment as well as provide a mounting geometry that is tailored to the rod end of the gas spring. If the rod end were mounted directly to the

underside of the work surface platform via a bracket, it would be stationary relative to the work surface platform and would allow the use of a simple locking handle rather than the use of Bowden cables as used in Zhang.

In addition, and as an example of this gas spring being mounted to the underside of the work surface platform via a bracket, Lindahl—as discussed in this report—discloses a gas spring that is directly fixed to the underside of the work surface platform via a bracket. Where both Yamamoto and Zhang use hydraulic cylinders or gas springs to transfer load to the work surface platform via slide mechanisms, a POSITA would reasonably decide to simplify the mounting of the gas spring(s) by directly fixing them to the underside of the work surface platform via a bracket, as is shown in Lindahl. Fixing directly to the work surface platform allowed Lindahl to use a simple lever as its gas spring locking mechanism, rather than hydraulics or Bowden cables. See below for the description of the gas spring used in Lindahl.

“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).” Lindahl 4:5-15

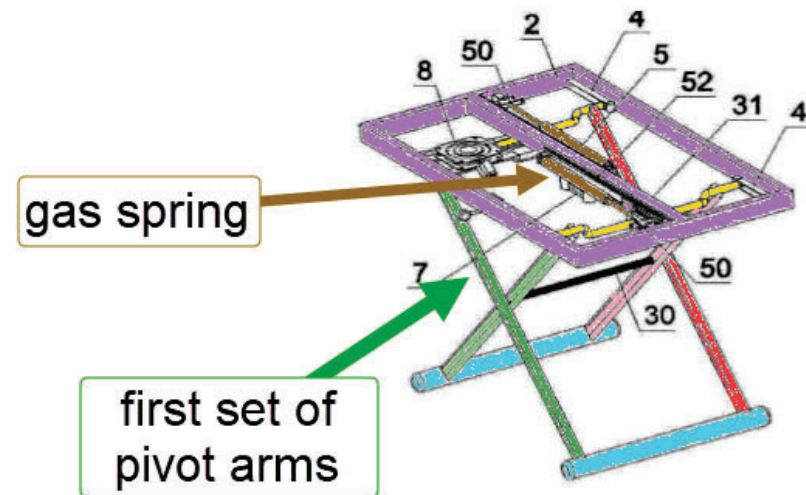
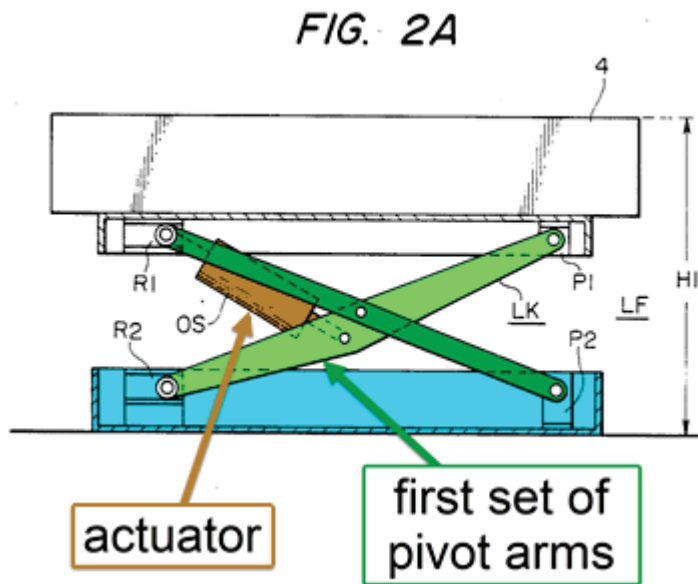
A POSITA would be motivated to use the linkage of Yamamoto, one or more gas springs of Zhang, and mount the spring(s) directly to the underside of the work surface platform via a bracket, as shown in the Lindahl example, in order to provide greater strength to the attachment as well as provide a tailored mounting geometry that is designed to interface with the end of the gas spring.

7P. The desktop workspace of claim 6,

YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 6.

7a. wherein the gas spring is attached directly to the one of the first set of pivot arms.

YES: Yamamoto in view of Zhang discloses that the gas spring is attached directly to one of the first set of pivot arms.

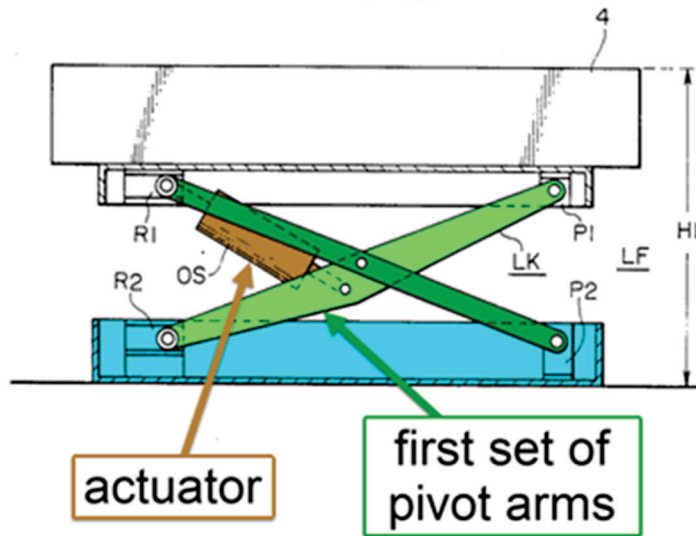


“There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the “X” - shaped cross movable metal foot (3)” Zhang [0004]

As shown above, the hydraulic cylinder of Yamamoto is attached directly to one of the first set of pivot arms. As discussed previously, a POSITA would be motivated to replace the hydraulic cylinder of Yamamoto with one or more locking gas springs as taught by Zhang.

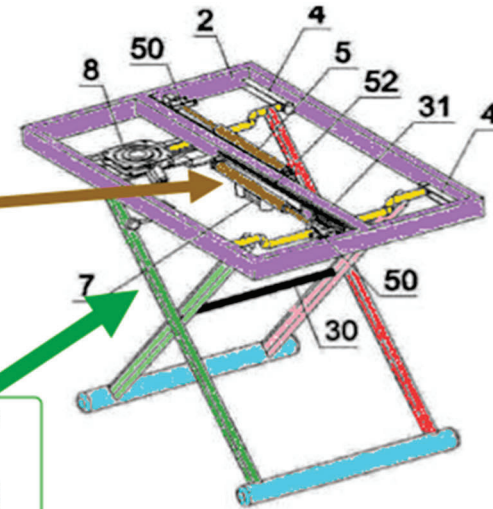
8P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
8a. wherein the gas spring is attached directly to the one of the first set of pivot arms.	YES: See element 7a.

