and controller C (see Fig. 2) that controls the traveling magnetic field generated by the forcer 74. The motor 62 may be a closed loop motor with suitable commutation devices 74C, such as Hall effect devices mounted for example on rail 68 and in communication with controller C. As will be described further below, the commutation devices 74C serve as a position sensor, sensing the exact position of the container 151 on the conveyor run 56.

As seen in Fig. 5, the rails 66I, 660, 68 of the rail system 60 may have a modular construction. For example, rail 660 may include modules 6601, 6602 (only rail modules 6601, 6602 are shown in Fig. 5 for example purposes). The rail modules 6601, 6602 are joined at the intermediate joint 660I. The rail modules 6601, 6602 are provided with any suitable mating means, (e.g. interlocking facets, mechanical, fasteners) allowing the modules to be joined together end to end as shown in Fig. 5. The center rail 68, and outer rail 66I have a similar modular construction. The rail modules similar to modules 6601, 6602 may be provided in any suitable length, such as a few feet, for ease of handling during installation. The rail modules may be joined together during installation to form the rails 660, 66I, 68 of the rail system of the conveyor run 56. By way of example, rail modules similar to modules 6601, 6602 may be assembled during installation in the facility to form rail 66 from one end 56L (see Fig. 2) of run 56 to the other end 56R. The center rail 68, and other outer rail 66I may be similarly installed to form conveyor run 56. The rail modules, such as modules 6601, 6602, may otherwise be installed to modularly install the conveyor run 56. For example, modules for all rails 66I, 660, 68 may be installed to form one or more conveyor run modules

56M1, 56M2 (see Fig. 2). The conveyor run 56 installation then proceeds module by module. Modules 56M1, 56M2 of conveyor run 56 are described above as being installed first for example purposes only, and in alternate embodiments the center modules of the conveyor run may be installed first. The conveyor modules 56M1, 56M2 are joined at intermediate run joints 56I. Once installed, each conveyor run module 56M1, 56M2 may become operational as soon as desired and before completion of the entire run 56. This is allowed in part by the use of the solid state motor 62 which unlike conventional conveyor systems does not employ a mechanical transmission that is coupled to all the drive rollers before the conveyor run may become operational. Further, unlike conventional systems, motor 62 is capable of precisely starting and stopping the container transported by the conveyor run 56 as will be seen further below. Yet another advantage arising from transport system section 14 using a solid state motor, similar to linear motor 62, is that the solid state motor by its very nature can readily accommodate, without noticeable performance degradation, misalignment between rail modules. The linear motor 62 of section 14 is capable of operating with misalignment between modules of the center rail 68 commensurate with modular structural assembly tolerances under field conditions. In marked contrast, a conventional mechanical conveyor drive system (such as illustrated in Fig. 1A) is restricted to the much tighter mechanical tolerances of the drive. Consequently, the drive rails for a conventional conveyor run must be fabricated in one piece offsite for substantially the entire length of the run, and then installed as one piece in the facility. Hence, the transport system section 14

has much greater flexibility in both installation and use during start up compared to conventional systems.

As noted above, the reaction component of platen 76 of the linear motor is incorporated into the workpiece holding container 151. Referring now also to Fig. 7, which shows a bottom view of the container 151, the workpiece holding container 151 is depicted as a Front Opening Unified Pod. (FOUP) container, but can be any suitable container such as a SMIF pod or a bottom opening container. The FOUP container 151 has a container housing 154 (see Fig. 5) sized to hold a number of semiconductor workpieces such as 200 mm, 300 mm wafers, or flat panel displays or any other desired kind of workpieces. The housing 154 is capable of interfacing directly with the interface of processing tools P (see Fig. 2). The housing 154 may include engagement surfaces 156, such as detents or recesses to allow the hoist 206 (see Figs. 6A-6B) of the transport vehicle 200 to capture and hold the container 151. For example, the engagement surface 156 may be arranged to allow the capture arms 208 of the hoist 206 to pick the container from either sides 154R, 154F or front/back sides 154R, 154L (see Fig. 5). Hence, the hoist 206 of vehicle 200 may pick the container 151 regardless of the orientation of the container under the hoist.

Referring now to Fig. 7, there is shown an exploded perspective view of the container 151. As seen in Fig. 7, the container housing 154 may include an upper part 154U and a lower part 154L. Container door 155, which is removably latched to the housing, is shown covering the opening in the front 154F of the housing. The upper part 154U of the housing may be a one-piece molding made from

plastic or any other suitable material capable of being used to hold semiconductor workpieces without contamination. The material for the housing is capable of being subjected to a full immersion bath during periodic cleaning of the container The lower part 154L of the housing is also a plastic molding. In the embodiment shown in Fig. 7, the lower housing part 154L has a general flat shape forming the bottom of the container. The lower part 154L may be joined to the upper part 154U using any suitable process, such as chemical bonding, ultrasonic welding or others resulting in a substantially seamless interface between the lower and upper housing parts. In the embodiment shown in Fig. 7, the reaction component 76 of the linear motor 62 (disclosed in greater detail below) is molded within the lower part 154L.

The lower housing part 154L has a lower surface 152, shown in Fig. 7A. The lower surface 152 has seating surfaces 158, 160 disposed in a biaxial arrangement on the lower surface. In this embodiment, the seating surfaces 158, 160 are located around the perimeter of the lower surface 152, to allow the container to seat against the rollers 72 of rails 660 66I (see Fig. 6). The biaxial arrangement of the seating surfaces allows the container to be properly seated on the rails with either axis A, B oriented with the rails. Fig. 7A also shows an exemplary distribution of the reaction component 76 of linear motor 62 in this embodiment. As noted above, the reaction component 76 is molded in the lower container housing molding 154L. Hence, the reaction component 76 is sealed within the lower housing part 154L. This eliminates seams between the reaction component and surrounding housing structure thereby eliminating areas

where contaminants may collect. Further, by enclosing the reaction component 76 within the housing adverse interaction between the reaction component and cleaning bath is avoided. The reaction component 76, comprises, in this embodiment, reaction elements 162, 164, 166, 168 which are schematically illustrated in Fig. 7A. The reaction elements 162, 164, 166, 168 are also arranged biaxially on the container housing 154. The reaction elements may be permanent magnets or plates made from magnetic material capable of reacting with the magnetic fields generated by the forcer 74 to drive or thrust the containers along the rails 660, 66I. Reaction elements 162, 164 (two elements, each possibly being made up of sub-elements, are shown on opposite sides of the lower surface for example purposes, and in alternate embodiments the reaction elements may be provided in any suitable number and any suitable arrangement) are aligned along axis B in order to provide drive forces (in cooperation with forcer 74 or other forcers aligned with axis B) in the axis B direction. Reaction elements 166, 168 are arranged to provide drive forces in a similar manner along the A axis. The container 151 is shown in Fig. 5 placed on the rails 660, 66I in an orientation where axis A (see also Fig. 7) is aligned with forcer 74. As can be realized, the container 151 may be placed on the rails in an orientation rotated 90° from that shown in Fig. 5. In that case, the container 151 axis B would be aligned with the forcer 74. The biaxial drive configuration effectively reduces the time used to place or pick the container from the conveyor run 56 in comparison to conventional transport systems (i.e. smaller rotation to find usable drive axis compared to conventional systems).

Fig. 7B is a bottom perspective view of the lower housing part 154L' in accordance with another embodiment. The lower housing part 154L' in this embodiment is generally similar to lower housing part 154L described before and shown in Figs. 7-7A, and similar features are similarly numbered. Lower housing part 154L' has recesses 167', 169' formed therein for mounting the reaction component 76' to the container housing. In the embodiment shown in Fig. 7B, two recesses, 167', 169' are shown for example purposes, generally aligned with axis of symmetry A'. The recess 1167', 169' are formed in the bottom surface 152'. This leaves the bottom surface of the reaction component elements exposed when installed. In alternate embodiments, the recesses may be formed into the upper surface 152U' of the lower housing part so that when installed the reaction component elements are not exposed on the outer surface of the housing. The recesses, 169', 167' are blind as shown and do not extend through the lower housing part, though in alternate embodiments, apertures through the lower part may be used in place of the recesses. The recesses 169', 167' may be formed during molding of the lower housing part 154L' or may be machined into the lower housing part after fabrication of the housing part. The recesses 169', 167' are substantially conformal to the reaction component elements (only reaction component element 168'is shown for example purposes) and are sufficiently deep so that when positioned into the corresponding recesses, the bottom surface of the reaction component elements is substantially flush or somewhat inwardly displaced from the bottom surface 152' of the housing. The reaction component elements 168' may be mounted to the lower housing part using any suitable bonding or fastening means including mechanical fasteners. Suitable seals

(not shown) may be used to eliminate gaps/crevices that may collect contaminants. In other alternate embodiments, the bottom of the housing may not include recesses or pockets, and the reaction component elements may be surface mounted to the bottom. In still other alternate embodiments, the reaction component elements may be assembled in a frame, and the frame may be mounted to the bottom of the container housing, or positioned into a recess in the housing. In this case, the reaction component may be replaceable.

Referring now also to Fig. 7C, there is shown another bottom perspective view of the lower part 154L" of the container housing in accordance with yet another embodiment. Except as otherwise noted, the lower housing part 154L" is generally similar to the housing part 154L described before and shown in Fig. 7. Similar features are similarly numbered. In this embodiment, the reaction component 76" is mounted in a turn table assembly 170". The turn table assembly 170" may be mechanically mounted or otherwise connected to the bottom 152" of the housing lower part. The assembly 170" may be surface mounted or may be located in a recess 167" as shown in Fig. 7C. If desired, the turn table assembly 170" may be replaceable. The turntable 170" may have any suitable configuration, but in general it includes a base 172" and pivot section 174". The base 172" provides the interface for attaching the turn table 170" to the housing part 154L". The pivot section 174" is movably mounted to the base section 172" by any suitable means to allow the pivot section 174" to rotate relative to the base section in the direction indicated by arrow R. The reaction component 76", schematically shown in Fig. 7C having representative elements 166", 168" is attached to the pivot section

174". Hence, by pivoting section 174", the orientation of the reaction component 76" may be changed as desired. For instance, rotating the turntable may move elements initially oriented along axis A" to any desired orientation such as alignment with axis B". The turntable may be provided with appropriate interlocks (not shown) to fix the turntable in any orientation. The interlocks may be activated with the forcer 74 of the linear motor. The forcer of the linear motor may also be used in cooperation with reaction component 76" to effect rotation of the turntable.

When the container 151 is placed on the conveyor run 56, the controller C (see Fig. 2) controls the traveling magnetic field generated by forcer 74 to move the container as desired. The controller C registers the position of the container 151 during movement on the conveyor run 56 via for example, the commutation sensors 74C. In the case where the linear motor is a brushed motor, the controller may register the location of the container by detecting the direct commutation in the motor. The controller C may move container 151 along the conveyor run 56, in either direction indicated by arrows X3, X4 in Fig. 3 at any desired speed and to any desired position. The controller C is capable of accurately placing the container 151 at any desired position along the run 56. This is possible for all the conveyor runs 52, 54, 56, 58 of transport section 14, unlike conventional conveyor systems, because sensors 74C detect the true position of the container anywhere along runs 52, 54, 56, 58 and send data to controller C indicating the container's true position. Further, the direct interaction between forcer 74 and reaction component 76' of the linear motor provide high fidelity control of the

motion of the container. Accordingly, the controller C is capable of commanding the motor to stop the container precisely, and can accurately detect if the container is actually located at the precise location commanded. This is not possible with conventional conveyor systems, such as illustrated in Fig. 1A because of inaccuracies generated by the frictional drive system, susceptible to some slippage between container and drive, as well as variances in the conventional sensor system that in effect estimates container position between data points. For example, any deviation between the drive line, (aligned with the plane) of the roller in a conventional drive and the general direction of movement of the container will result in some slippage between drive roller and contact surface of the container. This in turn will generate a variance between rotation distance of the roller used to determine container position in the conventional system and actual travel of the container on the conveyor. Further slippage may occur during acceleration/deceleration increasing the margin of error between true position and calculated position in conventional systems. The conveyor runs 52, 54, 56, 58 of transport section 14 in Fig. 3 eliminate these problems of conventional systems. Construction tolerances due not influence the drive speed or accuracy in positioning the containers 151 on the conveyor runs. Maximum acceleration/deceleration rates can be achieved (unlike conventional systems where acceleration/deceleration rates are slip limited) thereby increasing efficiency of the transport section 14 and hence of the whole handling system. Moreover, controller C is capable of controlling forcer 74 to drive any desired number of containers along the conveyor run 56. Also the controller is capable of controlling the forcer

74 to move containers on the same conveyor run in opposite directions substantially at the same time. For example, as seen in Fig. 3, container 151 may be moved in direction X3 by the linear motor, while container 151A is being moved in direction X4.

The accuracy in controlling movement and placement of containers on conveyor runs 52, 54, 56, 58, allows any location on the conveyor runs to become a pick location O from which transport vehicle 200 can pick a container 15' off the conveyor runs. By way of example, and with reference again to Figs. 6A-6B, the transport vehicle 200 may be at a given position α on a track 22A of transport system section 12. For instance, the transport vehicle may be at location α having just released a container on conveyor run 56. Position α can be any position along track 22A. The vehicle hoist is shown in Figs. 6A-6B as being in the retracted position, though the hoist may be in its extended position (not shown) in which it can pick/release containers 151 from run 56. If in the extended position, the hoist 208 may be in the orientation shown in Fig. 6B, rotated 90° from that shown in Fig. 6A. In Fig. 6B, the gripper arms of the hoist are disposed astride the rails of the run 56. The controller C (see Fig. 2) controls the linear motor to bring a desired container 151 along run 56. The controller registers the position α of the transport vehicle 200 on track 22A and matches the position O of the container 151 so that the container is aligned, in this case under vehicle 200. Controller C controls position O on run 56 so that the vehicle hoist 208 may be merely extended to pick container 151 without further re-positioning of the vehicle 200 on track 22A. In the case

where the hoist 208 is extended (position E1 in Fig. 6B), the container is driven on run 56 to position O where the grip portion on the container 151 is between the gripping arms of the hoist 208. To effect the pick, the gripping arms of the hoist 208 are merely closed. This "drive in" capability provided by transport system section 14 greatly enhances the efficiency of handling system 10 by providing a maximum number of pick places on section 14. Although, the above has been described with respect to the vehicle 200 being in a static position α, a similar process may be used with the vehicle 200 in a dynamic position. In that case, the container 151 may be driven along run 56 to match both position and velocity with the vehicle 200 on track 22A.

As seen in Fig. 2, conveyor runs, for example runs 52, 56 of the transport system section 14, may be provided with shunts or run buffer sections 52B, 56B. The run buffer sections 52B, 56B are depicted schematically in Fig. 2, on one side of the conveyor runs, but may be located on either side of the runs. Fig. 5 shows a portion of a representative buffer section 56B on run 56. The buffer section has a support platform 90, which for example may be made from one or more rails 92. The support platform 90, intersects at least one of the conveyor run rails 660. The vertical flange 66V of the conveyor run rails 660 may be removed locally in way of platform 90. The support platform 90 may include omnidirectional supports such as ball bearings 93 (see Fig. 5) allowing the container 151 to move freely in any desired direction over the supports. The buffer section 56B may also include a suitable linear forcer component 94 capable of cooperating with the reaction elements 162, 164, 166, 168 on the container 151 (see Fig. 7) to move the container

in the directions indicated by arrows X5, X6 in Fig. 5 into and out of the buffer section 56B. As can be realized from Figs. 5 and 7, the container 151 can be moved from the conveyor run 56 to the buffer section 56B and vice versa without reorienting the container. For example, in the orientation shown in Fig. 5, the container 151 is moved in direction X4 until substantially aligned with buffer section 56B. In that position, the reaction elements 164, 162 arranged to operate along axis B of the container, are capable of cooperating with the forcer 94. Hence, if desired, (such as in the case where a container is traveling in an opposite direction on conveyor run 56), the controller C (see also Fig. 2) activates forcer 94 to move container 151 in direction X5 into the buffer section 56B. When desired to return container 151 back to the conveyor run 56, forcer 94 is operated to move the container in direction X6 onto the rails 660, 66I. The container 151 can then be moved almost instantaneously thereafter in any desired direction along conveyor run 56. A similar approach is used to transit the containers at junctions between conveyor runs. In an alternate embodiment, any suitable type of junction device such as for example, using a turntable, may be used to direct the container from the conveyor run into the buffer section. As can be realized from Fig. 5, the switching system enabling container transfer between conveyor run and buffer section is equally applicable to effecting transfer between any joining conveyor runs (see Fig. 2).

Still referring to Fig. 5, the buffer section 56B may be sized to hold as many containers 151 as desired. In the case of a one container buffer section, a single linear forcer component 94 may be provided with a pair of

support rails 92. To expand the buffer section, additional linear forcer rails 94L and support rails 92L may be added in a general grid pattern as shown in Fig. 5. The pattern of outwardly extending rails 92, 94 and lateral extending rails 92L, 94L form the grid pattern which enables a container to move two dimensionally (in the directions indicated by arrows X5, X6, X7) to any location in the buffer section 56B. In Fig. 5, a single set of outward rails 92, 94 and a single set of lateral rails 92L, 94L is shown for example purposes. The rail pattern shown can be repeated as desired to provide a buffer section of any desired size.

Referring again to Fig. 3, mounting system 64 may include any suitable structural members to support the rails 66O, 66I, 68 of the conveyor run 56 substantially under the track 23A of the corresponding interbay or intrabay transport branch. This allows the transport vehicles 200 on at least some portion of the tracks of the interbay or intrabay branches to pick or place containers 151 directly on the conveyor runs. Unlike conventional systems, the containers 151 an be placed by transport vehicles 200 on the conveyor runs at any time, and be moving on the conveyor runs immediately thereafter. Accordingly, seamless integration between the transport system section 12 and transport system section 14 (as no time is lost to coordinate between transport vehicles 200 on system section 12 on transport panels used in conventional conveyor systems). This in turn increases workpiece traveling density of the automated material handling system 10 and reliability (a defective container is readily removed from the system, and unlike a palletized system the impact is limited to only to that container without any loss in system transport capacity).

It should be understood that the foregoing description is only illustrative of the invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the invention. Accordingly, the present invention is intended to embrace all such alternatives, modifications and variances which fall within the scope of the appended claims.

CLAIMS

What is claimed is:

1. A semiconductor workpiece processing system comprising:

at least one processing tool for processing semiconductor workpieces;

a container for holding at least one semiconductor workpiece therein for transport to and from the processing tool;

a first transport section connected to the processing tool for transporting the container to and from the processing tool; and

a second transport section connected to the first transport section for transporting the container to and from the processing tool;

wherein the first transport section is a vehicle based section having a transport vehicle capable of holding the container and moving along a first track of the first transport section, and the second transport section is not a vehicle based section and has a second track with at least one support element of the second track adapted to interface with the container for movably supporting the container from the second track and allowing the container to move relative to the first track, and wherein the second transport section has a motor connected to the second track for aligning the container on the

second track with the transport vehicle on the first track.

2. The system according to Claim 1, wherein the motor is connected to the second track for driving the container along the second track, at least a portion of the motor being mounted to the container.

3. The system according to Claim 2, wherein the container has a one-piece frame assembly, the at least a portion of the motor being integral to the frame assembly of the container.

4. The system according to claim 2, wherein at least a portion of the motor is molded in a portion of the frame assembly.

5. The system according to claim 2, wherein at least a portion of the motor is removably mounted to the frame assembly.

6. The system according to Claim 2, wherein at least another portion of the motor is fixedly connected to the track.

7. The system according to Claim 2, wherein the motor is a linear motor.

8. The system according to Claim 2, wherein the motor is a brushless motor.

9. The system according to claim 2, wherein the motor is a solid state motor without moving parts.

10. The system according to Claim 2, wherein the at least a portion of the motor mounted to the container includes a permanent magnet mounted to the container.

11. The system according to Claim 2, wherein the at least a portion of the motor mounted to the container includes at least two permanent magnets, the permanent magnets being arranged on the container so that an axis connecting poles of one of the two magnets is oriented at an angle relative to another axis connecting poles of another of the two magnets.

12. The system according to Claim 2, wherein the motor is adapted for bi-directionally driving the container along the second track.

13. The system according to Claim 2, wherein the motor is adapted for bi-directionally driving the container so that the container is capable of moving bi-directionally along two different axes.

14. The system according to Claim 13, wherein the two different axes are crossing axes.

15. The system according to Claim 1, wherein the second track has a longitudinal portion with at least one shunt portion extending laterally from the longitudinal portion.

16. The system according to Claim 15, wherein the at least one shunt portion provides for track buffering.

17. The system according to Claim 1, wherein at least a portion of the first transport section is disposed between the at least one processing tool and the second transport section.

18. The system according to Claim 1, wherein at least a portion of the second track of the second transport

section extends substantially alongside a portion of the first track of the first transport section.

19. The system according to Claim 1, wherein at least a portion of the second track of the second transport section spans between at least two portions of the first track of the first transport section.

20. The system according to claim 1, wherein the first track and second track are disposed proximate to each other to allow the container to be moved therebetween in one move.

21 A semiconductor workpiece container transport system comprising:

at least one semiconductor workpiece container adapted for holding at least one semiconductor workpiece therein, the semiconductor workpiece container having a one-piece frame assembly;

a track for movably supporting the at least one semiconductor workpiece container so that the at least one semiconductor workpiece container is capable of moving along the track; and

a motor connected to the track for driving the at least one container along the track, wherein at least part of the motor is mounted to the frame assembly of the at least one container.

22. The system according to Claim 21, wherein the frame assembly has an interface section for mating with a load port section of a processing tool and allowing the at least one semiconductor workpiece to be transferred between the at least one container and load port section.

23. The system according to Claim 21, wherein the motor is a linear motor having a primary coil assembly connected to the track, and wherein the at least one part of the motor mounted to the frame assembly is a reaction portion of the linear motor reacting with the primary coil assembly for driving the at least one container along the track.

24. The system according to Claim 23, wherein the reaction portion of the linear motor comprises a reaction plate mounted to the frame assembly, the reaction plate including a magnetic plate capable of reacting with the primary coil assembly.

25. The system according to Claim 23, wherein the reaction portion of the linear motor comprises permanent magnets mounted to the frame assembly.

26. The system according to Claim 23, wherein the reaction plate is arranged for bi-directionally driving the at least one container along two crossing axes.

27. The system according to Claim 21, further comprising another track and a vehicle adapted for traveling on the other track and for holding the at least one container thereon, the vehicle having a transport mechanism for transporting the container between the track and the other track.

28. A semiconductor workpiece transport container comprising:

a frame defining a chamber for holding therein at least one semiconductor workpiece, the frame being sized and shaped for interfacing with an interfacing portion of a semiconductor

workpiece processing tool to allow the at least one semiconductor workpiece to be transported between the chamber and processing tool, wherein the frame defines at least one surface for seating against a track of a transport system for transporting the container between the processing tool and another location; and

a motor portion mounted to the frame, the motor portion being adapted to cooperate with another motor portion of the transport system for driving the container along the track.

29. The container according to claim 28, wherein the motor portion is adapted to cooperate with the other motor portion for driving the container in opposite directions along the track.

30. The container according to claim 28, wherein the motor portion is adapted to cooperate with the other motor portion for driving the container in crossing directions relative to the track.

31. The container according to claim 28, wherein the frame and the motor portion mounted thereto form a one-piece assembly.

32. The container according to claim 28, wherein the motor portion is a reaction portion of a linear motor, and the other motor portion is a coil assembly of the linear motor connected to the track.

33. The container according to claim 28, wherein the frame includes engagement surfaces for enabling a transport vehicle to capture and carry the container from the track.

34. A semiconductor workpiece processing system comprising:

at least one processing tool for processing semiconductor workpieces;

a first transport section connected to the processing tool for transporting containers holding semiconductor workpieces to and from the processing tool; and

a second transport section connected to the first transport section for transporting the containers to and from the processing tool;

wherein the first transport section is a vehicle based section having a transport vehicle capable of holding at least one of the containers and moving along a first track of the first transport section, and the second transport section is not a vehicle based section and has a second track with support elements thereon adapted to interface the containers for movably supporting the containers from the second track and allowing the containers to move bi-directionally relative to the track, and wherein the second transport section has a motor connected to the second track capable of bi-directionally driving the containers substantially simultaneously on at least one portion of the second track.

35. The processing system according to Claim 34, wherein the at least one portion of the second track is an

intermediate portion of the second track at a distance from an end portion of the second track.

36. The processing system according to Claim 34, wherein the at least one portion is any portion of the second track.

37. The processing system according to Claim 34, wherein the motor is a linear motor.

38. The processing system according to Claim 34, wherein the motor includes at least one motor portion mounted on at least one of the containers.

39. A semiconductor workpiece processing system comprising:

at least one processing tool for processing semiconductor workpieces;

a container for holding at least one semiconductor workpiece therein for transport to and from the processing tool;

a first transport section connected to the processing tool for transporting the container to and from the processing tool, the first transport section having a first track and a transport vehicle movably supported from the first track and capable of picking the container; and

a second transport section connected to the first transport section for transporting the container to and from the processing tool, the second transport section having a conveyor track with a track surface adapted to interface

with the container, and a motor connected to the conveyor track for moving the container on the conveyor track;

wherein the motor is adapted for stopping the container at any location along a portion of the conveyor track so that the container is in a predetermined position relative to the transport vehicle for providing a pickplace for the vehicle to pick the container.

40. The system according to Claim 39, wherein the portion of the conveyor track extends along the first track.

41. The system according to Claim 39, wherein the conveyor track has track segments joined to each other at intermediate connections of the conveyor track to form the conveyor track, the track segments being adapted for being joined to each other during installation of the conveyor track.

42. The system according to Claim 39, further comprising a position sensor connected to the second transport section, the position sensor being adapted to sense the position of the container at any location along the conveyor track.

43. The system according to Claim 43, wherein at least a portion of the motor provides the position sensor.

44. A material handling system for transporting a container capable of holding at least one workpiece and transporting the at least one workpiece in a controlled environment between a workpiece processing tool and another location, the system comprising:

a conveyor transport section including a drive track for driving the container, the track having track elements interfacing with the container for driving the container, wherein the drive track is modular with modules adapted to be joined together to form extended lengths of the drive track during drive track installation, wherein each module has at least one of the track elements thereon.

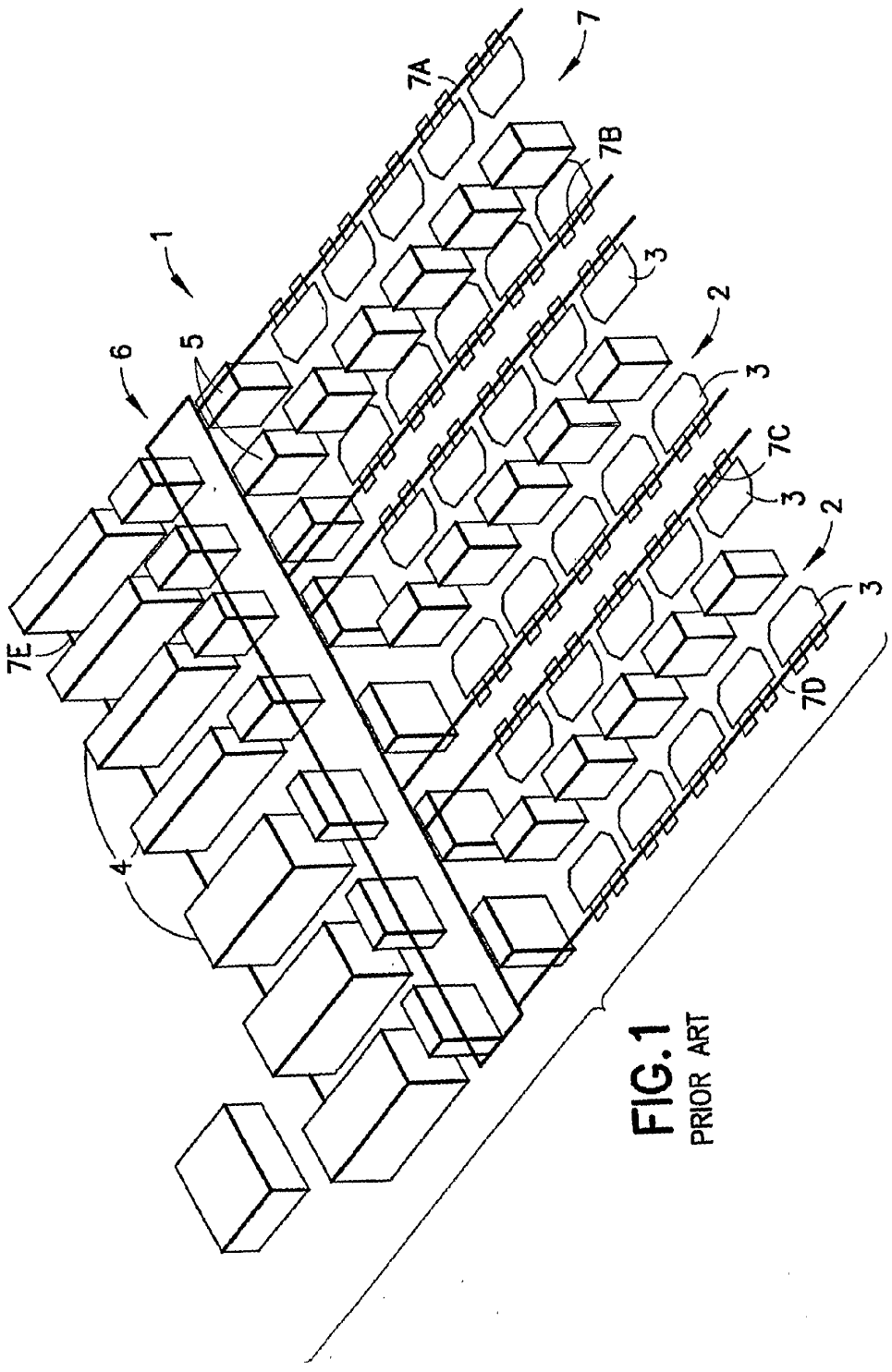


FIG.1
PRIOR ART

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 277
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

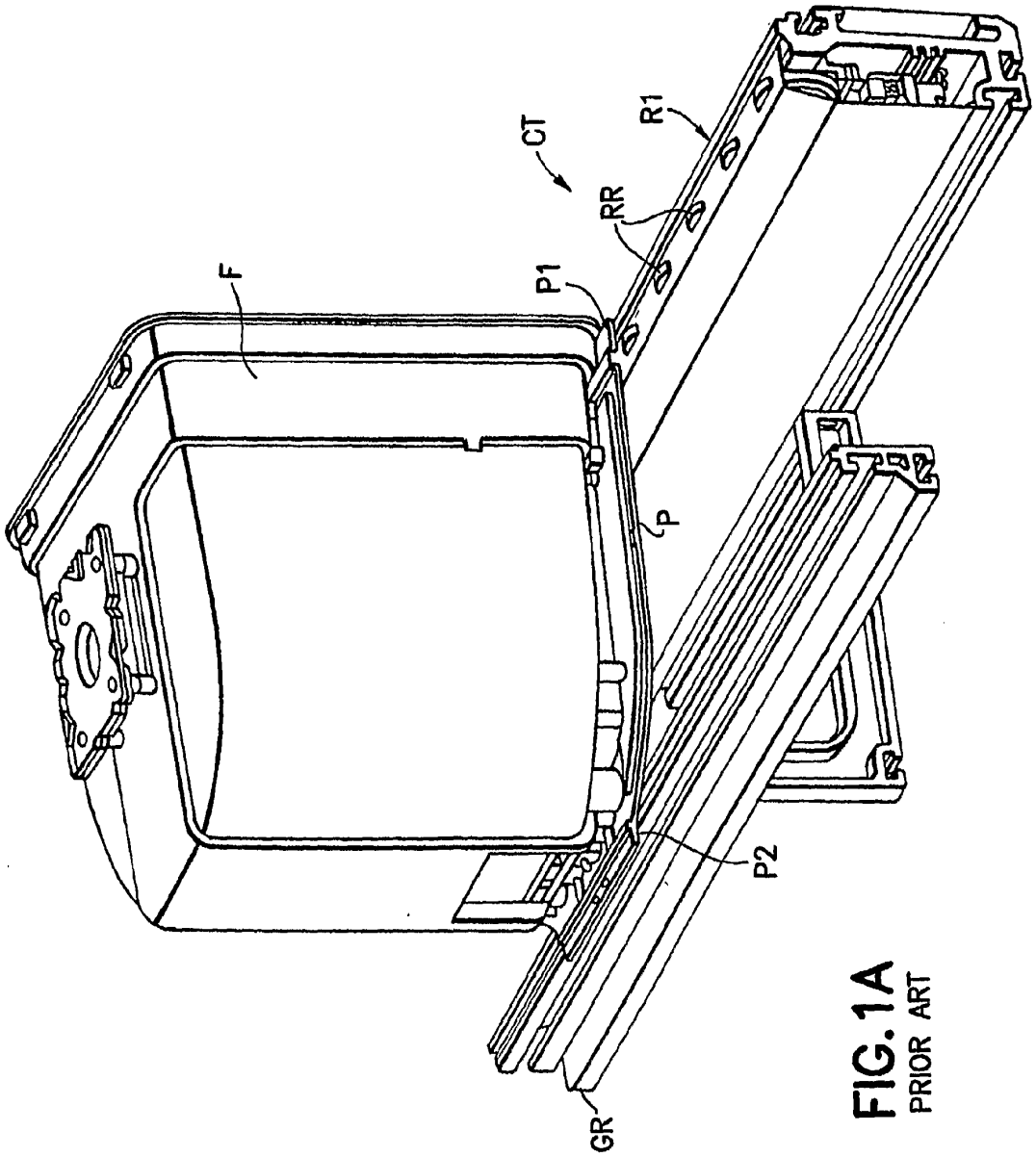


FIG. 1A
PRIOR ART

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 278
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

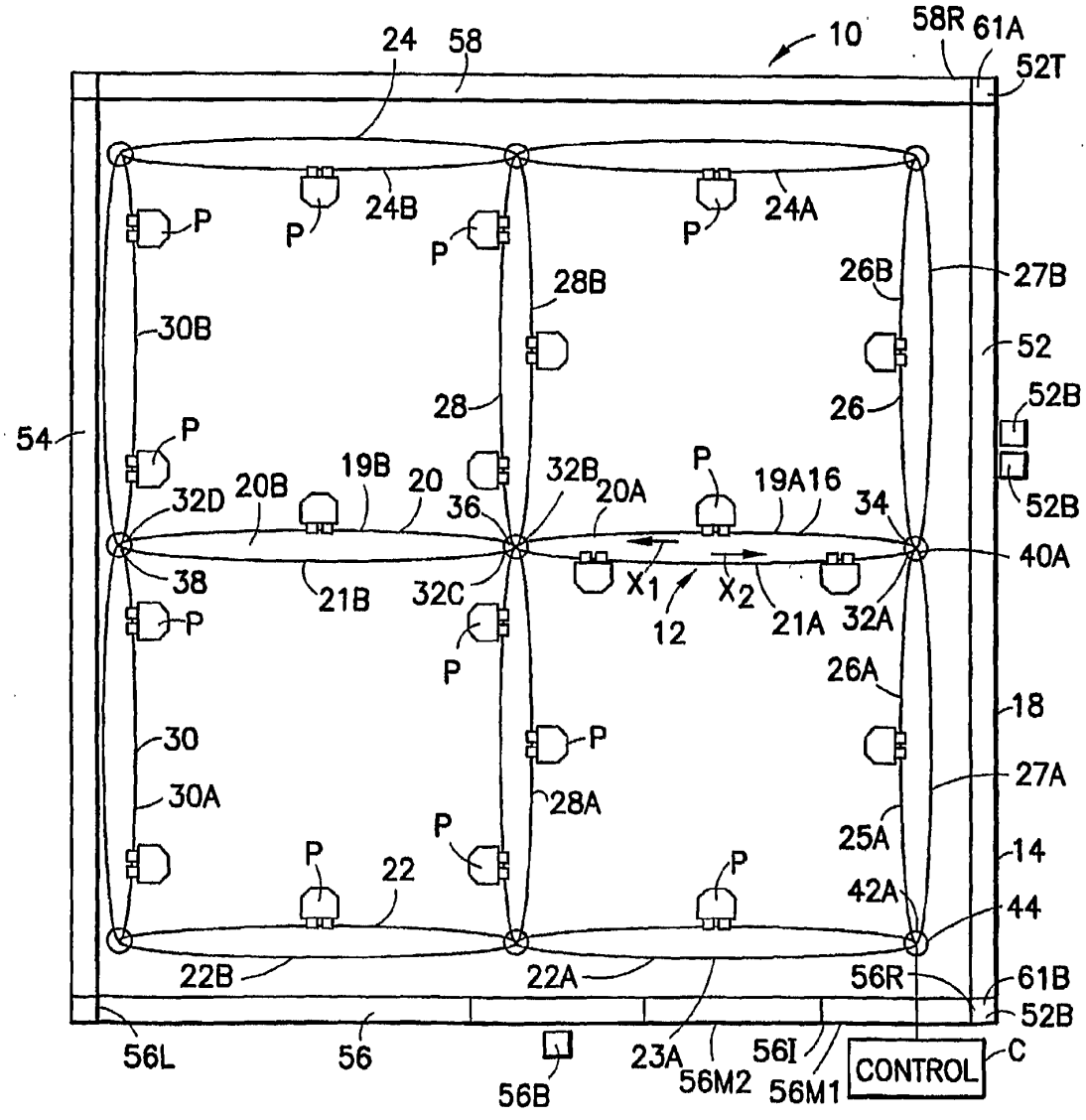


FIG 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 279
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