FIG. 2A



gas spring

first set of pivot arms



"There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the "X" - shaped cross movable metal foot (3)" Zhang [0004]

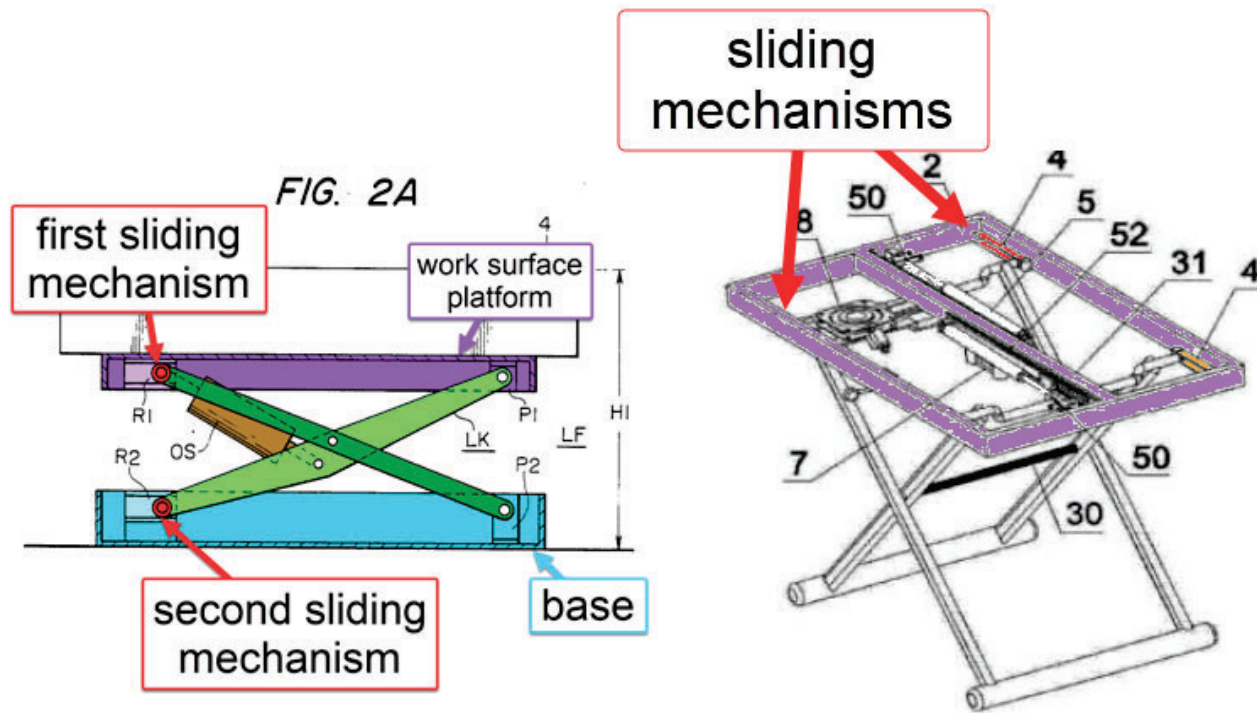
As shown above, the hydraulic cylinder of Yamamoto is attached directly to one of the first set of pivot arms. As discussed previously, a POSITA would be motivated to replace the hydraulic cylinder of Yamamoto with the pair of locking gas springs as taught by Zhang. Fixing the cylinder to the first set of pivot arms as shown in Yamamoto gives a greater mechanical advantage throughout the full range of motion versus the Zhang mechanism.

9P. The desktop workspace of claim 1,

YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.

9a. wherein the sliding mechanism is a first sliding mechanism,
9b. the desktop workspace further comprising a second sliding mechanism,

YES: Yamamoto in view of Zhang discloses that the sliding mechanism is a first sliding mechanism. Further this combination discloses that there is a second sliding mechanism.



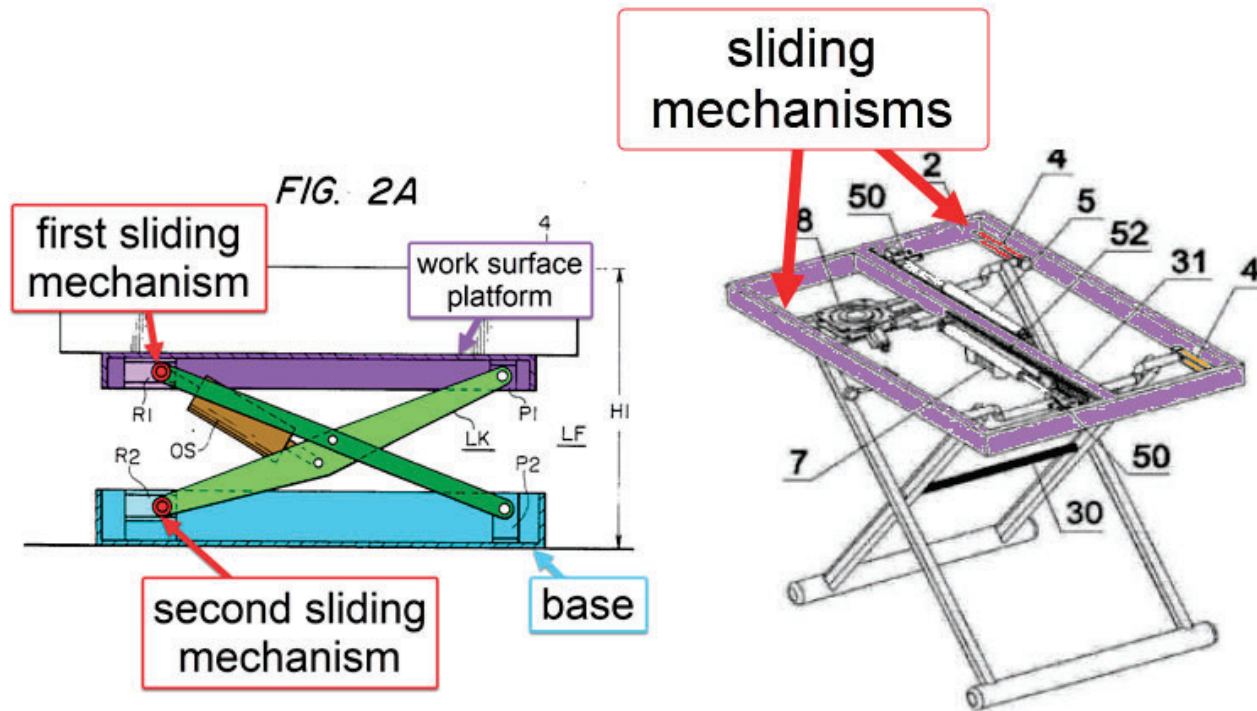
“a set of horizontal guide rails (4) are respectively provided at both ends of the stand (2), and the left and right upper ends of the “X” – shaped cross movable metal foot (3) are respectively placed in the horizontal position so as to slide left and right. Inside the guide rail (4)” Zhang [0004]

“The lifter LF includes a link mechanism LK having bearing P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail” Yamamoto 1:68-2:3

As shown above, both Zhang and Yamamoto have a first sliding mechanism, which is what allows the top portion of the scissor links to translate relative to the work surface platform. In addition to this, Yamamoto discloses a second sliding mechanism that is operable between the pivot arms and the base. Again, this is typical scissor linkage design that any POSITA would readily understand is ubiquitous.

9c. wherein either the first sliding mechanism or the second sliding mechanism is attached or slides along the work surface platform,
9d. and the other of the first sliding mechanism and the second sliding mechanism is attached to or slides along the base.

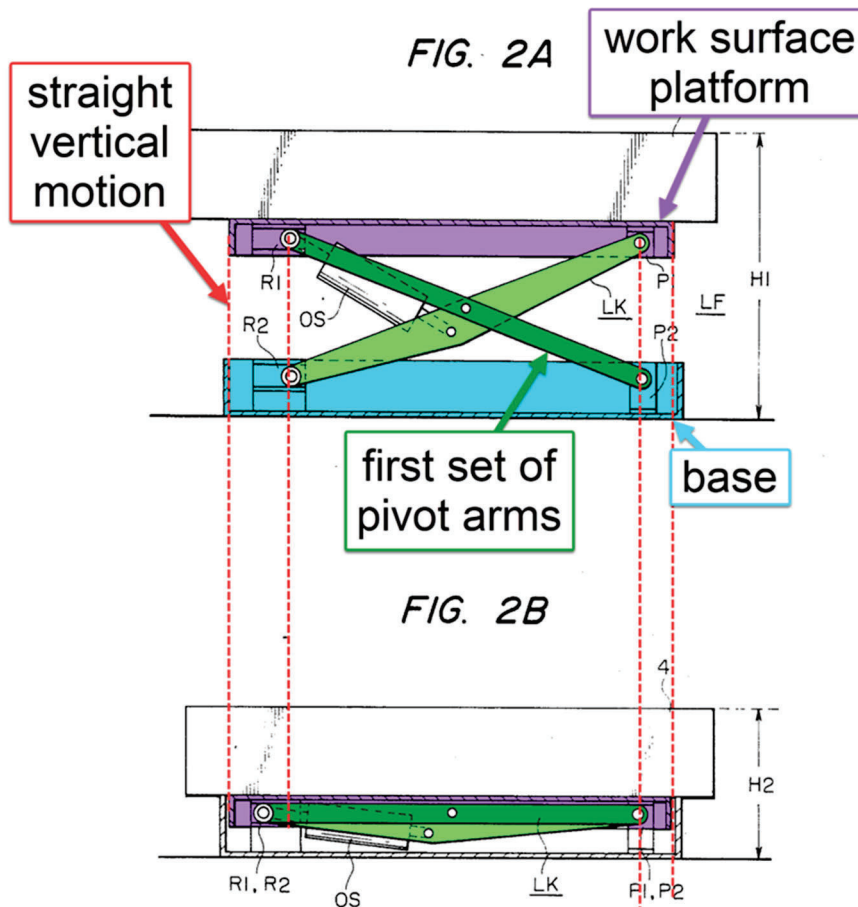
YES: Yamamoto in view of Zhang discloses that either the first or the second sliding mechanism is attached or slides along the work surface platform.
 Further, the other first and second sliding mechanism is attached to or slides along the base.



“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 foot (3) are respectively placed in the horizontal position so as to slide left and right. Inside the guide rail (4)” Zhang [0004]

“The lifter LF includes a link mechanism LK having bearing P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail” Yamamoto 1:68-2:3

As shown above, both Yamamoto and Zhang show that the first sliding mechanism(s) are attached to or slide along the work surface platform. Further, Yamamoto has a second sliding mechanism (item R2 as shown above) that is attached to or slides along the base.	
10P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
10a. wherein the scissoring motion when raising and lowering the work surface platform to various heights of the height adjustment mechanism moves the work surface platform in a straight vertical direction relative to the base.	YES: Yamamoto discloses that the scissoring motion when raising and lowering the work surface platform to various heights of the height adjustment mechanism moves the work surface platform in a straight vertical line relative to the base.



“To meet this demand, it has been proposed to combine a lifter with the bed for adjusting the height of the bed. FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement. The height of the fluidized bed, and hence the height of the tank 4, are freely adjustable by a lifter LF between a maximum height H1 and a minimum height H2. The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to the ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail. A hydraulic cylinder OS serves as a vertical drive unit for extending and retracting the link mechanism LK. Vertical movement of such a vertically movable fluidized bed with a patient thereon while the beads 5 are in a flowing condition, however, results in the danger of causing the patient to move unnecessarily on the bed.” Yamamoto 1:61-2:9

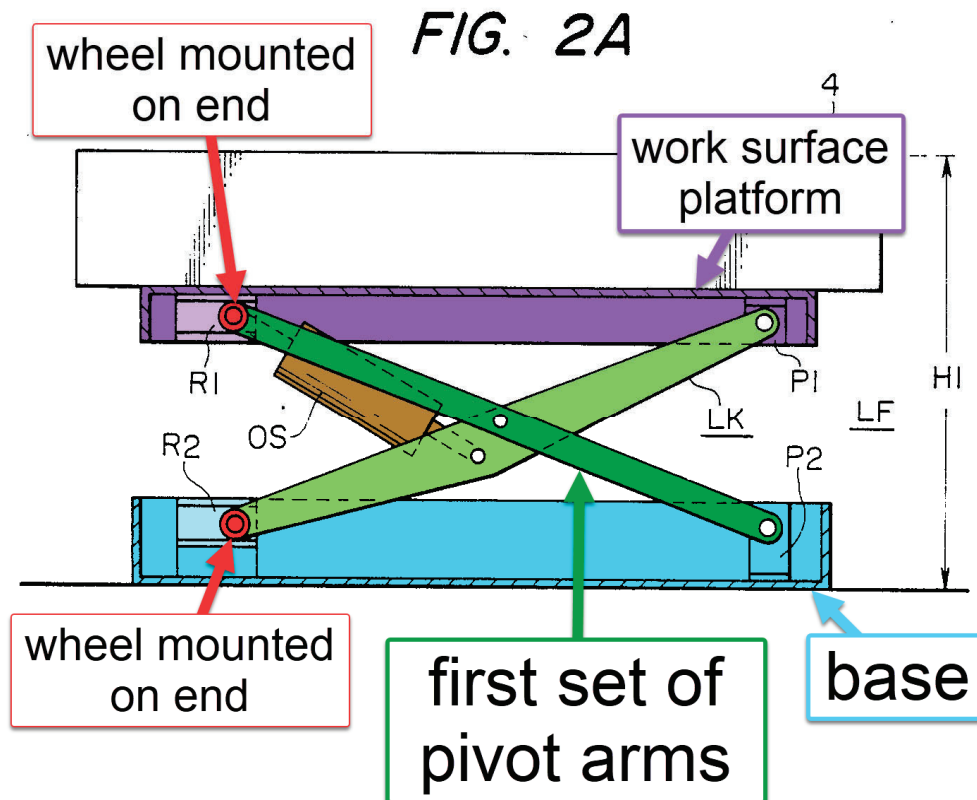
As shown above, the scissor mechanism of Yamamoto moves the work surface platform in a straight vertical line relative to the base. This is a property typical of scissor lifting mechanisms generally as a POSITA would understand.

11P. The desktop workspace of claim 1,

YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.

11a. wherein the sliding mechanism includes a wheel mounted on the end of the arm of the first set of pivot arms.

YES: Yamamoto discloses that the sliding mechanism includes a wheel mounted on the end of the arm of the first set of pivot arms.