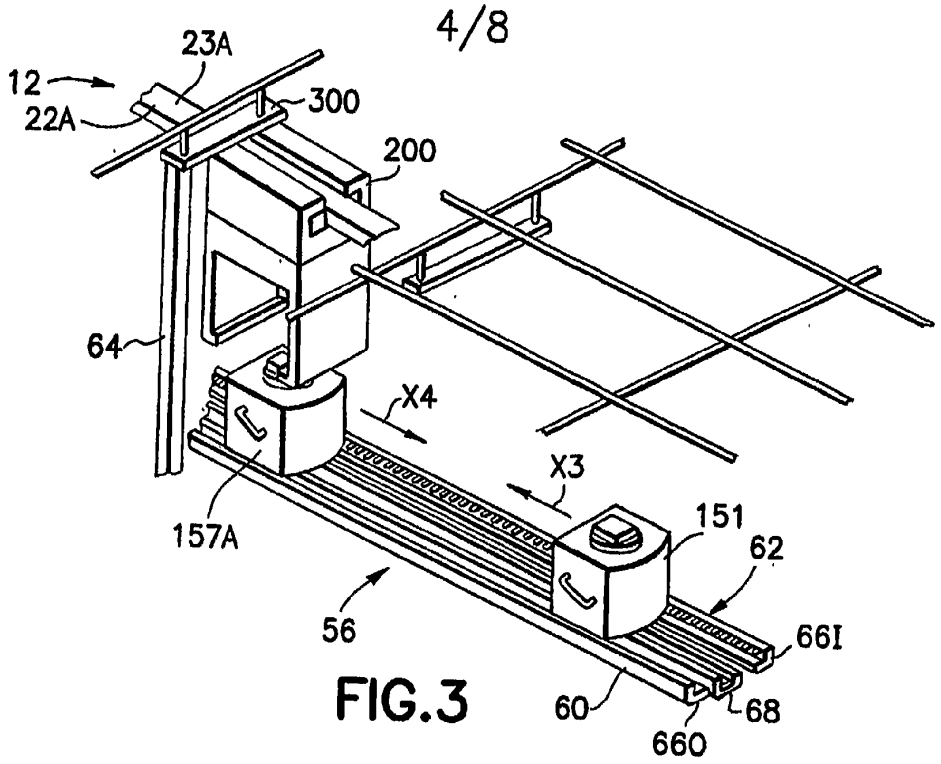


FIG.3

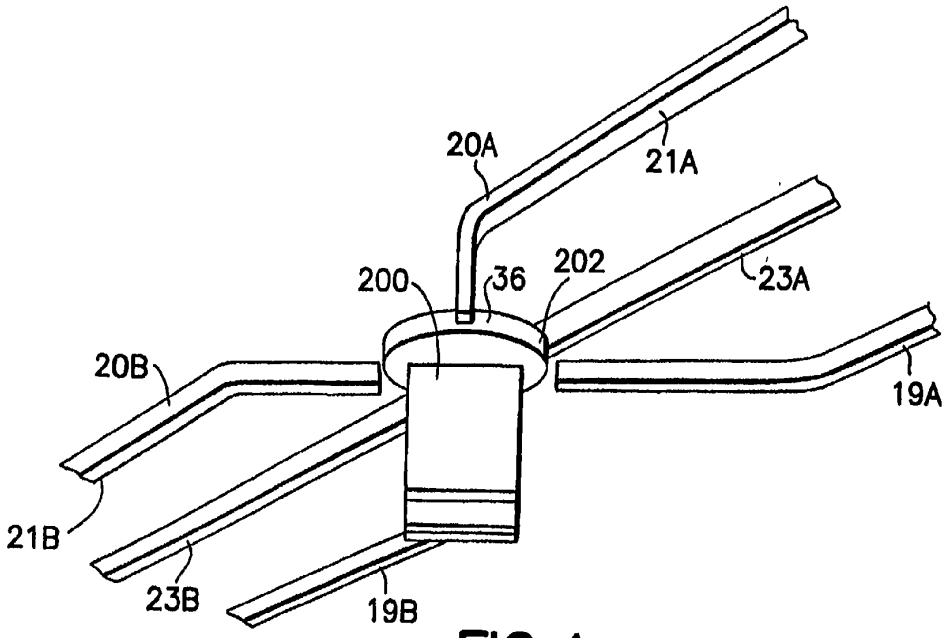
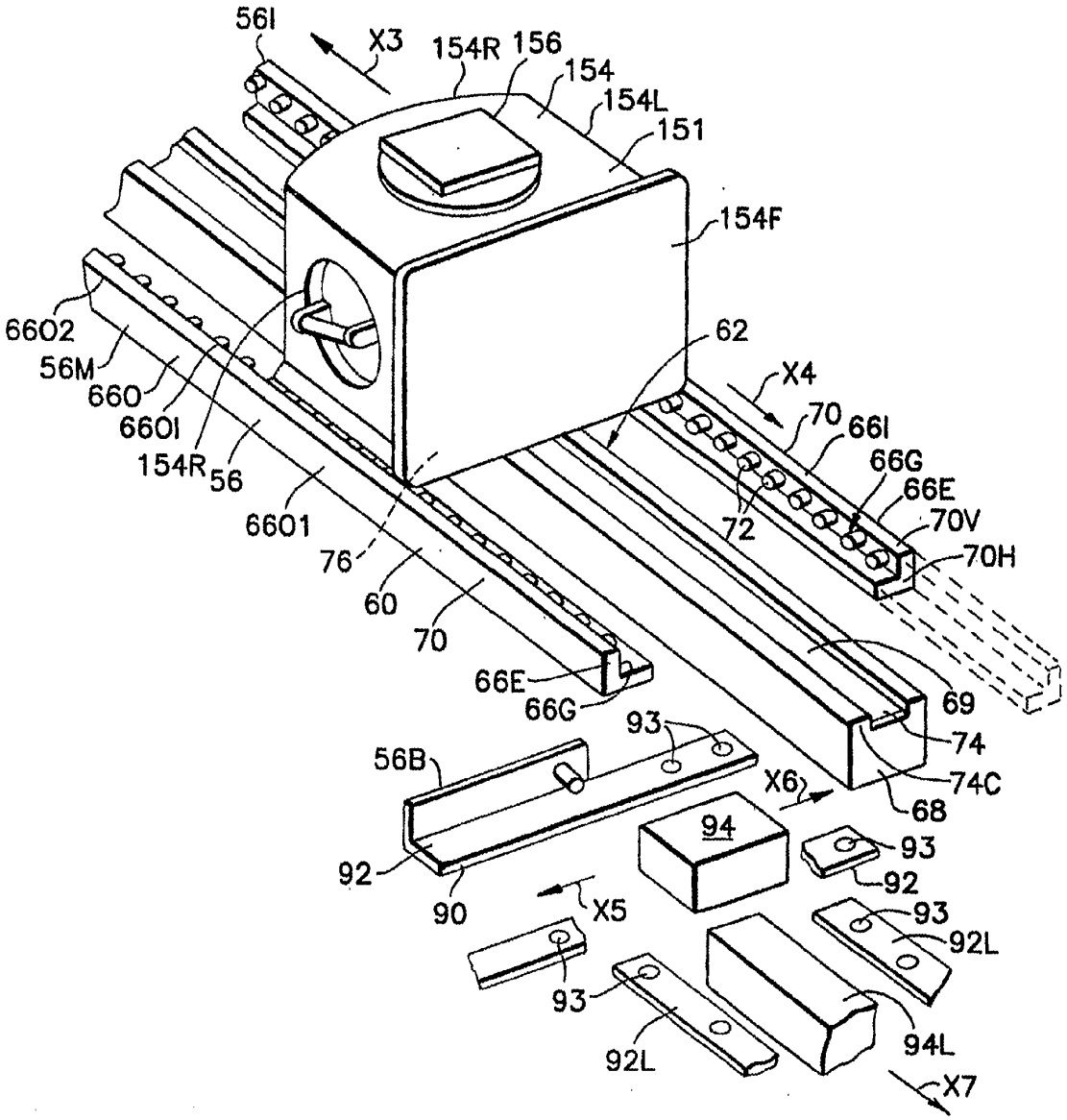


FIG.4

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 280
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

FIG.5



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 281
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

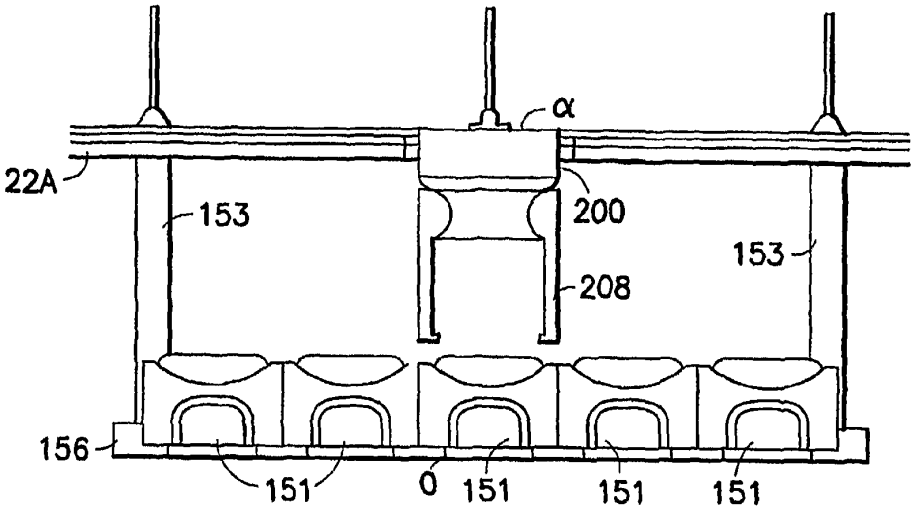


FIG.6A

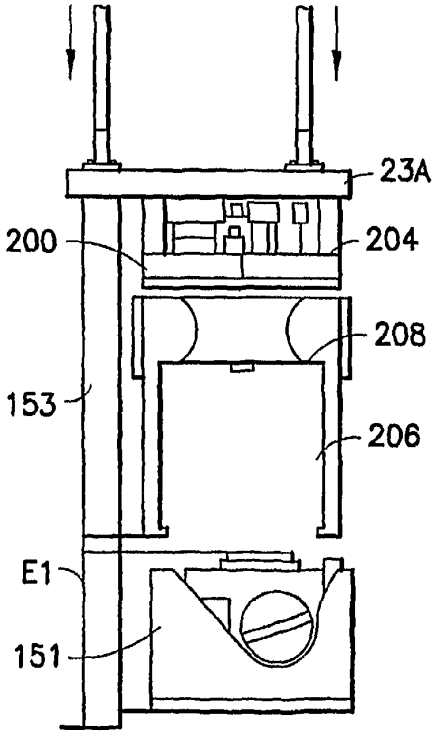


FIG.6B

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 282
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

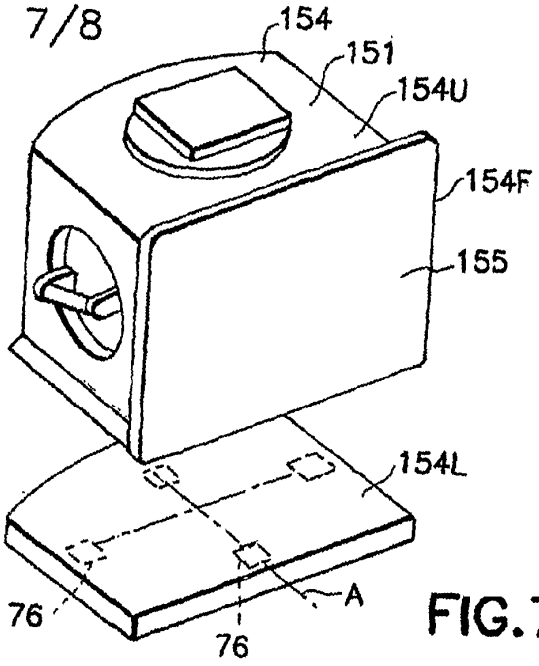


FIG.7

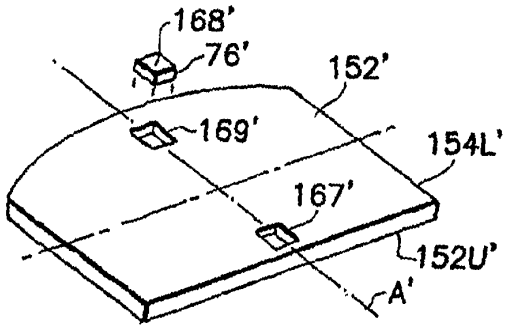


FIG.7B

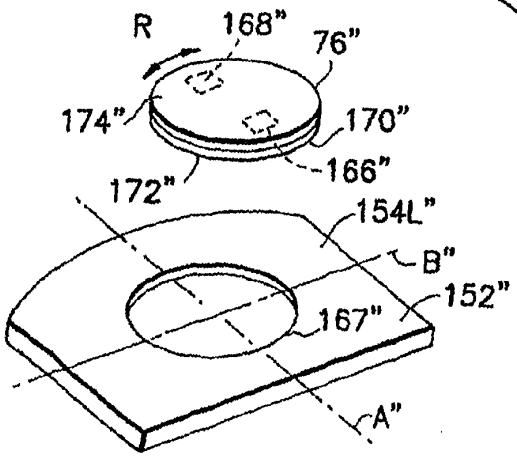


FIG.7C

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 283
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

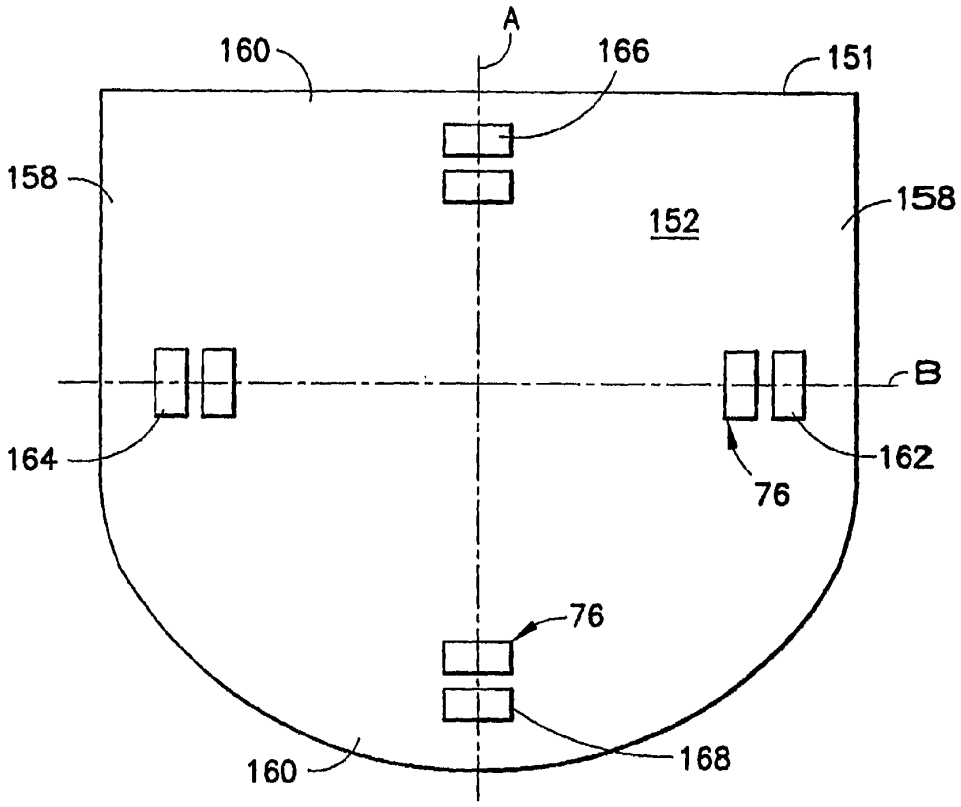


FIG.7A

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 284
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
BORCHARDT, James D.

Reinhart Boerner Van Deuren s.c. 1000 North Water Street, Suite 1700 Milwaukee, Wisconsin 53202 USA

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing *(day/month/year)*	09 January 2019 (09.01.2019)
Applicant's or agent's file reference: 066749-1803	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No.: **PCT/US2018/044629**	International filing date *(day/month/year)*: **31 July 2018 (31.07.2018)**

Applicant
MILWAUKEE ELECTRIC TOOL CORPORATION

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 , 9-011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within **22 months** from the priority date, the applicant may request that a supplementary international search be carried out by a different International Searching Authority, that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/KR International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea	Authorized officer COMMISSIONER
Facsimile No. 82-42-481-8578	Telephone No. 82-42-481-5875

Form PCT/ISA/220 (July 2017)

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for six months(expire date : **2019.07.09**) from the date of mailing of the international search report.

http://www.kipo.go.kr/en/ => PCT ISA Portal => PCT Status

ID : PCT international application number

PW : **RDNLFBF3**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: http://www.ipkcenter.com

Email: ipkc@ipkcenter.com

Notes to Form PCT/ISA/220 (July 2014)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 066749-1803	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. **PCT/US2018/044629**	International filing date *(day/month/year)* **31 July 2018 (31.07.2018)**	(Earliest) Priority Date *(day/month/year)* 31 July 2017 (31.07.2017)

Applicant

MILWAUKEE ELECTRIC TOOL CORPORATION

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☒ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 41

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 287
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/044629

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons.

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Group I, claims 1-11, 41-53, and 56-69, suggests a storage container comprising first and second mounting rails for mounting a variety of accessories.
Group II, claims 12-15, suggests a modular attachment plate comprising a plate body including a cleat receptacle opening and a latch receptacle opening for coupling a storage container to a variety of accessories.
Group III, claims 16-27, suggests a collapsible storage crate, which comprises a crate bottom and a cleat, coupled to a storage container for receiving a variety of accessories.
Group IV, claims 28-33, suggests a stack lock assembly comprising a cleat and a rail for accommodating a plurality of containers by a lock mechanism.
Group V, claims 34-38, suggests a cleat assembly comprising a cleat receptacle receiving a cleat.
Group VI, claims 39 and 40, suggests an accessory holder comprising a holder body and an accessory attachment rail for holding an accessory.
Group VII, claims 54-55 and 70-87, suggests a storage container comprising

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of any additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-11, 41-53, and 56-69

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/044629

A. CLASSIFICATION OF SUBJECT MATTER

B25H 3/02(2006.01)i, B62B 5/06(2006.01)i, A45F 5/02(2006.01)i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B25H 3/02; A47L 9/24; B62B 1/00; B62B 1/12; B62B 1/14; B62B 1/16; H01L ; B62B 5/06; A45F 5/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: storage container, first mounting rail, second mounting rail, mount, cleat receptacle

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012-0207571 A1 (SCOTT, CHARLES SHAY) 16 August 2012 See paragraphs [0038]-[0058]; claims 1-13; and figures 1, 2A-2C, 3A-3D.	1-7,41-53,64-66
Y		8-11,56-63,67-69
Y	WO 2005-045886 A2 (BROOKS AUTOMATION, INC.) 19 May 2005 See claims 1-20; and figure 5.	8-11
Y	US 2008-0116312 A1 (DIPASQUALE et al.) 22 May 2008 See paragraphs [0064]-[0067]; and figures 27-31.	11,56-63,67-69
A	US 2016-0023349 A1 (MILWAUKEE ELECTRIC TOOL CORPORATION) 28 January 2016 See claims 1-24; and figures 20-31.	1-11,41-53,56-69
A	US 2006-0186624 A1 (KADY, DARREN) 24 August 2006 See paragraphs [0081]-[0089]; and figures 1-3.	1-11,41-53,56-69

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which 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 or theory 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
09 January 2019 (09.01.2019)	**09 January 2019 (09.01.2019)**

Name and mailing address of the ISA/KR
International Application Division
Korean Intellectual Property Office
189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea
Facsimile No. +82-42-481-8578

Authorized officer
LEE, Jong Kyung
Telephone No. +82-42-481-3360

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/US2018/044629

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012-0207571 A1	16/08/2012	US 2016-0207553 A1	21/07/2016
		US 9242662 B2	26/01/2016
WO 2005-045886 A2	19/05/2005	CN 101175682 A	07/05/2008
		CN 101175682 B	11/07/2012
		EP 1685598 A2	02/08/2006
		EP 1685598 A4	12/01/2011
		EP 1685598 B1	06/06/2012
		JP 2007-521662 A	02/08/2007
		KR 10-1233301 B1	14/02/2013
		KR 10-2006-0116827 A	15/11/2006
		US 2005-0095087 A1	05/05/2005
		WO 2005-045886 A3	11/10/2007
US 2008-0115312 A1	22/05/2008	EP 1922969 A2	21/05/2008
		EP 1922969 A3	02/07/2008
		EP 1922969 B1	03/08/2011
		US 7716783 B2	18/05/2010
US 2016-0023349 A1	28/01/2016	CN 205968920 U	22/02/2017
		CN 207189614 U	06/04/2018
		US 10086508 B2	02/10/2018
		US 2017-0239808 A1	24/08/2017
		US 9616562 B2	11/04/2017
US 2006-0186624 A1	24/08/2006	AU 2001-287167 A1	25/11/2002
		CA 2450948 A1	21/11/2002
		CN 100361851 C	16/01/2008
		CN 1529669 A	15/09/2004
		EP 1399347 A2	24/03/2004
		MX PA03011786 A	07/03/2005
		US 2002-0171228 A1	21/11/2002
		US 2006-0186642 A1	24/08/2006
		US 7147243 B2	12/12/2006
		WO 02-092412 A2	21/11/2002
		WO 02-092412 A3	23/01/2003

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 290
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To.
BORCHARDT, James D.

Reinhart Boerner Van Deuren s.c. 1000 North Water Street, Suite 1700 Milwaukee, Wisconsin 53202 USA

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	09 January 2019 (09.01.2019)
Applicant's or agent's file reference 066749-1803	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2018/044629	**31 July 2018 (31.07.2018)**	31 July 2017 (31.07.2017)

International Patent Classification (IPC) or both national classification and IPC

B25H 3/02(2006.01)i, B62B 5/06(2006.01)i, A45F 5/02(2006.01)i

Applicant
MILWAUKEE ELECTRIC TOOL CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR	Date of completion of this opinion	Authorized officer
International Application Division Korean Intellectual Property Office 189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea Facsimile No. +82-42-481-8578	09 January 2019 (09.01.2019)	LEE, Jong Kyung Telephone No. +82-42-481-3360

Form PCT/ISA/237 (cover sheet) (January 2015)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2018/044629

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:

   a. ☐ forming part of the international application as filed:
      ☐ in the form of an Annex C/ST.25 text file.
      ☐ on paper or in the form of an image file.

   b. ☐ furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.

   c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
      ☐ in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
      ☐ on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2018/044629

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
   - ☐ paid additional fees
   - ☐ paid additional fees under protest and, where applicable, the protest fee
   - ☐ paid additional fees under protest but the applicable protest fee was not paid
   - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
   - ☐ complied with
   - ☒ not complied with for the following reasons:

Group Ⅰ, claims 1-11, 41-53, and 56-69, suggests a storage container comprising first and second mounting rails for mounting a variety of accessories.

Group Ⅱ, claims 12-15, suggests a modular attachment plate comprising a plate body including a cleat receptacle opening and a latch receptacle opening for coupling a storage container to a variety of accessories.

Group Ⅲ, claims 16-27, suggests a collapsible storage crate, which comprises a crate bottom and a cleat, coupled to a storage container for receiving a variety of accessories.

Group Ⅳ, claims 28-33, suggests a stack lock assembly comprising a cleat and a rail for accommodating a plurality of containers by a lock mechanism.

Group Ⅴ, claims 34-38, suggests a cleat assembly comprising a cleat receptacle receiving a cleat.

Group Ⅵ, claims 39 and 40, suggests an accessory holder comprising a holder body and an accessory attachment rail for holding an accessory.

Group Ⅶ, claims 54-55 and 70-87, suggests a storage container comprising a container body, an upright member, and a handle for moving the container body.

The inventions listed as Group Ⅰ, Ⅱ, Ⅲ, Ⅳ, Ⅴ, Ⅵ, and Ⅶ do not relate to a single general inventive concept under PCT Rule 13.1, because under PCT Rule 13.2 they lack the same or corresponding special technical features for the following reason; they are separate inventions with distinct fields of search.

4. Consequently, this opinion has been established in respect of the following parts of the international application:
   - ☐ all parts.
   - ☒ the parts relating to claims Nos. 1-11, 41-53, and 56-69

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 293
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2018/044629

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-11,41-53,56-69	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-11,41-53,56-69	NO
Industrial applicability (IA)	Claims	1-11,41-53,56-69	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 2012-0207571 A1 (SCOTT, CHARLES SHAY) 16 August 2012
D2: WO 2005-045886 A2 (BROOKS AUTOMATION, INC.) 19 May 2005
D3: US 2008-0115312 A1 (DIPASQUALE et al.) 22 May 2008

1. Novelty and Inventive Step

1.1 Independent Claim 1

D1, which is considered to be the closest prior art to the subject matter of claim 1, discloses a dumpster (170) comprising: a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a); and a carriage frame (124) detachably connected to the left rail (111a) and the right rail (111b) (see paragraphs [0038]-[0039], [0041], [0053]; and figures 1, 3A).

The subject matter of claim 1 differs from D1 in that a storage container comprises a mount including at least one cleat receptacle defined therein.

However, this feature would be easily conceived from the disclosure of D1 considering that a holder assembly (104) including a carriage assembly (120) having the carriage frame (124) may hold a container (108) (see paragraphs [0038], [0041]; and figure 1).

Accordingly, claim 1 would have been obvious over D1. Therefore, claim 1 does not involve an inventive step under PCT Article 33(3).

1.2 Dependent Claims 2-7

1.2.1 Concerning Claim 2

The additional feature of claim 2, characterized in that a first mounting rail and a second

Continued on Supplemental Box

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 294
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Box No. V

mounting rail are disposed at respective corners of the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that a system (100) including the left rail (111a) and the right rail (111b) is engaged on the dumpster (170) (see paragraph [0053]; claim 1; and figures 1, 3A). Accordingly, claim 2 would have been obvious over D1. Therefore, claim 2 does not involve an inventive step under PCT Article 33(3).

1.2.2 Concerning Claim 3

The additional feature of claim 3, characterized in that the mount spans across an entire side of the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the system (100) comprising the holder assembly (104) including the carriage assembly (120) having the carriage frame (124) is engaged on the dumpster (170) (see paragraphs [0041], [0053]; claim 1; and figures 1, 3A). Accordingly, claim 3 would have been obvious over D1. Therefore, claim 3 does not involve an inventive step under PCT Article 33(3).

1.2.3 Concerning Claim 4

The additional feature of claim 4, characterized in that the mount includes a first mount end and a second mount end, and at least one of the first and second mount ends includes a closure latch, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the carriage frame (124) may be latched to be held in a raised position on the frame (110) including the left rail (111a) and the right rail (111b) (see paragraphs [0039], [0050]; and figure 1). Accordingly, claim 4 would have been obvious over D1. Therefore, claim 4 does not involve an inventive step under PCT Article 33(3).

1.2.4 Concerning Claim 5

The additional feature of claim 5, characterized in that the mount is configured to resiliently snap on and off of the respective first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the carriage frame (124) may be latched to be held in the raised position on the frame (110) including the left rail (111a) and the right rail (111b) (see paragraphs [0039], [0050]; and figure 1). Accordingly, claim 5 would have been obvious over D1. Therefore, claim 5 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 295
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

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Continuation of : Previous Page

1.2.5 Concerning Claim 6

The additional feature of claim 6, characterized in that a cleat is slidably received in the cleat receptacle, and an attachment accessory is connected to the cleat, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the holder assembly (104) including the carriage assembly (120) having the carriage frame (124) may hold the container (108) (see paragraphs [0038], [0041]; and figure 1). Accordingly, claim 6 would have been obvious over D1. Therefore, claim 6 does not involve an inventive step under PCT Article 33(3).

1.2.6 Concerning Claim 7

The additional feature of claim 7, characterized in that the mount includes a rigid plate member, and the at least one cleat receptacle is defined in the rigid plate member, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the holder assembly (104) including the carriage assembly (120) having the carriage frame (124) may hold the container (108) (see paragraphs [0038], [0041]; and figure 1). Accordingly, claim 7 would have been obvious over D1. Therefore, claim 7 does not involve an inventive step under PCT Article 33(3).

1.3 Independent Claim 8

D1, which is considered to be the closest prior art to the subject matter of claim 8, discloses a dumpster (170) comprising: a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a); and a container (108) mounted to the left rail (111a) and the right rail (111b) (see paragraphs [0038]-[0039], [0041], [0053]; and figures 1, 3A).

The subject matter of claim 8 differs from D1 in that a storage container comprises: a tiedown rail disposed between first and second mounting rails; and an auxiliary storage container including a receiving sleeve, wherein the tiedown rail is disposed in the receiving sleeve.

However, this feature would be easily conceived from the disclosure of D2 considering that a workpiece holding container (151) is connected to a center rail (68) disposed between outer rails (660-661) (see figure 5).

Accordingly, it would be obvious to a person skilled in the art to apply the feature of D2 to the dumpster of D1 to arrive at the storage container of claim 8. Therefore, claim 8 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 296
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

1.4 Dependent Claims 9-11

1.4.1 Concerning Claim 9

The additional feature of claim 9, characterized in that the auxiliary storage container includes a soft-sided bag, is not explicitly disclosed in either D1 or D2. However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of the container (108) connected to a holder assembly (104) (see paragraph [0038]; and figure 1). Accordingly, claim 9 would have been obvious over D1 in view of D2. Therefore, claim 9 does not involve an inventive step under PCT Article 33(3).

1.4.2 Concerning Claim 10

The additional feature of claim 10, characterized in that the auxiliary storage container is removably connected to the first mounting rail, the second mounting rail, and the tiedown rail, is not explicitly disclosed in either D1 or D2. However, this feature would be easily conceived from the disclosure of D2 considering that the workpiece holding container (151) is connected to the outer rails (660-661) and the center rail (68) disposed between the outer rails (660-661) (see figure 5). Accordingly, claim 10 would have been obvious over D1 in view of D2. Therefore, claim 10 does not involve an inventive step under PCT Article 33(3).

1.4.3 Concerning Claim 11

The additional feature of claim 11, characterized in that the auxiliary storage container includes a first resilient mounting clip removably connected to the first mounting rail, and a second resilient mounting clip removably connected to the second mounting rail, is not explicitly disclosed in either D1 or D2. However, this feature would be easily conceived from the disclosures of D1 considering that a frame (110) includes the left rail (111a) and the right rail (111b) connected to the container (108) (see paragraph [0039]; and figure 1) and D3 considering that a vacuum (200) can be provided with a pair of cord wrap ears (230, 232) (see paragraph [0064]; and figure 29). Accordingly, it would be obvious to a person skilled in the art to combine the features of D1-D3 to arrive at the storage container of claim 11. Therefore, claim 11 does not involve an inventive step under PCT Article 33(3).

1.5 Independent Claim 41

D1, which is considered to be the closest prior art to the subject matter of claim 41,

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 297
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Previous Page

discloses a dumpster (170) comprising a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a) (see paragraphs [0039], [0053]; and figures 1, 3A).

The subject matter of claim 41 differs from D1 in that a storage container comprises a bin connected to a first mounting rail and a second mounting rail.

However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of a container (108) connected to the left rail (111a) and the right rail (111b) (see figure 1).

Accordingly, claim 41 would have been obvious over D1. Therefore, claim 41 does not involve an inventive step under PCT Article 33(3).

1.6 Dependent Claims 42-45

1.6.1 Concerning Claim 42

The additional feature of claim 42, characterized in that the bin is removably connected to the first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 42 would have been obvious over D1. Therefore, claim 42 does not involve an inventive step under PCT Article 33(3).

1.6.2 Concerning Claim 43

The additional feature of claim 43, characterized in that the first mounting rail and the second mounting rail are disposed at respective corners of the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that a system (100) including the left rail (111a) and the right rail (111b) is engaged on the dumpster (170) (see paragraph [0053]; claim 1; and figures 1, 3A). Accordingly, claim 43 would have been obvious over D1. Therefore, claim 43 does not involve an inventive step under PCT Article 33(3).

1.6.3 Concerning Claim 44

The additional feature of claim 44, characterized in that the bin spans across an entire side of the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the system (100) including the container (108) is engaged on the dumpster (170) (see paragraph [0053]; and figures 1, 3A).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 298
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

Accordingly, claim 44 would have been obvious over D1. Therefore, claim 44 does not involve an inventive step under PCT Article 33(3).

1.6.4 Concerning Claim 45

The additional feature of claim 45, characterized in that the bin is configured to resiliently snap on and off of the respective first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 45 would have been obvious over D1. Therefore, claim 45 does not involve an inventive step under PCT Article 33(3).

1.7 Independent Claim 46

D1, which is considered to be the closest prior art to the subject matter of claim 46, discloses a dumpster (170) comprising a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a) (see paragraphs [0039], [0053]; and figures 1, 3A).

The subject matter of claim 46 differs from D1 in that a storage container comprises a table assembly connected to a first mounting rail and a second mounting rail.

However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of a container (108) connected to the left rail (111a) and the right rail (111b) (see figure 1).

Accordingly, claim 46 would have been obvious over D1. Therefore, claim 46 does not involve an inventive step under PCT Article 33(3).

1.8 Dependent Claims 47 and 48

1.8.1 Concerning Claim 47

The additional feature of claim 47, characterized in that the table assembly includes a platform, wherein the platform of the table assembly is rotatable relative to the first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that a holder (122) may continue to be rotated until the contents of the container (108) are dumped into the dumpster (170) (see paragraph [0049]; and figures 1, 3A). Accordingly, claim 47 would have been obvious over D1. Therefore, claim 47 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 299
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

1.8.2 Concerning Claim 48

The additional feature of claim 48, characterized in that the table assembly is configured to resiliently snap on and off of the respective first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 48 would have been obvious over D1. Therefore, claim 48 does not involve an inventive step under PCT Article 33(3).

1.9 Independent Claim 49

D1, which is considered to be the closest prior art to the subject matter of claim 49, discloses a dumpster (170) comprising a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a) (see paragraphs [0039], [0053]; and figures 1, 3A).

The subject matter of claim 49 differs from D1 in that a storage container comprises a bag holder assembly connected to a first mounting rail and a second mounting rail.

However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of a container (108) connected to the left rail (111a) and the right rail (111b) (see figure 1).

Accordingly, claim 49 would have been obvious over D1. Therefore, claim 49 does not involve an inventive step under PCT Article 33(3).

1.10 Dependent Claims 50-53

1.10.1 Concerning Claim 50

The additional feature of claim 50, characterized in that a wheeled cart supports the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that a frame assembly (102) supporting the container (108) includes a frame (110) and wheels (112) (see paragraph [0039]; and figure 1). Accordingly, claim 50 would have been obvious over D1. Therefore, claim 50 does not involve an inventive step under PCT Article 33(3).

1.10.2 Concerning Claim 51

The additional feature of claim 51, characterized in that the bag holder assembly includes a bag receiving rod spanning across an entire side of the storage container, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 300
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Previous Page

considering that a system (100) including the container (108) is engaged on the dumpster (170) (see paragraph [0053]; and figures 1, 3A). Accordingly, claim 51 would have been obvious over D1. Therefore, claim 51 does not involve an inventive step under PCT Article 33(3).

1.10.3 Concerning Claim 52

The additional feature of claim 52, characterized in that the bag receiving rod is formed into a semi-circle spanning from the first mounting rail to the second mounting rail, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 52 would have been obvious over D1. Therefore, claim 52 does not involve an inventive step under PCT Article 33(3).

1.10.4 Concerning Claim 53

The additional feature of claim 53, characterized in that the bag holder assembly is configured to resiliently snap on and off of the respective first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 53 would have been obvious over D1. Therefore, claim 53 does not involve an inventive step under PCT Article 33(3).

1.11 Independent Claim 56

D1, which is considered to be the closest prior art to the subject matter of claim 56, discloses a dumpster (170) comprising a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a) (see paragraphs [0039], [0053]; and figures 1, 3A).

The subject matter of claim 56 differs from D1 in that a storage container comprises: a first clip removably mounted to a first mounting rail, the first clip including a first accessory hook; and a second clip removably mounted to a second mounting rail, the second clip including a second accessory hook, wherein the first and second clips are arranged with the first and second accessory hooks facing outwardly from the storage container to receive an accessory.

However, these features would be easily conceived from the disclosures of D1 considering that a container (108) is connected to the left rail (111a) and the right rail (111b) of a frame (110) (see paragraph [0039]; and figure 1), and D3 considering that a vacuum (200) can be

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 301
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

provided with a pair of cord wrap ears (230, 232) (see paragraph [0064]; and figure 29)

Accordingly, it would be obvious to a person skilled in the art to apply the feature of D3 to the dumpster of D1 to arrive at the storage container of claim 56. Therefore, claim 56 does not involve an inventive step under PCT Article 33(3).

1.12 Dependent Claims 57-63

1.12.1 Concerning Claim 57

The additional feature of claim 57, characterized in that the accessory includes a first loop and a second loop, and the first accessory hook is received in the first loop and the second accessory hook is received in the second loop, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosure of D3 considering that a cord (236) is wrapped around the cord wrap ears (230, 232) (see paragraph [0065]; and figure 29). Accordingly, claim 57 would have been obvious over D1 in view of D3. Therefore, claim 57 does not involve an inventive step under PCT Article 33(3).

1.12.2 Concerning Claim 58

The additional feature of claim 58, characterized in that the accessory includes a plurality of hooks disposed between the first mounting rail and the second mounting rail, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosures of D1 considering that the frame (110) includes the left rail (111a) and the right rail (111b) (see paragraph [0039]; and figure 1), and D3 considering that the cord (236) is wrapped around the cord wrap ears (230, 232) (see paragraph [0065]; and figure 29). Accordingly, claim 58 would have been obvious over D1 in view of D3. Therefore, claim 58 does not involve an inventive step under PCT Article 33(3).

1.12.3 Concerning Claim 59

The additional feature of claim 59, characterized in that the plurality of hooks are integrally formed as a unitary part with the first and second loops, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosure of D3 considering that the cord (236) is wrapped around the cord wrap ears (230, 232) (see paragraph [0065]; and figure 29). Accordingly, claim 59 would have been obvious over D1 in view of D3. Therefore, claim 59 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 302
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

1.12.4 Concerning Claim 60

The additional feature of claim 60, characterized in that the accessory includes a storage bin disposed between the first mounting rail and the second mounting rail, is not explicitly disclosed in either D1 or D3. However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of the container (108) connected to the left rail (111a) and the right rail (111b) (see figure 1). Accordingly, claim 60 would have been obvious over D1 in view of D3. Therefore, claim 60 does not involve an inventive step under PCT Article 33(3).

1.12.5 Concerning Claim 61

The additional feature of claim 61, characterized in that the storage bin is integrally formed as a unitary part with the first and second loops, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosures of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1), and D3 considering that the cord (236) is wrapped around the cord wrap ears (230, 232) (see paragraph [0065]; and figure 29). Accordingly, claim 61 would have been obvious over D1 in view of D3. Therefore, claim 61 does not involve an inventive step under PCT Article 33(3).

1.12.6 Concerning Claim 62

The additional feature of claim 62, characterized in that the first clip is resiliency snapped onto the first mounting rail and the second clip is resiliently snapped onto the second mounting rail, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosures of D1 considering that the container (108) is connected to the left rail (111a) and the right rail (111b) (see figure 1), and D3 considering that the vacuum (200) can be provided with the pair of cord wrap ears (230, 232) (see paragraph [0064]; and figure 29). Accordingly, claim 62 would have been obvious over D1 in view of D3. Therefore, claim 62 does not involve an inventive step under PCT Article 33(3).

1.12.7 Concerning Claim 63

The additional feature of claim 63, characterized in that a length of cord is removably wrapped about the first and second accessory hooks, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosure of D3 considering that the cord (236) is wrapped around the cord wrap ears (230, 232) (see

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 303
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of : Previous Page

paragraph [0065]; and figure 29). Accordingly, claim 63 would have been obvious over D1 in view of D3. Therefore, claim 63 does not involve an inventive step under PCT Article 33(3).

1.13 Independent Claim 64

D1, which is considered to be the closest prior art to the subject matter of claim 64, discloses a dumpster (170) comprising: a left rail (111a) and a right rail (111b) spaced apart from the left rail (111a); and a carriage frame (124) detachably connected to the left rail (111A) and the right rail (111b) (see paragraphs [0038]-[0039], [0041], [0053]; and figures 1, 3A).

The subject matter of claim 64 differs from D1 in that a storage container comprises at least one bin removably disposed on a mount.

However, this feature is merely a matter of design option in view of the disclosure of D1 such as the kind of a container (108) disposed on the carriage frame (124) (see figure 1).

Accordingly, claim 64 would have been obvious over D1. Therefore, claim 64 does not involve an inventive step under PCT Article 33(3).

1.14 Dependent Claims 65 and 66

1.14.1 Concerning Claim 65

The additional feature of claim 65, characterized in that the mount is configured to resiliently snap on and off of the first and second mounting rails, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the carriage frame (124) may be latched to be held in a raised position on a frame (110) including the left rail (111a) and the right rail (111b) (see paragraphs [0039], [0050]; and figure 1). Accordingly, claim 65 would have been obvious over D1. Therefore, claim 65 does not involve an inventive step under PCT Article 33(3).

1.14.2 Concerning Claim 66

The additional feature of claim 66, characterized in that the at least one bin is slidably received on the mount, is not explicitly disclosed in D1. However, this feature would be easily conceived from the disclosure of D1 considering that the container (108) is disposed on the carriage frame (124) (see figure 1). Accordingly, claim 66 would have been obvious over D1. Therefore, claim 66 does not involve an inventive step under PCT Article 33(3).

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 304
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Previous Page

1.15 Independent Claim 67

D1, which is considered to be the closest prior art to the subject matter of claim 67, discloses a dumpster (170) comprising: a container body; a left rail (111a) connected to the container body; a holder (122) hingedly connected to the container body; and a container (108) disposed on the holder (122) of the dumpster (170), wherein the container (108) includes a right rail (111b) (see paragraphs [0039], [0049], [0053]; and figures 1, 3A)

The subject matter of claim 67 differs from D1 in that a storage container comprises: a first clip removably mounted to a first mounting rail, the first clip including a first accessory hook; and a second clip removably mounted to a supplemental mounting rail, the second clip including a second accessory hook.

However, these features would be easily conceived from the disclosures of D1 considering that a frame (110) includes the left rail (111a) and the right rail (111b) connected to the container (108) (see paragraph [0039]; and figure 1), and D3 considering that a vacuum (200) can be provided with a pair of cord wrap ears (230, 232) (see paragraph [0064]; and figure 29)

Accordingly, it would be obvious to a person skilled in the art to apply the feature of D3 to the dumpster of D1 to arrive at the storage container of claim 67. Therefore, claim 67 does not involve an inventive step under PCT Article 33(3).

1.16 Dependent Claims 68 and 69

1.16.1 Concerning Claim 68

The additional feature of claim 68, characterized in that a length of cord is removably wrapped about the first and second accessory hooks, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosure of D3 considering that a cord (236) is wrapped around the cord wrap ears (230, 232) (see paragraph [0065]; and figure 29). Accordingly, claim 68 would have been obvious over D1 in view of D3. Therefore, claim 68 does not involve an inventive step under PCT Article 33(3).

1.16.2 Concerning Claim 69

The additional feature of claim 69, characterized in that the first mounting rail and the supplemental mounting rail are substantially aligned, is not explicitly disclosed in either D1 or D3. However, this feature would be easily conceived from the disclosure of D1 considering that the frame (110) includes the left rail (111a) and the right rail (111b) (see paragraph

Continued on The Next Page

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 305
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Previous Page

[0039]; and figure 1). Accordingly, claim 69 would have been obvious over D1 in view of D3. Therefore, claim 69 does not involve an inventive step under PCT Article 33(3).

2. Industrial Applicability

Claims 1-11, 41-53, and 56-69 are industrially applicable under PCT Article 33(4).

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Milwaukee Electric Tool Corporation
Title:	Utility Assembly and Coupling Mechanism
Appl. No.:	16/216,724
Filing Date:	December 11, 2018
Examiner:	WEINERTH, GIDEON R
Art Unit:	3736
Confirmation Number:	1402

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Submitted herewith on Form PTO/SB/08 is a listing of the documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR § 1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR § 1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 307
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(c), before the mailing date of any of a final action under 37 CFR § 1.113, a notice of allowance under 37 CFR §1.311, or an action that otherwise closes prosecution in the application.

FEES

The IDS Fee of $240.00 under 37 CFR 1.17(p) is being paid via Deposit Account No. 18-0882 via EFS-web.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 18-0882. If any extensions of time are needed for timely acceptance of papers submitted herewith, applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 18-0882.

Respectfully submitted,

Date April 23, 2019

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 308
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Electronic Patent Application Fee Transmittal	
Application Number:	16216724
Filing Date:	11-Dec-2018
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Filer:	Derek Howard Campbell/Andrea Dietzel
Attorney Docket Number:	066749-2270
Filed as Large Entity	
Filing Fees for Utility under 35 USC 111(a)	

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	240	240
		Total in USD ($)		**240**

Electronic Acknowledgement Receipt	
EFS ID:	35808605
Application Number:	16216724
International Application Number:	
Confirmation Number:	1402
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
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Attorney Docket Number:	066749-2270
Receipt Date:	23-APR-2019
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Application Type:	Utility under 35 USC 111(a)

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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		066749-2270_Amendment.pdf	327594 41b1de44af8bf5256627c4606186589b1b004aad	yes	17
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	17	
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	066749-2270_SB08.pdf	95329 675b4aaa92b1598ed83fb0ddff18105113e68c64	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO2005045886.pdf	9601468 189f7dfd3b05bbd77e014af9daab6ccbc4c5b4f4	no	56
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	ISR_WO.pdf	2043290 2589655a42b418ceb7673fd44573b326eb49dad5	no	22
Warnings:					
Information:					

5	Transmittal Letter	066749-2270_IDS_Transmittal.pdf	84415 72cef9687fe2685f6345c27887a034052bb6f95e	no	2
Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	30544 391879fa97bbfb70eb8b63f85b3c6abe759d87b1	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	12182640		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/216,724	12/11/2018	Yaron Brunner	066749-2270	1402

142078 7590 06/13/2019

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	

ART UNIT	PAPER NUMBER
3736	

NOTIFICATION DATE	DELIVERY MODE
06/13/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPAdmin@reinhartlaw.com

Office Action Summary	**Application No.** 16/216,724	**Applicant(s)** Brunner et al.	
	Examiner GIDEON R WEINERTH	**Art Unit** 3736	**AIA (FITF) Status** Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 23 April 2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-3,5-12 and 14-22 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☑ Claim(s) 1-3,6-7,9,11-12,14-17 and 20-22 is/are allowed.

7) ☑ Claim(s) 5,8,10 and 18-19 is/are rejected.

8) ☑ Claim(s) 15 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 11 December 2018 is/are: a)☐ accepted or b)☑ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 4/23/2019.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 315
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

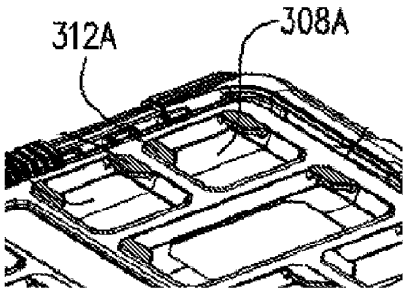
Response to Amendment

2. In the amended Claims of 4/23/2019, Claims 1-3, 5-12, 14-22 are amended. Claims 1, 2, 5, 7, 10, 14, and 15 are amended. Claims 21-22 are new.

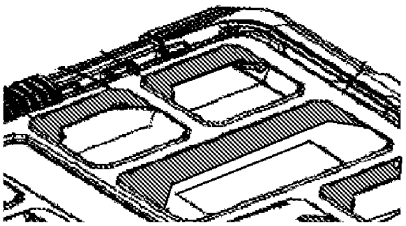
Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. Claim 7 recites a coupler comprising a back wall, two sidewalls, and a singular rib wherein the singular rib extends from the back wall and the two sidewalls. This is not shown in the drawings. Rather, Figure 12C shows two ribs, each rib extending from the back wall and a single sidewall. A single rib extending from the back wall and two sidewalls would look rather different as shown in Diagram 1 below.



Two ribs, each rib extends from the back wall and each of the two sidewalls.



A singular rib extending from the back wall and the two sidewalls.

Diagram 1 showing the claimed language of 'the (singular) rib extends from the back wall and the two sidewalls as claimed on the right vs. what is shown in Figure 12C on left in detail, with rib shaded in grey.

5. Please note that Claim 10 depends from Claim 7 and recites that the first coupler comprises a ***single*** rib.

6. Claim 14 recites that the (singular) depressed surface of the second face covers at least 50% of the second face. This is not shown in the drawings.

7. The drawings do not support any singular depressed surface covering at least 50% of the face. Rather, the figures show a number of couplers with depressed surfaces. In total, the areas of the depressed surfaces (plural) covers at least 50% of the second face.

8. Similarly, Claims 21 and 22 recite the singular depressed surface of the first face comprises at least 50% of the area of the first face. Any **single** depressed surface that makes up 50% of the surface area is not shown in the drawings.

9. Claims 5, 8, 10, 18, and 19 describe a single second coupler. No SINGLE coupler on a second container is ever shown in the drawings. Rather, at minimum, two or more couplers are shown. A single second coupler must be shown in the drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

10. The following is a quotation of 35 U.S.C. 112(b):

> (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 5, 8, 10, 18, and 19 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

12. Claim 5 recites “The second container comprising a single second coupler, the single second coupler comprising a single rib.” Similarly, Claim 8 recites “The second utility module comprising a single second coupler with a tongue extending in the second direction, the single second coupler comprising a single tongue.” Claim 10 recites “the first utility module comprises a single first coupler, the single first coupler comprising a single rib.” Claim 18 recites “the first container comprising a single second coupler, the single second coupler comprising a single rib.” Claim 19 recites “the first container comprising a single first coupler, the single first coupler comprising a single tongue.”

13. In the Remarks and Arguments section, Pages 8-9 Applicant states that to disclose the feature of a single second coupler, Applicant submits that this feature is disclosed by virtue of the phrase “one or more female couplers” “one or more depressed locking locations”, and “at least one locking location” “one or more ribs” “at least one rib” “one or more locking ribs” “at least one locking rib”.

14. The Examiner disagrees that such terms in the Specification disclose “a single second coupler” as claimed.

15. The Examiner first notes that no coupler is shown in the drawings alone. Couplers are always shown in pairs. While each coupler (singular) may have one or more ribs, no single coupler component comprising a number of elements, such as a singular depressed surface and a rib, is shown.

16. Therefore, there is an inherent ambiguity in claiming “comprising a single second coupler”. It is unclear if the term has the same meaning as “comprising at least one second coupler”. The transitional phrase “comprising” is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude

additional, unrecited elements or method steps. (MPEP 2111.03). However, by specifying that the second container comprising a single second coupler, the term renders the claim indefinite. It is unclear whether the claim denotes a single second coupler (excluding any other second coupler), a single second coupler in addition to other possible couplers, or a plurality of second couplers are intended.

17. It is immaterial that the Specification recites "at least one" or "one or more". The claim language "comprising a single" element does not share the same meaning. "Comprising a single" element **IS NOT** synonymous with terms "at least one" element, "one or more" elements, or a "plurality" of elements which indicates two or more. Therefore, claims which recite the term "comprising a single… " are indefinite.

Claim Objections

18. Claim 15 objected to because of the following informalities: Claim 15 recites "The first container of claim 14, the rib engaged between the second tongue of the second container and a first face of the second container, when the first container is removably coupled to the second container".

19. This is improper grammar and the comma should be removed. A properly worded claim would read: "The first container of claim 14, wherein the rib is engaged between the second tongue of the second container and a first face of the second container~~,~~ when the first container is removably coupled to the second container".

20. Appropriate correction is required.

Allowable Subject Matter

21. Claims 1, 2, 3, 6, 7, 9, 11, 12, 14, 15, 16, 17, 20-22 are allowed.

22. However, much of the claimed language is not shown in the drawings, and Applicant appears to be claiming a structure which is different than what is intended. Applicant is advised to carefully review the claimed language to specifically identify the subject matter shown.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIDEON R. WEINERTH whose telephone number is (571)270-5121. The examiner can normally be reached on Monday-Friday 10AM-6PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Pickett can be reached on (571) 272-4560. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Notice of References Cited	Application/Control No. 16/216,724	Applicant(s)/Patent Under Reexamination Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9506489-B2	11-2016	Ko; Kenneth H.	A47B87/02	1/1
*	B	US-20170138382-A1	05-2017	KO; Kenneth H.	F16B12/24	1/1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC - Searched*		
Symbol	**Date**	**Examiner**
A45C5/14	1/16/2019	GW
A45C7/0045,005	01/16/2019	GW
A45C13/02	01/16/2019	GW
A45F3/10	1/16/2019	GW
A47B47/00,04,	1/16/2019	GW
A47B67/04	1/16/2019	GW
A47B87/02,007,0276	1/16/2019	GW
A47B88/90	1/16/2019	GW
A47B2210/19	1/16/2019	GW
B25H1/04	1/16/2019	GW
B25H3/021,022,023,04,06,02,	1/16/2019	GW
B62B1/14	1/16/2019	GW
B62B5/067	1/16/2019	GW
B65D21/0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209,	1/16/2019	GW
B65D2255/00	1/16/2019	GW
B65D25/2823,06	1/16/2019	GW
B65H2701/533	1/16/2019	GW
B60P7/13,06	1/16/2019	GW
E04F2201/013,0146,023,05,	1/16/2019	GW
Y10S292/38,53	1/16/2019	GW
Y10T403/7045	1/16/2019	GW
Update Search/IDS search	06/09/2019	GW
A45C5/14	06/09/2019	GW
A45C7/0045,005	06/09/2019	GW
F16B12/24,44	06/09/2019	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 324
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
206	508,511,504,503,501,	1/16/2019	GW
220	4.27	1/16/2019	GW
280	47.18,47.19,47.26,79.2,47.26,47.28,652,	1/16/2019	GW
312	107,111	1/16/2019	GW
410	84	1/16/2019	GW
248	224.7,225.21	1/16/2019	GW

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 325
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/09/2019								
	1	=								
	2	=								
	3	=								
	4	-								
	5	✓								
	6	=								
	7	=								
	8	✓								
	9	=								
	10	✓								
	11	=								
	12	=								
	13	-								
	14	=								
	15	=								
	16	=								
	17	=								
	18	✓								
	19	✓								
	20	=								
	21	=								
	22	=								

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 326
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

PTO/SB/08 (09-06)
Approved for use through 03/31/2007. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				***Complete if Known***	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	16/216,724
Date Submitted: April 23, 2019				**Filing Date**	December 11, 2018
				First Named Inventor	Yaron Brunner
(use as many sheets as necessary)				Art Unit	3736
				Examiner Name	WEINERTH, GIDEON R
Sheet	1	of	1	Attorney Docket Number	066749-2270

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/G.R.W/	A1	2006/0186624	08-24-2006	Kady, Darren	
/G.R.W/	A2	2008/0115312	05-22-2005	DiPasquale et al.	
/G.R.W/	A3	2012/0207571	08-16-2012	Scott, Charles Shay	
/G.R.W/	A4	2016/0023349	01-28-2016	Milwaukee Electric Tool Corporation	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Application Document Serial Number-Kind Code[2] *(if known)*	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
/G.R.W/	A5	WO 2005/045886	05-19-2005	Brooks Automation, Inc.		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[6]
/G.R.W/	A6	International Search Report and Written Opinion for International Application No. PCT/US2018/044629, dated January 9, 2019, 22 pages.	

Examiner Signature	/GIDEON R WEINERTH/	Date Considered	06/06/2019

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	14	(US-20110073516-$ or US-20190002004-$ or US-20180044059-$ or US-20170318927-$ or US-20130121783-$ or US-20110181008-$ or US-20100147642-$ or US-20090145790-$ or US-20080277221-$ or US-20050139745-$ or US-20080115312-$ or US-20170138382-$ or US-20070145864-$).did. or (US-9506489-$).did.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 328
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S16	26	("2812099" | "2980751" | "3147151" | "3167458" | "3338452" | "3341053" | "3745048" | "3767468" | "3933268" | "3944074" | "4113926").PN. OR ("4339049").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:14
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 329
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S24	3	(("20020014488") or ("4113214") or ("3845968")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:35
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 330
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S49	92	B65D21/0217,0219,0222,0228,023.cpc. and spring	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 331
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 332
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 333
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S75	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:26
S76	110	("2457842" | "2483464" | "2664219" | "2702142" | "3073466" | "3130855" | "3140007" | "3586204" | "3828964").PN. OR ("4287997").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:30
S77	63	("2461526" | "3078484" | "3114486" | "3233803" | "3749294" | "3902640" | "3915189" | "4082208" | "4287997" | "4307826" | "4366922" | "4424841" | "4491258" | "4545414" | "4673070" | "4790432" | "4813542" | "4884731" | "5131576" | "5184763" | "5321904" | "5419473").PN. OR ("5628443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:33
S78	151	("1409838" | "20010040080" | "20020074332" | "20020130005" | "20020185350" | "20030034215" | "20030034636" | "20040000457" | "20040004332" | "20040026199" | "20040074725" | "20040163910" | "20040211634" | "20040238303" | "20050077133" | "20050077706" | "20050098402" | "20050103590" | "20050150733" | "20050258621" | "20050285359" | "20060010644" | "20060086583" | "20060102677" | "20060163305" | "20060175170" | "20060196743" | "20060207848" | "20080060953" | "20080136133" | "20080223679" | "20080236972" | "20080308369" | "20080308370" | "20090057082" | "20090139813" | "20090160147" | "20090218187" | "20100000805" | "20100025174" | "20100095480" | "20100108452" | "20100147642" | "20100263977" | "20100307879" | "20100308563" | "20110247910" | "20120160617" | "20120261223" | "20150091264" | "20160045000" | "2454438" | "2602675" | "3131829" | "3178197" | "3317081" | "3659867" | "3842953" | "3891230" | "3974898" | "4087102" | "4314624" | "4335895" | "4575109" | "4588055" | "4673070" | "4917392" | "4953257" | "4969660" | "5072958" | "5105962" | "5127662" | "5263727" | "5310071" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:34

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 334
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"5348325" | "5533231" | "5628443" | "5630601" | "5749503" | "5803471" | "5815843" | "5873145" | "5984154" | "5984327" | "6016893" | "6042127" | "6047442" | "6141841" | "6179176" | "6182981" | "6186295" | "6196366" | "6196560" | "6213266" | "6213267" | "6237734" | "6260871" | "6279705" | "6289554" | "6305587" | "6360400" | "6367602" | "6401888" | "6401890" | "6409412" | "6454065" | "6471019" | "6474524").PN. OR ("6484362" | "6530507" | "6533086" | "6575493" | "6591950" | "6604617" | "6609271" | "6736073" | "6769701" | "6832670" | "6880685" | "6923352" | "6961976" | "6964420" | "7066311" | "7070190" | "7073694" | "7093700" | "7097181" | "7097183" | "7143912" | "7226073" | "7232018" | "7237660" | "7281616" | "7284304" | "7318507" | "7328779" | "7350648" | "7374183" | "7426985" | "7441785" | "7478803" | "7594569" | "7597341" | "7780026" | "8607947").PN. OR ("9888752").URPN.				
S79	6	("2008/0308369").URPN.	USPAT	OR	OFF	2018/04/05 22:35
S80	45	("0672173" | "1084360" | "20020144376" | "20040084269" | "20040173427" | "20040238241" | "20050077136" | "20050092568" | "20080308369" | "20090095588" | "20090101461" | "20100059322" | "20100170761" | "20100236886" | "20100270116" | "20110168507" | "20130037364" | "20130175129" | "20130213753" | "20130220754" | "2581417" | "4836343" | "5099968" | "5355980" | "5560458" | "5671832" | "5829559" | "5927450" | "5988334" | "6347693" | "6533086" | "6536568" | "7322477" | "7322585" | "7503569" | "7909149" | "8087513" | "D516869" | "D671316").PN. OR ("9027722").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:36
S81	35	("0922567" | "1084360" | "1567461" | "2372845" | "2428906" | "2801666" | "2858957" | "3837447" | "4098312" | "4122925" | "4142563" | "4257463" | "4286639" | "4673070" | "4744446").PN. OR ("4836343").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:39
S82	51	("0778785" | "1567461" | "2372845" | "2428906" | "2989998" | "3631572" | "3696850" | "4122925" | "4128194" | "4256245" | "4424841").PN. OR ("4673070").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:40
S83	33	("0842498" | "1689399" | "3114486" | "3698045" | "4231135" | "4673070" | "4799298" | "4934573" | "5205448" | "5259093" | "5465425" | "5604958" | "5632071" | "5724707" | "5815843" | "6108816" | "7080430" | "7251867").PN. OR ("7526842").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:41

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 335
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S84	23	("2428906" | "2707035" | "3225951" | "3319744" | "3696850" | "3958731").PN. OR ("4122925").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:43
S85	33	("1973819" | "2007696" | "3373911").PN. OR ("4142563").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:46
S86	12	("2858957").URPN.	USPAT	OR	OFF	2018/04/05 22:48
S87	12	("20060071581" | "20080060964" | "2858957" | "3346137" | "3568879" | "4258847" | "4592601" | "4685565" | "4863222" | "7311202").PN. OR ("9724820").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S88	43	("2128854" | "3743372").PN. OR ("4863222").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S89	73	("2842420" | "2998128" | "3032381" | "3294463" | "3501044" | "3552817").PN. OR ("3743372").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:51
S90	36	("2011962" | "3514170" | "3552817" | "3743372" | "3851936" | "3999818" | "4198777" | "4238032" | "4353470" | "4589546" | "4744612" | "4782619" | "4874210" | "4907703" | "5046789" | "5137340" | "5176435" | "5191983" | "5344024" | "5399004" | "5454634").PN. OR ("6050657").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:53
S91	17	("3131829" | "3429632" | "3552579" | "3707023" | "4062302" | "4239306" | "5246284").PN. OR ("5454634").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:55
S92	55	("0511617" | "1890000" | "2492697" | "2557630" | "2807387" | "3203744" | "3283915" | "3514170" | "3743372" | "3758181" | "3918781" | "3999818" | "4026615" | "4056295" | "4120549").PN. OR ("4243279").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:59
S93	45	("2593998" | "2653072" | "2730423" | "3131829" | "3219400" | "3514170" | "3552817" | "3563624" | "3743372" | "3814489").PN. OR ("3999818").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:03
S94	14	("2593998").URPN.	USPAT	OR	OFF	2018/04/05 23:06
S95	52	("4081061" | "4621716" | "5316159" | "6213266" | "6213267" | "7976024" | "1084360" | "3749273" | "4570799" | "4995436" | "5779051" | "D447944" | "3103278" | "3374917" | "5000713" | "6585090" | "5098328" | "D359315" | "20030132184" | "20050199459" | "4813542" | "0480709" | "5062539" | "5186290" | "6276550" | "D346627" | "5310071" | "20040222059" | "3583590" | "3836043" | "4287997" | "4656840" | "5167336" | "5392945" | "6257381" | "20040000458" | "4573595" | "7644828" | "D483200" | "7648407" | "3811747" | "20010027902" | "5099968" | "5485920" | "5709304" | "5735422" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:14
S96	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" |	US-PGPUB; USPAT;	OR	OFF	2018/04/05 23:16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 336
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	USOCR			
S97	41	("2454438" | "2495132" | "3131829" | "3194426" | "3297196" | "3317081" | "3343705" | "3404805" | "3851936" | "4192422").PN. OR ("4328902").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:18
S98	43	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:29
S99	11	("0907507" | "1626482" | "2343525" | "3974898" | "4065014").PN. OR ("4423687").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:30
S100	32	("3481502").URPN.	USPAT	OR	OFF	2018/04/05 23:38
S101	8	(("1112943") or ("2255513") or ("2849151") or ("3371816")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:41
S102	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/05 23:41
S103	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:42
S104	21	("1112943").URPN.	USPAT	OR	OFF	2018/04/05 23:43
S105	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 12:32
S106	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 12:33
S107	22	("879455").URPN.	USPAT	OR	OFF	2018/04/06 12:34
S108	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 13:10
S109	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 13:11
S110	37	("3899229" | "4431237" | "4519655" | "4828341" | "4889254" | "5191983").PN. OR ("5469961").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:11
S111	25	("20030155267" | "20050224494" | "20080308641" | "20090139892" | "20090178989" | "20090236255" | "2634020" | "3182856" | "3387732" | "3581928" | "4351448" | "5353948" | "5469961" | "5606820" | "5699925" | "5755180" | "6761266" | "6959507" | "7246718").PN. OR ("8677661").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:12
S112	24	("1226708" | "2833137" | "2834121" | "2843943" | "3139744" | "3220229" | "3545235" | "3824813" | "4507942" | "4551996" | "4663948" | "4680948" | "4821535" | "4972687" | "4989426" | "5469961" | "5653416").PN. OR ("5951130").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:13
S113	118	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:03

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 337
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$).did. or (US-3117692-$ or US-2593998-$).did.				
S115	286	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S116	226	B65D21/0224.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S117	2198	B25H3/021,022,023,04,06.cpc.	US-PGPUB; USPAT;	OR	OFF	2018/04/06 18:07

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 338
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USOCR			
S118	436	A47B47/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S119	1076	A47B87/02,007,0276.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S120	550	A47B67/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:11
S121	770	Y10T403/7045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:12
S122	9	("7451578" | "6209278" | "4599841" | "6363677" | "6955020" | "7040068" | "6588166" | "6804926" | "6658808").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:14
S123	102	("0890436" | "2740167" | "3310919" | "3988187" | "5295341" | "5630304" | "6023907" | "1854396" | "2381469" | "20030029116" | "3040388" | "3192574" | "3347048" | "3526420" | "4599841" | "6098365" | "5899038" | "20020112433" | "20030029115" | "2381469" | "3673751" | "4599841" | "4819932" | "5086599" | "5363616" | "6029416" | "6216409" | "6324809" | "6546691" | "6606834" | "6647690" | "20030029115" | "3902291" | "5295341" | "5630304" | "6421970" | "6763643" | "0753791" | "20030029116" | "2430200" | "3579941" | "5283102" | "6209278" | "6647690" | "6854235" | "20030024201" | "3579941" | "3673751" | "4426820" | "4741136" | "5860267" | "6023907" | "6122879" | "6769835" | "0338653" | "1776188" | "1854396" | "20030024201" | "3172508" | "3175476" | "3902291" | "4094090" | "5706621" | "6122879" | "6397548" | "2740167" | "20020112433" | "3175476" | "4416097" | "5797237" | "6029416" | "6182410" | "6397548" | "0890436" | "0623562" | "3040388" | "3192574" | "3347048" | "4426820" | "5860267" | "6098365" | "6490836" | "20050210810" | "3310919" | "4819932" | "5086599" | "5283102" | "6006486" | "6101778" | "6209278" | "6324809" | "3720027" | "20020170258" | "4416097" | "4807416" | "5165816" | "5618602" | "6094882" | "6101778" | "6182410" | "6513862" | "20020170258" | "20030024200" | "3657852" | "3988187" | "5165816" | "6094882" | "6591568" | "5274979" | "6772568" | "3200553" | "3657852" | "4741136" | "4819532" | "5797237" | "6006486" | "6505452" | "6591568" | "6854235" | "4094090" | "5363616" | "5618602" | "6513862" | "6606834" | "5548937" | "6880307" | "7065935" | "20030024200" | "2138085" | "2142305" | "3526420" | "5348778" | "20050210810" | "1776188" | "2138085" | "2142305" | "2430200" | "3172508" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:15

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 339
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"0338653" | "5706621" | "6490836" | "6504552" | "6546691" | "5274979" | "1723306").PN.				
S124	373	("2740167").URPN.	USPAT	OR	OFF	2018/04/06 18:16
S125	477	("0087853" | "0108068" | "0124228" | "0213740" | "0274354" | "0316176" | "0634581" | "0861911" | "1194636" | "1723306" | "1743492" | "1809393" | "1902716" | "20010024707" | "20020031646" | "20020069611" | "20020092263" | "20020170258" | "20020170259" | "20020178674" | "20020178680" | "20020189190" | "20020194807" | "20030009971" | "20030024199" | "20030037504" | "20030084636" | "20030094230" | "20030101681" | "20030145549" | "20030180091" | "20030188504" | "20030196405" | "20040016196" | "20040031227" | "20040049999" | "20040060255" | "20040068954" | "20040123548" | "20040128934" | "20040139676" | "20040139678" | "20040159066" | "20040168392" | "20040177584" | "20040182033" | "20040182036" | "20040200175" | "20040211143" | "20040244325" | "20040250492" | "20040261348" | "20050003132" | "20050028474" | "20050050827" | "20050160694" | "20050166514" | "20050205161" | "20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060053724" | "20060070333" | "20060101769" | "20060156670" | "20060174577" | "20060179754" | "20060236642" | "20060260254" | "20060272262" | "20070006543" | "20070011981" | "20070028547" | "20070065293" | "20070175156" | "20070193178" | "20080000182" | "20080000186" | "20080000187" | "20080005998" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080041008" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080155930" | "20080216434" | "20080216920" | "20080295432" | "20090133353").PN. OR ("20090193748" | "20100293879" | "20100300031" | "20100319290" | "20100319291" | "20110030303" | "20110041996" | "20110088344" | "20110088345" | "20110088346" | "20110154763" | "20110167750" | "20110225922" | "20110252733" | "20110283650" | "20120017533" | "20120031029" | "20120036804" | "20120151865" | "20120174515" | "20120174520" | "20120279161" | "20130008117" | "20130014463" | "20130019555" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:17

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 340
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"20130042562" | "20130042563" |						
		"20130042564" | "20130042565" |						
		"20130047536" | "20130081349" |						
		"20130111845" | "20130145708" |						
		"20130160391" | "20130232905" |						
		"20130239508" | "20130263454" |						
		"20130263547" | "20130318906" |						
		"20140007539" | "20140020324" |						
		"20140033634" | "20140053497" |						
		"20140059966" | "20140069043" |						
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		"20140109506" | "20140123586" |						
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 341
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S128	6	(("0935402") or ("1925070") or ("2453918")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 18:23
S129	3	("3351366").URPN.	USPAT	OR	OFF	2018/04/06 18:39

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 342
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S130	51	("1575270" | "20020170933" | "20030141329" | "20050247653" | "20060237509" | "20080142462" | "20080179370" | "20080185353" | "20090145789" | "20090145866" | "20140075650" | "20170266804" | "2290468" | "2546720" | "2763377" | "2964196" | "3145031" | "3536286" | "4264013" | "4923202" | "4932576" | "5395023" | "5511705" | "5722576" | "5881891" | "5971242" | "6213365" | "6666465" | "6698632" | "6874624" | "7090075" | "7322482" | "7686196" | "7699197" | "7726495" | "7762440" | "8267260" | "8510868" | "9038869" | "D163637" | "D165553" | "D328681").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:42
S131	18	("2715966" | "20050247653" | "4771897" | "5429252" | "5740927" | "5845792" | "5915573" | "6152312" | "6267338" | "6435357" | "6564949" | "6581788" | "6698603" | "6871749" | "7014052" | "7028854" | "7117998").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:43
S132	7	("20100314271" | "8991599" | "5799787" | "7686180" | "8695795" | "8991599" | "20100314271" | "5797508" | "3862689").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:46
S133	2	("20080236562" | "7723655").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:47
S134	6	(matthew near3 vargo).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S135	75	(Hoppe near2 Christopher).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S136	14	B65D25/2823.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S137	351	B65D25/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S138	73	(Milwaukee adj Electric).as. and (stack box)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:01
S139	8	(Milwaukee adj Electric).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S140	8	(Milwaukee and tool).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S141	84	(Milwaukee and tool).as. and latch	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:03
S142	37	(Milwaukee and tool).as. and (stack stacked stacking)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 343
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 344
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S144	325	B65D21/0212.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:09
S145	27	("4212415" | "4664283" | "4823955" | "4896926" | "5246105").PN. OR ("5544751").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:11
S146	44	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:12
S147	0	("1140005").URPN.	USPAT	OR	OFF	2018/04/06 19:30
S148	119	("1267650" | "1999162" | "3163268" | "3379482" | "3419184" | "3425471" | "3498689" | "3642168" | "3700137" | "3979016" | "3987829" | "4161261" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 20:05

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 347
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"4293073" | "4303158" | "4523692" | "4664347" | "4799503" | "4804092" | "4819795" | "4915913" | "4982863" | "4984687" | "5011013" | "5024471" | "5040834" | "5042674" | "5065885" | "5065887" | "5080250" | "5103994" | "5117979" | "5123564" | "5176281" | "5186330" | "5190152" | "5193706" | "5244265" | "5319937" | "D237135" | "D237611" | "D238148" | "D239695" | "D246872" | "D248280" | "D257934" | "D258721" | "D277797" | "D286937" | "D292711" | "D302774" | "D312573" | "D316516" | "D319016" | "D321090" | "D321091" | "D322164" | "D325323" | "D325324" | "D326775" | "D326815" | "D327646" | "D328425" | "D328818" | "D328819" | "D329331" | "D329747" | "D330161" | "D330162" | "D330329" | "D331317" | "D335960" | "D336366" | "D339471" | "D342364").PN. OR ("5564805").URPN.				
S149	62	("0198092" | "0564782" | "1063046" | "1268124" | "1740470" | "1987822" | "2011197" | "2094805" | "2122969" | "2504722" | "2759507" | "2786500" | "2791251" | "2799306" | "3018355" | "3615087" | "3746210" | "3851756" | "4061323" | "4239195" | "4256294" | "4278243" | "4303158" | "4378828" | "4460085" | "4909491" | "4911296" | "5011013" | "5117979" | "5193706" | "D253212" | "D263533" | "D288867").PN. OR ("5595228").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:03
S150	15	("2587829" | "2610761" | "2740517" | "4252239" | "4733703" | "5329929" | "5595228").PN. OR ("6206063").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:04
S151	6	("4466659" | "4967944" | "5207470" | "6193118" | "6554169" | "7000810").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38
S152	96	("1032326" | "1503894" | "1926162" | "2612200" | "2629644" | "2724595" | "2735597" | "2754079" | "2979190" | "3229946" | "3640423" | "3642168" | "3664704" | "3727971" | "3759416" | "3791547" | "3854621" | "3940009" | "3987829" | "4190281" | "4213539" | "4215896" | "4288011" | "4403786" | "4458570" | "4488669" | "4499998" | "4522326" | "4531774" | "4580827" | "4593816" | "4623071" | "4674665" | "D259413" | "D285673").PN. OR ("4967944").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38
S153	25	("2967080" | "2987358" | "4844305" | "4967944" | "5419476" | "5667115").PN. OR ("5988473").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:40
S154	10	("2987358").URPN.	USPAT	OR	OFF	2018/04/07 00:41
S155	4	("2009/0315285").URPN.	USPAT	OR	OFF	2018/04/07 00:46
S156	223	("5072918" | "5390943" | "5871219" |	US-PGPUB;	OR	OFF	2018/04/07

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 348
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"6739605" | "0875476" | "6086073" | "4743040" | "6109628" | "1427388" | "20040129658" | "20050023786" | "20050057011" | "20060232033" | "20060237091" | "3472392" | "3999775" | "4699270" | "4786122" | "5072955" | "5743607" | "5876047" | "6123346" | "6545863" | "7232136" | "D396023" | "6497423" | "D153654" | "2155769" | "3313498" | "3870177" | "4391422" | "4763799" | "4923202" | "4998023" | "5509671" | "5915646" | "6073919" | "6095156" | "6170839" | "6264216" | "D188099" | "D460235" | "D461941" | "D469235" | "5921566" | "D415867" | "20030047895" | "20030218308" | "5183372" | "5275349" | "5465988" | "5913528" | "6276471" | "6752281" | "7114733" | "7134673" | "7144020" | "4743040" | "3379431" | "4457527" | "5316232" | "5566961" | "6572123" | "D153654" | "D415867" | "6497423" | "D485037" | "20060066064" | "3698735" | "3908749" | "4895068" | "6138558" | "6251113" | "6267080" | "6471010" | "6497424" | "7207449" | "4901937" | "5308012" | "6270094" | "D463646" | "D474570" | "D485410" | "5921566" | "D273242" | "D474570" | "1149639" | "2413164" | "2575661" | "2819908" | "20050001395" | "20060006621" | "20060157944" | "4099735" | "4688860" | "5048857" | "5224531" | "5452908" | "7017603" | "7156475" | "7204374" | "7296808" | "5887878" | "1126544" | "2705114" | "20050280228" | "20050284697" | "5285981" | "6116533" | "D302064" | "D361187" | "D381168" | "D424321" | "D487604" | "D504000" | "D469235" | "1200008" | "1471446" | "1562089" | "2623642" | "2845780" | "20010045718" | "20020084607" | "20020096844" | "20060076306" | "3965969" | "4138504" | "4165088" | "4373761" | "4880248" | "6539831" | "7044569" | "5154544" | "20040065989" | "20040227315" | "3212645" | "4179080" | "4759560" | "5188308" | "5362078" | "5495951" | "5687928" | "5839739" | "5971512" | "6497423" | "6669214" | "D336183" | "D471687" | "6086073" | "D302064" | "D336183" | "20020060438" | "20040056439" | "20060208440" | "4518208" | "4832355" | "5221132" | "5375860" | "5873585" | "6022088" | "6101831" | "6206385" | "D140635" | "4380293" | "6109437" | "3610431" | "4743040" | "5269545" | "5848798" | "6241181" | "6315376" | "D391032" | "D395108" | "D403826" | "D468881" | "D471688" | "D485037" | "20030122331" | "4923202" | "1487856" | "20030107195" | "3606445" | "3873114" | "5011240" | "5634649" | "5716116" | "5941229" |	USPAT; USOCR			00:50	

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 349
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"6578938" | "6783563" | "6910710" | "D469235" | "4815394" | "1660521" | "3759538" | "4564152" | "4585130" | "5016948" | "5123666" | "5595395" | "6102497" | "6109628" | "6322061" | "6615973" | "D361188" | "D153654" | "1649065" | "20020064478" | "20030121874" | "20050127627" | "3722700" | "4019793" | "5282678" | "6857644" | "D147135").PN.				
S157	18	("1193809" | "1268124" | "1521310" | "3696850" | "4724976" | "4756394" | "4787488" | "5209279" | "5219423" | "5314046" | "5971119" | "0622263" | "0695149").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:56
S158	31	("0783059" | "2878928" | "3245528" | "3319685" | "3386607" | "3605374" | "3835992" | "3992810" | "4320846" | "4627595" | "4799590" | "4890741" | "5135823" | "5370255").PN. OR ("5676274").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:50
S159	26	("1101357" | "1149266" | "1862868" | "2702116" | "3145871" | "4154362" | "4503955" | "4705316" | "4896926" | "4998616").PN. OR ("5415255").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:53
S160	37	("3182856" | "3565146" | "4951812" | "4998616" | "5036980" | "5040681" | "5060851" | "5117979").PN. OR ("5325966").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:55
S161	6	("3412888" | "4204609" | "5409126" | "5499715" | "5769229").PN. OR ("6467681").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 17:17
S162	173	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$ or US-20080104921-$ or US-20160153200-$ or US-20080134613-$ or US-20080134607-$ or US-20070193178-$ or US-20170266804-$ or US-20140075650-$ or US-20090145866-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160023349-$ or US-20140166516-$ or US-20120326406-$ or US-20110121695-$ or US-20070194543-$ or US-20070170671-$ or US-20110049824-$ or US-20130056378-$ or US-20120312812-$ or US-20120187013-$	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:25

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 350
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		or US-20120080432-$ or US-20120061930-$ or US-20050280228-$).did. or (US-20060027475-$ or US-20050155889-$ or US-20160168880-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$ or US-7451578-$ or US-6122879-$ or US-3526420-$ or US-2740167-$ or US-9803375-$ or US-9663940-$ or US-7841144-$ or US-9616562-$ or US-5544751-$ or US-5429260-$ or US-7946609-$ or US-6578708-$ or US-6176559-$ or US-5927837-$ or US-5564805-$ or US-5595228-$ or US-6206063-$ or US-7000810-$ or US-4967944-$ or US-5988473-$).did. or (US-6641013-$ or US-2987358-$ or US-4576423-$ or US-4756394-$ or US-4896926-$ or US-5325966-$ or US-5697500-$ or US-6467681-$).did. or (US-3117692-$ or US-2593998-$).did.				
S163	3	(("20170166352") or ("20110139665") or	US-PGPUB;	OR	OFF	2018/04/09

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 351
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		("5628443")).PN.	USPAT; USOCR			01:26
S164	28	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/04/09 01:36
S165	7	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S166	27	S164 not S165	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S167	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/21 18:13
S168	56	("1932429" | "20060016811" | "20060070906" | "20060237341" | "20070080089" | "20080110190" | "20080112782" | "20080121253" | "20080128414" | "20090178989" | "20090184021" | "20110139665" | "2178091" | "2259041" | "5271515" | "5429260" | "5531517" | "5544751" | "5549241" | "5860527" | "6062388" | "6581772" | "6880705" | "6991106" | "7044483" | "7063210" | "7516854" | "7661549" | "8342329" | "8640871" | "8973811" | "8997993" | "9056694" | "9101212" | "D277532" | "D277723" | "D277819" | "D347130" | "D385306" | "D406478" | "D470641" | "D529755" | "D538571" | "D543030" | "D589723" | "D590021" | "D645902" | "D654726" | "D664034" | "D689718" | "D709716" | "D773217" | "D781625").PN. OR ("D815471").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:13
S169	5	(("20160144500") or ("0784114") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:16
S170	4	(("20160144500") or ("7841144") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17
S171	554	("0124228" | "0213740" | "0714987" | "0753791" | "1124228" | "1194636" | "1371856" | "1407679" | "1454250" | "1468288" | "1477813" | "1510924" | "1540128" | "1575821" | "1602256" | "1602267" | "1615096" | "1622103" | "1622104" | "1637634" | "1644710" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 352
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"1660480" | "1714738" | "1718702" | "1723306" | "1734826" | "1743492" | "1764331" | "1778069" | "1787027" | "1790178" | "1809393" | "1823039" | "1859667" | "1898364" | "1902716" | "1906411" | "1925070" | "1929871" | "1940377" | "1953306" | "1986739" | "1988201" | "1995264" | "20010029720" | "20020007608" | "20020007609" | "20020014047" | "20020020127" | "20020031646" | "20020046528" | "20020056245" | "20020069611" | "20020083673" | "20020092263" | "20020100231" | "20020160610" | "20020178673" | "20020178674" | "20020178682" | "20030009971" | "20030009972" | "20030024199" | "20030033777" | "20030033784" | "20030037504" | "20030041545" | "20030084636" | "20030101674" | "20030101681" | "20030115812" | "20030115821" | "20030180091" | "20030188504" | "20030196405" | "20030221387" | "20030233809" | "20040016196" | "20040031227" | "20040035078" | "20040035079" | "20040060255" | "20040068954" | "20040115921" | "20040139678" | "20040168392" | "20040177584" | "20040182036" | "20040200175" | "20040206036" | "20040211143" | "20040241374" | "20040255541" | "20050034404" | "20050034405" | "20050097860" | "20050102937" | "20050108970" | "20050138881" | "20050160694" | "20050161468" | "20050166516" | "20050193677" | "20050208255").PN. OR ("20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060032168" | "20060048474" | "20060070333" | "20060073320" | "20060075713" | "20060101769" | "20060117696" | "20060179773" | "20060196139" | "20060236642" | "20060260254" | "20060283127" | "20070006543" | "20070028547" | "20070119110" | "20070151189" | "20070193178" | "20080000186" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080295432" | "20090193748" | "2015813" | "2026511" | "2044216" | "2088238" | "2089075" | "2204675" | "2266464" | "2276071" | "2303745" | "2324628" | "2398632" | "2430200" | "2495862" | "2596280" | "2732706" | "2740167" | "2780253" | "2851740" | "2865058" | "2894292" | "2947040" | "3023681" | "3045294" | "3100556" | "3120083" | "3125138" | "3182769" | "3200553" | "3203149" |				

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 354
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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S174	1351	E04F2201/0146,023,05.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:26
S175	514	B25H3/02.cpc.	USPAT	OR	OFF	2018/11/21 18:45
S176	1041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45
S177	165	B25H3/021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45
S178	0	("2018/0213934").URPN.	USPAT	OR	OFF	2018/11/21 18:46
S179	369	A47B88/90.cpc.	USPAT	OR	OFF	2018/11/21 18:46
S180	81	A47B2210/19.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:47
S181	29	("2614016" | "2676080" | "3001564" | "3079037" | "3974898" | "4040538" | "4119204" | "4239309" | "4287997" | "4293072" | "4865404" | "5190156").PN. OR ("5407074").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:50
S182	27	("0224486" | "1472676" | "2975930" | "3159436" | "3424334" | "3506321" | "3584738" | "3737031" | "4155452").PN. OR ("4293072").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:51
S183	48	("3506321").URPN.	USPAT	OR	OFF	2018/11/21 18:54
S184	46	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:56
S185	520	B65D21/0204.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:01
S186	868	A47B87/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S187	2232	312/107,111.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S188	703	A47B88/90.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:15
S189	50	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:23
S190	34	("0455883" | "0484121" | "0918297" | "20060175945" | "20100052276" |	US-PGPUB; USPAT;	OR	OFF	2018/11/21 19:24