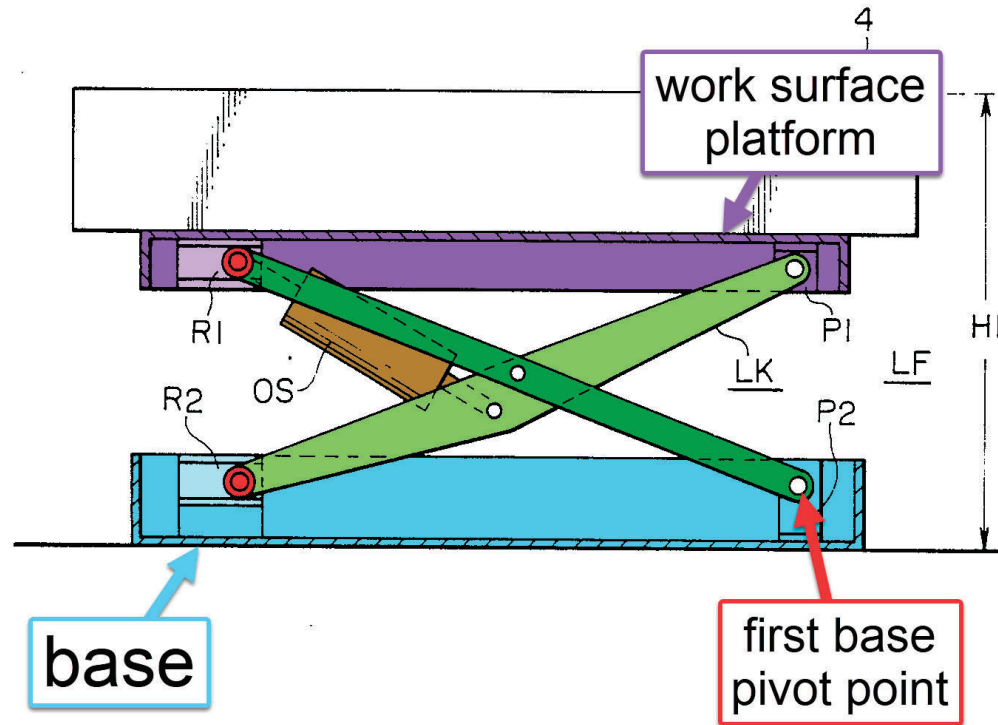


“The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail. A hydraulic cylinder OS serves as a vertical drive unit for extending and retracting the link mechanism LK.” Yamamoto 1:68-2:5

As shown above, Yamamoto discloses a sliding mechanism that includes a wheel mounted on the end of the arm of the first set of pivot arms. Yamamoto discloses at least two such wheels as R1 and R2. This is a very common design for scissor lifts, and example of which is shown in Yamamoto. As previously discussed, a sliding mechanism of some kind is generally necessary to allow a scissor linkage to move up and down. Some scissor linkages use sliding contact, others use rolling contact. A POSITA would be motivated to use the wheel as disclosed in Yamamoto as rolling contact has less friction than sliding contact. This would lead to better ease of use and less wear and tear on the mechanism.

12P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
12a. wherein the base pivot point is a first base pivot point,	YES: Yamamoto discloses that that base pivot point is a first base pivot point.

FIG. 2A

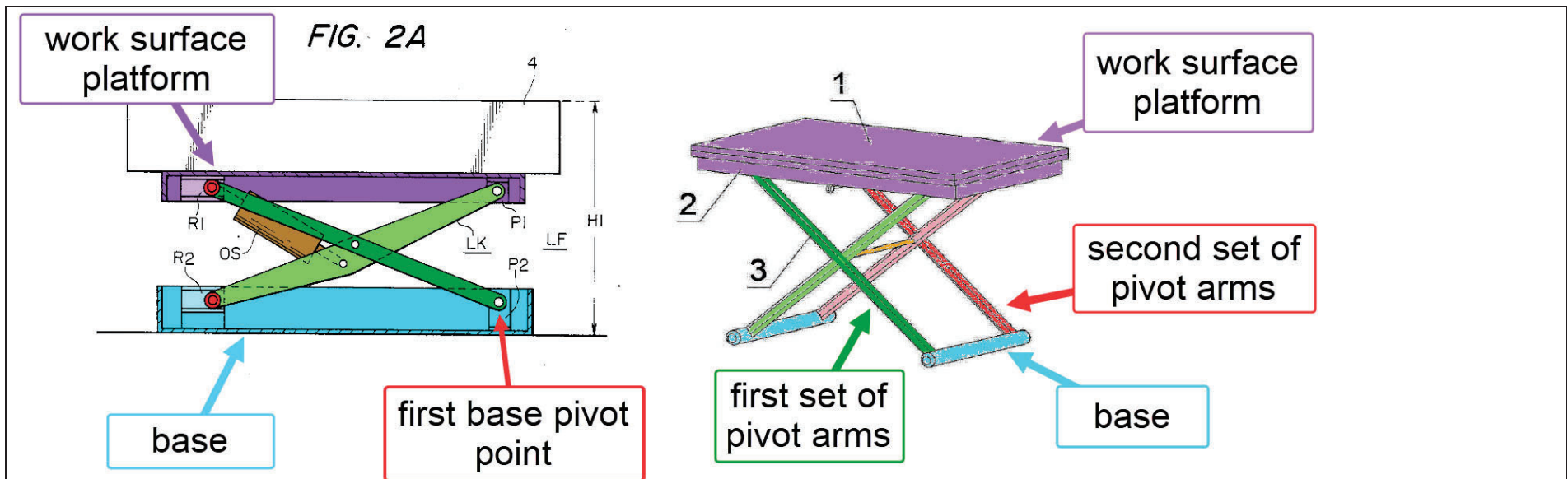


"The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail." Yamamoto 1:68-2:3

As shown above, as is ubiquitous with scissor linkage design, Yamamoto discloses a set of pivot points, two of which are fixed and two of which are able to translate. This is what allows the scissor lift mechanism to move with the traditional scissoring action. As a consequence, virtually all scissor linkages with a base member have a first base pivot point (P2 in the case of Yamamoto).

12b. wherein the height adjustment mechanism further includes a second base pivot point fixed relative to the base and connecting the base and the second set of pivot arms, and

YES: Yamamoto in view of Zhang discloses that the height adjustment mechanism further includes a second base pivot point fixed relative to the base and connecting the base to the second set of pivot arms.



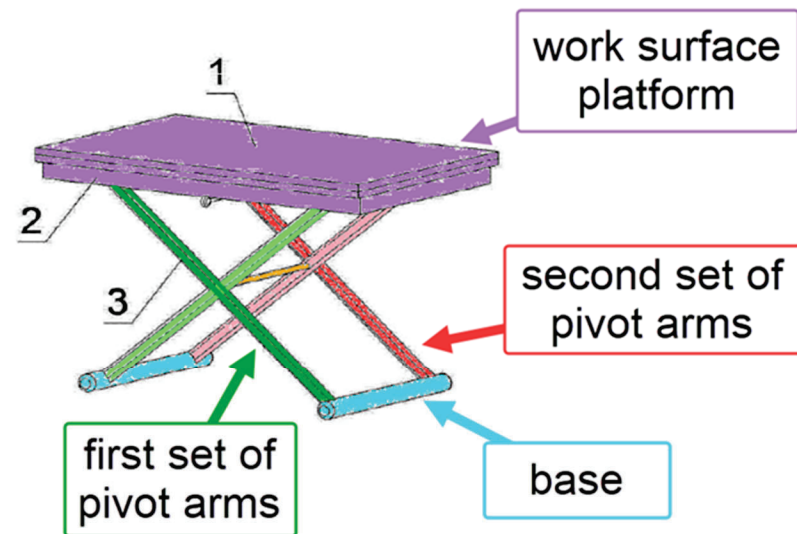
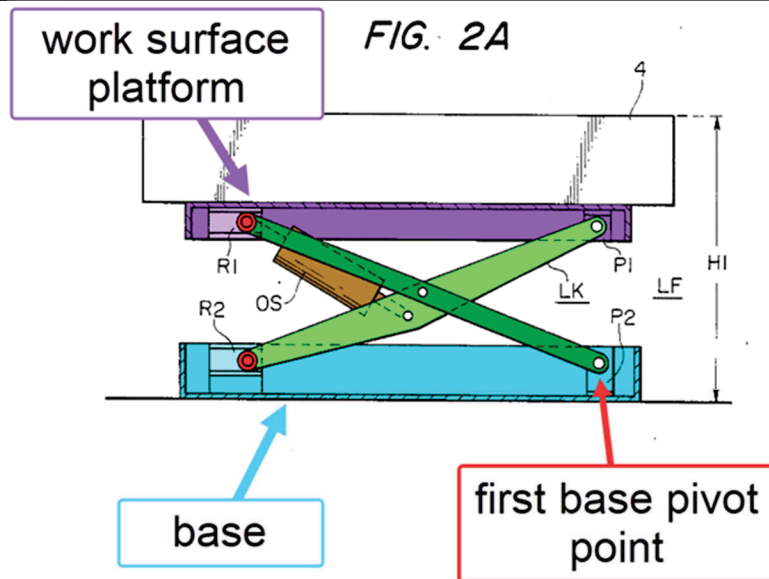
"The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail." Yamamoto 1:68-2:3

"The tabletop (1) is installed on the stand (2), and the "X" - shaped cross movable metal foot (3) provides horizontal support for the stand (2). The middle of the "X" - shaped cross movable metal foot (3) is connected by a pivot shaft (30)" Zhang [0004]

As shown above and as shown previously, Yamamoto discloses a first base pivot point and at least one set of pivot arms. It is extremely common in scissor lift design to have a pair of scissor lift linkages (and therefore a pair of pivot arms). For example, Zhang has a pair of pivot arms as previously discussed. Further, a POSITA will be motivated to incorporate the second set of pivot arms of Zhang, as previously discussed. Thus, the combination of Yamamoto in view of Zhang will also have a second base pivot point which accompanies the second set of pivot arms of Zhang. Were this not the case, there would be no purpose to having the second set of pivot arms. Further, the second base pivot point will be fixed relative to the base which connects to the second set of pivot arms in the same way that Yamamoto shows the base connecting to the first set of pivot arms.

12c. wherein the base includes one or multiple stationary pieces of material connecting the first and second base pivot points to one another.

YES: Yamamoto discloses that the base includes one or multiple stationary pieces of material connecting the first and second base pivot points to one another.



"To meet this demand, it has been proposed to combine a lifter with the bed for adjusting the height of the bed. FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement. ... The lifter LF includes a link mechanism LK having bearings P1 and P2 fixed to ends thereof and rollers R1 and R2 on opposite ends thereof which are movable along a guide rail." Yamamoto 1:61-64, 68-2:3

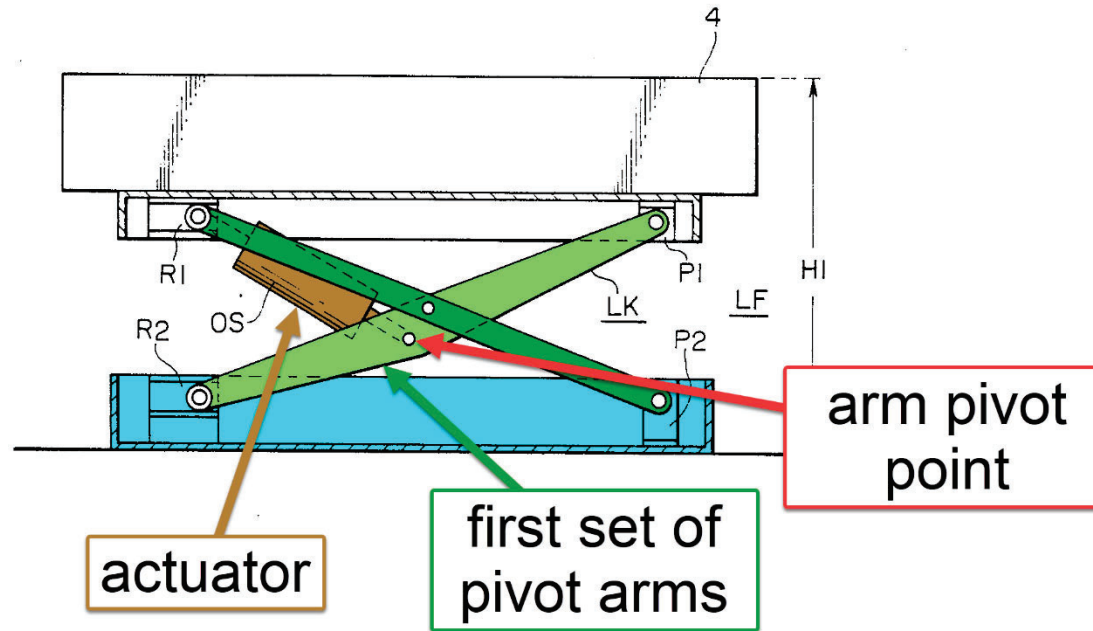
As shown above, Yamamoto has a stationary base. Yamamoto is configured to provide vertical movement. As shown in the figures and in the text, it is the patient bed (i.e. work surface platform) that moves up and down while the base remains in stationary contact with the existing platform (the floor).

Zhang discloses material (blue portions of item 3) that connects the first set of pivot arms to the second set of pivots arms. As the Zhang mechanism is being collapsed, for instance, whichever transverse rod has more weight on it will be the stationary piece with respect to the existing platform.

As also shown above, Yamamoto has a base comprised of one or more stationary pieces. As previously discussed, the combination of Yamamoto in view of Zhang incorporates the base of Yamamoto. Thus, the stationary base will connect the first and second base pivot points to one another.

13P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
13a. wherein the gas spring is attached to the one of the first set of pivot arms via an arm pivot point.	YES: Zhang discloses that the gas spring is attached to one of the first set of pivot arms via an arm pivot point.