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 355
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"20110279956" | "20120086319" | "20130134850" | "2341434" | "2431830" | "2441728" | "3058320" | "3135570" | "3326203" | "3712697" | "4590709" | "5011240" | "5026130" | "5048902" | "5145245" | "5673984" | "6068356" | "6164738" | "8201900" | "D322875").PN. OR ("9872562").URPN.	USOCR			
S191	45	("1223455" | "2123803" | "2704699" | "3272581" | "3316045" | "3796474" | "4155611" | "4505526" | "4577773" | "4848588" | "5205595" | "5246105" | "5299688" | "5344226" | "5358321" | "5426885").PN. OR ("5603559").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:27
S192	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:28
S193	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:02
S194	75	("0440957" | "1933637" | "2511949" | "2789828" | "2981549" | "3055723" | "3349924" | "3379482" | "3891230" | "3905662").PN. OR ("4118048").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:03
S195	45	("0273398" | "0325555" | "0825642" | "0953715" | "0953815" | "1143711" | "1365098" | "1495046" | "1611034" | "2055657" | "2565969" | "2714433" | "3828899" | "3891230" | "3974898" | "3987875" | "4066155" | "4118048" | "4139084" | "4202586" | "4389078" | "4693345").PN. OR ("4813521").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:04
S196	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05
S197	143	("0344661" | "0687619" | "1424819" | "20010052681" | "20020014488" | "20020067027" | "20020074905" | "20020113386" | "20020185831" | "20030001348" | "20030146589" | "20040265104" | "20050062244" | "20050104308" | "20050258610" | "20050275178" | "20060006619" | "20060012139" | "20060038367" | "20070080512" | "20070194543" | "20070273114" | "20080084036" | "20080121547" | "20080128305" | "20080143069" | "20090020528" | "20090026901" | "20090096181" | "20090309323" | "20100052276" | "20100290877" | "20100327562" | "20110049824" | "20110181008" | "20120160886" | "20120326406" | "20140001719" | "20140023221" | "20140375181" | "2554091" | "2588830" | "2901262" | "2964328" | "3168329" | "3393951" | "3734526" | "3804432" | "3891230" | "3990653" | "4169607" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 356
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"4363496" | "4448434" | "4619363" | "4884689" | "4936594" | "4984704" | "5104135" | "5123666" | "5207723" | "5333885" | "5362078" | "5378005" | "5464104" | "5474312" | "5595395" | "5626352" | "5634649" | "5720535" | "5799958" | "5845915" | "5906381" | "5913527" | "5931483" | "5934466" | "5938396" | "6000713" | "6050660" | "6079719" | "6082539" | "6109627" | "6113129" | "6123344" | "6131926" | "6135466" | "6176559" | "6254112" | "6347847" | "6357063" | "6371320" | "6394471" | "6398235" | "6474930" | "6561528" | "6601930" | "6616152" | "6659476" | "6666465" | "6874634" | "6889838" | "6945546" | "7063339" | "7066475" | "7108131" | "7168715" | "7188846" | "7188847" | "7210689" | "7263742" | "7328905" | "7367571" | "7500681").PN. OR ("7503569" | "7686260" | "7703776" | "7819407" | "7823893" | "7845653" | "7883096" | "7905502" | "7938412" | "8132819" | "8226092" | "8567796" | "8657307" | "8668209" | "9132543" | "D437484" | "D542496" | "D640869" | "D653832" | "D654241").PN. OR ("9566990").URPN.				
S198	18	("2042387" | "2528872" | "3401420" | "3891230" | "4989291" | "5915438" | "6230361" | "7000287").PN. OR ("7263742").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:07
S199	37	("5013055" | "5207723" | "5378005").PN. OR ("5799958").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:08
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S202	1975	280/47.26,47.28.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:10
S203	518	280/652.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:10
S204	1	"15826201"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 00:33
S205	12	(US-0271616-$ | US-0320243-$ | US-1276744-$ | US-1477050-$ | US-15826201-$ | US-20080308369-$ | US-3616562-$ | US-3875888-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:39
S206	2	(("8875888") or ("9616562") or ("20080308369")).PN.	USPAT; USOCR	OR	OFF	2018/11/22 03:40
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S208	64	("20020113387" | "20070194543" | "20080079227" | "20080084036" | "20110049824" | "3522955" | "4118048" | "4119044" | "4281843" | "5176281" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:37

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 357
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 358
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"7237673" | "7237688" | "7246704" | "7316309" | "7322470" | "7326428" | "7334680" | "7357250" | "7357268" | "7367451" | "7370891" | "7401698" | "7401700" | "7418846" | "7540364" | "7552560" | "7552950" | "7600640" | "7661530" | "7837053" | "7845653" | "7854321" | "7874328" | "7883096" | "7938412" | "7984820" | "8056943" | "8061536" | "8132819" | "8152037" | "8191910" | "8210387" | "8267245" | "8267247" | "8272628" | "8327576" | "8328247" | "8376177" | "8434617" | "8469195" | "8505729" | "8657307" | "D259154" | "D272203" | "D309981" | "D326815" | "D333215" | "D333487" | "D347731" | "D355849" | "D368159" | "D370619" | "D374772" | "D375834" | "D377118" | "D378247" | "D385110" | "D386903" | "D390358" | "D402106" | "D405956" | "D414038" | "D418977" | "D437684" | "D447340" | "D447630" | "D448162" | "D449442" | "D449738" | "D451275" | "D452071" | "D453624" | "D455263" | "D459073" | "D462168" | "D465923" | "D467070" | "D470659" | "D471360" | "D472774" | "D480867" | "D505548" | "D509656" | "D516310" | "D516808" | "D516812" | "D520746" | "D563669" | "D572479" | "D572480" | "D588811" | "D589703" | "D599112" | "D600015" | "D600912" | "D601797" | "D605403" | "D608094" | "D609911" | "D609913").PN. OR ("D616200" | "D618911" | "D624317" | "D627968" | "D629607" | "D630435" | "D630851" | "D635769" | "D636996" | "D637812" | "D639554" | "D641552" | "D647301" | "D648532" | "D648533" | "D649350" | "D649783" | "D661858" | "D661903" | "D664354" | "D668867" | "D668868" | "D668869" | "D670500" | "D672555" | "D673774" | "D701696" | "D744750" | "D750890").PN. OR ("9539722").URPN.				
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 359
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"8226092" | "8376376" | "8668209" | "D182716").PN. OR ("8915504").URPN.				
S212	2	("2012/0292870").URPN.	USPAT	OR	OFF	2018/11/22 19:41
S213	52	("6264083" | "6666362" | "7204374" | "20120247044" | "4249684" | "6264220" | "6935641" | "7048320" | "7165702" | "20040194333" | "20040251227" | "20070210021" | "20100300996" | "20120199708" | "4944416" | "7487981" | "6615973" | "6786374" | "20070137532" | "5628534" | "7017254" | "6932406" | "20040051016" | "20050006539" | "20080296245" | "7740329" | "20060021985" | "5913380" | "6736265" | "20020100396" | "20120131872" | "3610429" | "6629654" | "4535897" | "6581920" | "20110107704" | "0332360" | "5406894" | "6474245" | "20050269792" | "5582269" | "20070012636" | "5687856" | "5899544" | "6247720" | "6814362" | "20040222176" | "20110168651" | "4630739" | "4961295" | "5730414").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:46
S214	39	("2320387" | "3052484" | "3179270" | "3734526" | "4281843" | "4363496" | "4790549" | "5464104" | "5465987" | "5474312" | "5595395" | "5671933").PN. OR ("6131926").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 23:52
S215	1	"12736715"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:36
S216	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/23 01:36
S217	20	("2807387" | "20060220503" | "3219400" | "3424334" | "4293072" | "4643494" | "4782619" | "4996628" | "5184726" | "5246105" | "5427394" | "5544751" | "5699925" | "5901998" | "5924778" | "6367631" | "6983946").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:37
S218	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:38
S219	13	("3379482").URPN.	USPAT	OR	OFF	2018/11/23 02:28
S220	0	("2012/0152800").URPN.	USPAT	OR	OFF	2018/11/23 02:30
S221	12	("20080060964" | "3568879" | "4592601" | "4685565" | "20060071581" | "4258847" | "4863222" | "2858957" | "7311202" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:30
S222	1041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S223	140	S222 and (snap)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S224	67	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-	US-PGPUB; USPAT;	OR	OFF	2018/11/23 14:36

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 360
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20150274362-$ or US-20110073516-$ or US-20090193748-$ or US-20080134607-$ or US-20080104921-$ or US-20180313094-$ or US-20180213934-$ or US-20150102717-$ or US-20180161975-$ or US-20140305829-$).did. or (US-20120312812-$ or US-20180290288-$ or US-20180162592-$ or US-20170239808-$ or US-20170121056-$ or US-20130127129-$ or US-20060038367-$ or US-20160114822-$ or US-20080308369-$ or US-20080169739-$ or US-20120292870-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$ or US-5429260-$ or US-7841144-$ or US-5407074-$ or US-4293072-$ or US-3506321-$ or US-3974898-$ or US-6109707-$ or US-4423687-$ or US-9872562-$ or US-6547347-$ or US-4619363-$ or US-4118048-$ or US-3891230-$ or US-9566990-$).did. or (US-5799958-$ or US-9616562-$ or US-5184726-$).did. or (US-2430200-$).did.	USOCR			
S225	3	("20080308369" | "8875888" | "9616562").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S226	28	(US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20110139665-$).did. or (US-9506489-$ or US-9132543-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/11/23 14:37
S227	37	S224 not (S225 S226)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S228	1	"20170174392".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:54
S229	14	(US-20180290288-$ or US-20180161975-	US-PGPUB;	OR	OFF	2018/11/23

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 361
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$).did. or (US-2430200-$).did.	USPAT; USOCR			21:07
S230	716	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2019/01/16 16:21
S231	51	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S232	33	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S233	56	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S234	114	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S235	0	("2017/0166352").URPN.	USPAT	OR	OFF	2019/01/16 16:23
S236	1	(("2012312812") or ("4974740")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:25
S237	0	"2012312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S238	1	"20120312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S239	4	("2012/0312812").URPN.	USPAT	OR	OFF	2019/01/16 16:26
S240	0	("2018/0161975").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S241	0	("2018/0044059").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S242	68	("6082539" | "6874634" | "8875888" | "7503569" | "D462519" | "D467424" | "D753394" | "D753395" | "D753396" | "20010030403" | "20120152944" | "6761366" | "D437484" | "D439407" | "D449738" | "D564216" | "D629607" | "D636994" | "D668048" | "D700777" | "D709697" | "D753397" | "6371320" | "20140102928" | "D415894" | "D520237" | "D613560" | "D643217" | "D701697" | "7905353" | "20110181008" | "D348152" | "D647300" | "D663952" | "D674605" | "D710098" | "D713639" | "20110049824" | "20110139666" | "5022546" | "D467426" | "D527181" | "D572479" | "D630851" | "D701696" | "D711105" | "5437369" | "D693121" | "20070273114" | "20090145790" | "8602217" | "8789699" | "8851282" | "D630435" | "D702044" | "D703437" | "D709287" | "9393684" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:30

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 362
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"8505729" | "20040134818" | "D493284" | "D600912" | "D649350" | "D653832" | "D694522" | "D703436" | "D710100" | "D719352").PN.				
S243	46	("20030062232" | "20040211634" | "20060012139" | "20060027475" | "5011013" | "5209384" | "5240264" | "5664652" | "5833065" | "6126003" | "6176559" | "6347847" | "6371320" | "6601930" | "6761366" | "7004481" | "7210689").PN. OR ("7503569").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:34
S244	23	("1192847" | "1891811" | "2053969" | "2828023").PN. OR ("5022546").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:37
S245	14	("2053969").URPN.	USPAT	OR	OFF	2019/01/16 16:38
S246	19	("2053969" | "3014604" | "3061134" | "3162320" | "3734308" | "4109789" | "4616752" | "6024223").PN. OR ("6840378").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S247	22	("20040000550" | "2705575" | "3346137" | "4293072" | "5628443" | "5704625" | "6840378").PN. OR ("7780026").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S248	21	("3081120" | "3162320" | "3653521").PN. OR ("3734308").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S249	34	("3015407" | "3493258" | "3501193" | "3552557" | "3633777" | "3677599" | "3691595" | "3712661" | "3734308" | "3888536" | "3980185" | "4093090" | "4149747" | "4341495" | "4356145" | "4630856" | "4648645" | "5163726" | "5931617" | "6135524" | "7014234").PN. OR ("8177463").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S250	65	("2053969" | "3014604" | "3691595" | "3712661").PN. OR ("3980185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S251	23	("0610816" | "20080099622" | "2357182" | "2431194" | "3380602" | "3765711" | "3980185" | "4128267" | "4341495" | "4881601" | "5161705" | "5328133" | "5344203" | "5593113" | "5836548" | "7014234" | "7549687" | "7887011" | "8177463").PN. OR ("9440741").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S252	28	("2876726" | "3004772" | "3057315" | "3107024" | "3162320" | "3711902" | "3734308" | "3799100" | "3805721" | "3818854" | "3822667" | "3872555" | "3938461" | "3980185" | "4290382" | "4294185").PN. OR ("4695184").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:44
S253	899	B60P7/13,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:46
S254	110	410/84.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S255	7	("6077006" | "7056081" | "6490766" | "8342786" | "8523501" | "7056061" | "8523401").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 363
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S256	2	("1751571").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:49
S257	38	("3034256" | "3159368" | "3334953" | "3618795" | "4249684" | "4303367" | "4325531" | "4737055" | "4805859" | "4901961" | "5161700" | "5205602" | "5240214" | "5511842" | "5588631" | "5609451" | "5653366" | "5730414" | "5855310" | "5899544").PN. OR ("6666362").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:50
S258	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S259	17	("2696962" | "4929973" | "5035389" | "5040712" | "5129613" | "5282554" | "5332183" | "5356105" | "5653366" | "5730348" | "5730406" | "6036071" | "6315182" | "7225958" | "8020821").PN. OR ("8448829").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S260	37	("1252207" | "20060186290" | "20070097617" | "20070170336" | "20070230102" | "20080105803" | "2174140" | "5730406" | "5833189" | "5850996" | "6173931" | "6315255" | "6371424" | "6431510" | "6702604" | "6758454" | "6877641" | "7261264" | "7334762" | "7455271" | "7499272" | "7673838").PN. OR ("8020821").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S261	10	("20050139745" | "4660793" | "5035389" | "5433416" | "5452874" | "5608603" | "5924790" | "6237886" | "6520463" | "6637707").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S262	10	("5356104" | "5639522" | "5662375" | "5694123" | "5943208" | "5947440" | "6349911" | "6402106" | "6446915" | "6710828").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:53
S263	12	("5284311" | "5428502").PN. OR ("5608603").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:54
S264	788	248/224.7,225.21.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:56
S265	21	("1862466" | "2979300" | "3110467" | "3669035" | "4056250" | "4076204" | "4085867").PN. OR ("4660793").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:57
S266	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:01
S267	38	("3454250" | "3456929" | "4065092" | "4230248" | "4249684" | "4444427" | "4848629" | "4974766" | "4984837" | "5007568" | "5046652" | "5181639" | "5275320" | "5285942").PN. OR ("5395019").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:02
S268	42	("2680000" | "2897928" | "3631572" | "3881677" | "4346868" | "4618081" | "4948085" | "5181774").PN. OR ("5332183").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:05

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 364
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S269	71	("2708088" | "3878589" | "3915189" | "3931893" | "4450989" | "4461445" | "4858869" | "5026016" | "5035389" | "5078279" | "5344032" | "5356038" | "5433416" | "5435511" | "5452874" | "5765699" | "5915572" | "D329192" | "D386298" | "D386304").PN. OR ("6637707").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:45
S270	32	("2103106" | "2703912" | "2879561" | "3237779" | "3399374" | "3403641" | "4029038" | "4068332" | "4266882" | "4340199" | "4376593" | "4389133" | "4430947").PN. OR ("4565465").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:55
S271	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S272	319	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S273	1937	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S274	69	A45C7/005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S275	2987	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S277	357	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S278	850	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S279	1194	B25H3/02,021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S280	1052	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S281	437	B65D21/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S282	164	B65D21/0228.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S283	320	A45C7/0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S284	436	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S285	752	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S286	23	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 365
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S287	177	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S288	121	(US-0000440-$ | US-0027475-$ | US-0038367-$ | US-0068757-$ | US-0104921-$ | US-0121056-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0139665-$ | US-0144500-$ | US-0145866-$ | US-0155613-$ | US-0161975-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0174392-$ | US-0194543-$ | US-0195793-$ | US-0217464-$ | US-0219193-$ | US-0239808-$ | US-0254946-$ | US-0266804-$ | US-0271616-$ | US-0290288-$ | US-0308369-$ | US-0320243-$ | US-0326406-$ | US-1276744-$ | US-1477050-$ | US-2430200-$ | US-20020000440-$ | US-20040195793-$ | US-20060027475-$ | US-20060038367-$ | US-20060254946-$ | US-20070068757-$ | US-20070194543-$ | US-20080104921-$ | US-20080134607-$ | US-20080169739-$ | US-20080308369-$ | US-20090145866-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20120326406-$ | US-20130127129-$ | US-20140166516-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170266804-$ | US-20180161975-$ | US-20180290288-$ | US-2608238-$ | US-3117692-$ | US-5240264-$ | US-5429260-$ | US-5595228-$ | US-5628443-$ | US-5988473-$ | US-6085925-$ | US-6547347-$ | US-6641013-$ | US-7503569-$ | US-7841144-$ | US-8132819-$ | US-8459495-$ | US-8677661-$ | US-8813960-$ | US-8875888-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9872562-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:23
S289	4	(CN-2608238-$ | JP-1276744-$ | JP-1477050-$ | KR-300271616-$ | KR-300320243-$ | TW-135074-$ | TW-168686-$ | TW-174412-$ | VA-223131450-$ | WO-2016142935-$ | WO-2017028845-$).DID.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:24
S290	0	(15/826201).APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S291	0	("150826201").APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S292	0	"150826201"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S293	45	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" |	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:39

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 366
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.				
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 367
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USOCR			
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S307	11	("4887751" | "20080169739" | "20050045640" | "20090250470" | "20050211586" | "20140353191" | "4688674" | "20040016666" | "20080197756" | "4403638" | "5653337").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:22
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 368
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		US-20170259956-$ or US-20100147642-$ or US-20150274362-$ or US-20140262885-$ or US-20130127129-$ or US-20120152800-$).did. or (US-20060027475-$ or US-20030094392-$ or US-20080277221-$ or US-20110073516-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$ or US-9725209-$ or US-8789699-$ or US-7503569-$ or US-5022546-$ or US-6840378-$ or US-3980185-$ or US-7780026-$ or US-8657307-$ or US-8177463-$ or US-9440741-$ or US-4341495-$ or US-5183375-$ or US-4695184-$ or US-3734308-$ or US-8342786-$ or US-6666362-$ or US-5653366-$ or US-8448829-$ or US-8020821-$ or US-5608603-$ or US-4660793-$).did. or (US-5395019-$ or US-9056586-$ or US-8387940-$ or US-5332183-$ or US-8398315-$ or US-5129613-$ or US-6637707-$ or US-4565465-$ or US-2053969-$ or US-6585090-$ or US-8561769-$ or US-3891230-$ or US-4889254-$ or US-9701443-$).did. or (US-2430200-$).did.				
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 369
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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6/9/2019 9:02:36 PM
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 370
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 371
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/216,724	Filing Date 12/11/2018	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	08/14/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/Ruby Johnson/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Milwaukee Electric Tool Corporation
Title:	UTILITY ASSEMBLY AND COUPLING MECHANISM
Appl. No.:	16/216,724
Filing Date:	December 11, 2018
Examiner:	Weinerth, Gideon R.
Art Unit:	3736
Confirmation No:	1402

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AND REPLY UNDER 37 C.F.R. § 1.116

This communication is responsive to the Final Office Action dated June 13, 2019, concerning the above-referenced patent application.

Amendments to the Claims begin on page 2 of this document.

Remarks begin on page 7 of this document.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 373
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Amendments to the Claims

The claims are amended as follows. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Presented) A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the two sidewalls and the back wall project from a depressed surface of the first face, and the rib extends from the back wall in a first direction above the depressed surface; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset from the second face and extends in a second direction opposite the first direction, the tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

2. (Previously Presented) The container assembly of claim 1, wherein the first and second couplers on the first and second containers, respectively, engage when the first and second containers are slid along a sliding path defined by the rib and the tongue.

3. (Original) The container assembly of claim 1, wherein when the tongue and rib are engaged:

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 374
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

a first side wall of the first coupler and a second side wall of the second coupler interface to restrict displacement between the first container and the second container in a third direction perpendicular to the first direction and parallel to the first face of the first container.

4. (Cancelled)

5. (Currently Amended) The container assembly of claim 1,

~~the second container comprising a single second coupler, the single second coupler comprising a single rib; and~~

the first container further comprising:

a third coupler extending from a second face of the first container, the third coupler including a tongue that is offset from the second face of the first container and extending in the second direction, the tongue of the first container configured to engage a rib of a third container, the first and third containers entering an engaged position by the third container sliding with respect to the first container; and

a latch coupled to the first container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the third container when the tongue of the first container and the rib of the third container are engaged.

6. (Original) The first container of claim 1, wherein the first coupler extends from a bottom face of the first container, and the second coupler extends from a top face of the second container.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 375
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

7-13. (Cancelled)

14. (Currently Amended) A first container configured to be removably coupled to a second container, the first container comprising:

a top face;

a bottom face; and

a first coupler extending from a first face of the first container that is one of the top face and the bottom face, the first coupler comprises a tongue that is offset from the first face and extends in a first direction;

a second coupler extending from a second face of the first container that is the other of the top face and the bottom face, the second face comprising a plurality of depressed surfaces, the second coupler comprises a back wall, two sidewalls, and a rib, the back wall and the two sidewalls project from [[a]] one of the plurality of depressed surfaces ~~surface~~ of the second face, the rib offset from the second face and extends above the one of the plurality of depressed surfaces ~~surface~~ in a second direction opposing the first direction, the rib engageable with a second tongue coupled to a second container, the first container enters an engaged position with the second container by the first and second containers sliding with respect to each other, wherein the plurality of depressed surfaces ~~surface~~ of the second face cover ~~covers~~ at least 50% of the second face;

a latch recess; and

a latch, the latch positionable in a locked position in which the latch interlocks with a second latch recess in the second container restricting displacement between the first container and the second container.

15. (Currently Amended) The first container of claim 14, wherein the rib is engaged between the second tongue of the second container and a first face of the second container[[,]] when the first container is removably coupled to the second container.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 376
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

16. (Original) The first container of claim 14, the first coupler of the first container engageable with a second rib of a third container.

17. (Original) The first container of claim 16, the latch recess of the first container engageable with a second latch of the third container.

18-19. (Cancelled)

20. (Original) The first container of claim 14, wherein the first face of the first container is the bottom face of the first container, and the second face of the first container is the top face of the first container.

21. (Currently Amended) The first container of claim 1, wherein the first face comprises a plurality of depressed surfaces, one of which the rib extends above, and wherein the plurality of depressed surfaces ~~surface~~ of the first face comprise ~~comprises~~ at least 50% of the area of the first face.

22. (Cancelled)

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 377
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

23. (New) A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the first face comprises a plurality of depressed surfaces, the back wall and the two sidewalls project from one of the plurality of depressed surfaces, the rib extends from the back wall in a first direction above the one of the plurality of depressed surfaces, the plurality of depressed surfaces of the first face cover at least 50% of the first face; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset from the second face and extends in a second direction opposite the first direction, the tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 378
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

REMARKS

This reply is intended to be completely responsive to the Final Office Action dated June 13, 2019.

Status

Claims 1-3, 5-12 and 14-22 are pending in this application.

Claims 1-3, 6-7, 9, 11-12, 14-17 and 20-22 are allowed, claims 5, 8, 10 and 18-19 are rejected, and claim 15 is objected to.

With this submission claims 7-13, 18-19 and 22 are cancelled, claims 5, 14-15 and 21 are amended, and claim 23 is added.

Applicant believes that the rejections and objections raised by the Examiner have been addressed and the application is in condition for allowance. Reconsideration and allowance of the application is respectfully requested.

Drawing Objections

On pages 2-4 of the Office Action, the Examiner objected to the drawings for allegedly not supporting subject matter in claims 5, 7-8, 10, 14, 18-19 and 21-22.

Without conceding the propriety of these objections, to expedite prosecution of this application claims 7-8, 10, 18-19 and 22 have been cancelled, and the term in claim 5 cited for this drawing objection has been cancelled. Applicant therefore submits that the drawing objections with respect to claims 5, 7-8, 10, 18-19 and 22 are moot and should be withdrawn.

With respect to the drawing objections in regard to claims 14 and 21, without conceding the propriety of these objections and to expedite the prosecution of this application, Applicant has amended claims 14 and 21 consistent with the Examiner's suggestion. Claim 14 has been amended in relevant part as follows:

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 379
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

a second coupler extending from a second face of the first container that is the other of the top face and the bottom face, the second face comprising a plurality of depressed surfaces, the second coupler comprises a back wall, two sidewalls, and a rib, the back wall and the two sidewalls project from [[a]] one of the plurality of depressed surfaces ~~surface~~ of the second face, the rib offset from the second face and extends above the one of the plurality of depressed surfaces ~~surface~~ in a second direction opposing the first direction, the rib engageable with a second tongue coupled to a second container, the first container enters an engaged position with the second container by the first and second containers sliding with respect to each other, wherein the plurality of depressed surfaces ~~surface~~ of the second face cover ~~covers~~ at least 50% of the second face;

Applicant submits that support for this amendment can be found throughout the specification and figures as originally filed, and for exemplary purposes at least at Fig. 12C, which is copied below.

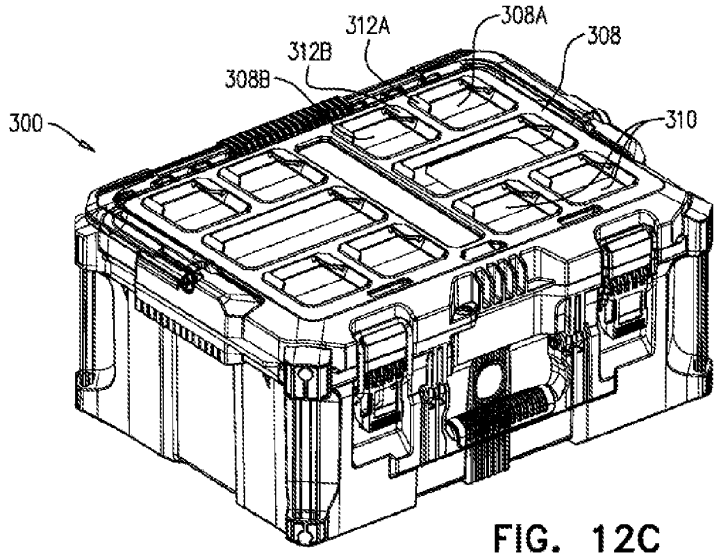


FIG. 12C

Claim 21 has been similarly amended.

42141305

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 380
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Accordingly, Applicant submits that the drawing objections in regard to claims 14 and 21 should be withdrawn.

Claim Rejections - 35 U.S.C. § 112

On pages 4-6 of the Office Action, the Examiner rejected claims 5, 8, 10 and 18-19 under 35 U.S.C. § 112 as being indefinite.

Without conceding the propriety of these rejections, to expedite prosecution of this application claims 8, 10 and 18-19 have been cancelled, and the term in claim 5 cited for this rejection has been cancelled. Applicant therefore submits that rejection under § 112 with respect to claims 5, 8, 10 and 18-19 is moot and should be withdrawn.

Claim Objections

On page 6 of the Office Action, the Examiner objected to claim 15.

Without conceding the propriety of this objection, to expedite prosecution of this application to allowance claim 15 has been amended consistent with the Examiner's suggestion. Applicant therefore submits that the claim objection to claim 15 is moot and should be withdrawn.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 1-3, 6-7, 9, 11-12, 14-17 and 20-22 contain allowable subject matter.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 381
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

New Claim

Claim 23 was added. Claim 23 includes subject matter from allowable claims 1 and 14. Accordingly, Applicant submits that new claim 23 is in condition for allowance for at least the same reasons as exist for claims 1 and 14. Applicant submits that no new matter is introduced by claim 23.

Conclusion

Applicant believes that the present application is in condition for allowance. Favorable reconsideration of the application is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

It should be noted that, for the sake of clarity and simplicity, Applicant's remarks have focused on the rejections of the independent claims set forth in the Office Action with the understanding that the dependent claims are patentable for at least the same reasons as the independent claims. Further, in addressing the Examiner's rejections, Applicant's remarks have set forth only some of the available arguments for patentability of the rejected claims. Applicant expressly reserves the right to argue the patentability of all claims separately and to provide new, different, and/or additional arguments for patentability not set forth herein, including, but not limited to, the failure of cited references to disclose, teach, or suggest other elements of the claims, the lack of motivation to combine cited references, teachings away from the combination of cited references, the failure of references to qualify as prior art or improper combination of the cited references, in this or any future proceedings.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 18-0882. If any extensions of time are needed for timely acceptance of

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 382
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 18-0882.

Respectfully submitted,

Date August 14, 2019

By /Derek H. Campbell/

Reinhart Boerner Van Deuren s.c.
Customer Number: 142078
Telephone: (414) 298-8374
Facsimile: (414) 298-8097

Derek H. Campbell
Attorney for Applicant
Registration No. 70,608

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 383
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Electronic Acknowledgement Receipt

EFS ID:	36871602
Application Number:	16216724
International Application Number:	
Confirmation Number:	1402
Title of Invention:	Utility Assembly and Coupling Mechanism
First Named Inventor/Applicant Name:	Yaron Brunner
Customer Number:	142078
Filer:	Derek Howard Campbell/Andrea Dietzel
Filer Authorized By:	Derek Howard Campbell
Attorney Docket Number:	066749-2270
Receipt Date:	14-AUG-2019
Filing Date:	11-DEC-2018
Time Stamp:	17:09:15
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		066749-2270_Amendment.pdf	179101 53ed366cb1529ada1a06dcabd8edb92c9514673 8	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	11
Warnings:			
Information:			
	Total Files Size (in bytes):	179101	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

142078 7590 09/11/2019

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

EXAMINER
WEINERTH, GIDEON R

ART UNIT	PAPER NUMBER
3736	

DATE MAILED: 09/11/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/216,724	12/11/2018	Yaron Brunner	066749-2270	1402

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	12/11/2019

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 02/11)

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 386
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

142078 7590 09/11/2019

Reinhart (Milwaukee Tool)
ATTN: TRAVIS MCDONNELL, PARALEGAL
1000 NORTH WATER STREET
SUITE 2100
MILWAUKEE, WI 53202

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/216,724	12/11/2018	Yaron Brunner	066749-2270	1402

TITLE OF INVENTION: Utility Assembly and Coupling Mechanism

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	12/11/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
WEINERTH, GIDEON R	3736	220-004270

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 387
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/216,724	12/11/2018	Yaron Brunner	066749-2270	1402

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SUITE 2100
MILWAUKEE, WI 53202

EXAMINER	
WEINERTH, GIDEON R	
ART UNIT	**PAPER NUMBER**
3736	

DATE MAILED: 09/11/2019

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 388
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/216,724	Applicant(s) Brunner et al.	
	Examiner GIDEON R WEINERTH	Art Unit 3736	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 8/14/2019.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are See Continuation Sheet . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 390
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Continuation of 3. The allowed claim(s) is/are: 1-3,5-6,14-17,20-21 and 23

Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance: As discussed in the Previous Office Action of 6/13/2019, Claims 1 - 3, 6, 7, 9, 11, 12, 14, 15, 16, 17, 20-22 were allowed. The presently amended claims overcome all other 112 rejections and drawing objections.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIDEON R. WEINERTH whose telephone number is (571)270-5121. The examiner can normally be reached on Monday-Friday 10AM-6PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Pickett can be reached on (571) 272-4560. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GIDEON R WEINERTH/
Examiner, Art Unit 3736

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	06/09/2019	09/04/2019							
	1	=	=							
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	3	=	=							
	4	-	-							
	5	✓	=							
	6	=	=							
	7	=	-							
	8	✓	-							
	9	=	-							
	10	✓	-							
	11	=	-							
	12	=	-							
	13	-	-							
	14	=	=							
	15	=	=							
	16	=	=							
	17	=	=							
	18	✓	-							
	19	✓	-							
	20	=	=							
	21	=	=							
	22	=	-							
	23		=							

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 394
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

CPC								
Symbol							**Type**	**Version**
B65D	/	21	/	0223			F	2013-01-01
B25H	/	3	/	02			I	2013-01-01
A45C	/	5	/	14			I	2013-01-01
A45C	/	7	/	005			I	2013-01-01
A45F	/	3	/	10			I	2013-01-01
B25H	/	1	/	04			I	2013-01-01
A45C	/	13	/	02			I	2013-01-01
B25H	/	3	/	021			I	2013-01-01
B65D	/	21	/	0209			I	2013-01-01
B62B	/	1	/	14			I	2013-01-01
B65D	/	21	/	0228			I	2013-01-01
B65H	/	2701	/	533			A	2013-01-01
A45C	/	7	/	0045			A	2013-01-01
B25H	/	3	/	023			A	2013-01-01
B62B	/	5	/	067			A	2013-01-01
B65D	/	2255	/	00			A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	04 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20190904

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 395
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

INTERNATIONAL CLASSIFICATION				
CLAIMED				
B65D	/	21	/	02
B65D	/	21	/	028
A45C	/	13	/	02
B25H	/	3	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
206	501

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
206	504	508	511			
280	47.18					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	12	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	04 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20190904

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 396
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		10		19										
2	2		11	11	20										
3	3		12	6	21										
	4		13	12	22										
4	5	7	14		23										
5	6	8	15												
	7	9	16												
	8	10	17												
	9		18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	12	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736	04 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20190904

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 397
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC - Searched*		
Symbol	**Date**	**Examiner**
A45C5/14	1/16/2019	GW
A45C7/0045,005	01/16/2019	GW
A45C13/02	01/16/2019	GW
A45F3/10	1/16/2019	GW
A47B47/00,04,	1/16/2019	GW
A47B67/04	1/16/2019	GW
A47B87/02,007,0276	1/16/2019	GW
A47B88/90	1/16/2019	GW
A47B2210/19	1/16/2019	GW
B25H1/04	1/16/2019	GW
B25H3/021,022,023,04,06,02,	1/16/2019	GW
B62B1/14	1/16/2019	GW
B62B5/067	1/16/2019	GW
B65D21/0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209,	1/16/2019	GW
B65D2255/00	1/16/2019	GW
B65D25/2823,06	1/16/2019	GW
B65H2701/533	1/16/2019	GW
B60P7/13,06	1/16/2019	GW
E04F2201/013,0146,023,05,	1/16/2019	GW
Y10S292/38,53	1/16/2019	GW
Y10T403/7045	1/16/2019	GW
Update Search/IDS search	06/09/2019	GW
A45C5/14	06/09/2019	GW
A45C7/0045,005	06/09/2019	GW
F16B12/24,44	06/09/2019	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 398
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
206	508,511,504,503,501,	1/16/2019	GW
220	4.27	1/16/2019	GW
280	47.18,47.19,47.26,79.2,47.26,47.28,652,	1/16/2019	GW
312	107,111	1/16/2019	GW
410	84	1/16/2019	GW
248	224.7,225.21	1/16/2019	GW

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Update search. Include searches for applications 15826201, 15826232	09/03/2019	GW

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 399
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	Art Unit
	GIDEON R WEINERTH	3736

206	508,511,504,503,501,	09/03/2019	GW
220	4.27	09/03/2019	GW
280	47.18,47.19,47.26,79.2,47.26,47.28,652,	09/03/2019	GW
312	107,111	09/03/2019	GW
410	84	09/03/2019	GW
248	224.7,225.21	09/03/2019	GW
A45C5	14	09/03/2019	GW
A45C7	0045,005	09/03/2019	GW
A45C13	02	09/03/2019	GW
A45F3	10	09/03/2019	GW
A47B47	00,04,	09/03/2019	GW
A47B67	04	09/03/2019	GW
A47B87	02,007,0276	09/03/2019	GW
A47B88	90	09/03/2019	GW
A47B2210	19	09/03/2019	GW
B25H1	04	09/03/2019	GW
B25H3	021,022,023,04,06,02,	09/03/2019	GW
B62B1	14	09/03/2019	GW
B62B5	067	09/03/2019	GW
B65D21	0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209,	09/03/2019	GW
B65D2255	00	09/03/2019	GW
B65D25	2823,06	09/03/2019	GW
B65H2701	533	09/03/2019	GW
B60P7	13,06	09/03/2019	GW
E04F2201	013,0146,023,05,	09/03/2019	GW
F16B12	24,44	09/03/2019	GW
Y10S292	38,53	09/03/2019	GW
Y10T403	7045	09/03/2019	GW

/GIDEON R WEINERTH/ Examiner, Art Unit 3736	/GIDEON R WEINERTH/ Examiner, Art Unit 3736

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 400
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Amendments to the Claims

The claims are amended as follows. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously Presented) A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the two sidewalls and the back wall project from a depressed surface of the first face, and the rib extends from the back wall in a first direction above the depressed surface; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset from the second face and extends in a second direction opposite the first direction, the tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

2. (Previously Presented) The container assembly of claim 1, wherein the first and second couplers on the first and second containers, respectively, engage when the first and second containers are slid along a sliding path defined by the rib and the tongue.

3. (Original) The container assembly of claim 1, wherein when the tongue and rib are engaged:

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 401
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

a first side wall of the first coupler and a second side wall of the second coupler interface to restrict displacement between the first container and the second container in a third direction perpendicular to the first direction and parallel to the first face of the first container.

4. (Cancelled)

5. (Currently Amended) The container assembly of claim 1,

~~the second container comprising a single second coupler, the single second coupler comprising a single rib; and~~

the first container further comprising:

a third coupler extending from a second face of the first container, the third coupler including a tongue that is offset from the second face of the first container and extending in the second direction, the tongue of the first container configured to engage a rib of a third container, the first and third containers entering an engaged position by the third container sliding with respect to the first container; and

a latch coupled to the first container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the third container when the tongue of the first container and the rib of the third container are engaged.

6. (Original) The first container of claim 1, wherein the first coupler extends from a bottom face of the first container, and the second coupler extends from a top face of the second container.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 402
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

7-13. (Cancelled)

14. (Currently Amended) A first container configured to be removably coupled to a second container, the first container comprising:

a top face;

a bottom face; and

a first coupler extending from a first face of the first container that is one of the top face and the bottom face, the first coupler comprises a tongue that is offset from the first face and extends in a first direction;

a second coupler extending from a second face of the first container that is the other of the top face and the bottom face, the second face comprising a plurality of depressed surfaces, the second coupler comprises a back wall, two sidewalls, and a rib, the back wall and the two sidewalls project from [[a]] one of the plurality of depressed surfaces ~~surface~~ of the second face, the rib offset from the second face and extends above the one of the plurality of depressed surfaces ~~surface~~ in a second direction opposing the first direction, the rib engageable with a second tongue coupled to a second container, the first container enters an engaged position with the second container by the first and second containers sliding with respect to each other, wherein the plurality of depressed surfaces ~~surface~~ of the second face cover ~~covers~~ at least 50% of the second face;

a latch recess; and

a latch, the latch positionable in a locked position in which the latch interlocks with a second latch recess in the second container restricting displacement between the first container and the second container.

15. (Currently Amended) The first container of claim 14, wherein the rib is engaged between the second tongue of the second container and a first face of the second container[[,]] when the first container is removably coupled to the second container.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 403
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

16. (Original) The first container of claim 14, the first coupler of the first container engageable with a second rib of a third container.

17. (Original) The first container of claim 16, the latch recess of the first container engageable with a second latch of the third container.

18-19. (Cancelled)

20. (Original) The first container of claim 14, wherein the first face of the first container is the bottom face of the first container, and the second face of the first container is the top face of the first container.

21. (Currently Amended) The first container of claim 1, wherein the first face comprises a plurality of depressed surfaces, one of which the rib extends above, and wherein the plurality of depressed surfaces ~~surface~~ of the first face comprise ~~comprises~~ at least 50% of the area of the first face.

22. (Cancelled)

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 404
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

23. (New) A container assembly comprising:

a first container comprising:

a first coupler extending from a first face of the first container, the first coupler comprises two sidewalls, a back wall, and a rib, the back wall extends between the two sidewalls, the first face comprises a plurality of depressed surfaces, the back wall and the two sidewalls project from one of the plurality of depressed surfaces, the rib extends from the back wall in a first direction above the one of the plurality of depressed surfaces, the plurality of depressed surfaces of the first face cover at least 50% of the first face; and

a latch recess; and

a second container comprising:

a second coupler extending from a second face of the second container, the second coupler includes a tongue that is offset from the second face and extends in a second direction opposite the first direction, the tongue of the second container is engageable with the rib of the first container; and

a latch coupled to the second container, the latch positionable in a locked position in which the latch prevents disengagement of the first container and the second container when the tongue and rib are engaged.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 405
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

EAST Search History

EAST Search History (Prior Art)

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L4	1	(US-20170138382-$).did.	US-PGPUB	OR	OFF	2019/09/04 13:42
L6	1	(US-20170138382-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/04 13:42
S1	2	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 19:40
S2	7	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 19:41
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S9	38	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:01
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S11	206	S10 and (spring resilient)	US-PGPUB;	OR	OFF	2018/04/05

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 406
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USPAT; USOCR			20:07
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S18	121	206/503.ccls. and (spring)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:19
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S21	891	280/47.18,47.19,47.26,79.2.ccls. and (spring)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:30
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S24	3	(("20020014488") or ("4113214") or ("3845968")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 20:35
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Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 407
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"7544915" | "7950679" | "8322530" | "8360447" | "8465030" | "8596655" | "8690170" | "8777043" | "8936260" | "9205951").PN. OR ("9669930").URPN.				
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S40	60	(french adj cleat)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:16
S41	25	("3361293").URPN.	USPAT	OR	OFF	2018/04/05 21:21
S42	32	("2483269" | "3219400" | "3361293" | "3512696" | "3565624" | "3763980" | "4190172" | "4322118" | "4389078" | "4624383" | "4660725" | "5016946" | "5038937" | "5105962" | "5310071" | "6047827" | "6056377" | "6276550" | "D330128" | "D332745").PN. OR ("7152752").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:22
S43	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:23
S44	16	("3469331" | "4716666").PN. OR ("4995176").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:24
S45	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:25
S46	7	("1849659").URPN.	USPAT	OR	OFF	2018/04/05 21:29
S47	46	("1849659" | "2774511" | "2916293" | "2994457" | "3053397" | "3100582" | "3113680" | "3219232" | "3282458" | "3647112" | "4000817" | "4176747" | "Re26758" | "Re27649").PN. OR ("4550837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:30
S48	1066	B65D21/0217,0219,0222,0228,023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S49	92	B65D21/0217,0219,0222,0228,023.cpc. and spring	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:33
S50	0	("2017/0121056").URPN.	USPAT	OR	OFF	2018/04/05 21:37
S51	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:37
S52	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:39

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 408
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"6889838" | "7387350" | "7516842").PN.				
S53	2	("2012/0024739").URPN.	USPAT	OR	OFF	2018/04/05 21:43
S54	4	("2011/0168599").URPN.	USPAT	OR	OFF	2018/04/05 21:44
S55	22	("5699925" | "6959507" | "20090139892" | "3182856" | "20030155267" | "20080308641" | "3182856" | "5353948" | "3581928" | "4351448" | "20090178989" | "2634020" | "3387732" | "5755180" | "6761266" | "20050224494" | "7246718" | "5606820" | "20090236255" | "5469961").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:45
S56	237	206/501.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:46
S57	2	("2010/0219193").URPN.	USPAT	OR	OFF	2018/04/05 21:50
S58	72	("0879455" | "20040134390" | "20040178208" | "20060254946" | "20060254947" | "20080017650" | "20100219193" | "2695115" | "2849151" | "3103278" | "3117692" | "3383009" | "3391824" | "3407758" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" | "3916803" | "3926321" | "3968879" | "4287997" | "4618059" | "4655360" | "4765252" | "4832200" | "4848605" | "4889235" | "5054617" | "5203494" | "5392945" | "5404829" | "5454477" | "5641090" | "5718350" | "5769230" | "5779051" | "5974981" | "6021916" | "6085467" | "6186345" | "6237758" | "6308858" | "6371364" | "6446563" | "6457599" | "6585090" | "6622642" | "6662950" | "6698362" | "7163122" | "D236326" | "D333094" | "D361715" | "D446017" | "D500924").PN. OR ("8851287").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:50
S59	36	("20020096844" | "4066155" | "4813542" | "5099968" | "5564805" | "5906291" | "D439739").PN. OR ("6585090").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:52
S60	73	("20030029750" | "20030123965" | "20050072642" | "20050077136" | "20060119060" | "20070012694" | "20070068757" | "2497173" | "3061057" | "3452846" | "3532355" | "3572253" | "3650216" | "3861703" | "3891230" | "4081061" | "4118048" | "4122925" | "4350194" | "4621716" | "4657135" | "4693345" | "4738340" | "4792025" | "4813521" | "4951818" | "5038842" | "5048649" | "5109961" | "5142445" | "5178244" | "5186290" | "5197579" | "5339934" | "5373104" | "5379870" | "5407039" | "5447216" | "5484045" | "5484046" | "5632496" | "5713439" | "5890571" | "5927361" | "6073737" | "6116390" | "6164425" | "6213266" | "6401890" | "6520327" | "6585090" | "6634496" | "6758334" | "6976566" | "7077252" | "7232018" | "7380685" | "7398868" | "7726483" | "7780002" | "7942282" | "D294775" | "D453623").PN. OR ("8561769").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:53
S61	44	("20040007574" | "20050036847" | "20050199459" | "20070130731" | "20090178946" | "20120292867" | "3419184" | "3987829" | "4287997" | "4452555" | "5058746" | "5085448" | "5186330" | "5564805" | "5709008" | "5785328" | "6116390" | "6983946"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 21:59

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 409
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		| "7011214" | "7044528" | "7163122" | "7350789" | "7482928" | "7530580" | "7537119" | "7714708" | "7780026" | "7854321" | "7883096" | "7938412" | "8132819" | "8146771" | "8256242" | "8561769" | "8567796" | "D358765" | "D401412" | "D467424" | "D467425" | "D467426" | "RE44656").PN. OR ("9550605").URPN.				
S62	10	("20050199623" | "5765707" | "5829595" | "6024223" | "7337908").PN. OR ("8146771").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:03
S63	42	("0621601" | "2761582" | "3113690" | "3616943" | "3643993" | "3823973" | "3828964" | "3977558" | "4000704" | "4042111" | "4416374" | "4678084" | "4887731" | "5011036" | "5022546" | "5105967").PN. OR ("5186330").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:05
S64	74	("0879455" | "2849151" | "3005282" | "3371816" | "3393858" | "3481502").PN. OR ("3616943").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:08
S65	36	("1234730" | "20020145022" | "20030010799" | "20040207225" | "20090212584" | "2578238" | "2883764" | "3002650" | "3131829" | "3351228" | "3374914" | "3616943" | "4754883" | "4838745" | "4941784" | "5025964" | "5392945" | "5469999" | "5538153" | "5671511" | "5676251" | "5687895" | "5855310" | "6471278" | "7159730" | "7329451" | "7537119" | "D264014" | "D333094").PN. OR ("9738198").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:09
S66	75	("0879455" | "20040178208" | "20060254947" | "2695115" | "2849151" | "2939603" | "3103278" | "3117692" | "3383009" | "3391824" | "3419184" | "3481502" | "3616943" | "3754645" | "3756396" | "3759416" | "3811747" | "3968879" | "4287997" | "4655360" | "4671411" | "4765252" | "4832200" | "4848605" | "5042674" | "5203494" | "5392945" | "5454477" | "5566824" | "5641090" | "5718350" | "5769230" | "5779051" | "6021916" | "6085467" | "6186345" | "6237758" | "6308858" | "6367630" | "6371364" | "6457599" | "6585090" | "6662950" | "7163122" | "D333094" | "D361715" | "D446017" | "D500924").PN. OR ("7537119").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:10
S67	45	("0491865" | "1142932" | "1665238" | "20060016812" | "20070108080" | "20080264820" | "20100084119" | "3144016" | "3259263" | "3369691" | "3384259" | "3828964" | "4109789" | "4655360" | "4760921" | "4901380" | "5086926" | "5203494" | "5461755" | "5564583" | "5671856" | "5699925" | "5769230" | "6024223" | "6085467" | "6186345" | "6237758" | "6273258" | "6457599" | "6715627" | "6840378" | "6851566" | "7510096" | "7537119" | "8056722" | "RE37518").PN. OR ("8813960").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:11
S68	32	("4506798" | "4626155" | "4741449" | "5109985" | "5123541" | "5190179" | "5722328" | "5862917").PN. OR ("6024223").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:12
S69	4	("1665238").URPN.	USPAT	OR	OFF	2018/04/05 22:15
S70	39	("2885135" | "3376046" | "3539071" | "3568879" | "3987829" | "4174950" | "4765252" | "4844263" | "D248015").PN. OR	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:17

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 410
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		("D333094").URPN.				
S71	53	("2761582" | "3117692" | "3360162" | "3379341" | "3392875" | "3419184" | "3675815" | "3759416" | "3979016" | "4093071" | "4106624" | "4189052" | "4379508").PN. OR ("4832200").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:19
S72	79	("3117692").URPN.	USPAT	OR	OFF	2018/04/05 22:22
S73	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:24
S74	13	("20060186186" | "20070209962" | "20080202976" | "2328689" | "2828059" | "3811566" | "4279354" | "4293071" | "6315126").PN. OR ("8684222").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:25
S75	45	("1762635" | "2531671" | "2614399" | "3117692" | "3498494" | "3501044" | "3502241" | "3667647" | "3751852").PN. OR ("4279354").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:26
S76	110	("2457842" | "2483464" | "2664219" | "2702142" | "3073466" | "3130855" | "3140007" | "3586204" | "3828964").PN. OR ("4287997").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:30
S77	63	("2461526" | "3078484" | "3114486" | "3233803" | "3749294" | "3902640" | "3915189" | "4082208" | "4287997" | "4307826" | "4366922" | "4424841" | "4491258" | "4545414" | "4673070" | "4790432" | "4813542" | "4884731" | "5131576" | "5184763" | "5321904" | "5419473").PN. OR ("5628443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:33
S78	151	("1409838" | "20010040080" | "20020074332" | "20020130005" | "20020185350" | "20030034215" | "20030034636" | "20040000457" | "20040004332" | "20040026199" | "20040074725" | "20040163910" | "20040211634" | "20040238303" | "20050077133" | "20050077706" | "20050098402" | "20050103590" | "20050150733" | "20050258621" | "20050285359" | "20060010644" | "20060086583" | "20060102677" | "20060163305" | "20060175170" | "20060196743" | "20060207848" | "20080060953" | "20080136133" | "20080223679" | "20080236972" | "20080308369" | "20080308370" | "20090057082" | "20090139813" | "20090160147" | "20090218187" | "20100000805" | "20100025174" | "20100095480" | "20100108452" | "20100147642" | "20100263977" | "20100307879" | "20100308563" | "20110247910" | "20120160617" | "20120261223" | "20150091264" | "20160045000" | "2454438" | "2602675" | "3131829" | "3178197" | "3317081" | "3659867" | "3842953" | "3891230" | "3974898" | "4087102" | "4314624" | "4335895" | "4575109" | "4588055" | "4673070" | "4917392" | "4953257" | "4969660" | "5072958" | "5105962" | "5127662" | "5263727" | "5310071" | "5348325" | "5533231" | "5628443" | "5630601" | "5749503" | "5803471" | "5815843" | "5873145" | "5984154" | "5984327" | "6016893" | "6042127" | "6047442" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:34

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 411
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"6141841" | "6179176" | "6182981" | "6186295" | "6196366" | "6196560" | "6213266" | "6213267" | "6237734" | "6260871" | "6279705" | "6289554" | "6305587" | "6360400" | "6367602" | "6401888" | "6401890" | "6409412" | "6454065" | "6471019" | "6474524").PN. OR ("6484362" | "6530507" | "6533086" | "6575493" | "6591950" | "6604617" | "6609271" | "6736073" | "6769701" | "6832670" | "6880685" | "6923352" | "6961976" | "6964420" | "7066311" | "7070190" | "7073694" | "7093700" | "7097181" | "7097183" | "7143912" | "7226073" | "7232018" | "7237660" | "7281616" | "7284304" | "7318507" | "7328779" | "7350648" | "7374183" | "7426985" | "7441785" | "7478803" | "7594569" | "7597341" | "7780026" | "8607947").PN. OR ("9888752").URPN.				
S79	6	("2008/0308369").URPN.	USPAT	OR	OFF	2018/04/05 22:35
S80	45	("0672173" | "1084360" | "20020144376" | "20040084269" | "20040173427" | "20040238241" | "20050077136" | "20050092568" | "20080308369" | "20090095588" | "20090101461" | "20100059322" | "20100170761" | "20100236886" | "20100270116" | "20110168507" | "20130037364" | "20130175129" | "20130213753" | "20130220754" | "2581417" | "4836343" | "5099968" | "5355980" | "5560458" | "5671832" | "5829559" | "5927450" | "5988334" | "6347693" | "6533086" | "6536568" | "7322477" | "7322585" | "7503569" | "7909149" | "8087513" | "D516869" | "D671316").PN. OR ("9027722").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:36
S81	35	("0922567" | "1084360" | "1567461" | "2372845" | "2428906" | "2801666" | "2858957" | "3837447" | "4098312" | "4122925" | "4142563" | "4257463" | "4286639" | "4673070" | "4744446").PN. OR ("4836343").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:39
S82	51	("0778785" | "1567461" | "2372845" | "2428906" | "2989998" | "3631572" | "3696850" | "4122925" | "4128194" | "4256245" | "4424841").PN. OR ("4673070").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:40
S83	33	("0842498" | "1689399" | "3114486" | "3698045" | "4231135" | "4673070" | "4799298" | "4934573" | "5205448" | "5259093" | "5465425" | "5604958" | "5632071" | "5724707" | "5815843" | "6108816" | "7080430" | "7251867").PN. OR ("7526842").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:41
S84	23	("2428906" | "2707035" | "3225951" | "3319744" | "3696850" | "3958731").PN. OR ("4122925").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:43
S85	33	("1973819" | "2007696" | "3373911").PN. OR ("4142563").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:46
S86	12	("2858957").URPN.	USPAT	OR	OFF	2018/04/05 22:48
S87	12	("20060071581" | "20080060964" | "2858957" | "3346137" | "3568879" | "4258847" | "4592601" | "4685565" | "4863222" | "7311202").PN. OR ("9724820").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:49
S88	43	("2128854" | "3743372").PN. OR ("4863222").URPN.	US-PGPUB; USPAT;	OR	OFF	2018/04/05 22:49

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 412
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USOCR			
S89	73	("2842420" | "2998128" | "3032381" | "3294463" | "3501044" | "3552817").PN. OR ("3743372").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:51
S90	36	("2011962" | "3514170" | "3552817" | "3743372" | "3851936" | "3999818" | "4198777" | "4238032" | "4353470" | "4589546" | "4744612" | "4782619" | "4874210" | "4907703" | "5046789" | "5137340" | "5176435" | "5191983" | "5344024" | "5399004" | "5454634").PN. OR ("6050657").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:53
S91	17	("3131829" | "3429632" | "3552579" | "3707023" | "4062302" | "4239306" | "5246284").PN. OR ("5454634").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:55
S92	55	("0511617" | "1890000" | "2492697" | "2557630" | "2807387" | "3203744" | "3283915" | "3514170" | "3743372" | "3758181" | "3918781" | "3999818" | "4026615" | "4056295" | "4120549").PN. OR ("4243279").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 22:59
S93	45	("2593998" | "2653072" | "2730423" | "3131829" | "3219400" | "3514170" | "3552817" | "3563624" | "3743372" | "3814489").PN. OR ("3999818").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:03
S94	14	("2593998").URPN.	USPAT	OR	OFF	2018/04/05 23:06
S95	52	("4081061" | "4621716" | "5316159" | "6213266" | "6213267" | "7976024" | "1084360" | "3749273" | "4570799" | "4995436" | "5779051" | "D447944" | "3103278" | "3374917" | "5000713" | "6585090" | "5098328" | "D359315" | "20030132184" | "20050199459" | "4813542" | "0480709" | "5062539" | "5186290" | "6276550" | "D346627" | "5310071" | "20040222059" | "3583590" | "3836043" | "4287997" | "4656840" | "5167336" | "5392945" | "6257381" | "20040000458" | "4573595" | "7644828" | "D483200" | "7648407" | "3811747" | "20010027902" | "5099968" | "5485920" | "5709304" | "5735422" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:14
S96	22	("3131829" | "3194426" | "3338452" | "4258847" | "4328902" | "4428479" | "5016946" | "5050755" | "5310071" | "5316159" | "5503288" | "5845790").PN. OR ("6276550").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:16
S97	41	("2454438" | "2495132" | "3131829" | "3194426" | "3297196" | "3317081" | "3343705" | "3404805" | "3851936" | "4192422").PN. OR ("4328902").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:18
S98	43	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:29
S99	11	("0907507" | "1626482" | "2343525" | "3974898" | "4065014").PN. OR ("4423687").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/05 23:30
S100	32	("3481502").URPN.	USPAT	OR	OFF	2018/04/05 23:38
S101	8	(("1112943") or ("2255513") or ("2849151") or ("3371816")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:41
S102	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/05 23:41
S103	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/05 23:42
S104	21	("1112943").URPN.	USPAT	OR	OFF	2018/04/05 23:43

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 413
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S105	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 12:32
S106	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 12:33
S107	22	("879455").URPN.	USPAT	OR	OFF	2018/04/06 12:34
S108	16	("2849151").URPN.	USPAT	OR	OFF	2018/04/06 13:10
S109	8	(("0993866") or ("1342909") or ("1514512") or ("1640368")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 13:11
S110	37	("3899229" | "4431237" | "4519655" | "4828341" | "4889254" | "5191983").PN. OR ("5469961").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:11
S111	25	("20030155267" | "20050224494" | "20080308641" | "20090139892" | "20090178989" | "20090236255" | "2634020" | "3182856" | "3387732" | "3581928" | "4351448" | "5353948" | "5469961" | "5606820" | "5699925" | "5755180" | "6761266" | "6959507" | "7246718").PN. OR ("8677661").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:12
S112	24	("1226708" | "2833137" | "2834121" | "2843943" | "3139744" | "3220229" | "3545235" | "3824813" | "4507942" | "4551996" | "4663948" | "4680948" | "4821535" | "4972687" | "4989426" | "5469961" | "5653416").PN. OR ("5951130").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 13:13
S113	118	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:03

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 414
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$).did. or (US-3117692-$ or US-2593998-$).did.				
S115	286	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S116	226	B65D21/0224.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:05
S117	2198	B25H3/021,022,023,04,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:07
S118	436	A47B47/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S119	1076	A47B87/02,007,0276.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:10
S120	550	A47B67/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:11
S121	770	Y10T403/7045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:12
S122	9	("7451578" | "6209278" | "4599841" | "6363677" | "6955020" | "7040068" | "6588166" | "6804926" | "6658808").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:14
S123	102	("0890436" | "2740167" | "3310919" | "3988187" | "5295341" | "5630304" | "6023907" | "1854396" | "2381469" | "20030029116" | "3040388" | "3192574" | "3347048" | "3526420" | "4599841" | "6098365" | "5899038" | "20020112433" | "20030029115" | "2381469" | "3673751" | "4599841" | "4819932" | "5086599" | "5363616" | "6029416" | "6216409" | "6324809" | "6546691" | "6606834" | "6647690" | "20030029115" | "3902291" | "5295341" | "5630304" | "6421970" | "6763643" | "0753791" | "20030029116" | "2430200" | "3579941" | "5283102" | "6209278" | "6647690" | "6854235" | "20030024201" | "3579941" | "3673751" | "4426820" | "4741136" | "5860267" | "6023907" | "6122879" | "6769835" | "0338653" | "1776188" | "1854396" | "20030024201" | "3172508" | "3175476" | "3902291" | "4094090" | "5706621" | "6122879" | "6397548" | "2740167" | "20020112433" | "3175476" | "4416097" | "5797237" | "6029416" | "6182410" | "6397548" | "0890436" | "0623562" | "3040388" | "3192574" | "3347048" | "4426820" | "5860267" | "6098365" | "6490836" | "20050210810" | "3310919" | "4819932" | "5086599" | "5283102" | "6006486" | "6101778" | "6209278" | "6324809" | "3720027" | "20020170258" | "4416097" | "4807416" | "5165816" | "5618602" | "6094882" | "6101778" | "6182410" | "6513862" | "20020170258" | "20030024200" | "3657852" | "3988187" | "5165816" | "6094882" | "6591568" | "5274979"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:15

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 415
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		| "6772568" | "3200553" | "3657852" | "4741136" | "4819532" | "5797237" | "6006486" | "6505452" | "6591568" | "6854235" | "4094090" | "5363616" | "5618602" | "6513862" | "6606834" | "5548937" | "6880307" | "7065935" | "20030024200" | "2138085" | "2142305" | "3526420" | "5348778" | "20050210810" | "1776188" | "2138085" | "2142305" | "2430200" | "3172508" | "0338653" | "5706621" | "6490836" | "6504552" | "6546691" | "5274979" | "1723306").PN.				
S124	373	("2740167").URPN.	USPAT	OR	OFF	2018/04/06 18:16
S125	477	("0087853" | "0108068" | "0124228" | "0213740" | "0274354" | "0316176" | "0634581" | "0861911" | "1194636" | "1723306" | "1743492" | "1809393" | "1902716" | "20010024707" | "20020031646" | "20020069611" | "20020092263" | "20020170258" | "20020170259" | "20020178674" | "20020178680" | "20020189190" | "20020194807" | "20030009971" | "20030024199" | "20030037504" | "20030084636" | "20030094230" | "20030101681" | "20030145549" | "20030180091" | "20030188504" | "20030196405" | "20040016196" | "20040031227" | "20040049999" | "20040060255" | "20040068954" | "20040123548" | "20040128934" | "20040139676" | "20040139678" | "20040159066" | "20040168392" | "20040177584" | "20040182033" | "20040182036" | "20040200175" | "20040211143" | "20040244325" | "20040250492" | "20040261348" | "20050003132" | "20050028474" | "20050050827" | "20050160694" | "20050166514" | "20050205161" | "20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060053724" | "20060070333" | "20060101769" | "20060156670" | "20060174577" | "20060179754" | "20060236642" | "20060260254" | "20060272262" | "20070006543" | "20070011981" | "20070028547" | "20070065293" | "20070175156" | "20070193178" | "20080000182" | "20080000186" | "20080000187" | "20080005998" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080041008" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080155930" | "20080216434" | "20080216920" | "20080295432" | "20090133353").PN. OR ("20090193748" | "20100293879" | "20100300031" | "20100319290" | "20100319291" | "20110030303" | "20110041996" | "20110088344" | "20110088345" | "20110088346" | "20110154763" | "20110167750" | "20110225922" | "20110252733" | "20110283650" | "20120017533" | "20120031029" | "20120036804" | "20120151865" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:17

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 416
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"20120174515" | "20120174520" |								
		"20120279161" | "20130008117" |								
		"20130014463" | "20130019555" |								
		"20130042562" | "20130042563" |								
		"20130042564" | "20130042565" |								
		"20130047536" | "20130081349" |								
		"20130111845" | "20130145708" |								
		"20130160391" | "20130232905" |								
		"20130239508" | "20130263454" |								
		"20130263547" | "20130318906" |								
		"20140007539" | "20140020324" |								
		"20140033634" | "20140053497" |								
		"20140059966" | "20140069043" |								
		"20140090335" | "20140109501" |								
		"20140109506" | "20140123586" |								
		"20140150369" | "20140190112" |								
		"20140208677" | "20140223852" |								
		"20140237931" | "20140250813" |								
		"20140260060" | "20140305065" |								
		"20140366476" | "20140373478" |								
		"20140373480" | "20150000221" |								
		"20150013260" | "20150059281" |								
		"20150089896" | "20150121796" |								
		"20150152644" | "20150167318" |								
		"20150211239" | "20150233125" |								
		"20150267419" | "20150300029" |								
		"20150330088" | "20150337537" |								
		"20160032596" | "20160060879" |								
		"20160069088" | "20160076260" |								
		"20160090744" | "20160153200" |								
		"20160168866" | "20160186426" |								
		"20160194884" | "20160201336" |								
		"20160251859" | "20160251860" |								
		"20160281368" | "20160281370" |								
		"20160340913" | "20170037641" | "2026511" |								
		"2204675" | "2266464" | "2277758" | "2430200"									
		| "2596280").PN. OR ("2732706" | "2740167" |									
		"2858584" | "2863185" | "2865058" | "2889016"									
		| "3023681" | "3077703" | "3099110" |									
		"3147522" | "3271787" | "3325585" | "3331180"									
		| "3378958" | "3396640" | "3512324" |									
		"3517927" | "3526071" | "3535844" | "3572224"									
		| "3579941" | "3720027" | "3722379" |									
		"3731445" | "3742669" | "3760547" | "3760548"									
		| "3778954" | "3849235" | "3919820" |									
		"3950915" | "3994609" | "4007994" | "4030852"									
		| "4037377" | "4041665" | "4064571" |									
		"4080086" | "4082129" | "4100710" | "4104840"									
		| "4107892" | "4113399" | "4169688" |									
		"4196554" | "4227430" | "4299070" | "4304083"									
		| "4426820" | "4447172" | "4512131" |									
		"4599841" | "4648165" | "4819932" | "5007222"									
		| "5026112" | "5071282" | "5135597" |									
		"5148850" | "5173012" | "5182892" | "5247773"									
		| "5272850" | "5274979" | "5295341" |									
		"5344700" | "5348778" | "5373674" | "5465546"									
		| "5485702" | "5502939" | "5548937" |									
		"5577357" | "5598682" | "5618602" | "5634309"									
		| "5658086" | "5694730" | "5755068" |									
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		| "5970675" | "6006486" | "6029416" |									
		"6052960" | "6065262" | "6173548" | "6182410"									
		| "6203653" | "6254301" | "6295779" |									
		"6314701" | "6332733" | "6339908" | "6345481"									
		| "6358352" | "6363677" | "6385936" |									
		"6418683" | "6446413" | "6449918" | "6450235"									
		| "6490836" | "6505452" | "6546691" |									
		"6553724" | "6576079" | "6584747" | "6591568"									
		| "6601359" | "6617009" | "6647689" |									

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 417
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"6647690" | "6651400" | "6670019" | "6681820" | "6684592" | "6685391" | "6729091" | "6763643" | "6766622" | "6769219" | "6769835").PN. OR ("6802166" | "6804926" | "6808777" | "6854235" | "6862857" | "6865855" | "6874291" | "6880307" | "6948716" | "7021019" | "7040068" | "7051486" | "7108031" | "7121058" | "7152383" | "7188456" | "7219392" | "7251916" | "7337588" | "7377081" | "7451578" | "7454875" | "7516588" | "7517427" | "7533500" | "7556849" | "7568322" | "7584583" | "7614197" | "7617651" | "7634884" | "7637068" | "7644553" | "7677005" | "7716889" | "7721503" | "7757452" | "7802411" | "7806624" | "7841144" | "7841145" | "7841150" | "7856789" | "7861482" | "7866110" | "7908815" | "7908816" | "7930862" | "7954295" | "7980041" | "8006458" | "8033074" | "8042311" | "8061104" | "8079196" | "8112967" | "8171692" | "8181416" | "8234830" | "8245478" | "8341914" | "8341915" | "8353140" | "8359805" | "8381477" | "8387327" | "8448402" | "8499521" | "8505257" | "8511031" | "8528289" | "8544230" | "8544234" | "8572922" | "8578675" | "8596013" | "8627862" | "8640424" | "8650826" | "8677714" | "8689512" | "8701368" | "8707650" | "8713886" | "8733065" | "8733410" | "8763341" | "8769905" | "8776473" | "8844236" | "8857126" | "8869485" | "8898988" | "8925274" | "8959866" | "8973331" | "9027306" | "9051738" | "9068360" | "9091077" | "9194134" | "9212492" | "9216541" | "9238917" | "9284737" | "9309679" | "9316002" | "9340974" | "9347469" | "9359774" | "9366036" | "9376821" | "9382716" | "9388584" | "9428919" | "9453347" | "9458634" | "9482012" | "9540826" | "9663940" | "RE30154").PN. OR ("9803375").URPN.				
S126	100	("2732706").URPN.	USPAT	OR	OFF	2018/04/06 18:21
S127	16	(("1351133") or ("1459189") or ("1465421") or ("1652421") or ("1652305") or ("1667160") or ("2201110") or ("2460330")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 18:22
S128	6	(("0935402") or ("1925070") or ("2453918")).PN.	USPAT; USOCR	OR	OFF	2018/04/06 18:23
S129	3	("3351366").URPN.	USPAT	OR	OFF	2018/04/06 18:39
S130	51	("1575270" | "20020170933" | "20030141329" | "20050247653" | "20060237509" | "20080142462" | "20080179370" | "20080185353" | "20090145789" | "20090145866" | "20140075650" | "20170266804" | "2290468" | "2546720" | "2763377" | "2964196" | "3145031" | "3536286" | "4264013" | "4923202" | "4932576" | "5395023" | "5511705" | "5722576" | "5881891" | "5971242" | "6213365" | "6666465" | "6698632" | "6874624" | "7090075" | "7322482" | "7686196" | "7699197" | "7726495" | "7762440" | "8267260" | "8510868" | "9038869" | "D163637" | "D165553" | "D328681").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:42
S131	18	("2715966" | "20050247653" | "4771897" | "5429252" | "5740927" | "5845792" | "5915573" | "6152312" | "6267338" | "6435357" | "6564949" | "6581788" | "6698603" | "6871749" | "7014052" | "7028854" | "7117998").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:43

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 418
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S132	7	("20100314271" | "8991599" | "5799787" | "7686180" | "8695795" | "8991599" | "20100314271" | "5797508" | "3862689").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:46
S133	2	("20080236562" | "7723655").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:47
S134	6	(matthew near3 vargo).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S135	75	(Hoppe near2 Christopher).inv.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:49
S136	14	B65D25/2823.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S137	351	B65D25/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 18:54
S138	73	(Milwaukee adj Electric).as. and (stack box)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:01
S139	8	(Milwaukee adj Electric).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S140	8	(Milwaukee and tool).as. and ("220" "206" "215").clas.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:02
S141	84	(Milwaukee and tool).as. and latch	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:03
S142	37	(Milwaukee and tool).as. and (stack stacked stacking)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04
S143	629	("1275862" | "20010022257" | "20020008125" | "20020014507" | "20020017752" | "20020043534" | "20020074332" | "20020084159" | "20020125160" | "20020162716" | "20020163284" | "20030034636" | "20030042091" | "20030042093" | "20030075468" | "20030132080" | "20030151218" | "20040004332" | "20040026199" | "20040026294" | "20040036240" | "20040108179" | "20040112777" | "20040144606" | "20040154889" | "20040163910" | "20040188201" | "20040188205" | "20040195791" | "20040206431" | "20040245735" | "20050023096" | "20050056511" | "20050109650" | "20050121275" | "20050121868" | "20050194756" | "20050224305" | "20050279123" | "20060017293" | "20060124505" | "20060144732" | "20060151967" | "20060196744" | "20060201834" | "20060213735" | "20070045370" | "20070045974" | "20070051765" | "20070074941" | "20070137960" | "20070164064" | "20070170671" | "20070194543" | "20070200309" | "20070215425" | "20070241113" | "20070267371" | "20070290466" | "20080017463" | "20080017537" | "20080035508" | "20080035510"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:04

		"20080067206"	"20080135364"						
		"20080135366"	"20080136130"						
		"20080152944"	"20080164842"						
		"20080169739"	"20080217130"						
		"20080230416"	"20090014974"						
		"20090080809"	"20090139813"						
		"20090166141"	"20090211932"						
		"20090212536"	"20090236810"						
		"20090250365"	"20090301833"						
		"20100000805"	"20100012538"						
		"20100012655"	"20100033325"						
		"20100101908"	"20100108451"						
		"20100108452"	"20100175960"						
		"20100224527"	"20100258465"						
		"20100320245"	"20110067967"						
		"20110084075").PN. OR ("20110094910"							
		"20110121695"	"20110132046"						
		"20110155526"	"20110174648"						
		"20110214957"	"20110268374"						
		"20120018330"	"20120138403"						
		"20120152944"	"20120160626"						
		"20120206907"	"20120210596"						
		"20120255824"	"20120257379"						
		"20120267374"	"20120292213"						
		"20120312708"	"20120317933"						
		"20120318792"	"20120326406"						
		"20120326669"	"20130007979"						
		"20130008753"	"20130099648"						
		"20130161143"	"20130186795"						
		"20130233660"	"20130240314"						
		"20130284553"	"20130292221"						
		"20130327608"	"20140021232"						
		"20140027227"	"20140102928"						
		"20140166414"	"20140166516"						
		"20140197059"	"20140311844"						
		"20140326562"	"20140353104"						
		"20150047941"	"20150060221"						
		"20150102573"	"20150107949"						
		"20150129384"	"20150130148"						
		"20150136554"	"20150150348"						
		"20150173475"	"20150208774"	"2042387"					
		"2125856"	"2145143"	"2463713"	"2799306"				
		"2826426"	"2883184"	"3177023"					
		"3259411"	"3394955"	"3446304"	"3606372"				
		"3817419"	"3842953"	"3851756"					
		"3924844"	"3948365"	"3989128"	"3997038"				
		"4036336"	"4062429"	"4087102"					
		"4105112"	"4222580"	"4228877"	"4254850"				
		"4261447"	"4278187"	"4288134"					
		"4353182"	"4561526"	"4566616"	"4575109"				
		"4588055"	"4630837"	"4846493"					
		"4852705"	"4890414"	"4923105"	"5035523"				
		"5042193"	"5048649"	"5108119"					
		"5116289"	"5147019"	"5165148"	"5167306"				
		"5167354"	"5184477"	"5207440"					
		"5209327"	"5228609"	"5228706"	"5249438"				
		"5295742"	"5310079"	"5316096").PN. OR					
		("5323886"	"5323887"	"5330141"	"5358082"				
		"5368143"	"5377795"	"5379887"					
		"5386907"	"5394965"	"5396974"	"5429287"				
		"5431262"	"5435423"	"5447216"					
		"5447261"	"5452778"	"5469944"	"5470000"				
		"5474162"	"5482147"	"5498010"					
		"5499702"	"5501308"	"5501379"	"5511682"				
		"5513066"	"5518139"	"5524737"					
		"5524920"	"5528453"	"5529230"	"5529322"				
		"5542510"	"5553692"	"5560458"					
		"5560459"	"5562208"	"5564538"	"5564805"				
		"5568848"	"5570824"	"5575391"					

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 420
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

| | | |

		| "8282113" | "8327576" | "8328247" | "8328530" | "8342543" | "8365886" | "8376177" | "8434617" | "8439174" | "8469195" | "8505729" | "8517155" | "8517400" | "8534434" | "8567796" | "8657307" | "8662268" | "8695770" | "8708351" | "8752683" | "8844689" | "8851282" | "8869960" | "8888111" | "8919896" | "8936140" | "8936258" | "8960959" | "8979073" | "8979100" | "9060577" | "9066565" | "9067614" | "9095193" | "9260129" | "9295313" | "D258705" | "D259154" | "D272203" | "D309981" | "D316485" | "D326815" | "D333215" | "D333487" | "D347731" | "D355849" | "D368159" | "D370619" | "D374772" | "D375834" | "D377118" | "D378247" | "D385110" | "D386903" | "D390358" | "D402106" | "D405956" | "D414038" | "D418977" | "D437684" | "D447340" | "D447630" | "D448162" | "D449442" | "D449738" | "D451275" | "D452071" | "D453624" | "D455263" | "D459073" | "D462168" | "D465923" | "D467070" | "D470659" | "D471360" | "D472385" | "D472774" | "D480867" | "D505548" | "D509656" | "D516310" | "D516808" | "D516812" | "D520746" | "D563669" | "D572479" | "D572480" | "D588811" | "D589703" | "D599112" | "D600015").PN. OR ("D600912" | "D601797" | "D605403" | "D608094" | "D609911" | "D609913" | "D616200" | "D618911" | "D621153" | "D621610" | "D624317" | "D625515" | "D625915" | "D627968" | "D629607" | "D630435" | "D630851" | "D635769" | "D636996" | "D637812" | "D639554" | "D641552" | "D647301" | "D648532" | "D648533" | "D649350" | "D649783" | "D661858" | "D661903" | "D664354" | "D668867" | "D668868" | "D668869" | "D670500" | "D672555" | "D673774" | "D701696" | "D744750" | "D750890").PN. OR ("9616562").URPN.				
S144	325	B65D21/0212.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:09
S145	27	("4212415" | "4664283" | "4823955" | "4896926" | "5246105").PN. OR ("5544751").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:11
S146	44	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 19:12
S147	0	("1140005").URPN.	USPAT	OR	OFF	2018/04/06 19:30
S148	119	("1267650" | "1999162" | "3163268" | "3379482" | "3419184" | "3425471" | "3498689" | "3642168" | "3700137" | "3979016" | "3987829" | "4161261" | "4293073" | "4303158" | "4523692" | "4664347" | "4799503" | "4804092"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 20:05

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 422
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		| "4819795" | "4915913" | "4982863" | "4984687" | "5011013" | "5024471" | "5040834" | "5042674" | "5065885" | "5065887" | "5080250" | "5103994" | "5117979" | "5123564" | "5176281" | "5186330" | "5190152" | "5193706" | "5244265" | "5319937" | "D237135" | D237611" | "D238148" | "D239695" | "D246872" | "D248280" | "D257934" | "D258721" | "D277797" | "D286937" | "D292711" | "D302774" | "D312573" | "D316516" | "D319016" | "D321090" | "D321091" | "D322164" | "D325323" | "D325324" | "D326775" | "D326815" | "D327646" | "D328425" | "D328818" | "D328819" | "D329331" | "D329747" | "D330161" | "D330162" | "D330329" | "D331317" | "D335960" | "D336366" | "D339471" | "D342364").PN. OR ("5564805").URPN.				
S149	62	("0198092" | "0564782" | "1063046" | "1268124" | "1740470" | "1987822" | "2011197" | "2094805" | "2122969" | "2504722" | "2759507" | "2786500" | "2791251" | "2799306" | "3018355" | "3615087" | "3746210" | "3851756" | "4061323" | "4239195" | "4256294" | "4278243" | "4303158" | "4378828" | "4460085" | "4909491" | "4911296" | "5011013" | "5117979" | "5193706" | "D253212" | "D263533" | "D288867").PN. OR ("5595228").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:03
S150	15	("2587829" | "2610761" | "2740517" | "4252239" | "4733703" | "5329929" | "5595228").PN. OR ("6206063").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/06 22:04
S151	6	("4466659" | "4967944" | "5207470" | "6193118" | "6554169" | "7000810").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38
S152	96	("1032326" | "1503894" | "1926162" | "2612200" | "2629644" | "2724595" | "2735597" | "2754079" | "2979190" | "3229946" | "3640423" | "3642168" | "3664704" | "3727971" | "3759416" | "3791547" | "3854621" | "3940009" | "3987829" | "4190281" | "4213539" | "4215896" | "4288011" | "4403786" | "4458570" | "4488669" | "4499998" | "4522326" | "4531774" | "4580827" | "4593816" | "4623071" | "4674665" | "D259413" | "D285673").PN. OR ("4967944").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:38
S153	25	("2967080" | "2987358" | "4844305" | "4967944" | "5419476" | "5667115").PN. OR ("5988473").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:40
S154	10	("2987358").URPN.	USPAT	OR	OFF	2018/04/07 00:41
S155	4	("2009/0315285").URPN.	USPAT	OR	OFF	2018/04/07 00:46
S156	223	("5072918" | "5390943" | "5871219" | "6739605" | "0875476" | "6086073" | "4743040" | "6109628" | "1427388" | "20040129658" | "20050023786" | "20050057011" | "20060232033" | "20060237091" | "3472392" | "3999775" | "4699270" | "4786122" | "5072955" | "5743607" | "5876047" | "6123346" | "6545863" | "7232136" | "D396023" | "6497423" | "D153654" | "2155769" | "3313498" | "3870177" | "4391422" | "4763799" | "4923202" | "4998023" | "5509671" | "5915646" | "6073919" | "6095156" | "6170839" | "6264216" | "D188099" | "D460235" | "D461941" |	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:50