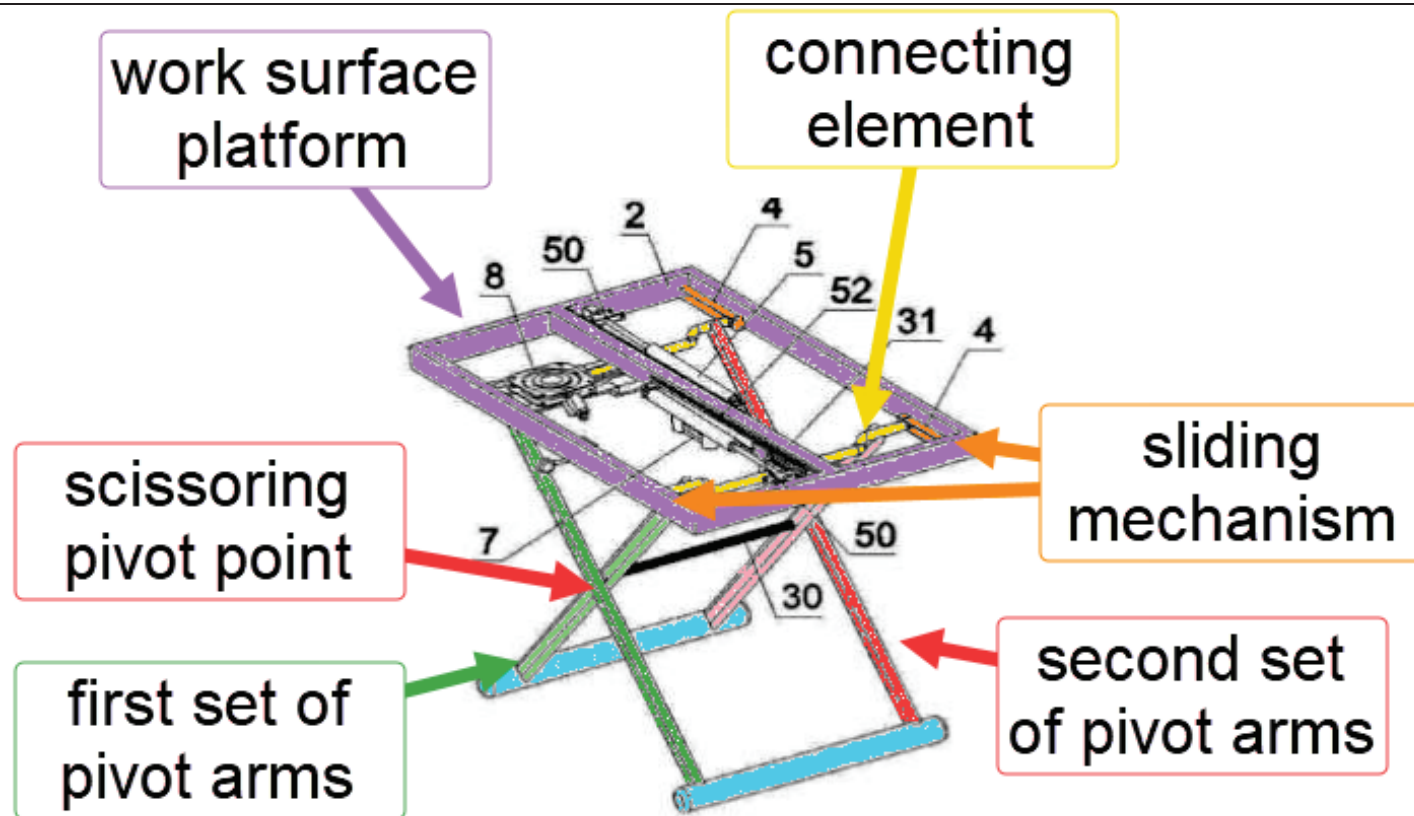
FIG. 2A



“A hydraulic cylinder OS serves as a vertical drive unit for extending and retracting the link mechanism LK.” Yamamoto 2:3-5

As shown above, the cylinder of Yamamoto is attached to one of the first set of pivot arms via an arm pivot point. As discussed previously, a POSITA would be motivated to replace the hydraulic cylinder of Yamamoto with one or more locking gas springs as taught by Zhang. A POSITA would easily recognize one method for adjusting the height of the table would be accomplished via attaching the gas spring to one of the pivot arms.

14P. The desktop workspace of claim 1,	YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 1.
14a. wherein the element that connects the first set of pivot arms to the second set of pivot arms is attached on the same sides of the arms as the sliding mechanism relative to the scissoring pivot points.	YES: Zhang discloses that the element that connects the first set of pivot arms to the second set of pivot arms is attached on the same sides of the arms as the sliding mechanism relative to the scissoring pivot points.



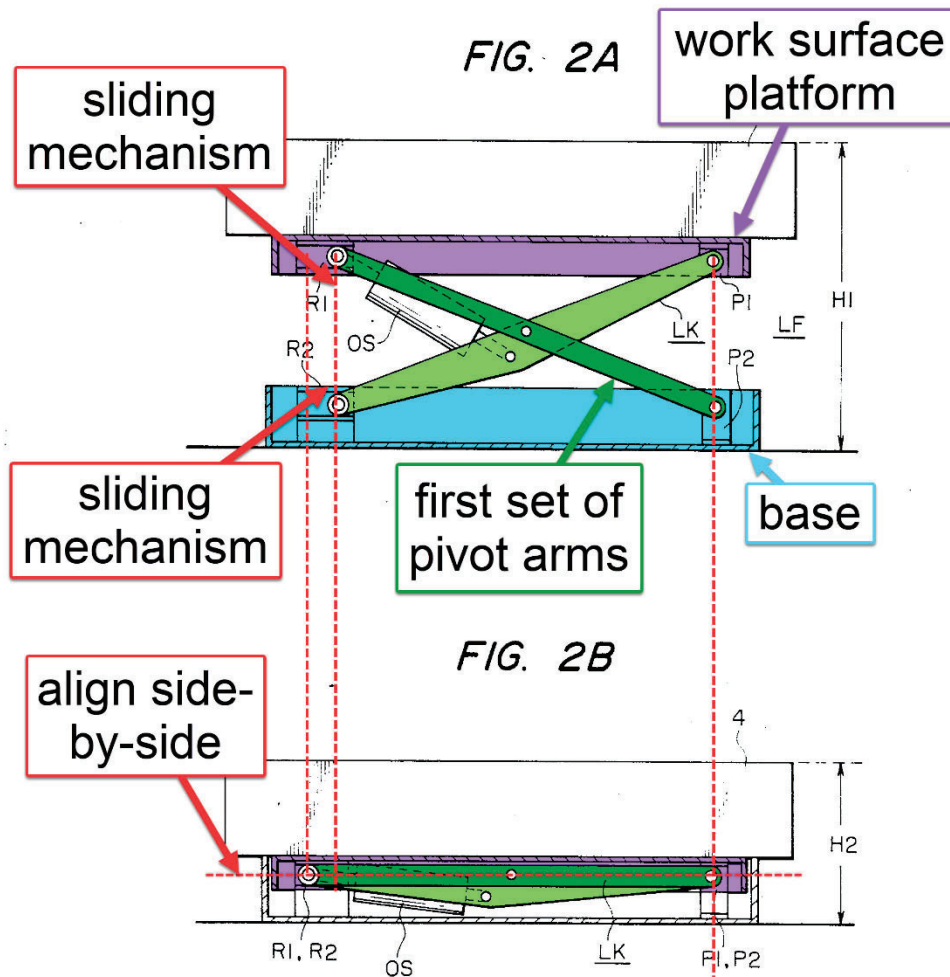
“The purpose of the present utility model is achieved as follows: a height-adjustable table, comprising a tabletop (1), a stand (2), and an "X" - shaped cross movable metal foot (3). The tabletop (1) is installed on the stand (2), and the "X" - shaped cross movable metal foot (3) provides horizontal support for the stand (2). The middle of the "X" - shaped cross movable metal foot (3) is connected by a pivot shaft (30), 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 foot (3) are respectively placed in the horizontal position so as to slide left and right.” Zhang [0004]

As shown above, the connecting element of Zhang is on the same side of the pivot arms as the sliding mechanism of Zhang, relative to the scissoring pivot points. Further, as previously discussed, the connecting element is an element that connects the first set of pivot arms to the second set of pivot arms. A POSITA would be motivated to ensure the connecting element and sliding mechanisms were on the same side relative to the scissoring pivot point because it is precisely this layout that describes a typical X-shaped scissor mechanism. The connecting members provides greater stability and rigidity to the structure.

16P. A desktop workspace that adjusts vertically, comprising:	YES: See element 1P.
16a. a work surface platform;	YES: See element 1a.
16b. a platform element sitting on the work surface platform, the platform element including an elevated platform surface above the work surface platform;	YES: See element 1b.
16c. a base configured to sit on an existing platform; and	YES: See element 1c.
16d. a height adjustment mechanism connecting the work surface platform and the base, the height adjustment mechanism including:	YES: See element 1d.
16d1. a first set of pivot arms that connect at a scissoring pivot point creating a scissoring motion when raising and lowering the work surface platform to various heights;	YES: See element 1d1.
16d2. a second set of pivot arms;	YES: See element 1d2.
16d3. an element that connects the first set of pivot arms to the second set of pivot arms;	YES: See element 1d3.
16d4. a base pivot point fixed relative to the base and connecting the base and the first set of pivot arms;	YES: See element 1d4.
16d5. a platform pivot point fixed relative to the work surface platform and connecting the work surface platform and the first set of pivot arms;	YES: See element 1d5.
16d6. a sliding mechanism on an end of an arm of the first set of pivot arms between the end of the arm and either the work surface platform or the base; and	YES: See element 1d6.
16d7. a gas spring that assists in elevation of the work surface platform by applying a force to one of the first set of pivot arms as part of the scissoring motion,	YES: See element 1d7.
16d8. wherein one end of the gas spring is fixed to the work surface platform, wherein the gas spring acts as a locking device that holds the work surface platform at various vertical heights above the base, and	YES: See element 1d8
16d9. wherein the gas spring, the first set of pivot arms, the base pivot point, and the platform pivot point align side-by-	YES: Yamamoto in view of Zhang discloses that the gas spring, the first set of pivot arms, the base pivot point, and the platform pivot point align side-

side when the desktop workspace is in a fully lowered position such that the desktop workspace adjusts vertically.

by-side when the desktop workspace is in a fully lowered position such that the desktop workspace adjusts vertically.



*“The conventional fluidized bed has a fixed height. However, there has been a demand for a fluidized bed having an adjustable height, **specifically one in which the height of the bed above the floor can be made as small as possible** for ease in transferring a patient onto the bed or when a patient gets onto or off the bed, and placed at a suitable height when the patient is lying on the bed for administering treatment to the*

patient. To meet this demand, it has been proposed to combine a lifter with the bed for adjusting the height of the bed. FIG. 2 illustrates the arrangement of such a mechanism for producing vertical movement” Yamamoto 1:53-64 (emphasis added)

As shown above, the Yamamoto linkage is arranged such that the first set of pivot arms, the base pivot point, and the platform pivot point align perfectly side-by-side when the workspace is in a fully lowered position. As Yamamoto uses a hydraulic cylinder to lift, the cylinder is also side-by-side with the pivot arms and other associated components. To the extent that this side-by-side alignment is construed to require that all pivot points of the gas spring are aligned on a horizontal line with the other pivot points, the gas spring is at least partially aligned in Yamamoto (i.e. one of the two pivot points of the cylinder is also in alignment).

The locking gas springs of Zhang are mounted such that when permitted to fully collapse as the linkage in Yamamoto does, the gas springs pivot points (and the gas springs as a whole) will be in perfect horizontal alignment with the other pivot points.

As shown above Zhang uses a gas spring to assist in the lifting of the work surface platform as opposed to a hydraulic cylinder such as Yamamoto. Further the gas spring of Zhang is aligned with the rest of the pivot point in the work surface platform frame. In accordance with the teachings of Yamamoto (i.e. the desirability for compactness) and in accordance with the well-understood desire of compactness as taught in Zhang¹⁸⁴, a POSITA would be motivated to combine the linkage of Yamamoto with the linkage of Zhang in a way that the scissor arms will line up flat when the platform is fully lowered.

Further still, a POSITA will understand that gas springs are approximately constant force devices, unlike hydraulic cylinders such as used in Yamamoto. A POSITA will further understand that the actuator has the worst mechanical advantage for lifting the platform at the bottom (fully lowered) position. In this position the cylinder of Yamamoto is nearly horizontal. In other words, the actuator is least effective and must generate the largest force to lift the work surface platform when doing so from the fully lowered position. As stated earlier, a POSITA will recognize that a gas spring will be little utility to lift the platform when in this position. Thus, the lifting assistance provided by a nearly horizontal gas spring would be out-weighted by the loss of compactness offered by keeping the gas spring in a non-horizontal orientation. Thus, a POSITA would be motivated to combine the linkage of Yamamoto with the gas spring placement already in Zhang to have maximum compactness in the stowed position.

Were the gas spring to be oriented like the hydraulic cylinder of Yamamoto, the gas spring force would have to be increase significantly which would make the platform more difficult to adjust when at the top position. This could even make the table dangerous to adjust as the gas spring would develop greater and greater mechanical advantage as the platform is raised causing it to violently pop up at the end. Further, this would make the platform much more difficult to compress starting from the top. This is because gas-springs are not able to vary their output force in the same way as hydraulic cylinders.

¹⁸⁴ See Zhang at [0002-3]

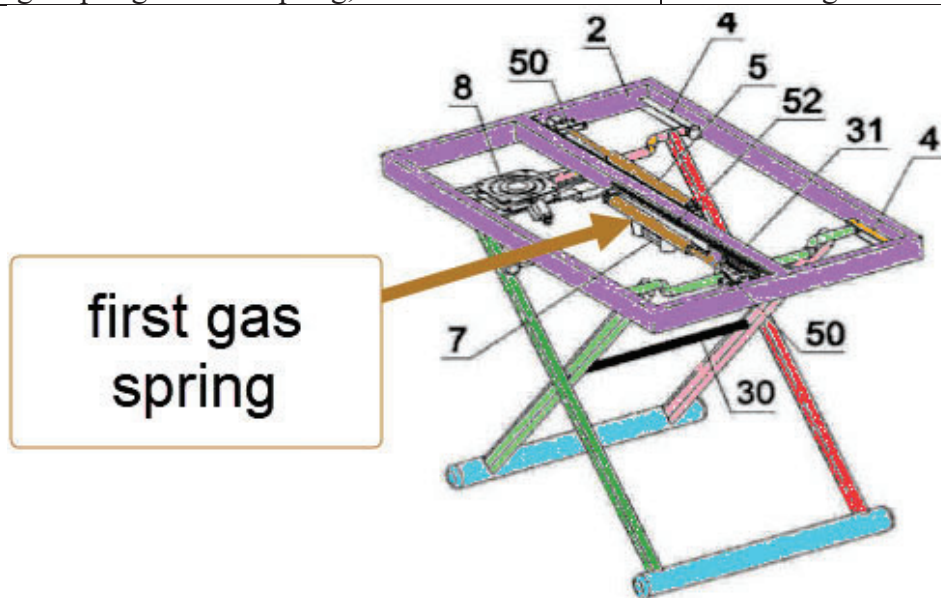
Thus, the combination of Zhang in view of Yamamoto is configured such that the gas spring, the first set of pivots arms, the base pivot point, and the platform pivot point align side-by-side when the desktop is in a fully lowered position. As discussed previously, it is the very nature of scissor lift mechanisms generally to adjust vertically.

17P. The desktop workspace of claim 16,

YES: As shown previously, Yamamoto in view of Zhang, and in further view of Clark discloses the desktop workspace of claim 16.