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 423
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"D469235" | "5921566" | "D415867" | "20030047895" | "20030218308" | "5183372" | "5275349" | "5465988" | "5913528" | "6276471" | "6752281" | "7114733" | "7134673" | "7144020" | "4743040" | "3379431" | "4457527" | "5316232" | "5566961" | "6572123" | "D153654" | "D415867" | "6497423" | "D485037" | "20060066064" | "3698735" | "3908749" | "4895068" | "6138558" | "6251113" | "6267080" | "6471010" | "6497424" | "7207449" | "4901937" | "5308012" | "6270094" | "D463646" | "D474570" | "D485410" | "5921566" | "D273242" | "D474570" | "1149639" | "2413164" | "2575661" | "2819908" | "20050001395" | "20060006621" | "20060157944" | "4099735" | "4688860" | "5048857" | "5224531" | "5452908" | "7017603" | "7156475" | "7204374" | "7296808" | "5887878" | "1126544" | "2705114" | "20050280228" | "20050284697" | "5285981" | "6116533" | "D302064" | "D361187" | "D381168" | "D424321" | "D487604" | "D504000" | "D469235" | "1200008" | "1471446" | "1562089" | "2623642" | "2845780" | "20010045718" | "20020084607" | "20020096844" | "20060076306" | "3965969" | "4138504" | "4165088" | "4373761" | "4880248" | "6539831" | "7044569" | "5154544" | "20040065989" | "20040227315" | "3212645" | "4179080" | "4759560" | "5188308" | "5362078" | "5495951" | "5687928" | "5839739" | "5971512" | "6497423" | "6669214" | "D336183" | "D471687" | "6086073" | "D302064" | "D336183" | "20020060438" | "20040056439" | "20060208440" | "4518208" | "4832355" | "5221132" | "5375860" | "5873585" | "6022088" | "6101831" | "6206385" | "D140635" | "4380293" | "6109437" | "3610431" | "4743040" | "5269545" | "5848798" | "6241181" | "6315376" | "D391032" | "D395108" | "D403826" | "D468881" | "D471688" | "D485037" | "20030122331" | "4923202" | "1487856" | "20030107195" | "3606445" | "3873114" | "5011240" | "5634649" | "5716116" | "5941229" | "6578938" | "6783563" | "6910710" | "D469235" | "4815394" | "1660521" | "3759538" | "4564152" | "4585130" | "5016948" | "5123666" | "5595395" | "6102497" | "6109628" | "6322061" | "6615973" | "D361188" | "D153654" | "1649065" | "20020064478" | "20030121874" | "20050127627" | "3722700" | "4019793" | "5282678" | "6857644" | "D147135").PN.				
S157	18	("1193809" | "1268124" | "1521310" | "3696850" | "4724976" | "4756394" | "4787488" | "5209279" | "5219423" | "5314046" | "5971119" | "0622263" | "0695149").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 00:56
S158	31	("0783059" | "2878928" | "3245528" | "3319685" | "3386607" | "3605374" | "3835992" | "3992810" | "4320846" | "4627595" | "4799590" | "4890741" | "5135823" | "5370255").PN. OR ("5676274").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:50
S159	26	("1101357" | "1149266" | "1862868" | "2702116" | "3145871" | "4154362" | "4503955" | "4705316" | "4896926" | "4998616").PN. OR ("5415255").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 16:53
S160	37	("3182856" | "3565146" | "4951812" | "4998616" | "5036980" | "5040681" | "5060851" |	US-PGPUB; USPAT;	OR	OFF	2018/04/07 16:55

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 424
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"5117979").PN. OR ("5325966").URPN.	USOCR			
S161	6	("3412888" | "4204609" | "5409126" | "5499715" | "5769229").PN. OR ("6467681").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/07 17:17
S162	173	(US-20130127129-$ or US-20110155613-$ or US-20110139665-$ or US-20040195793-$ or US-20020000440-$ or US-20120292213-$ or US-20070012694-$ or US-20150336710-$ or US-20020134700-$ or US-20100270764-$ or US-20100000893-$ or US-20050062244-$ or US-20040183266-$ or US-20020014488-$ or US-20020113386-$ or US-20030196860-$ or US-20170259956-$ or US-20160144500-$ or US-20160130034-$ or US-20150274362-$ or US-20110168599-$ or US-20090178989-$ or US-20100219193-$ or US-20060254946-$ or US-20070068757-$ or US-20090178946-$).did. or (US-20050199459-$ or US-20080308369-$ or US-20050077136-$ or US-20080104921-$ or US-20160153200-$ or US-20080134613-$ or US-20080134607-$ or US-20070193178-$ or US-20170266804-$ or US-20140075650-$ or US-20090145866-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160023349-$ or US-20140166516-$ or US-20120326406-$ or US-20110121695-$ or US-20070194543-$ or US-20070170671-$ or US-20110049824-$ or US-20130056378-$ or US-20120312812-$ or US-20120187013-$ or US-20120080432-$ or US-20120061930-$ or US-20050280228-$).did. or (US-20060027475-$ or US-20050155889-$ or US-20160168880-$).did. or (US-7503569-$ or US-9022234-$ or US-8875888-$ or US-8657307-$ or US-8590704-$ or US-3182856-$ or US-8459495-$ or US-7097036-$ or US-6193062-$ or US-9393684-$ or US-6637592-$ or US-D730088-$ or US-5833065-$ or US-5482162-$ or US-5244265-$ or US-4244509-$ or US-9643629-$ or US-7780026-$ or US-9132543-$ or US-8567796-$ or US-8226092-$ or US-8201837-$ or US-8132819-$ or US-7997594-$ or US-3010775-$ or US-9669930-$).did. or (US-4813542-$ or US-6585090-$ or US-6085925-$ or US-D776106-$ or US-6839238-$ or US-9609964-$ or US-7152752-$ or US-9506489-$ or US-3944282-$ or US-5241765-$ or US-4389078-$ or US-1849659-$ or US-4405057-$ or US-9802741-$ or US-8851287-$ or US-8763836-$ or US-8561769-$ or US-D808164-$ or US-9550605-$ or US-4887731-$ or US-9738198-$ or US-7537119-$ or US-8813960-$ or US-9669968-$ or US-6024223-$ or US-1665238-$ or US-D333094-$).did. or (US-3376046-$ or US-4832200-$ or US-D364558-$ or US-3419184-$ or US-3117692-$ or US-8684222-$ or US-2328689-$ or US-4287997-$ or US-5628443-$ or US-9888752-$ or US-9027722-$ or US-4673070-$ or US-7526842-$ or US-5465839-$ or US-9724820-$ or US-4863222-$ or US-3743372-$ or US-6050657-$ or US-5454634-$ or US-3851936-$ or US-5602721-$ or US-3999818-$ or US-5271515-$ or US-4243279-$ or US-6276550-$ or US-4328902-$ or US-7350648-$).did. or (US-5407074-$ or US-3481502-$ or US-2849151-$ or US-3616943-$ or US-5469961-$ or US-8677661-$ or US-5951130-$ or US-7451578-$ or US-6122879-$ or US-3526420-$ or US-2740167-$ or US-9803375-$ or US-9663940-$ or US-7841144-$ or US-9616562-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:25

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 425
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		$ or US-5544751-$ or US-5429260-$ or US-7946609-$ or US-6578708-$ or US-6176559-$ or US-5927837-$ or US-5564805-$ or US-5595228-$ or US-6206063-$ or US-7000810-$ or US-4967944-$ or US-5988473-$).did. or (US-6641013-$ or US-2987358-$ or US-4576423-$ or US-4756394-$ or US-4896926-$ or US-5325966-$ or US-5697500-$ or US-6467681-$).did. or (US-3117692-$ or US-2593998-$).did.				
S163	3	(("20170166352") or ("20110139665") or ("5628443")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:26
S164	28	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/04/09 01:36
S165	7	(("5240264") or ("7503569") or ("20020000440") or ("20040195793") or ("20110139665") or ("20110155613") or ("20130127129")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S166	27	S164 not S165	US-PGPUB; USPAT; USOCR	OR	OFF	2018/04/09 01:37
S167	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/21 18:13
S168	56	("1932429" | "20060016811" | "20060070906" | "20060237341" | "20070080089" | "20080110190" | "20080112782" | "20080121253" | "20080128414" | "20090178989" | "20090184021" | "20110139665" | "2178091" | "2259041" | "5271515" | "5429260" | "5531517" | "5544751" | "5549241" | "5860527" | "6062388" | "6581772" | "6880705" | "6991106" | "7044483" | "7063210" | "7516854" | "7661549" | "8342329" | "8640871" | "8973811" | "8997993" | "9056694" | "9101212" | "D277532" | "D277723" | "D277819" | "D347130" | "D385306" | "D406478" | "D470641" | "D529755" | "D538571" | "D543030" | "D589723" | "D590021" | "D645902" | "D654726" | "D664034" | "D689718" | "D709716" | "D773217" | "D781625").PN. OR ("D815471").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:13
S169	5	(("20160144500") or ("0784114") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:16
S170	4	(("20160144500") or ("7841144") or ("20110073516") or ("20150274362")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17
S171	554	("0124228" | "0213740" | "0714987" | "0753791" | "1124228" | "1194636" | "1371856" | "1407679" | "1454250" | "1468288" | "1477813" | "1510924" | "1540128" | "1575821" | "1602256" | "1602267" | "1615096" | "1622103" | "1622104" | "1637634" | "1644710" | "1660480" | "1714738" | "1718702" | "1723306"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:17

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 426
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

| "1734826" | "1743492" | "1764331" | "1778069" | "1787027" | "1790178" | "1809393" | "1823039" | "1859667" | "1898364" | "1902716" | "1906411" | "1925070" | "1929871" | "1940377" | "1953306" | "1986739" | "1988201" | "1995264" | "20010029720" | "20020007608" | "20020007609" | "20020014047" | "20020020127" | "20020031646" | "20020046528" | "20020056245" | "20020069611" | "20020083673" | "20020092263" | "20020100231" | "20020160610" | "20020178673" | "20020178674" | "20020178682" | "20030009971" | "20030009972" | "20030024199" | "20030033777" | "20030033784" | "20030037504" | "20030041545" | "20030084636" | "20030101674" | "20030101681" | "20030115812" | "20030115821" | "20030180091" | "20030188504" | "20030196405" | "20030221387" | "20030233809" | "20040016196" | "20040031227" | "20040035078" | "20040035079" | "20040060255" | "20040068954" | "20040115921" | "20040139678" | "20040168392" | "20040177584" | "20040182036" | "20040200175" | "20040206036" | "20040211143" | "20040241374" | "20040255541" | "20050034404" | "20050034405" | "20050097860" | "20050102937" | "20050108970" | "20050138881" | "20050160694" | "20050161468" | "20050166516" | "20050193677" | "20050208255").PN. OR ("20050210810" | "20050235593" | "20050252130" | "20050268570" | "20060032168" | "20060048474" | "20060070333" | "20060073320" | "20060075713" | "20060101769" | "20060117696" | "20060179773" | "20060196139" | "20060236642" | "20060260254" | "20060283127" | "20070006543" | "20070028547" | "20070119110" | "20070151189" | "20070193178" | "20080000186" | "20080010931" | "20080010937" | "20080028707" | "20080034708" | "20080066415" | "20080104921" | "20080110125" | "20080134607" | "20080134613" | "20080134614" | "20080295432" | "20090193748" | "2015813" | "2026511" | "2044216" | "2088238" | "2089075" | "2204675" | "2266464" | "2276071" | "2303745" | "2324628" | "2398632" | "2430200" | "2495862" | "2596280" | "2732706" | "2740167" | "2780253" | "2851740" | "2865058" | "2894292" | "2947040" | "3023681" | "3045294" | "3100556" | "3120083" | "3125138" | "3182769" | "3200553" | "3203149" | "3247638" | "3267630" | "3282010" | "3301147" | "3310919" | "3347048" | "3377931" | "3378958" | "3387422" | "3436888" | "3460304" | "3481810" | "3508523" | "3512324" | "3517927" | "3526071" | "3526420" | "3535844" | "3538665" | "3548559" | "3553919" | "3554850" | "3555762" | "3572224" | "3579941" | "3694983" | "3714747" | "3731445" | "3742669" |

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S172	969	Y10S292/38,53.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:25
S173	35	E04F2201/013.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:25
S174	1351	E04F2201/0146,023,05.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:26
S175	514	B25H3/02.cpc.	USPAT	OR	OFF	2018/11/21 18:45
S176	1041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45
S177	165	B25H3/021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:45
S178	0	("2018/0213934").URPN.	USPAT	OR	OFF	2018/11/21

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 428
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

						18:46
S179	369	A47B88/90.cpc.	USPAT	OR	OFF	2018/11/21 18:46
S180	81	A47B2210/19.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:47
S181	29	("2614016" | "2676080" | "3001564" | "3079037" | "3974898" | "4040538" | "4119204" | "4239309" | "4287997" | "4293072" | "4865404" | "5190156").PN. OR ("5407074").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:50
S182	27	("0224486" | "1472676" | "2975930" | "3159436" | "3424334" | "3506321" | "3584738" | "3737031" | "4155452").PN. OR ("4293072").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:51
S183	48	("3506321").URPN.	USPAT	OR	OFF	2018/11/21 18:54
S184	46	("1092651" | "2565969" | "2891639" | "3028207" | "3032381" | "3506321").PN. OR ("3974898").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 18:56
S185	520	B65D21/0204.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:01
S186	868	A47B87/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S187	2232	312/107,111.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:02
S188	703	A47B88/90.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:15
S189	50	(("BRUNNER") near3 ("Yaron")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:23
S190	34	("0455883" | "0484121" | "0918297" | "20060175945" | "20100052276" | "20110279956" | "20120086319" | "20130134850" | "2341434" | "2431830" | "2441728" | "3058320" | "3135570" | "3326203" | "3712697" | "4590709" | "5011240" | "5026130" | "5048902" | "5145245" | "5673984" | "6068356" | "6164738" | "8201900" | "D322875").PN. OR ("9872562").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:24
S191	45	("1223455" | "2123803" | "2704699" | "3272581" | "3316045" | "3796474" | "4155611" | "4505526" | "4577773" | "4848588" | "5205595" | "5246105" | "5299688" | "5344226" | "5358321" | "5426885").PN. OR ("5603559").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:27
S192	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 19:28
S193	16	("20080000899" | "20120312812" | "20130127129" | "3379482" | "3811559" | "4118048" | "4619363" | "5125697" | "5904269" | "6082539" | "6371320" | "6874634" | "6889838" | "7387350" | "7516842").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:02
S194	75	("0440957" | "1933637" | "2511949" | "2789828" | "2981549" | "3055723" | "3349924" | "3379482" | "3891230" | "3905662").PN. OR ("4118048").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:03

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 429
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S195	45	("0273398" | "0325555" | "0825642" | "0953715" | "0953815" | "1143711" | "1365098" | "1495046" | "1611034" | "2055657" | "2565969" | "2714433" | "3828899" | "3891230" | "3974898" | "3987875" | "4066155" | "4118048" | "4139084" | "4202586" | "4389078" | "4693345").PN. OR ("4813521").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:04
S196	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05
S197	143	("0344661" | "0687619" | "1424819" | "20010052681" | "20020014488" | "20020067027" | "20020074905" | "20020113386" | "20020185831" | "20030001348" | "20030146589" | "20040265104" | "20050062244" | "20050104308" | "20050258610" | "20050275178" | "20060006619" | "20060012139" | "20060038367" | "20070080512" | "20070194543" | "20070273114" | "20080084036" | "20080121547" | "20080128305" | "20080143069" | "20090020528" | "20090026901" | "20090096181" | "20090309323" | "20100052276" | "20100290877" | "20100327562" | "20110049824" | "20110181008" | "20120160886" | "20120326406" | "20140001719" | "20140023221" | "20140375181" | "2554091" | "2588830" | "2901262" | "2964328" | "3168329" | "3393951" | "3734526" | "3804432" | "3891230" | "3990653" | "4169607" | "4363496" | "4448434" | "4619363" | "4884689" | "4936594" | "4984704" | "5104135" | "5123666" | "5207723" | "5333885" | "5362078" | "5378005" | "5464104" | "5474312" | "5595395" | "5626352" | "5634649" | "5720535" | "5799958" | "5845915" | "5906381" | "5913527" | "5931483" | "5934466" | "5938396" | "6000713" | "6050660" | "6079719" | "6082539" | "6109627" | "6113129" | "6123344" | "6131926" | "6135466" | "6176559" | "6254112" | "6347847" | "6357063" | "6371320" | "6394471" | "6398235" | "6474930" | "6561528" | "6601930" | "6616152" | "6659476" | "6666465" | "6874634" | "6889838" | "6945546" | "7063339" | "7066475" | "7108131" | "7168715" | "7188846" | "7188847" | "7210689" | "7263742" | "7328905" | "7367571" | "7500681").PN. OR ("7503569" | "7686260" | "7703776" | "7819407" | "7823893" | "7845653" | "7883096" | "7905502" | "7938412" | "8132819" | "8226092" | "8567796" | "8657307" | "8668209" | "9132543" | "D437484" | "D542496" | "D640869" | "D653832" | "D654241").PN. OR ("9566990").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:05
S198	18	("2042387" | "2528872" | "3401420" | "3891230" | "4989291" | "5915438" | "6230361" | "7000287").PN. OR ("7263742").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:07
S199	37	("5013055" | "5207723" | "5378005").PN. OR ("5799958").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:08
S201	2395	280/47.26,47.28,652.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:09
S202	1975	280/47.26,47.28.ccls.	US-PGPUB;	OR	OFF	2018/11/21

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 430
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USPAT; USOCR			20:10
S203	518	280/652.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/21 20:10
S204	1	"15826201"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 00:33
S205	12	(US-0271616-$ | US-0320243-$ | US-1276744-$ | US-1477050-$ | US-15826201-$ | US-20080308369-$ | US-3616562-$ | US-3875888-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:39
S206	2	(("8875888") or ("9616562") or ("20080308369")).PN.	USPAT; USOCR	OR	OFF	2018/11/22 03:40
S207	3	(("8875888") or ("9616562") or ("20080308369")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 03:40
S208	64	("20020113387" | "20070194543" | "20080079227" | "20080084036" | "20110049824" | "3522955" | "4118048" | "4119044" | "4281843" | "5176281" | "5193706" | "5244265" | "5378005" | "5634649" | "5641170" | "5680932" | "5799958" | "5906381" | "5938396" | "5950828" | "6131926" | "6170839" | "6176559" | "6264220" | "6347847" | "6371320" | "6601930" | "6761366" | "6817623" | "7367571" | "7467801" | "7503569" | "7628406" | "7845653" | "7883096" | "7938412" | "D404916" | "D437484" | "D462168" | "D462170").PN. OR ("8132819").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:37
S209	269	("20020014507" | "20020043534" | "20020074332" | "20020125160" | "20030075468" | "20040112777" | "20050109650" | "20060017293" | "20060124505" | "20060144732" | "20060201834" | "20070137960" | "20070194543" | "20070241113" | "20080017537" | "20080035508" | "20080035510" | "20080067206" | "20080152944" | "20080164842" | "20080169739" | "20080230416" | "20090080809" | "20090211932" | "20090236810" | "20090250365" | "20100012538" | "20100012655" | "20100033325" | "20100224527" | "20100258465" | "20110084075" | "20110094910" | "20110132046" | "20110174648" | "20110268374" | "20120018330" | "20120152944" | "20120206907" | "20120257379" | "20120267374" | "20120292213" | "20120312708" | "20120317933" | "20120318792" | "20120326406" | "20120326669" | "20130007979" | "20130186795" | "20140102928" | "2125856" | "2145143" | "2799306" | "2883184" | "3177023" | "3259411" | "3394955" | "3817419" | "3851756" | "3924844" | "4105112" | "4278187" | "4353182" | "4890414" | "5042193" | "5165148" | "5295742" | "5379887" | "5386907" | "5429287" | "5470000" | "5501379" | "5518139" | "5562208" | "5580137" | "5595228" | "5620212" | "5660276" | "5672145" | "5732987" | "5755311" | "5762411" | "5915553" | "5915554" | "5924533" | "6006906" | "6015064" | "6038747" | "6073766" | "6081695"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:39

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 431
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		| "6082538" | "6167680" | "6176559" | "6203075" | "6206063" | "6213296" | "6230887" | "6244485" | "6244486" | "6343708" | "6343815" | "6347847" | "6371320" | "6405864" | "6415924" | "6478463" | "6502882" | "6527309").PN. OR ("6533138" | "6561402" | "6614337" | "6622856" | "6675965" | "6675967" | "6695142" | "6698609" | "6722524" | "6755302" | "6755448" | "6761366" | "6789670" | "6860059" | "6915902" | "6955381" | "6978890" | "7008031" | "7021637" | "7048133" | "7108131" | "7121407" | "7158376" | "7225923" | "7228983" | "7237673" | "7237688" | "7246704" | "7316309" | "7322470" | "7326428" | "7334680" | "7357250" | "7357268" | "7367451" | "7370891" | "7401698" | "7401700" | "7418846" | "7540364" | "7552560" | "7552950" | "7600640" | "7661530" | "7837053" | "7845653" | "7854321" | "7874328" | "7883096" | "7938412" | "7984820" | "8056943" | "8061536" | "8132819" | "8152037" | "8191910" | "8210387" | "8267245" | "8267247" | "8272628" | "8327576" | "8328247" | "8376177" | "8434617" | "8469195" | "8505729" | "8657307" | "D259154" | "D272203" | "D309981" | "D326815" | "D333215" | "D333487" | "D347731" | "D355849" | "D368159" | "D370619" | "D374772" | "D375834" | "D377118" | "D378247" | "D385110" | "D386903" | "D390358" | "D402106" | "D405956" | "D414038" | "D418977" | "D437684" | "D447340" | "D447630" | "D448162" | "D449442" | "D449738" | "D451275" | "D452071" | "D453624" | "D455263" | "D459073" | "D462168" | "D465923" | "D467070" | "D470659" | "D471360" | "D472774" | "D480867" | "D505548" | "D509656" | "D516310" | "D516808" | "D516812" | "D520746" | "D563669" | "D572479" | "D572480" | "D588811" | "D589703" | "D599112" | "D600015" | "D600912" | "D601797" | "D605403" | "D608094" | "D609911" | "D609913").PN. OR ("D616200" | "D618911" | "D624317" | "D627968" | "D629607" | "D630435" | "D630851" | "D635769" | "D636996" | "D637812" | "D639554" | "D641552" | "D647301" | "D648532" | "D648533" | "D649350" | "D649783" | "D661858" | "D661903" | "D664354" | "D668867" | "D668868" | "D668869" | "D670500" | "D672555" | "D673774" | "D701696" | "D744750" | "D750890").PN. OR ("9539722").URPN.				
S210	15	("2007/0194543").URPN.	USPAT	OR	OFF	2018/11/22 19:40
S211	56	("1478913" | "20010035704" | "20050159784" | "20050269792" | "20060006621" | "20060144732" | "20070194543" | "20070235959" | "20080128305" | "20090301913" | "20100289236" | "20100295430" | "20110127736" | "20120292870" | "20130118818" | "3861703" | "3874531" | "4435115" | "4726602" | "4822116" | "4846485" | "4858940" | "4976450" | "4993551" | "5174447" | "5378005" | "5452908" | "5573089" | "5743607" | "5799958" | "5893572" | "6027128" | "6170839" | "6439585"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:40

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 432
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		| "6446987" | "6702168" | "6935641" | "6945546" | "7044569" | "7083174" | "7314134" | "7328905" | "7431313" | "7434819" | "7503569" | "7661685" | "7905502" | "8226092" | "8376376" | "8668209" | "D182716").PN. OR ("8915504").URPN.				
S212	2	("2012/0292870").URPN.	USPAT	OR	OFF	2018/11/22 19:41
S213	52	("6264083" | "6666362" | "7204374" | "20120247044" | "4249684" | "6264220" | "6935641" | "7048320" | "7165702" | "20040194333" | "20040251227" | "20070210021" | "20100300996" | "20120199708" | "4944416" | "7487981" | "6615973" | "6786374" | "20070137532" | "5628534" | "7017254" | "6932406" | "20040051016" | "20050006539" | "20080296245" | "7740329" | "20060021985" | "5913380" | "6736265" | "20020100396" | "20120131872" | "3610429" | "6629654" | "4535897" | "6581920" | "20110107704" | "0332360" | "5406894" | "6474245" | "20050269792" | "5582269" | "20070012636" | "5687856" | "5899544" | "6247720" | "6814362" | "20040222176" | "20110168651" | "4630739" | "4961295" | "5730414").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 19:46
S214	39	("2320387" | "3052484" | "3179270" | "3734526" | "4281843" | "4363496" | "4790549" | "5464104" | "5465987" | "5474312" | "5595395" | "5671933").PN. OR ("6131926").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/22 23:52
S215	1	"12736715"	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:36
S216	1	("2011/0139665").URPN.	USPAT	OR	OFF	2018/11/23 01:36
S217	20	("2807387" | "20060220503" | "3219400" | "3424334" | "4293072" | "4643494" | "4782619" | "4996628" | "5184726" | "5246105" | "5427394" | "5544751" | "5699925" | "5901998" | "5924778" | "6367631" | "6983946").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:37
S218	36	("1253546" | "1619761" | "1857640" | "2004900" | "3133771" | "3409162" | "3529878" | "3606506" | "3729242" | "3758181").PN. OR ("5246105").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 01:38
S219	13	("3379482").URPN.	USPAT	OR	OFF	2018/11/23 02:28
S220	0	("2012/0152800").URPN.	USPAT	OR	OFF	2018/11/23 02:30
S221	12	("20080060964" | "3568879" | "4592601" | "4685565" | "20060071581" | "4258847" | "4863222" | "2858957" | "7311202" | "3346137").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:30
S222	1041	B25H3/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S223	140	S222 and (snap)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 02:39
S224	67	(US-20170166352-$ or US-20110139665-$ or US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:36

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 433
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20150274362-$ or US-20110073516-$ or US-20090193748-$ or US-20080134607-$ or US-20080104921-$ or US-20180313094-$ or US-20180213934-$ or US-20150102717-$ or US-20180161975-$ or US-20140305829-$).did. or (US-20120312812-$ or US-20180290288-$ or US-20180162592-$ or US-20170239808-$ or US-20170121056-$ or US-20130127129-$ or US-20060038367-$ or US-20160114822-$ or US-20080308369-$ or US-20080169739-$ or US-20120292870-$).did. or (US-5628443-$ or US-9132543-$ or US-9506489-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5595228-$ or US-3117692-$ or US-5429260-$ or US-7841144-$ or US-5407074-$ or US-4293072-$ or US-3506321-$ or US-3974898-$ or US-6109707-$ or US-4423687-$ or US-9872562-$ or US-6547347-$ or US-4619363-$ or US-4118048-$ or US-3891230-$ or US-9566990-$).did. or (US-5799958-$ or US-9616562-$ or US-5184726-$).did. or (US-2430200-$).did.				
S225	3	("20080308369" | "8875888" | "9616562").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S226	28	(US-20170266804-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20120326406-$ or US-20100219193-$ or US-20090145866-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060027475-$ or US-20110139665-$).did. or (US-9506489-$ or US-9132543-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-6641013-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-3117692-$).did.	US-PGPUB; USPAT	OR	OFF	2018/11/23 14:37
S227	37	S224 not (S225 S226)	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:37
S228	1	"20170174392".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 14:54
S229	14	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$).did. or (US-2430200-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/23 21:07
S230	716	((("MILWAUKEE") near3 ("ELECTRIC") near3 ("TOOL") near3 ("CORPORATION"))).AS,AANM.	USPAT	OR	OFF	2019/01/16 16:21
S231	51	((("Brunner") near3 ("Yaron"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S232	33	((("Squiers") near3 ("Grant") near3 ("T"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S233	56	((("Hoppe") near3 ("Christopher") near3 ("S"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 434
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S234	114	((("Hyma") near3 ("Steven") near3 ("W"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:21
S235	0	("2017/0166352").URPN.	USPAT	OR	OFF	2019/01/16 16:23
S236	1	(("2012312812") or ("4974740")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:25
S237	0	"2012312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S238	1	"20120312812".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:26
S239	4	("2012/0312812").URPN.	USPAT	OR	OFF	2019/01/16 16:26
S240	0	("2018/0161975").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S241	0	("2018/0044059").URPN.	USPAT	OR	OFF	2019/01/16 16:29
S242	68	("6082539" | "6874634" | "8875888" | "7503569" | "D462519" | "D467424" | "D753394" | "D753395" | "D753396" | "20010030403" | "20120152944" | "6761366" | "D437484" | "D439407" | "D449738" | "D564216" | "D629607" | "D636994" | "D668048" | "D700777" | "D709697" | "D753397" | "6371320" | "20140102928" | "D415894" | "D520237" | "D613560" | "D643217" | "D701697" | "7905353" | "20110181008" | "D348152" | "D647300" | "D663952" | "D674605" | "D710098" | "D713639" | "20110049824" | "20110139666" | "5022546" | "D467426" | "D527181" | "D572479" | "D630851" | "D701696" | "D711105" | "5437369" | "D693121" | "20070273114" | "20090145790" | "8602217" | "8789699" | "8851282" | "D630435" | "D702044" | "D703437" | "D709287" | "9393684" | "8505729" | "20040134818" | "D493284" | "D600912" | "D649350" | "D653832" | "D694522" | "D703436" | "D710100" | "D719352").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:30
S243	46	("20030062232" | "20040211634" | "20060012139" | "20060027475" | "5011013" | "5209384" | "5240264" | "5664652" | "5833065" | "6126003" | "6176559" | "6347847" | "6371320" | "6601930" | "6761366" | "7004481" | "7210689").PN. OR ("7503569").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:34
S244	23	("1192847" | "1891811" | "2053969" | "2828023").PN. OR ("5022546").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:37
S245	14	("2053969").URPN.	USPAT	OR	OFF	2019/01/16 16:38
S246	19	("2053969" | "3014604" | "3061134" | "3162320" | "3734308" | "4109789" | "4616752" | "6024223").PN. OR ("6840378").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S247	22	("20040000550" | "2705575" | "3346137" | "4293072" | "5628443" | "5704625" | "6840378").PN. OR ("7780026").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:39
S248	21	("3081120" | "3162320" | "3653521").PN. OR ("3734308").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:41
S249	34	("3015407" | "3493258" | "3501193" | "3552557" | "3633777" | "3677599" | "3691595" |	US-PGPUB; USPAT;	OR	OFF	2019/01/16 16:41

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 435
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		"3712661" | "3734308" | "3888536" | "3980185" | "4093090" | "4149747" | "4341495" | "4356145" | "4630856" | "4648645" | "5163726" | "5931617" | "6135524" | "7014234").PN. OR ("8177463").URPN.	USOCR			
S250	65	("2053969" | "3014604" | "3691595" | "3712661").PN. OR ("3980185").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S251	23	("0610816" | "20080099622" | "2357182" | "2431194" | "3380602" | "3765711" | "3980185" | "4128267" | "4341495" | "4881601" | "5161705" | "5328133" | "5344203" | "5593113" | "5836548" | "7014234" | "7549687" | "7887011" | "8177463").PN. OR ("9440741").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:42
S252	28	("2876726" | "3004772" | "3057315" | "3107024" | "3162320" | "3711902" | "3734308" | "3799100" | "3805721" | "3818854" | "3822667" | "3872555" | "3938461" | "3980185" | "4290382" | "4294185").PN. OR ("4695184").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:44
S253	899	B60P7/13,06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:46
S254	110	410/84.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S255	7	("6077006" | "7056081" | "6490766" | "8342786" | "8523501" | "7056061" | "8523401").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:47
S256	2	("1751571").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:49
S257	38	("3034256" | "3159368" | "3334953" | "3618795" | "4249684" | "4303367" | "4325531" | "4737055" | "4805859" | "4901961" | "5161700" | "5205602" | "5240214" | "5511842" | "5588631" | "5609451" | "5653366" | "5730414" | "5855310" | "5899544").PN. OR ("6666362").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:50
S258	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S259	17	("2696962" | "4929973" | "5035389" | "5040712" | "5129613" | "5282554" | "5332183" | "5356105" | "5653366" | "5730348" | "5730406" | "6036071" | "6315182" | "7225958" | "8020821").PN. OR ("8448829").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:51
S260	37	("1252207" | "20060186290" | "20070097617" | "20070170336" | "20070230102" | "20080105803" | "2174140" | "5730406" | "5833189" | "5850996" | "6173931" | "6315255" | "6371424" | "6431510" | "6702604" | "6758454" | "6877641" | "7261264" | "7334762" | "7455271" | "7499272" | "7673838").PN. OR ("8020821").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S261	10	("20050139745" | "4660793" | "5035389" | "5433416" | "5452874" | "5608603" | "5924790" | "6237886" | "6520463" | "6637707").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:52
S262	10	("5356104" | "5639522" | "5662375" | "5694123" | "5943208" | "5947440" | "6349911" | "6402106" | "6446915" | "6710828").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:53
S263	12	("5284311" | "5428502").PN. OR	US-PGPUB;	OR	OFF	2019/01/16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 436
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		("5608603").URPN.	USPAT; USOCR			16:54
S264	788	248/224.7,225.21.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:56
S265	21	("1862466" | "2979300" | "3110467" | "3669035" | "4056250" | "4076204" | "4085867").PN. OR ("4660793").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 16:57
S266	25	("3334953" | "4249684" | "4938398" | "4993771" | "5255832" | "5395019").PN. OR ("5653366").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:01
S267	38	("3454250" | "3456929" | "4065092" | "4230248" | "4249684" | "4444427" | "4848629" | "4974766" | "4984837" | "5007568" | "5046652" | "5181639" | "5275320" | "5285942").PN. OR ("5395019").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:02
S268	42	("2680000" | "2897928" | "3631572" | "3881677" | "4346868" | "4618081" | "4948085" | "5181774").PN. OR ("5332183").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:05
S269	71	("2708088" | "3878589" | "3915189" | "3931893" | "4450989" | "4461445" | "4858869" | "5026016" | "5035389" | "5078279" | "5344032" | "5356038" | "5433416" | "5435511" | "5452874" | "5765699" | "5915572" | "D329192" | "D386298" | "D386304").PN. OR ("6637707").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:45
S270	32	("2103106" | "2703912" | "2879561" | "3237779" | "3399374" | "3403641" | "4029038" | "4068332" | "4266882" | "4340199" | "4376593" | "4389133" | "4430947").PN. OR ("4565465").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 17:55
S271	570	220/4.27.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S272	319	B65D21/0223.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S273	1937	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S274	69	A45C7/005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:12
S275	2987	A45C13/02.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S277	357	A45F3/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:13
S278	850	B25H1/04.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S279	1194	B25H3/02,021.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S280	1052	B62B1/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S281	437	B65D21/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:14
S282	164	B65D21/0228.cpc.	US-PGPUB;	OR	OFF	2019/01/16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 437
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			USPAT; USOCR			21:15
S283	320	A45C7/0045.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S284	436	B25H3/023.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:15
S285	752	B62B5/067.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S286	23	B65D2255/00.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S287	177	B65H2701/533.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:16
S288	121	(US-0000440-$ | US-0027475-$ | US-0038367-$ | US-0068757-$ | US-0104921-$ | US-0121056-$ | US-0127129-$ | US-0130034-$ | US-0134607-$ | US-0139665-$ | US-0144500-$ | US-0145866-$ | US-0155613-$ | US-0161975-$ | US-0166352-$ | US-0166516-$ | US-0168880-$ | US-0169739-$ | US-0174392-$ | US-0194543-$ | US-0195793-$ | US-0217464-$ | US-0219193-$ | US-0239808-$ | US-0254946-$ | US-0266804-$ | US-0271616-$ | US-0290288-$ | US-0308369-$ | US-0320243-$ | US-0326406-$ | US-1276744-$ | US-1477050-$ | US-2430200-$ | US-20020000440-$ | US-20040195793-$ | US-20060027475-$ | US-20060038367-$ | US-20060254946-$ | US-20070068757-$ | US-20070194543-$ | US-20080104921-$ | US-20080134607-$ | US-20080169739-$ | US-20080308369-$ | US-20090145866-$ | US-20100219193-$ | US-20110139665-$ | US-20110155613-$ | US-20120326406-$ | US-20130127129-$ | US-20140166516-$ | US-20160130034-$ | US-20160144500-$ | US-20160168880-$ | US-20170121056-$ | US-20170166352-$ | US-20170174392-$ | US-20170217464-$ | US-20170239808-$ | US-20170266804-$ | US-20180161975-$ | US-20180290288-$ | US-2608238-$ | US-3117692-$ | US-5240264-$ | US-5429260-$ | US-5595228-$ | US-5628443-$ | US-5988473-$ | US-6085925-$ | US-6547347-$ | US-6641013-$ | US-7503569-$ | US-7841144-$ | US-8132819-$ | US-8459495-$ | US-8677661-$ | US-8813960-$ | US-8875888-$ | US-9132543-$ | US-9506489-$ | US-9566990-$ | US-9616562-$ | US-9872562-$).DID.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:23
S289	4	(CN-2608238-$ | JP-1276744-$ | JP-1477050-$ | KR-300271616-$ | KR-300320243-$ | TW-135074-$ | TW-168686-$ | TW-174412-$ | VA-223131450-$ | WO-2016142935-$ | WO-2017028845-$).DID.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:24
S290	0	(15/826201).APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S291	0	("150826201").APP.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/01/16 21:25
S292	0	"150826201"	FPRS;	OR	OFF	2019/01/16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 438
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

			EPO; JPO; DERWENT; IBM_TDB			21:25
S293	45	("1699130" | "2072672" | "2551814" | "2633285" | "2736487" | "3010638" | "3361322" | "3623650" | "3632037" | "3713579" | "3905478" | "3905541" | "3921896" | "4002261" | "4023617" | "4187977" | "4230233" | "4245773" | "4251006" | "4277015" | "4291830" | "4389013" | "4482074" | "4643314" | "4685610" | "4762270" | "4763833" | "4828894" | "4884739" | "4911356" | "4948039" | "4993623" | "5038998" | "5116290" | "5190213").PN. OR ("5429260").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:39
S294	2	"2430200".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:43
S295	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" | "6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" | "5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:50
S296	70	("3861703" | "4738340" | "4951818" | "5038842" | "5048649" | "5178244" | "D294775" | "5373104" | "6213266" | "20030123965" | "3061057" | "3532355" | "4350194" | "5407039" | "6634496" | "6758334" | "7077252" | "20020104725" | "20050077136" | "4081061" | "4118048" | "4813521" | "5484045" | "20070068757" | "5927361" | "7232018" | "4693345" | "4122925" | "5484046" | "20060119060" | "20050072642" | "4792025" | "D453623" | "5186290" | "5890571" | "6073737" | "7380685" | "5109961" | "20070012694" | "3452846" | "4657135" | "5339934" | "5379870" | "5447216" | "6116390" | "6401890" | "5142445" | "7398868" | "7726483" | "6164425" | "6520327" | "6976566" | "3650216" | "2497173" | "20010027902" | "20030029750" | "4621716" | "5197579" | "5632496" | "5713439" | "7780002" | "7942282" | "3572253" | "6585090" | "3891230").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:51
S297	40	("20020096844" | "4066155" | "4813542" | "5099968" | "5564805" | "5906291" | "D439739").PN. OR ("6585090").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:53
S298	29	("2472491" | "2925283" | "3057636").PN. OR ("3891230").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:55
S299	59	("3194426" | "3338452" | "3441033" | "3862683" | "4426056" | "4523680" | "4589430" | "4804773").PN. OR ("4889254").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/16 21:59

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 439
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

S300	0	("2018/0127007").URPN.	USPAT	OR	OFF	2019/01/17 20:57
S301	3	("20110220531" | "5890613" | "6925834").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 20:58
S302	4	("20110139777" | "5301829" | "5427265" | "8602217").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:07
S303	1	("2014/0326693").URPN.	USPAT	OR	OFF	2019/01/17 21:08
S304	4	("20110139777" | "5301829" | "5427265" | "8602217").PN. OR ("9701443").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:09
S305	22	("3521764").URPN.	USPAT	OR	OFF	2019/01/17 21:15
S306	0	("2016/0082585").URPN.	USPAT	OR	OFF	2019/01/17 21:21
S307	11	("4887751" | "20080169739" | "20050045640" | "20090250470" | "20050211586" | "20140353191" | "4688674" | "20040016666" | "20080197756" | "4403638" | "5653337").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:22
S308	13	("2414708" | "4720021" | "4365725" | "5011013" | "4997090" | "5353948" | "5967322" | "7780036" | "0520505" | "4161261" | "4714158").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:24
S309	8	("6761366" | "0968633" | "6761366" | "0968633" | "5575401" | "20020030425" | "5575401" | "20050224384" | "20070012694" | "6371320").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:26
S310	12	("2006/0027475").URPN.	USPAT	OR	OFF	2019/01/17 21:29
S311	18	("1193809" | "1268124" | "1521310" | "3696850" | "4724976" | "4756394" | "4787488" | "5209279" | "5219423" | "5314046" | "5971119" | "0622263" | "0695149").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/17 21:29
S312	1	"20110073516".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16
S313	71	(US-20180290288-$ or US-20180161975-$ or US-20170239808-$ or US-20170121056-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20060038367-$ or US-20190002004-$ or US-20120312812-$ or US-20180044059-$ or US-20110181008-$ or US-20090145790-$ or US-20130121783-$ or US-20030034654-$ or US-20080105803-$ or US-20050139745-$ or US-20170174392-$ or US-20060254946-$ or US-20170318927-$ or US-20170259956-$ or US-20100147642-$ or US-20150274362-$ or US-20140262885-$ or US-20130127129-$ or US-20120152800-$).did. or (US-20060027475-$ or US-20030094392-$ or US-20080277221-$ or US-20110073516-$).did. or (US-9872562-$ or US-9566990-$ or US-7841144-$ or US-6547347-$ or US-5429260-$ or US-9725209-$ or US-8789699-$ or US-7503569-$ or US-5022546-$ or US-6840378-$ or US-3980185-$ or US-7780026-$ or US-8657307-$ or US-8177463-$ or US-9440741-$ or US-4341495-$ or US-5183375-$ or US-4695184-$ or US-3734308-$ or US-8342786-$ or US-6666362-$ or US-5653366-$ or US-8448829-$ or US-8020821-$ or US-5608603-$ or US-4660793-$).did. or (US-5395019-$ or US-9056586-$ or US-8387940-	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 440
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		$ or US-5332183-$ or US-8398315-$ or US-5129613-$ or US-6637707-$ or US-4565465-$ or US-2053969-$ or US-6585090-$ or US-8561769-$ or US-3891230-$ or US-4889254-$ or US-9701443-$).did. or (US-2430200-$).did.				
S314	121	(US-20180290288-$ or US-20180161975-$ or US-20170266804-$ or US-20170239808-$ or US-20170217464-$ or US-20170174392-$ or US-20170166352-$ or US-20170121056-$ or US-20160168880-$ or US-20160144500-$ or US-20160130034-$ or US-20140166516-$ or US-20130127129-$ or US-20120326406-$ or US-20110155613-$ or US-20110139665-$ or US-20100219193-$ or US-20090145866-$ or US-20080308369-$ or US-20080169739-$ or US-20080134607-$ or US-20080104921-$ or US-20070194543-$ or US-20070068757-$ or US-20060254946-$ or US-20060038367-$).did. or (US-20060027475-$ or US-20040195793-$ or US-20020000440-$).did. or (US-9872562-$ or US-9616562-$ or US-9566990-$ or US-9506489-$ or US-9132543-$ or US-8875888-$ or US-8813960-$ or US-8677661-$ or US-8459495-$ or US-8132819-$ or US-7841144-$ or US-7503569-$ or US-6641013-$ or US-6547347-$ or US-6085925-$ or US-5988473-$ or US-5628443-$ or US-5595228-$ or US-5429260-$ or US-5240264-$ or US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$).did. or (US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$ or US-0139665-$ or US-0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$).did. or (US-0038367-$ or US-0027475-$ or US-0000440-$).did. or (US-3117692-$ or US-2608238-$ or US-2430200-$ or US-1477050-$ or US-1276744-$ or US-0326406-$ or US-0320243-$ or US-0308369-$ or US-0290288-$ or US-0271616-$ or US-0266804-$ or US-0254946-$ or US-0239808-$ or US-0219193-$ or US-0217464-$ or US-0195793-$ or US-0194543-$ or US-0174392-$ or US-0169739-$ or US-0168880-$ or US-0166516-$ or US-0166352-$ or US-0161975-$ or US-0155613-$ or US-0145866-$ or US-0144500-$).did. or (US-0139665-$ or US-0134607-$ or US-0130034-$ or US-0127129-$ or US-0121056-$ or US-0104921-$ or US-0068757-$ or US-0038367-$ or US-0027475-$ or US-0000440-$).did.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:16
S315	52	S313 not S314	US-PGPUB; USPAT; USOCR	OR	OFF	2019/01/19 21:17
S316	1	"20120207571".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:39
S317	1	"20080115312".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/06 19:47
S318	13	(US-0023349-$ | US-0115312-$ | US-0186624-$ | US-0207571-$ | US-20060186624-$ | US-	US-PGPUB; USPAT;	OR	OFF	2019/06/06 20:25

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 441
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

		20080115312-$ | US-20120207571-$ | US-20160023349-$ | US-6848980-$).DID.	USOCR			
S319	2000	A45C5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:14
S320	380	A45C7/0045,005.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:15
S321	700	F16B12/24,44.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:34
S322	13	("7534065" | "9506489" | "20100254757" | "3944282" | "4995176" | "6612078" | "20110085853" | "4900090" | "6830236" | "6877824" | "8464408" | "20070145864" | "7152752").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/06/09 16:36
S355	14	(US-20110073516-$ or US-20190002004-$ or US-20180044059-$ or US-20170318927-$ or US-20130121783-$ or US-20110181008-$ or US-20100147642-$ or US-20090145790-$ or US-20080277221-$ or US-20050139745-$ or US-20080115312-$ or US-20170138382-$ or US-20070145864-$).did. or (US-9506489-$).did.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S356	14	("20050139745" | "20080277221" | "20090145790" | "20100147642" | "20110073516" | "20110181008" | "20130121783" | "20170318927" | "20180044059" | "20190002004" | "5608603" | "6637707" | "8177463" | "9701443").PN.	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S357	4	S355 not S356	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:01
S359	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/09/03 21:43

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	11	("20070145864" | "20100254757" | "20110085853" | "3944282" | "4900090" | "4995176" | "6612078" | "6830236" | "6877824" | "7152752" | "8464408").PN. OR ("9506489").URPN.	US-PGPUB; USPAT	OR	OFF	2019/09/04 13:24
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L5	2	"Term Removed"	USPAT	OR	OFF	2019/09/04 13:42
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S324	163	A45C7/0045,005.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S325	1408	A45C13/02.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S327	180	A45F3/10.cpc.	USPAT	OR	OFF	2019/06/09 16:15
S328	508	A47B47/00,04.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S329	312	A47B67/04.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S330	532	A47B87/02,007,00276.cpc.	USPAT	OR	OFF	2019/06/09

						16:16
S331	104	A47B88/906.cpc.	USPAT	OR	OFF	2019/06/09 16:16
S332	47	A47B2210/19.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S333	483	B25H1/04.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S334	1785	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S335	578	B62B1/14.cpc.	USPAT	OR	OFF	2019/06/09 16:17
S336	367	B62B5/067.cpc.	USPAT	OR	OFF	2019/06/09 16:18
S337	623	B62D21/0217,0219,0222,0228,023,0224,02,0223,0212,0204,0209.cpc.	USPAT	OR	OFF	2019/06/09 16:18
S339	193	B65D25/2823,06.cpc.	USPAT	OR	OFF	2019/06/09 16:19
S340	105	B65H2701/533.cpc.	USPAT	OR	OFF	2019/06/09 16:20
S343	526	B60P7/13,06.cpc.	USPAT	OR	OFF	2019/06/09 16:20
S344	637	E04F2201/013,0146,023,05.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S345	733	Y10S292/38,53.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S346	449	Y10T403/7045.cpc.	USPAT	OR	OFF	2019/06/09 16:21
S347	2233	206/501,503,504,508,511.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S348	391	220/4.27.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S349	2735	280/47.18,47.19,47.26,79.2,47.28,652.ccls.	USPAT	OR	OFF	2019/06/09 16:22
S350	1372	312/107,111.ccls.	USPAT	OR	OFF	2019/06/09 16:23
S351	76	410/84.ccls.	USPAT	OR	OFF	2019/06/09 16:23
S352	502	248/224.7,225.21.ccls.	USPAT	OR	OFF	2019/06/09 16:23
S353	0	"20140161518".pn.	USPAT	OR	OFF	2019/06/09 16:31
S354	1	"20140161518".pn.	US-PGPUB; USPAT	OR	OFF	2019/06/09 16:31
S358	5	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	OR	OFF	2019/06/09 21:00
S361	961	A45C5/14.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S362	961	A45C5/14.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S363	165	A45C7/0045,005.cpc.	USPAT	OR	OFF	2019/09/03 21:44
S364	1426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S365	1426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S366	1426	A45C13/02.cpc.	USPAT	OR	OFF	2019/09/03

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 443
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

						21:45
S367	183	A45F3/10.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S368	512	A47B47/00,04.cpc.	USPAT	OR	OFF	2019/09/03 21:45
S369	312	A47B67/04.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S370	534	A47B87/02,007,00276.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S371	104	A47B88/906.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S372	48	A47B2210/19.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S373	491	B25H1/04.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S374	1803	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/09/03 21:46
S376	1803	B25H3/021,022,023,04,06,02.cpc.	USPAT	OR	OFF	2019/09/03 21:47
S377	580	B62B1/14.cpc.	USPAT	OR	OFF	2019/09/03 21:47
S378	105	B65H2701/533.cpc.	USPAT	OR	OFF	2019/09/03 21:47
S379	531	B60P7/13,06.cpc.	USPAT	OR	OFF	2019/09/03 21:48

9/4/2019 1:42:57 PM
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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

CPC								
Symbol							**Type**	**Version**
B65D	/	21	/	0223			F	2013-01-01
B25H	/	3	/	02			I	2013-01-01
A45C	/	5	/	14			I	2013-01-01
A45C	/	7	/	005			I	2013-01-01
A45F	/	3	/	10			I	2013-01-01
B25H	/	1	/	04			I	2013-01-01
A45C	/	13	/	02			I	2013-01-01
B25H	/	3	/	021			I	2013-01-01
B65D	/	21	/	0209			I	2013-01-01
B62B	/	1	/	14			I	2013-01-01
B65D	/	21	/	0228			I	2013-01-01
B65H	/	2701	/	533			A	2013-01-01
A45C	/	7	/	0045			A	2013-01-01
B25H	/	3	/	023			A	2013-01-01
B62B	/	5	/	067			A	2013-01-01
B65D	/	2255	/	00			A	2013-01-01

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736		O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20191107

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 445
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/216,724	Brunner et al.
	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

INTERNATIONAL CLASSIFICATION				
CLAIMED				
B65D	/	21	/	02
B65D	/	21	/	028
A45C	/	13	/	02
B25H	/	3	/	02

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
206	501

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					
206	504	508	511			
280	47.18					

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 12	
/GIDEON R WEINERTH/ Examiner, Art Unit 3736 (Primary Examiner) (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A

U.S. Patent and Trademark Office Part of Paper No.: 20191107

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 446
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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	Examiner	**Art Unit**
	GIDEON R WEINERTH	3736

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		10		19										
2	2		11	11	20										
3	3		12	6	21										
	4		13		22										
4	5	7	14	12	23										
5	6	8	15												
	7	9	16												
	8	10	17												
	9		18												

NONE (Assistant Examiner) (Date)	**Total Claims Allowed:** 12
/GIDEON R WEINERTH/ Examiner, Art Unit 3736 (Primary Examiner) (Date)	O.G. Print Claim(s): 1 / O.G. Print Figure: 1A

U.S. Patent and Trademark Office Part of Paper No.: 20191107

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 447
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	16216724	Filing Date	2018-12-11	Docket Number (if applicable)	066749-2270	Art Unit	3736
First Named Inventor	Yaron Brunner			Examiner Name	WEINERTH, GIDEON R		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☐ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 180882

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Derek H. Campbell/	Date (YYYY-MM-DD)	2019-12-04
Name	Derek H. Campbell	Registration Number	70608

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Espacenet

Bibliographic data: CN101068661 (A) — 2007-11-07

Mobile driving mechanism

Inventor(s): FRANK TIEDE STEFFEN HESSE JUER [DE] ± (TIEDE STEFFEN,HESSE JUERGEN,FUCHS FRANK)

Applicant(s): BOSCH GMBH ROBERT [DE] ± (BOSCH GMBH ROBERT)

Classification: - international: ***A47L9/00; B25H3/00***
- cooperative: **A47L9/0009**; **A47L9/0027**; **A47L9/0036**; **A47L9/242**; **B25H3/006**

Application number: CN20058041156 20051013

Priority number(s): DE20041057870 20041130

Also published as: DE102004057870 (A1) EP1819487 (A1) US2008271280 (A1) WO2006058805 (A1)

Abstract of CN101068661 (A)

An ancillary device for positioning a bone graft between bones separated by an articular slot, to ensure arthrodesis of a joint, wherein the bone graft is placed in a recess provided at the end of one or more bones defining the articular slot, and comprising means for driving the bone graft, provided with support means on the bone graft suitable for moving the latter in the recess, and actuation means, functionally connected to the driving means, and capable of being handled in order to control the movement of the bone graft.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 451
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
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[19] 中华人民共和国国家知识产权局

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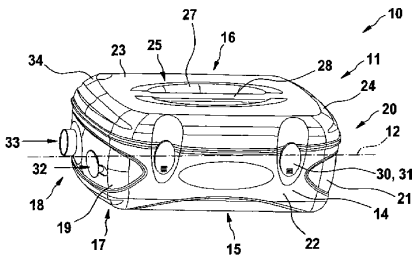
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代理人 曾 立
权利要求书 3 页 说明书 10 页 附图 7 页

[54] 发明名称

移动式动力源

[57] 摘要

本发明涉及借助抽气和/或排气驱动手持式工具机(70)的移动式动力源(10)，为了特别轻便及节省位置地运输，本发明提出：它具有一个壳体(11)，该壳体被构成可用一个盖(24)关闭的箱(13)；及它的空气输送功率适配于手持式工具机(70)的功率需要量及用于存放至少一个这样的或类似的手持式工具机(70)，尤其存放附件以及空气传送管或传送软管。



1.用于借助抽吸的空气和/或排出的空气驱动手持式工具机（70）的移动式动力源（10），**其特征在于**：该动力源具有一个壳体（11），该壳体被构造成可用一个盖（24）关闭的箱（13）并且其空气输送功率适配于手持式工具机（70）的功率需要量并且用于存放至少一个这样的或类似的、尤其是具有附件的手持式工具机（70）以及空气传送管或空气传送软管。

2.根据权利要求 1 的移动式动力源（10），**其特征在于**：该动力源的壳体（11）被构造成一个矩形的箱，具有向外弯拱的棱边、倒圆的角及平坦的、在中间钵状地向内弯拱的盖（24）及平坦的下侧面及上侧面（15，25）。

3.根据权利要求 1 或 2 的移动式动力源（10），**其特征在于**：该动力源的壳体（11）由一个上部敞开的箱部件（13）组成，该箱部件在上部可借助一个尤其是可绕一个铰链区域（26）摆动的盖（24）关闭。

4.根据权利要求 3 的移动式动力源（10），**其特征在于**：所述盖（24）由两个部件（23，27）构成，这两个部件中的一个平坦的盖外壳（23）具有一个中心的穿孔（280），该穿孔被一个接片状的桥接片（28）搭接及具有弯拱的边缘及角，其中，一个盖内壳（27）从下部围搭在该穿孔（280）上及相对接片状的桥接片（28）具有一个向下的距离。

5.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：该箱（13）的一个侧面（16）带有至少一个尤其是蘑菇状的突出部分（38），一个电源电缆（42）可绕在该突出部分上及由此可被保持，其中，该突出部分（38）构成一个放置面——该动力源（10）可被放置在该放置面上——并同时构成一个防撞面，用于例如在粗糙的工地工作的情况下吸收不希望的、作用在盖（24）的铰链区域（26）上的撞击。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 453
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

6.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在箱（13）中设有用于固定手持式工具机（70）的部件，尤其是用于固定/夹紧的弹性部件，优选为可充气的气垫的构型。

7.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在箱（13）的两个较短的侧面（18，20）的一个上尤其并排地设有吸气口及排气口（32，33），这些口具有用于联接抽吸软管（78）的机构。

8.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：该箱（13）由一个箱构架（22）组成，该箱构架构成肋形式的增强部分。

9.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在该增强部分（45）上设有一些缺口（69），这些缺口可借助由较软的成本有利的材料制成的、可加装的弹性的壳（19，21）封闭。

10.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：可操作的部件如盖的锁键、密封盖具有相对壳体（11）形成反差的颜色。

11.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：该箱（13）具有至少一个竖直的隔板，该隔板在壳体（11）中构成一个用于手持式工具机（70）的储物格（63）。

12.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：两个并排布置的、尤其是集成在箱（13）中的箱（55，62）用于接收电动机（105）及用作尘箱，尤其是可分别用一个盖（48，61）优选可超越锁止地封闭。

13.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：这两个箱构成为一个电动机箱（62）及一个具有尘屑控制机构的尘箱（55）。

14.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 454
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

在盖（24）的内侧设有用于接收抽吸软管（78）的保持机构（94），该抽吸软管可超越锁止地相对盖（24）平行地螺旋形设置。

15.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在防尘盖（56）上设有一个旁路阀（50）。

16.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在这些盖（24，56，61）与箱（13，55，62）之间设有密封机构。

17.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：在动力源（10）的内部、尤其是在储物格（63）中或者在盖（24）的内部设有照明机构，尤其是具有 LED 和/或发光的标记符号的构型。

18.根据权利要求 1 的移动式动力源（10），**其特征在于**：可手操作的操作部件（30，31，34）、尤其是用于打开及关闭盖或用于操作一个开关键以接通或关断动力源的操作部件被设置在壳体（11）的外部轮廓的内部。

19.根据权利要求 1 或 2 的移动式动力源（10），**其特征在于**：用于接通或关断动力源的开关键（34）可通过盖（24）的一个开口（29）由外部触及到，以便用脚或手进行操作。

20.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：一个排气适配器（83）可固定地设置在排气口（33）上及可与一个尤其是具有滤尘器（44）的排气栅（46）更换。

21.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：设有一个用于抽吸软管（78）的适配器，借助该适配器可使该抽吸软管与具有不同于该抽吸软管（78）的直径的抽吸接管的手持式工具机、如手持式电动精磨机相联接。

22.根据以上权利要求中一项的移动式动力源（10），**其特征在于**：设有一个软管中间联接件（91），用于使该抽吸软管（78）与一个加长的抽吸软管段相联接。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 455
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

移动式动力源

技术领域

本发明涉及一种用于用抽吸的空气和/或排出的空气驱动的手持式工具机的移动式动力源。

背景技术

根据 US 2003/0208874 A1 及 EP 1 383 285 A2 公开了紧凑型车间吸尘器，它们被用作清洁工具及设有用于抽吸灰尘、切屑等以及液体的附件，及此外这些车间吸尘器也可以以排气模式工作。此外，由 WO 03/026841 A1 公开了一种工具箱，它包括一个用于容纳切屑及灰尘的尘屑吸出单元。这些公开的吸尘器或工具箱仅能有条件地用作用抽吸的空气或排出的空气驱动的手持式工具机的动力源及运输箱。

发明内容

通过具有权利要求 1 的特征的本发明可得到一种紧凑的移动式动力源，该动力源既可单独地作为吸尘器也可用于驱动用空气流工作的工具机、尤其是手持式工具机，在这些工具机工作时可同时进行吸尘，并且该动力源被用作用于优选多个不同的手操纵的工具机的运输箱并且与该工具机一起构成用于不同加工方法的系统，这些方法既可用抽吸的空气也可用排出的空气来实施。

通过该动力源具有一个壳体，该壳体被构造成可用一个盖关闭的箱，该动力源的空气输送功率适配于手持式工具机的功率需要量及同时用于存放至少一个尤其是具有附件的手持式工具机以及空气传送管或空气传送软管，管的直径约为 40mm，则提供了一种新式的手持式工具机系统，它无需手持式工具机直接地连接电源即能工作及可提供足够高的工作功率及抽吸功率。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 456
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

通过该动力源具有一个壳体，该壳体被构造成一个矩形的箱，该箱具有向外弯拱的侧面、倒圆的角及棱边、平坦的上侧面及下侧面、尤其是具有在中心钵状地向内凹下的设有接片状手把的盖，因此得到了一个可特别舒适及轻便运输的、用于用空气流驱动的手持式工具机的动力源。

通过该动力源的壳体由一个上部敞开的、在那里可借助一个尤其是可绕铰链单元摆动的盖关闭的箱部件组成，因此在其中存放的手持式工具机可特别整齐地放置及可方便地取出。

通过所述盖由两个壳构成，其中上壳由特别抗弯曲、抗冲击的材料制成及具有一个中心的、带有一个接片状的桥接片的穿孔以及向下弯曲的、弯拱形的外边缘及角，及其中下壳由更有弹性的、较软的材料制成及围搭上壳的中心穿孔及从接片状的桥接片向下弯拱地突出，因此得到一个特别稳定的、可抗外部冲击地保护运输物并同时体贴地包围内部的容器部分。

通过箱部件的一个侧面带有至少一个尤其是蘑菇状的突出部分，用于对电动机供电的电源电缆可绕在该突出部分上，其中，该至少一个突出部分被用作放置面——该动力源可放置在该放置面上，并同时用作一个防撞面，用于在粗糙的工地工作时吸收作用在盖的铰链区域上的、不希望的撞击，因此运输物可被特别可靠保护地放置。

通过在箱部件中设有用于装入手持式工具机的、尤其是用于预加载地固定和/或夹紧该手持式工具机的保持-/夹紧部件，尤其是以可充气的气垫部件的构型，则在动力源运输时可防止手持式工具机在箱部件内部的不受控制的自身运动或相对运动及由此可受保护以免其损坏地运输。

通过在箱部件的两个较小侧面的一个上并排地设置各一个具有用于联接软管的机构的空气入口及空气出口，因此——视待连接的手持式工具机的选择而定——可实现从吸气到排气模式的动力源工作

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 457
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

方式的快速、方便的转换。

通过在下箱部件中设有框式基本部件构型的、构架形式的、支承所述棱边的增强部分，在该增强部分上可加装弱弹性的侧壳，则吸收冲击的、由贵且重的材料制成的壳体区域可以节约材料地构成，其中，承受冲击负荷较小的面可由轻的、成本有利的材料制成并同时由此改善了向内的冲击吸收。

通过在增强部分上设有缺口，在这些缺口上可加装所述壳，则壳体可保持小的重量。

通过可运动的、被设置用于由手操作的部分如盖的锁键、用于空气入口的密封盖具有相对移动式动力源形成反差的颜色，则可特别快速及方便地找到它们。

通过箱部件具有至少一个竖直的隔板，该隔板将吸尘器与储物空间分隔开，则可特别条理清楚及可靠地存放手持式工具机及其附件。

通过该动力源由两个并排布置的、尤其集成在箱部件中的箱组成，它们尤其是可分别用一个盖优选超越锁止地封闭，则壳体的结构坚固及存放的物件能可靠及受保护地放置。

通过吸尘器的两个箱被构造成一个电动机箱及一个具有尘屑控制开口的尘箱，则这些箱及其内容物可彼此无关地在壳体受到外部撞击或冲击负荷时尤其是防扭曲地被可靠保护。

通过在盖的内侧设有用于抽吸软管的锁止-夹紧机构，该抽吸软管可超越锁止地相对盖面平行地螺旋形放置/布置，则可特别节省位置及易于操作地存放该抽吸软管。

通过在防尘盖上设有一个旁路阀，则可防过载地保护吸尘单元。

通过在盖与箱部件之间设有密封唇，能可靠地防止外部空气的进入或灰尘的漏出。

通过由黑色的增强部分围作用绿色/兰色的箱部件/盖部件，则可直观地区分壳体的软区域及硬区域。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 458
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

通过在动力源内部，尤其是在箱部件/盖部件中设有照明机构，尤其是具有 LED 和/或图形标记和/或符号的构型，优选为一个发光的标记符号，则可特别好地检查当时的、箱部件的储物格中的内容物。

通过将操作部件、尤其是用于打开及关闭盖或用于操作一个开关键以接通或关断动力源的操作部件的外部面设置在动力源的外部轮廓的内部，则可使该动力源及放置在其中的内容物受到保护以免运输时无意地打开或损坏。

通过用于接通或关断动力源的开关键通过所述盖中的开口可由外部触及，用于不仅在盖关闭时而且在盖打开时用脚或手的操作，则动力源的接通及关断可特别舒适、简单及可靠地实现。

通过软管适配器可锁止地设置在空气出口上，该软管适配器可与一个尤其是可与滤尘器固定的排气栅更换，则可特别快速地实现排气与吸气模式之间 – 或反过来 –的转换。

通过用于动力源的抽吸空气软管的、可更换的适配器可与主要可用于吸尘的、尤其是与为电动工具机设置的吸尘器相连接的吸出适配器相更换，则该动力源可同时方便地将及用最小改装时间地被用作吸尘器及手持式电动工具机的动力源。在此，空气流可被用于驱动手持式工具机及同时地用于抽吸或吹出灰尘、切屑等。

通过设置一个用于使一个附加的抽吸软管段连接到动力源的抽吸软管上的中间联接件，由此可根据需要延长抽吸软管。

因此使用者具有将动力源用于不同的、手操纵的工具机的可能性，这些工具机用抽吸空气和/或压力空气驱动及不需要直接的、自身的电源。

附图说明

以下借助实施例与附图来详细描述本发明。

附图表示：

图 1：从斜前方观察该动力源的立体图，

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 459
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 2：从斜后方观察该动力源的视图，

图 3：根据图 1 的动力源在盖打开时的从斜上方观察的视图，

图 4：从斜左方观察根据图 1 的动力源的视图，

图 5：带有螺旋形地置入的软管的根据图 3 的动力源，

图 6：用于借助动力源工作的用抽吸空气驱动的手持式磨削机，

图 7：动力源的一个解体图，

图 8a：用于将抽吸软管与动力源或用空气流传动的手持式工具机连接的软管联接器，

图 8b：具有用于连接软管与排气口的接管的盖板，

图 8c：用于使抽吸软管与手持式电动工具机连接的联接件，具有用于 19 毫米软管的接管，

图 8d：用于使抽吸软管与手持式电动工具机连接的联接件，具有用于 35 毫米软管的接管，

图 8e：用于加装延长段及抽吸软管的软管中间联接器，及

图 8f：用于手持式钻孔机的钻孔辅助器，用于在产生位置上吸走钻孔尘屑。

具体实施方式

在图 1 中所示的一个箱式动力源 10 的从斜前方观察的立体图上可看到其纵轴线 12，该纵轴线平行于前侧面 14 及后侧面 16 地延伸。动力源 10 的下部区域是一个上部敞开的、六面的、矩形的箱 13，该箱在其下侧面 15 上借助于一个底部 17 封闭。此外该箱 13 具有一个左侧面及右侧面 18，20 以及一个上侧面 25，该上侧面通过一个盖 24 来体现。

箱 13 由一个具有冲击韧性的、高级材料作的底盘形式的箱构架 22 构成，该箱构架承载一个左及右侧的、由比较有弹性的轻材料作的侧壳 19，21 以及所述可摆动地被支承的、固定在铰链侧 25 上的盖 24，此盖构成动力源 10 的上侧面 26。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 460
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

盖 24 由一个盖框架 26 组成，此盖框架如箱构架 22 那样由具有冲击韧性的高级材料制成及在其上——从上方看——固定着一个凹入的盖壳 27。盖框架 26 构造有一个横向搭接盖壳 27 的、中间的手把片 28，该手把片可用手舒适地握持及保证了动力源 10 的非常均衡的携带。

在箱 13 的前侧面 14 上，在上部、与盖 24 相邻地设有两个卡锁 30，31，借助它们可使盖 24 防止无意地打开地可靠地锁在箱 13 上。在左侧面 18 上穿过左侧壳 19 彼此平行地伸出一个吸气口 32 及一个排气口 33。

在箱 13 的上侧面上，在左侧面 18 与后侧面 16 之间的角上设有一个开关键 34，该开关键借助弹簧系统 35 弹性预加载地保持在其起始位置中，由该起始位置起该开关键可被从上部按压到接通或关断位置。该开关键 34 穿过盖 34 中的一个合适的开口 29，以致其外部面与盖 24 的外部面齐平地延伸并且即使在盖 24 关闭的情况下也可从外部由脚或由手操作。开关键 34 位于一个上部件 36 上，该上部件与一个开关 37 形成操作连接。

在后侧面 16 上设有一个电缆盖板 38，用于保持可绕在该电缆盖板上的电源电缆 42，该电源电缆穿过后侧面 16 的一个未详细示出的、对水密封的出口穿出及在箱 13 的内部可通过一个电缆接线柱 39 与一个电动机 104 电连接。在箱 13 的内部设有一个电缆束 40，该电缆束使开关 37 与电动机 104 及其它未示出的电元件相连接。

在电缆盖板 38 的边缘上可固定一个电缆夹 41，借助该电缆夹可使电源电缆 42 的自由端部可取下地夹紧在该电缆夹上。

在一个电动机箱盖 61 与一个用于接收一个驱动未详细示出的抽气机的电动机 104 的电动机箱 62 之间设有一个电动机箱密封装置 42。

吸气口 32 可借助一个可取下的吸气口盖 48 封闭，此盖可防止：在动力源 10 运输时灰尘及切屑从其尘箱 55 掉落。排气口 33 被排气

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 461
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

过滤器 44 覆盖及借助一个可固定在那里的排气栅 46 将该排气过滤器固定在该排气口上。

尘箱 55 可由一个防尘盖 56 借助于防尘密封件 57 基本上气密地封闭，其中防尘盖 56 可借助一个手柄形式的突出部分 49 舒适地打开或关闭。在防尘盖 56 中设有一个旁路 50，该旁路在尘箱 55 过满时使一个阀 53 打开，空气在绕过吸气口 32 的情况下通过该阀进入。该旁路 50 包括一个固定盖 51，该固定盖带有所述阀 53 及一个密封件 52，其中阀 53 通过一个弹簧 54 预加载地保持并且只有从一个最小负压起被打开并且使附加的空气流入。

电动机箱 62 与尘箱 55 通过一个共同的开口连接，该开口被一个吸气过滤器 54 覆盖。该吸气过滤器 53 可防止吸入的空气使切屑及灰尘到达电动机 105。电动机箱盖 61 可绕一个未示出的铰链摆动以便打开及关闭。在与铰链对立的侧上，该电动机箱盖设有一个手抠 60，一个手的手指可容易地伸入其中以打开电动机箱盖 61。

卡锁 30，31 由两个曲杆 64，65 组成，这些曲杆各借助一个压键 66 及各一个锁止杆 67 可各绕一个轴 68 摆动。因此盖 24——可绕一个铰链侧 26 摆动地——可靠地、防止无意地打开地相对箱 13 闭锁。

图 2 表示从斜后方观察后侧面 16 时的动力源 10，其中可清楚地看到具有电缆夹 41 的电缆盖板 38。此外还可看到，电缆盖板 38 的面积这样地大，以致它可用作放置动力源的放置面。此外可看到动力源 10 的壳体 11 的壳状结构方式及吸气口与排气口 32，33 的布置。

图 3 表示当盖 24 打开时从斜上方看到其内部时的动力源 10。在此情况下可看到待被置入的抽吸软管 78 的预定螺旋布置及用于将该抽吸软管接收在盖 24 中的保持或夹持件 45 的构型。此外示出箱 13、开关键 34、盖 24 中的用于开关键 34 的穿过的开口 29、用于绕铰链 560 摆动/打开防尘盖 56 的手柄 49、设置在其上的旁路 50、用于打开电动机箱盖 61 的手抠 60、用于放置三角形磨削机 70 或其附件 98 的

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 462
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

储物格 63 的俯视图。在此可看到：箱 13 的大致 1/2 的容积供放置三角形磨削机及盖 24 的整个容积供放置抽吸软管 78 使用。

图 4 表示从斜上方观察具有吸气口 32 及排气口 33 的左侧面 18 及前侧面 14 与上侧面 25 的动力源 10，其中可清楚地看到先前描述的细节，在此不再重复。

图 5 表示类似图 3 的动力源 10，在打开的盖 24 的内部具有螺旋形地放置的抽吸软管 78，其中还可区分出附件 98。

图 6 表示一个构成透平-三角形磨削机 70 的、用于借助动力源 10 工作的、用抽吸空气驱动的手持式磨削机。该手持式磨削机具有一个烙铁形状的壳体 71，该壳体具有一个可由手握持的、用作操作手把 72 的上部区域。该壳体 71 向后延续到一个管状的壳体区域 73，该壳体区域被用作可由操作手舒适地握持的主手把。该壳体区域通到一个联接接管 80 中，在该联接接管中可超越锁止地插入抽吸软管 78 的一个软管联接件 81，以便使三角形磨削机 70 连接到动力源 10，以由抽吸空气来驱动。在上部在操作手把的区域中设有一个开关键 74，借助该开关键可减小抽吸空气流。借助该抽吸空气可驱动壳体 71 内部的一个未示出的透平，该透平将一个磨削盘 76 驱使为轨道运动。软管联接件 81 通过一些锁止凸块 82 形锁合地与联接接管 80 可超越锁止地连接及在那里进入到联接接管 80 的壁中的未详细描述的锁止开口中。

图 7 表示动力源 10——分解为各个零件——的解体图。在此，可特别清楚地看到在前面的图中所述的细节及特征。

图 8a 表示用于将抽吸软管连接到动力源 10 或三角形磨削机 70 或类似的用空气流驱动的工具机上的软管联接件。

图 8b 表示一个排气适配器 83，它由一个盖板 100 组成，该盖板设有一个接管 101，该接管用于使抽吸软管 78 连接到排气口 33 上，该排气口可更换在吸气模式时设置的具有排气过滤器 44 的排气栅 46。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 463
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

为此盖板在其侧向端部上设有一些锁舌 84，该锁舌 1 可在外部在排气口 33 的区域中卡到左侧面 18 上。

图 8c 表示一个软管联接件 85，用于将抽吸软管 78 连接到一个产生小量至中等量尘屑的手持式电动工具机的一个纤细的（19mm）吸出软管-接口/排气接管上。

图 8d 表示另一联接件 88，用于将抽吸软管 78 连接到一个产生中等量至大量尘屑的手持式电动工具机的一个不太细的（35mm）吸出软管-接口上

图 8e 表示一个软管-中间联接件 91，用于联接吸出软管的延长段，该延长段的直径与吸出软管 78 的直径相一致。

图 8f 表示一个钻孔辅助器 93，用于穿过一个钻头以抽吸在钻孔时形成的钻屑。

当连接在吸气口 32 的情况下，该动力源 10 例如可使下列器具用抽吸空气流工作：超精磨削机/多用磨削机、偏心式磨削机、石膏纸板切割机、钻孔辅助器及同时地吸出所形成的尘屑/污物，这些尘屑及污物将通过任意的过滤系统被分离。

当连接在排气口 33 的情况下，该动力源 10 可使以下器具用“压力”空气流工作：涂料喷枪、排气喷嘴/接缝喷嘴、热空气枪、用于使橡皮船及气垫等充气的附加阀。

在动力源 10 的箱 13 中设有一个储物格 63，用于放置三角形磨削机 70 及抽吸-功能附件例如接缝喷嘴、钻孔辅助器 93、用于动力工具的适配器 85，88、用于吸尘器附件的适配器、砂纸（Z）等。

电源电缆 42 在动力源 10 的后侧面 16 上被绕在电缆盖板 38 上及借助夹子形式的电缆夹 41 固定在该电缆盖板 38 上。此外，电缆盖板 38 可作为放置面使用，以便使动力源 10 竖放。

用于与排气栅 44 互换的排气适配器 83 用于在吸气时改善空气通过量及在排气时更好地建立压力。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 464
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

抽吸软管 78 具有一个用作快速锁合的联接接管 80，借助该联接接管可使该抽吸软管连接到吸尘器、透平-三角形磨削机或其它的附属器具上。

在上边缘/角部上的开关键 34 用于由脚方便地接通/关断，其中在盖打开及关闭时均可进行接通/关断操作。

箱 13 通过侧壳 19，21 加强，它们被压紧和/或用螺钉拧紧在箱构架 22 上。通过仅局部地使用更坚固/更高级的材料可提高箱构架 22 的强度，而无需对整个壳体 11 使用昂贵的材料。

吸气口 32 和具有手抠的排气口 33 都被集成在其中一个侧壳 19 上，以致在那里在注塑部件的可简单出模方面存在大的构型余量。

盖壳 23 也作为凹下的置入件被中心地设置在平盖 24 上的手把片 28 的手把区域中。由此该区域可更好地从注塑模具中出模，这保证了动力源的可叠放性及在使用时在盖关闭的情况下可固定小零件或刀具的放置并可用作设计要素。

在防尘盖 56 中或变换地在过滤器壳体中的旁路阀 50 可保证在附加吸尘袋时电动机 104 不会在过载状态下运行。电动机将由抽吸空气冷却。如果吸尘袋注满磨削屑或其气孔被堵塞，则在无旁路阀 50 时剩余是冷却空气将不再能足够地冷却电动机 104。该电动机将过热。一旦灰尘过滤器与电动机风扇之间的过滤器室中的负压低于一个确定的、可由弹簧 54 调节的值时，该负压/旁路阀 50 将打开。通过旁路阀 50 的打开将使附加的空气在绕过过滤器的情况下吸入，以足够地冷却电动机[7]。

在运输动力源 10 时，通过吸气口盖 48 的设置防止了灰尘/废屑从其吸气口 32 落出。通过侧面部分[24]中的手抠使所述打开变得容易及通过由一个销（Pin）固定在侧面部分[24]上可防止其脱落。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 465
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 1

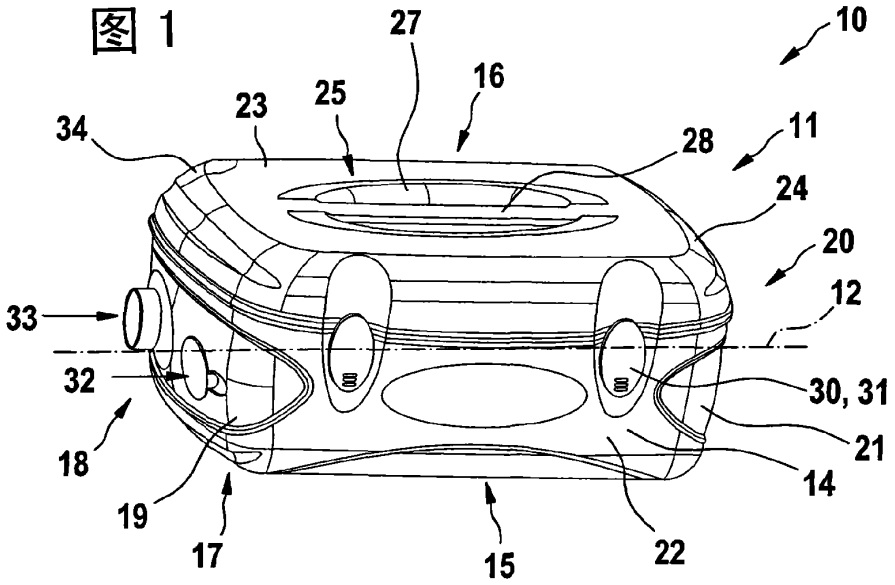
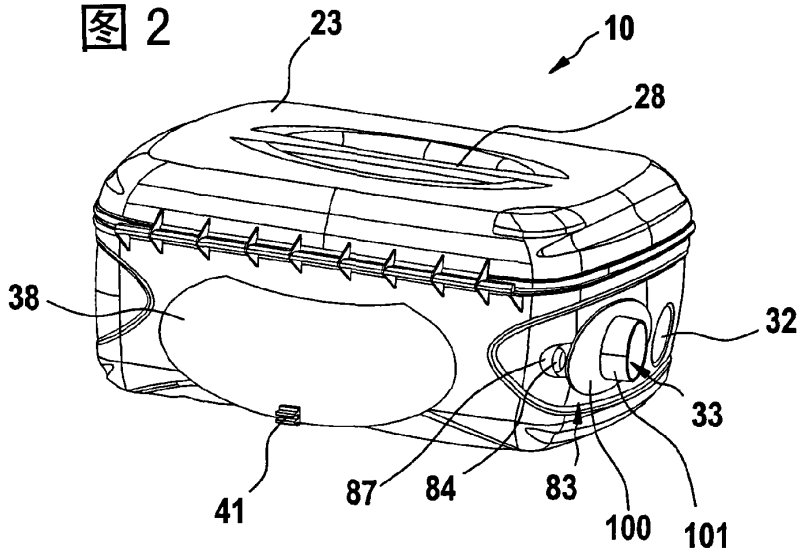
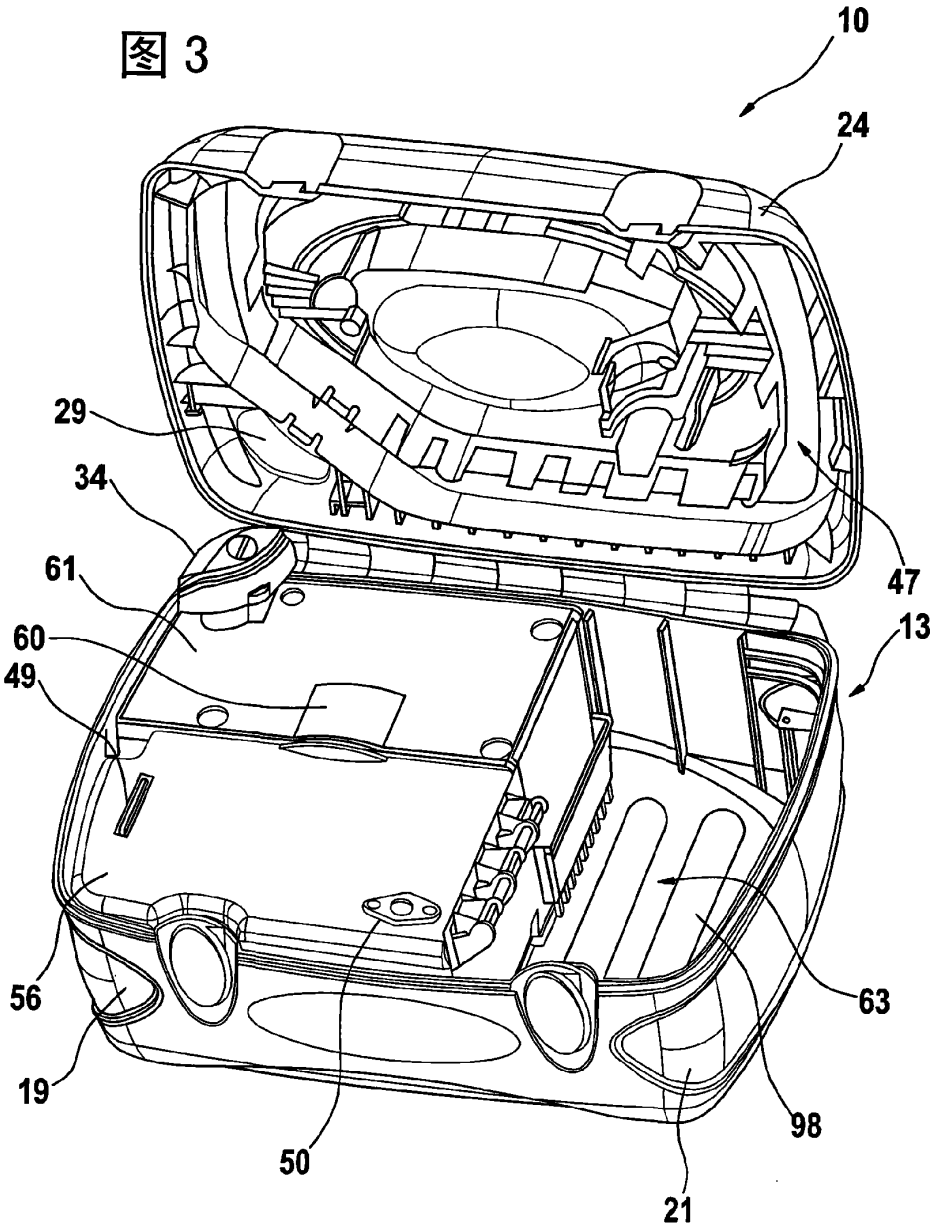