17a. wherein the gas spring is a first spring,

YES: Zhang discloses a gas spring that is a first spring

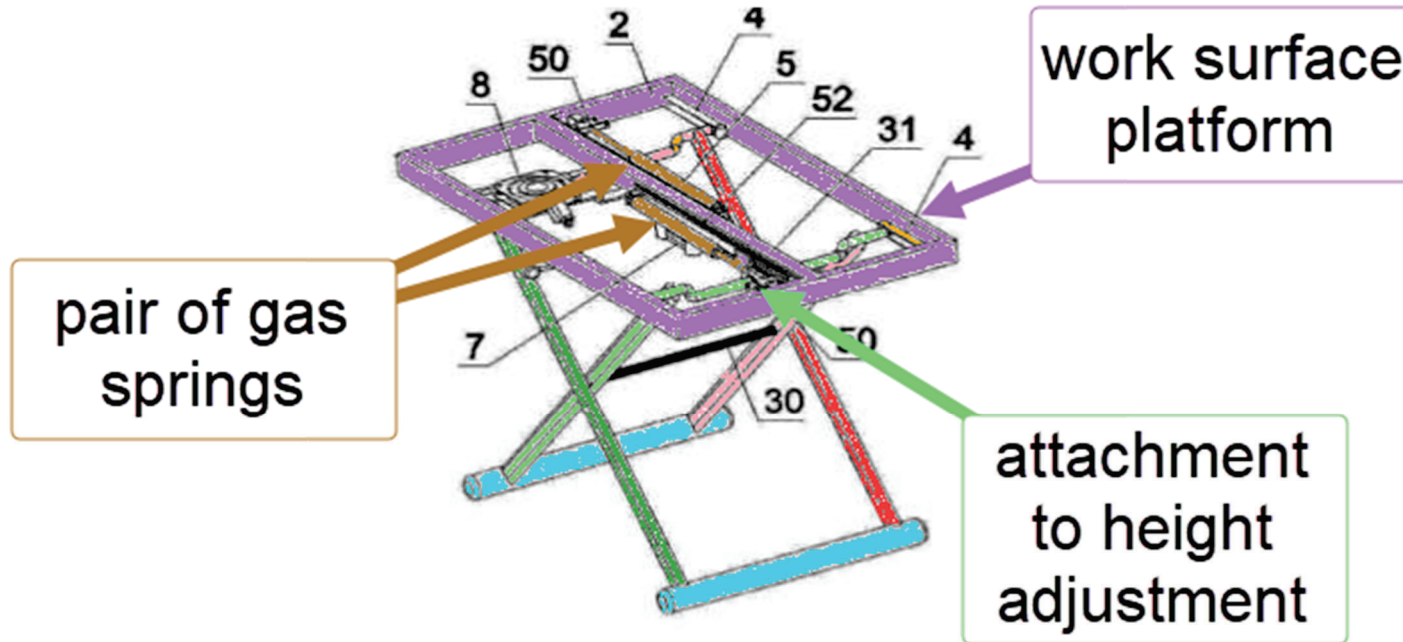


“There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the "X" - shaped cross movable metal foot (3), and the fixed end (51) of the air support rod (5) is connected to the sliding rod of the slide rail (52). The two air support rods (5) are controlled by a pull switch (6) to extend and retract the movable rod of the air support rod (5).” Zhang [0004]

As shown above, Zhang discloses a first gas spring (i.e. item 5)

17b. the desktop workspace comprising a pair of springs attached to the height adjustment mechanism to assist in the elevation of the work surface platform,

YES: Zhang discloses a desktop workspace comprising a pair of springs attached to the height adjustment mechanism to assist in the elevation of the work surface platform,

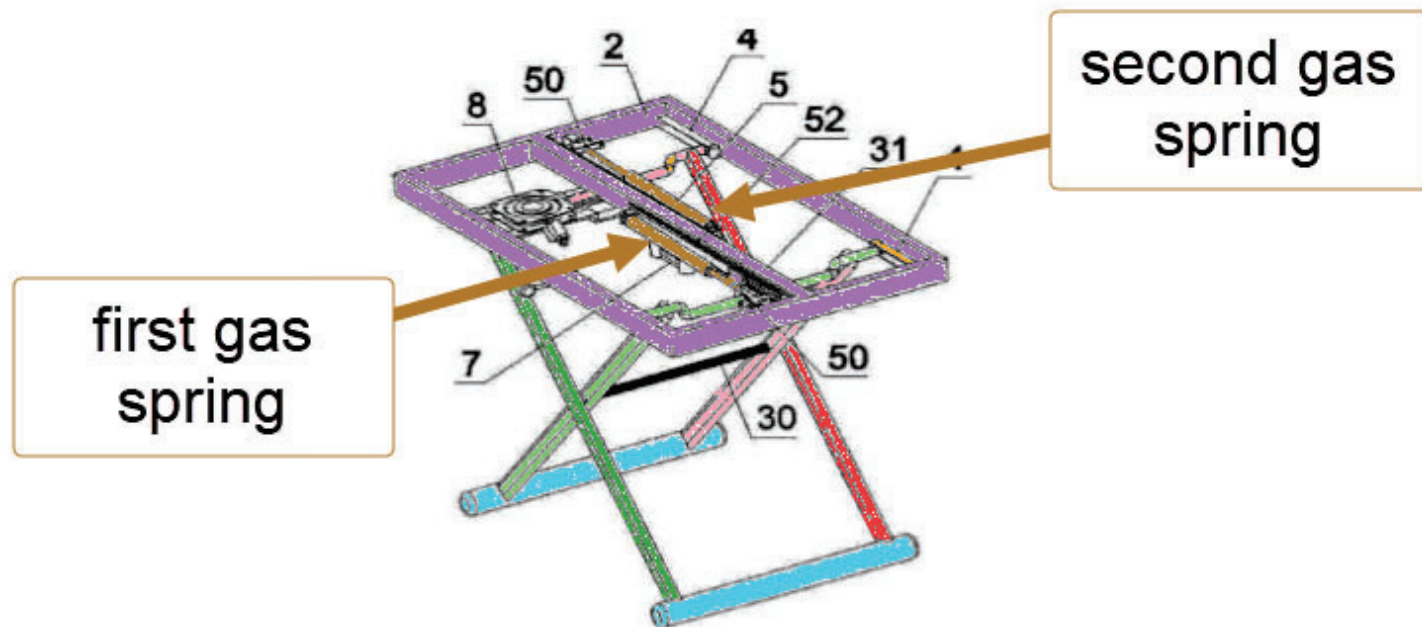


“There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the "X" - shaped cross movable metal foot (3), and the fixed end (51) of the air support rod (5) is connected to the sliding rod of the slide rail (52). The two air support rods (5) are controlled by a pull switch (6) to extend and retract the movable rod of the air support rod (5).” Zhang [0004]

As shown above, Zhang discloses the use of a second gas spring making a pair of gas springs. As discussed previously, a POSITA will be motivated to use the pair of gas springs as taught in Zhang in the combination of Yamamoto in view of Zhang.

17c. the pair of springs including the first spring and a second spring.

YES: Zhang discloses a pair of springs including the first spring and a second spring.



"There are also air support rods (5) connected between the two ends, where the movable rod end (50) of the air support rod (5) is rotatably connected to the upper end of the "X" - shaped cross movable metal foot (3), and the fixed end (51) of the air support rod (5) is connected to the sliding rod of the slide rail (52). The two air support rods (5) are controlled by a pull switch (6) to extend and retract the movable rod of the air support rod (5)." Zhang [0004]

As shown above, Zhang discloses the use of a pair of gas springs to facilitate the movement of a scissoring linkage style platform.

As shown above, Yamamoto in view of Zhang, and in further view of Clark with the knowledge of a POSITA renders obvious each and every element of the Asserted Claims of the '843 patent. In addition to this, certain things that would be well within the ordinary knowledge and familiarity of a POSITA are also explicitly demonstrated in Lindahl. For at least the reasons shown above, it is my opinion that the Asserted Claims of the '926 patent are invalid due to obviousness under 35 U.S.C §103.