图 2



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 466
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 3



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 467
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

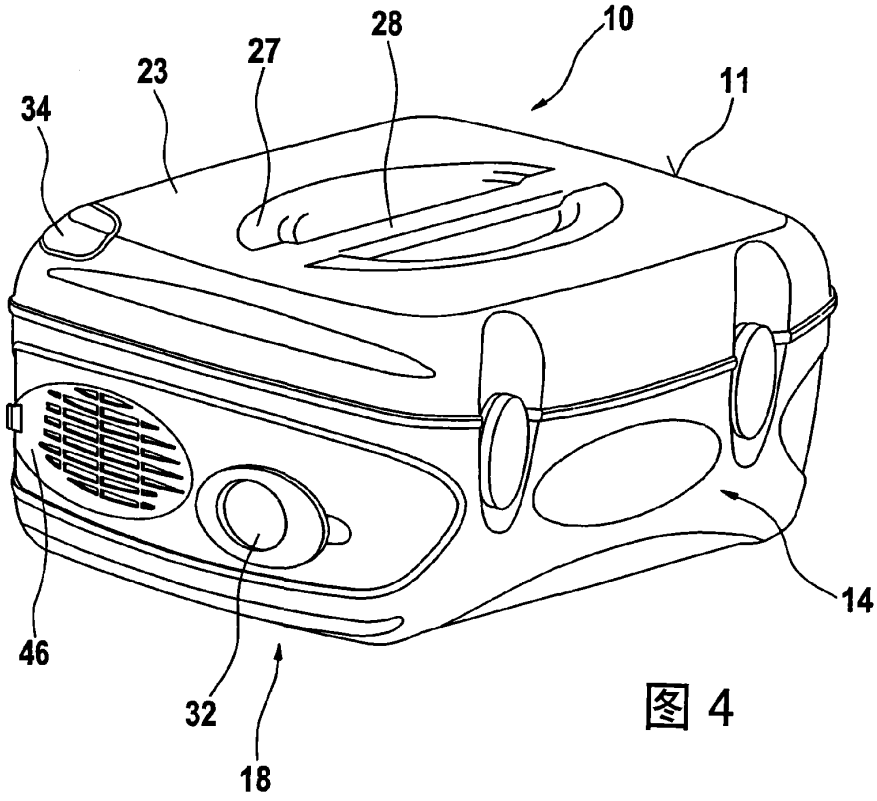
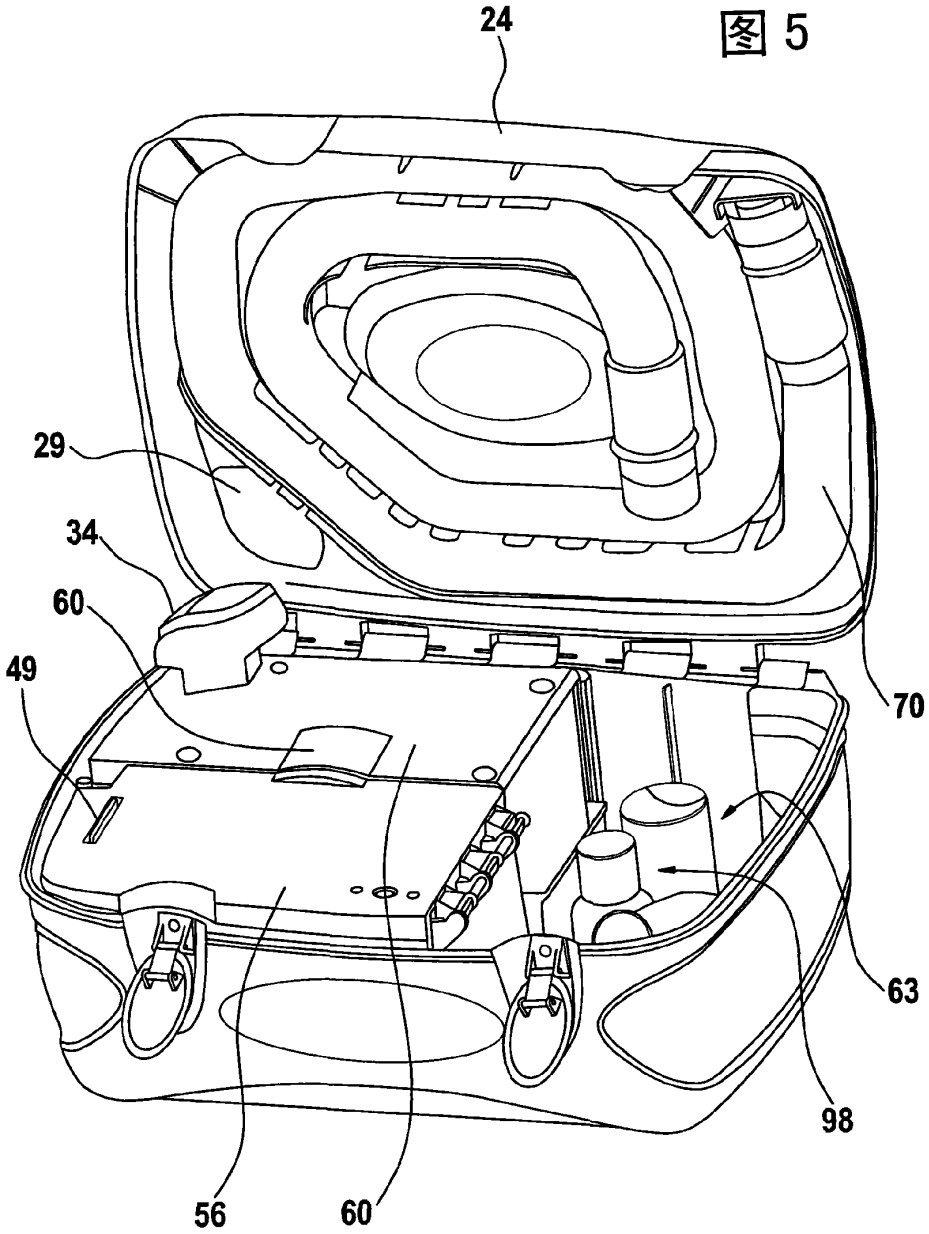


图 4

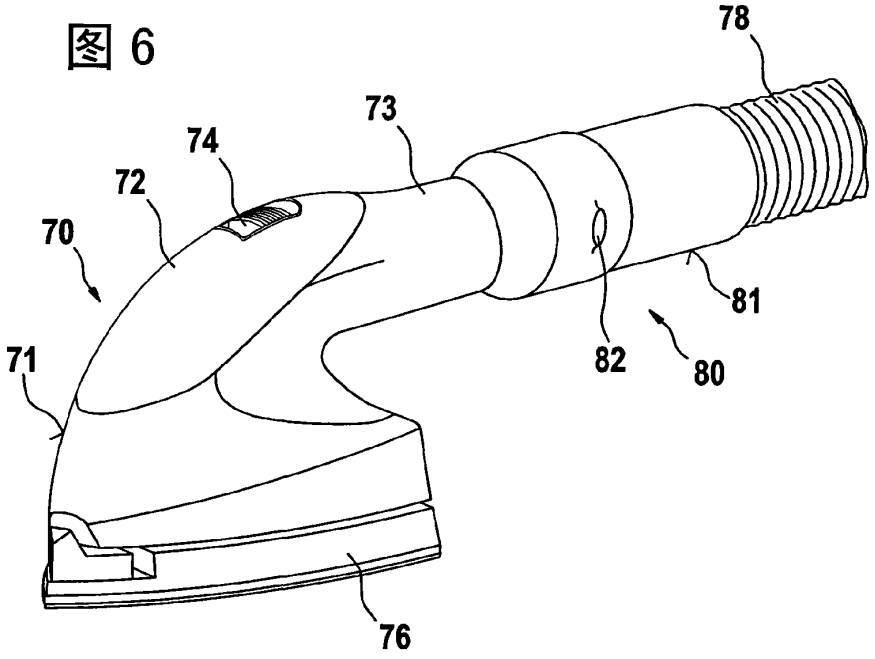
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 468
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 5



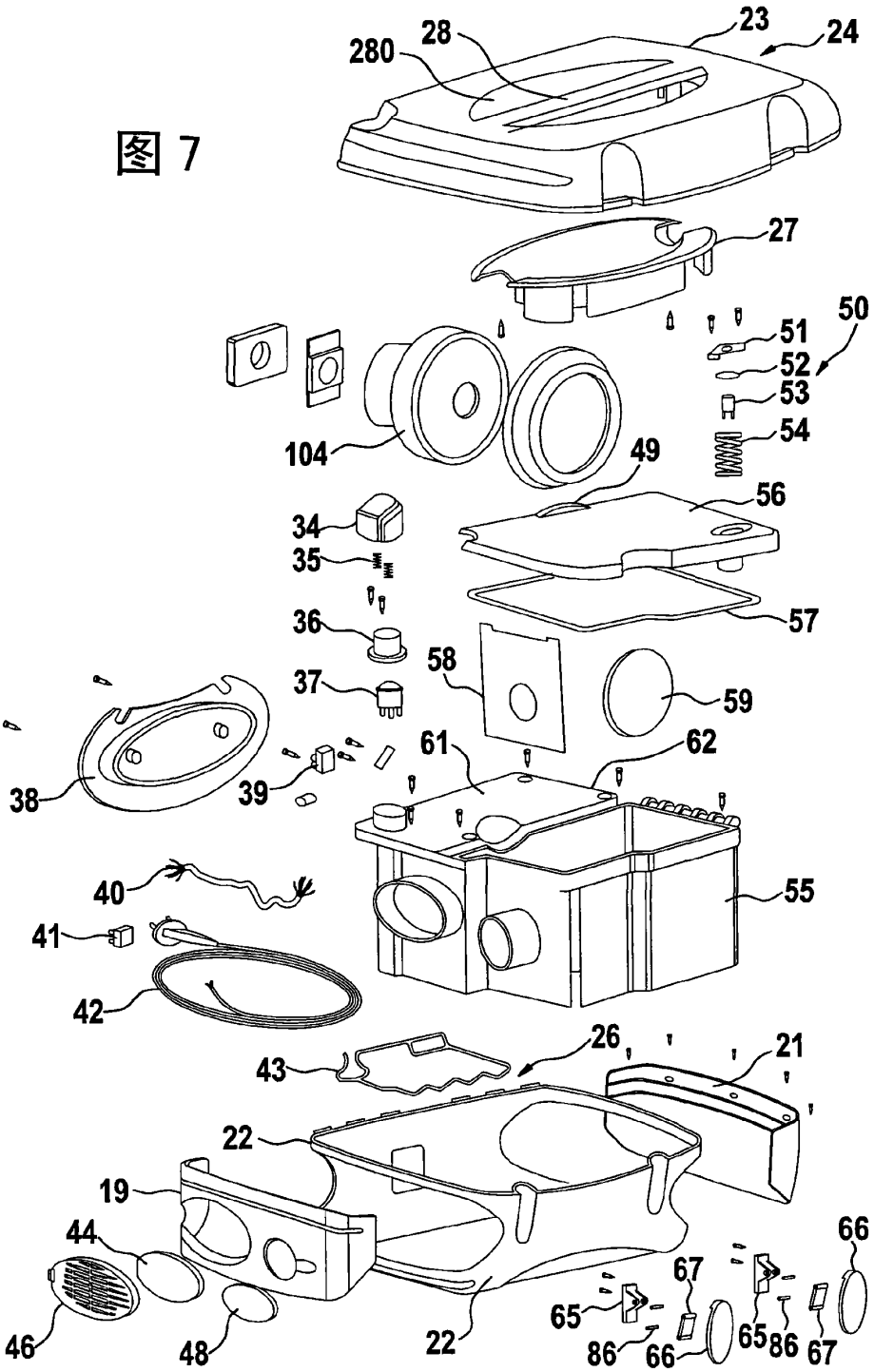
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 469
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 6



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 470
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 7



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 471
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

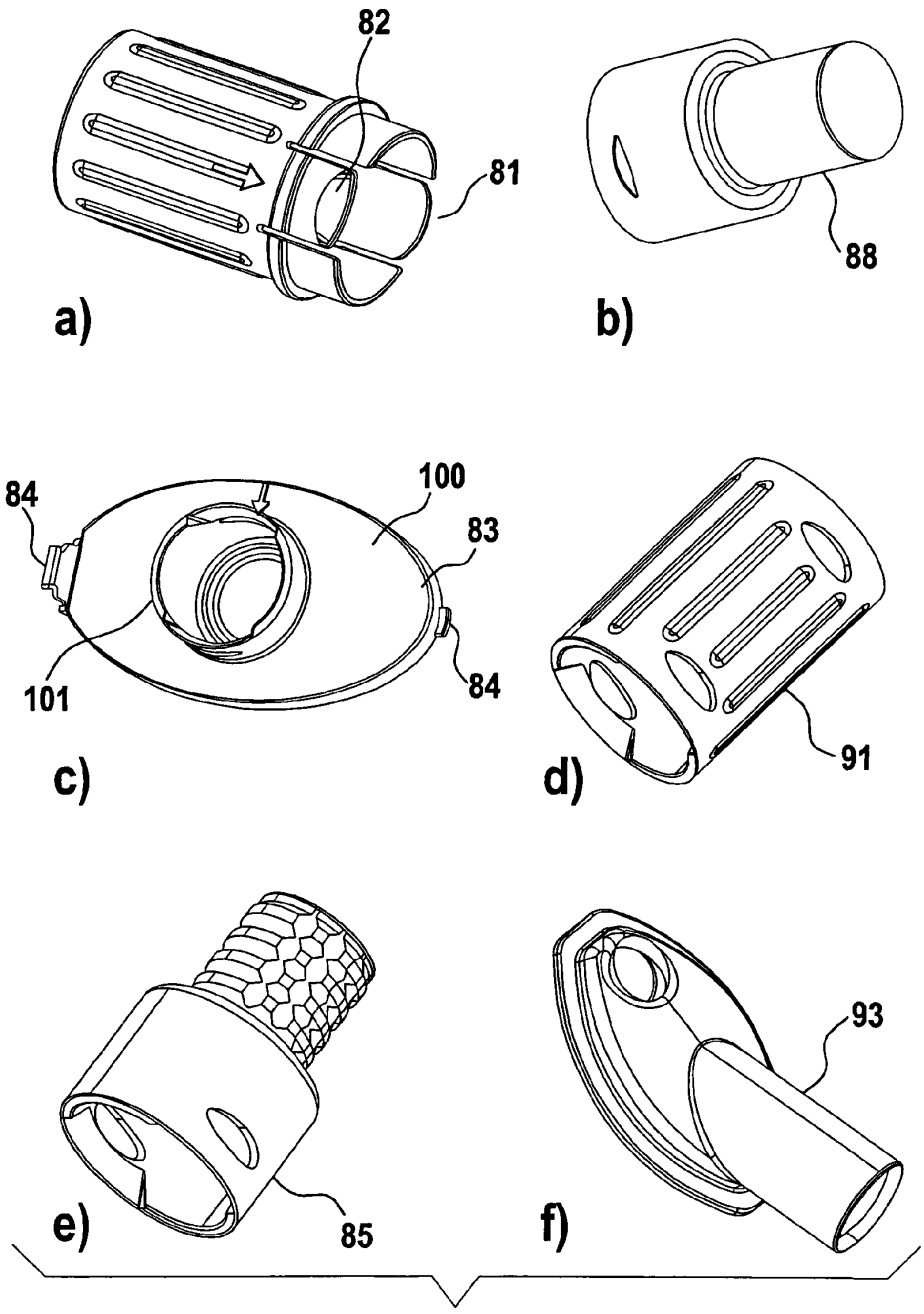


图 8a-f

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 472
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

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Toolbox assembly

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Classification: **- international:** ***B25H3/02***
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Application number: CN20111095467 20110416 Global Dossier

Priority number(s): CN20111095467 20110416

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Abstract of CN102248523 (A)

The invention provides a toolbox assembly, which comprises a base, a hanging plate arranged on the base and a box body which is arranged on the base and corresponds to the hanging plate, wherein an upper cover is arranged on the hanging plate. The toolbox assembly has a simple structure, is convenient to assemble and disassemble, can make various tools conveniently arranged, makes the tools in a toolbox diversified, and can make the tools arranged in a positioned way to prevent the tools from being damaged.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 473
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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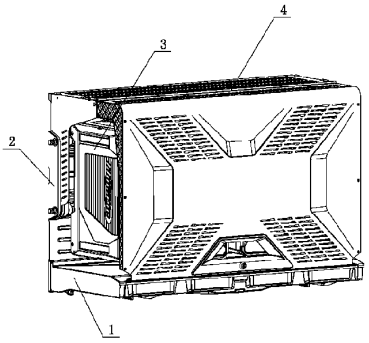
权利要求书 2 页 说明书 5 页 附图 5 页

(54)发明名称

工具箱组合

(57)摘要

本发明提供工具箱组合，包括底座、设在底座上的挂板、设在底座上与挂板对应的箱体，所述挂板上设有上盖。结构简单，组装拆装方便，能够方便放置各种工具，实现工具箱内工具的多样化，并且能够使得工具定位放置，防止损坏。



CN 102248523 A

1. 工具箱组合，其特征在于：包括底座 (1)、设在底座 (1) 上的挂板 (2)、设在底座 (1) 上与挂板 (2) 对应的箱体 (3)，所述挂板 (2) 上设有上盖 (4)。

2. 根据权利要求 1 所述的工具箱组合，其特征在于：所述挂板 (2) 两端各设一个侧板 (21)，两侧板 (21) 上均设有两个挂接孔 (22)，所述挂接孔 (22) 内设有挂接头 (23)，两侧对应的挂接头 (23) 之间设有挂杆 (24)，所述挂板 (2) 上设有上下两排安装孔 (25)，所述挂板 (2) 上设有若干加强筋 (26)，所述加强筋 (26) 上设有第一通孔 (261)，所述挂杆 (24) 穿过所述第一通孔 (261)。

3. 根据权利要求 2 所述的工具箱组合，其特征在于：所述挂接头 (23) 包括安装盘 (231)，所述安装盘 (231) 的两侧各设有一个连接柱 (232)，所述连接柱 (232) 的中心设有插接槽 (2321)，所述连接柱 (232) 的外圆周面上设有若干凸台 (2322)。

4. 根据权利要求 1 所述的工具箱组合，其特征在于：所述箱体 (3) 上设有与挂板 (2) 对应的上卡扣 (5)、下卡扣 (6)，所述上卡扣 (5) 与下卡扣 (6) 通过连扳 (7) 连接，所述连扳 (7) 侧面设有至少一对与箱体 (3) 连接的卡块 (8)，所述下卡扣 (6) 的前端还设有一块斜向上的导向板 (9)，所述上卡扣 (5) 为直角三角形，所述上卡扣 (5) 的斜边上设有向内凹的圆弧形，所述下卡扣 (6) 的横截面为钩形。

5. 根据权利要求 1 所述的工具箱组合，其特征在于：所述箱体 (3) 内设有若干滑槽 (31)，所述滑槽 (31) 内设有卡板 (32)，所述卡板 (32) 包括设有开口卡槽 (324) 的弹性卡板 (322)、设在弹性卡板 (322) 外侧的硬质卡板 (321)、设在硬质卡板 (321) 外侧与滑槽 (31) 对应的滑板 (323)，所述开口卡槽 (324) 内设有对称的两个卡舌 (325)，所述硬质卡板 (321) 的端部设有弹性卡片 (326)。

6. 根据权利要求 5 所述的工具箱组合，其特征在于：所述箱体 (3) 内设有第一抽屉 (33)，所述第一抽屉 (33) 上设有与滑槽 (31) 对应的滑条 (331)，所述箱体 (3) 上设有手柄 (34)，所述手柄 (34) 上设有防滑纹 (341)。

7. 根据权利要求 1 所述的工具箱组合，其特征在于：所述底座 (1) 包括后连扳 (11)、底板 (12)，所述后连扳 (11) 的前壁上开有矩形槽，所述矩形槽上壁内侧设有一块竖直向下的挡块 (13)，所述挡块 (13) 与矩形槽壁之间形成一个扣槽 (14)，所述底板 (12) 后侧的上平面设有一条与扣槽 (14) 相适配的卡条 (15)，所述底板 (12) 的底面设有至少一个插线板放置槽 (16) 和插线板锁紧块 (17)，所述插线板锁紧块 (17) 转动设置在插线板放置槽 (16) 的侧边上，在正对插线板放置槽 (16) 的底板 (12) 底面上还设有蓄电池充电槽 (18)，所述蓄电池充电槽 (18) 的两个侧壁上分别开有蓄电池固定槽 (19)，所述蓄电池充电槽 (18) 的入口处设有蓄电池卡扣 (110)，所述蓄电池卡扣 (110) 的一端平滑的与底板 (12) 的底面连接，所述蓄电池卡扣 (110) 的另一端凸出底板 (12) 的底面，所述底板 (12) 上还开有供电源线通过的第二通孔 (111)。

8. 根据权利要求 7 所述的一种工具箱组合，其特征在于：所述底板 (12) 的底面还开有应急灯放置槽 (112)，所述应急灯放置槽 (112) 的两侧边各设有一块向内倾斜的应急灯挡板 (113)，所述应急灯放置槽 (112) 的入口处设有一个应急灯卡扣 (114)，所述底板 (12) 前部的侧壁上设有至少一个第二抽屉 (115)。

9. 根据权利要求 1 所述的一种工具箱组合，其特征在于：所述上盖 (4) 包括盖板 (41) 和面板 (42)，所述盖板 (41) 与所述面板 (42) 铰接，所述盖板 (41) 与所述面板 (42) 之间

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 475
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

设有气缸 (43)，所述盖板 (41) 的两侧分别设有侧板 (411)，所述侧板 (411) 上设有挂钩 (412)，所述盖板 (41) 与所述面板 (442) 之间设有两只气缸 (43)，所述气缸 (43) 设于所述侧板 (411) 的内侧。

10. 根据权利要求 9 所述的一种工具箱组合，其特征在于：所述盖板 (41) 上设有背挂板 (414)，所述背挂板 (414) 上设有挂孔 (4141)，所述盖板 (41) 上设有网孔 (413)，所述面板 (42) 上设有把手 (421)。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 476
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

工具箱组合

技术领域

[0001] 本发明涉及工具箱组合。

背景技术

[0002] 工具箱，顾名思义，是存储工具的容器，工具箱被广泛使用在很多领域中。一般的工具组合是由多个工具箱组成，工具组合中工具箱的个数都是固定的，如果每个工具箱中存放一个种类的工具，当我们需要多个种类工具组成一个工具组合时，其调整就不是很方便，需要将多个工具箱放在一起，再用工具将多个工具箱采用螺钉固定或者直接焊接方式固定，费时费力，并且在拆卸时也不方便。现有的工具箱为了避免内部放置的工具晃动，防止工具损坏，通常设置与工具对应的凹槽，这就使得工具箱内放置工具时，需要与凹槽一一对应，如果需要增加工具，必须再设置与工具对应的凹槽，制造比较麻烦，无法实现工具箱内工具的多样化。

发明内容

[0003] 本发明所要解决的技术问题在于提供工具箱组合，结构简单，组装拆装方便，能够方便放置各种工具，实现工具箱内工具的多样化，并且能够使得工具定位放置，防止损坏。

[0004] 为解决上述现有的技术问题，本发明采用如下方案：工具箱组合，包括底座、设在底座上的挂板、设在底座上与挂板对应的箱体，所述挂板上设有上盖。

[0005] 作为优选，所述挂板两端各设一个侧板，两侧板上均设有两个挂接孔，所述挂接孔内设有挂接头，两侧对应的挂接头之间设有挂杆，所述挂板上设有上下两排安装孔，所述挂板上设有若干加强筋，所述加强筋上设有第一通孔，所述挂杆穿过所述第一通孔。结构简单，装拆方便。

[0006] 作为优选，所述挂接头包括安装盘，所述安装盘的两侧各设有一个连接柱，所述连接柱的中心设有插接槽，所述连接柱的外圆周面上设有若干凸台。

[0007] 作为优选，所述箱体上设有与挂板对应的上卡扣、下卡扣，所述上卡扣与下卡扣通过连扳连接，所述连扳侧面设有至少一对与箱体连接的卡块，所述下卡扣的前端还设有一块斜向上的导向板，所述上卡扣为直角三角形，其斜边为工作边，所述上卡扣的斜边上设有向内凹的圆弧形，所述下卡扣的横截面为钩形。无需使用任何工具，就能将工具箱方便的挂接到挂板上，快速拼装出一个工具组合，而且工具箱挂在挂板上稳固牢靠。

[0008] 作为优选，所述箱体内设有若干滑槽，所述滑槽内设有对应的卡板，所述卡板包括设有开口卡槽的弹性卡板、设在弹性卡板外侧的硬质卡板、设在硬质卡板外侧与滑槽对应的滑板，所述开口卡槽内设有对称的两个卡舌，所述硬质卡板的端部设有弹性卡片。采用了若干滑槽以及与滑槽对应的卡板，根据所需放置工具的局部大小设置卡板的数量，能够使得所需放置工具定位放置，方便了放置各种工具，实现了工具箱内工具的多样化，防止了工具的损坏。

[0009] 作为优选，所述箱体内设有第一抽屉，所述第一抽屉上设有与滑槽对应的滑条，所

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 477
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

述箱体上设有手柄，所述手柄上设有防滑纹。防滑效果好，有效地防止了工具箱的掉落。

[0010] 作为优选，所述底座包括后连扳、底板，所述后连扳的前壁上开有矩形槽，所述矩形槽上壁内侧设有一块竖直向下的挡块，所述挡块与矩形槽壁之间形成一个扣槽，所述底板后侧的上平面设有一条与扣槽相适配的卡条，所述底板的底面设有至少一个插线板放置槽和插线板锁紧块，所述插线板锁紧块转动设置在插线板放置槽的侧边上，在正对插线板放置槽的底板底面上还设有蓄电池充电槽，所述蓄电池充电槽的两个侧壁上分别开有蓄电池固定槽，所述蓄电池充电槽的入口处设有蓄电池卡扣，所述蓄电池卡扣的一端平滑的与底板的底面连接，所述蓄电池卡扣的另一端凸出底板的底面，所述底板上还开有供电源线通过的第二通孔。只要先将底板的部分卡条插入扣槽内，再向下压底板使卡条完全进入扣槽内，从而使底板与后连扳稳固连接，底板与后连扳连接方便快捷，省时省力，稳固牢靠。

[0011] 作为优选，所述底板的底面还开有应急灯放置槽，所述应急灯放置槽的两侧边各设有一块向内倾斜的应急灯挡板，所述应急灯放置槽的入口处设有一个应急灯卡扣，所述底板前部的侧壁上设有至少一个第二抽屉。

[0012] 作为优选，所述上盖包括盖板和面板，所述盖板与所述面板铰接，所述盖板与所述面板之间设有气缸，所述盖板的两侧分别设有侧板，所述侧板上设有挂钩，所述盖板与所述面板之间设有两只气缸，所述气缸设于所述侧板的内侧。通过盖板上的挂钩可以与挂板实现连接，由于盖板与面板之间设有气缸，可以实现上盖在任意位置的定位，其结构简单，装拆方便。

[0013] 作为优选，所述盖板上设有背挂板，所述背挂板上设有挂孔，所述盖板上设有网孔，所述面板上设有把手。

[0014] 有益效果：

[0015] 本发明采用上述技术方案提供工具箱，结构简单，组装拆装方便，能够方便放置各种工具，实现工具箱内工具的多样化，并且能够使得工具定位放置，防止损坏。

附图说明

[0016] 图 1 为本发明的结构示意图；

[0017] 图 2 为本发明中挂板未装配挂杆的结构示意图；

[0018] 图 3 为本发明中挂板装配挂杆的结构示意图；

[0019] 图 4 为挂接头的结构示意图；

[0020] 图 5 为本发明中上卡扣和下卡扣的结构示意图；

[0021] 图 6 为本发明中上卡扣和下卡扣使用时的示意图；

[0022] 图 7 为本发明中箱体的结构示意图；

[0023] 图 8 为本发明中箱体与卡板卡接的结构示意图；

[0024] 图 9 为本发明中底座后连扳的结构示意图；

[0025] 图 10 为本发明中底座底板底面的结构示意图；

[0026] 图 11 为本发明中底座的结构示意图；

[0027] 图 12 为图 10 中 A 处的局部放大图；

[0028] 图 13 为本发明中上盖的结构示意图。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 478
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

具体实施方式

[0029] 如图 1 所示，工具箱组合，包括底座 1、设在底座 1 上的挂板 2、设在底座 1 上与挂板 2 对应的箱体 3，所述挂板 2 上设有上盖 4。结构简单，组装拆装方便，能够方便放置各种工具。

[0030] 如图 2、图 3、图 4 所示，所述挂板 2 两端各设一个侧板 21，两侧板 21 上均设有两个挂接孔 22，所述挂接孔 22 内设有挂接头 23，两侧对应的挂接头 23 之间设有挂杆 24，所述挂板 2 上设有上下两排安装孔 25，所述挂板 2 上设有若干加强筋 26，所述加强筋 26 上设有第一通孔 261，所述挂杆 24 穿过所述第一通孔 261。所述挂接头 23 包括安装盘 231，所述安装盘 231 的两侧各设有一个连接柱 232，所述连接柱 232 的中心设有插接槽 2321，所述连接柱 232 的外圆周面上设有若干凸台 2322。装配时，挂杆 24 与挂接头 23 实现连接，再通过挂杆 24 与上盖 4 上的挂钩连接即可，挂接头 23 两侧各设有一个连接柱 232，还可以实现多段挂杆 24 的连接，从而实现多个工具箱的连接。

[0031] 如图 5、图 6 所示，所述箱体 3 上设有与挂板 2 对应的上卡扣 5、下卡扣 6，所述上卡扣 5 与下卡扣 6 通过连扳 7 连接，所述连扳 7 侧面设有至少一对与箱体 3 连接的卡块 8，所述下卡扣 6 的前端还设有一块斜向上的导向板 9，所述上卡扣 5 为直角三角形，其斜边为工作边，所述上卡扣 5 的斜边上设有向内凹的圆弧形，所述下卡扣 6 的横截面为钩形。在箱体 3 两侧面的后部可以先开卡孔，将上卡扣 5、下卡扣 6 扣入卡孔中，从而将上卡扣 5、下卡扣 6 与箱体 3 紧固连接在一起，再先将上卡扣 5 挂入挂条的上部，在箱体 3 的下部施力向内推，使挂条的下部沿下卡扣 6 的导向板 9 滑入下卡扣 6 内，从而将工具箱挂上挂条，用同样的方式将多个工具箱都挂在挂条上组成一个工具柜。无论是卡扣与工具箱连接，还是卡扣与挂条挂接，都方便快捷，且连接稳固牢靠。

[0032] 如图 7、图 8 所示，所述箱体 3 内设有若干滑槽 31，所述滑槽 31 内设有对应的卡板 32，所述卡板 32 包括设有开口卡槽 324 的弹性卡板 322、设在弹性卡板 322 外侧的硬质卡板 321、设在硬质卡板 321 外侧与滑槽 31 对应的滑板 323，所述开口卡槽 324 内设有对称的两个卡舌 325，所述硬质卡板 321 的端部设有弹性卡片 326。所述箱体 3 内设有第一抽屉 33，所述第一抽屉 33 上设有与滑槽 31 对应的滑条 331，所述箱体 3 上设有手柄 34，所述手柄 34 上设有防滑纹 341。根据所需放置工具的局部大小设置卡板 32 的数量，然后利用滑板 323 与滑槽 31 配合，实现了卡板 32 的放置，弹性卡板 322 上的开口卡槽 324 卡接所需放置的工具，保证了工具的定位放置。第一抽屉 33 用于放置工具，根据放置工具的大小设置不同大小的第一抽屉 33，第一抽屉 33 上设置滑条 331，保证了第一抽屉 33 与箱体 3 之间的可靠连接。箱体 3 上设有与手柄 34 对应的卡扣，当工具箱不使用时，手柄 34 转动到卡扣位置卡住定位，不易转动，防止损伤。

[0033] 所述的弹性卡板 322 采用改性聚丙烯 CK-95210BK001，磨损小，弹性好，方便了工具的卡接装配。成分构成如表 1 所示：

[0034] 表 1

[0035]

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 479
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

成分构成	序号	项 目	用 量	单位	质量分数
主要材料	1	HPP	346	kg	34~35%
	2	CPP	125	kg	12~13%
	3	HCPP 高结晶 PP	250	kg	24~26%
	4	弹性体	50	kg	4~6%
	5	矿物粉	220	kg	21~23%
辅助材料	6	抗氧剂	4	kg	0.3~0.5%
	7	耐候剂	3	Kg	0.2~0.4%
	8	加工助剂	2	kg	0.1~0.3%

[0036] 如图 9、图 10、图 11、图 12 所示，所述底座 1 包括后连扳 11、底板 12，所述后连扳 11 的前壁上开有矩形槽，所述矩形槽上壁内侧设有一块竖直向下的挡块 13，所述挡块 13 与矩形槽壁之间形成一个扣槽 14，所述底板 12 后侧的上平面设有一条与扣槽 14 相适配的卡条 15，所述底板 12 的底面设有至少一个插线板放置槽 16 和插线板锁紧块 17，所述插线板锁紧块 17 转动设置在插线板放置槽 16 的侧边上，在正对插线板放置槽 16 的底板 12 底面上还设有蓄电池充电槽 18，所述蓄电池充电槽 18 的两个侧壁上分别开有蓄电池固定槽 19，所述蓄电池充电槽 18 的入口处设有蓄电池卡扣 110，所述蓄电池卡扣 110 的一端平滑的与底板 12 的底面连接，所述蓄电池卡扣 110 的另一端凸出底板 12 的底面，所述底板 12 上还开有供电源线通过的第二通孔 111。所述底板 12 的底面还开有应急灯放置槽 112，所述应急灯放置槽 112 的两侧边各设有一块向内倾斜的应急灯挡板 113，所述应急灯放置槽 112 的入口处设有一个应急灯卡扣 114，所述底板 12 前部的侧壁上设有至少一个第二抽屉 115。后连扳 11 与底板 12 装配时，先将底板 12 左侧卡条 15 的一部分伸入扣槽 14 内，再下压底板 12 的右侧，使卡条 15 整个扣进扣槽 14 内，完成后连扳 11 与底板 12 的配合；如果要将后连扳 11 与底板 12 分开，只要手握底板 12 右侧，向上施力，就能使卡条 15 与扣槽 14 分离，将后连扳 11 与底板 12 分开，组合和拆分后连扳 11 与底板 12 时方便快捷。放置插线板时，先将插线板锁紧块 17 旋至竖直状态，将插线板放入插线板放置槽 16 内，再将插线板锁紧块 17 旋转 90 度，把插线板固定住。如果电动工具中的电池需要充电，只要将充电电池推入蓄电池充电槽 18，蓄电池的扣边扣入蓄电池固定槽 19 中，蓄电池的后部通过蓄电池卡扣 110 卡住，蓄电池对接到插线板上，即可开始对蓄电池进行充电，充电完成后，按下蓄电池卡扣 110，将蓄电池从蓄电池充电槽 18 中抽出。

[0037] 如图 13 所示，所述上盖 4 包括盖板 41 和面板 42，所述盖板 41 与所述面板 42 铰接，所述盖板 41 与所述面板 42 之间设有气缸 43，所述盖板 41 的两侧分别设有侧板 411，所述侧板 411 上设有挂钩 412，所述盖板 41 与所述面板 442 之间设有两只气缸 43，所述气缸 43 设于所述侧板 411 的内侧。所述盖板 41 上设有背挂板 414，所述背挂板 414 上设有挂孔

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 480
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

4141，所述盖板 41 上设有网孔 413，所述面板 42 上设有把手 421。可以实现上盖 4 在任意位置的定位，定位准确。

[0038] 以上所述仅为本发明的具体实施例，但本发明的技术特征并不局限于此，任何本领域的技术人员在本发明的领域内，所作的变化或修饰皆涵盖在本发明的专利范围之中。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 481
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

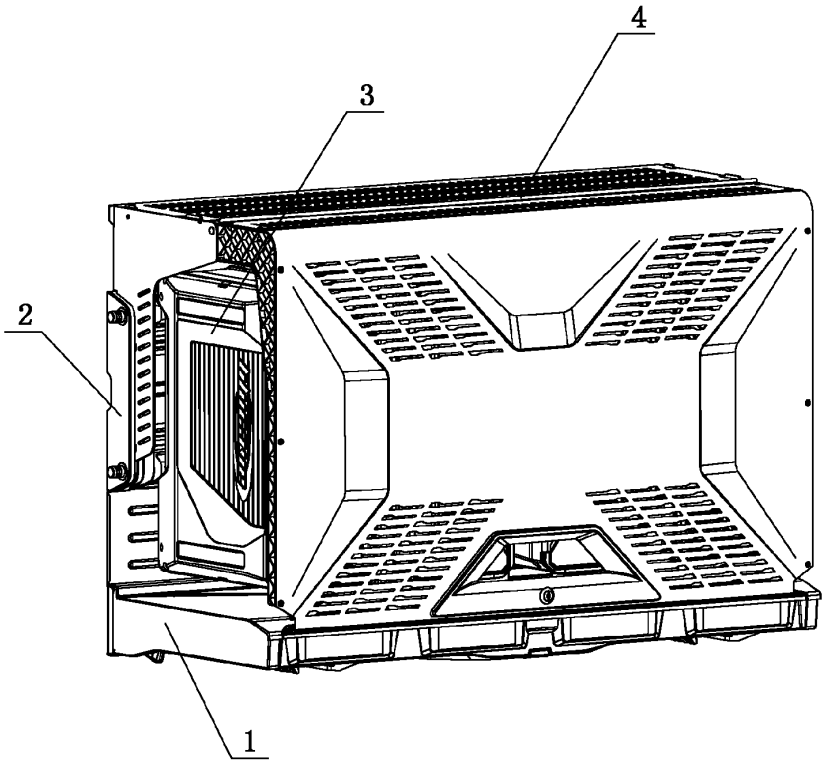


图 1

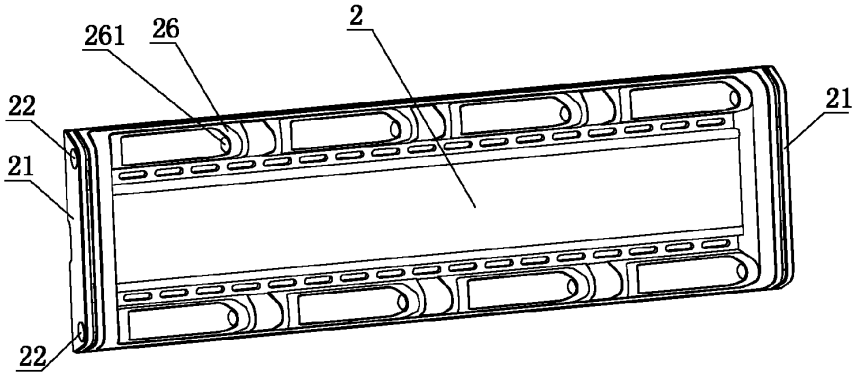


图 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 482
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

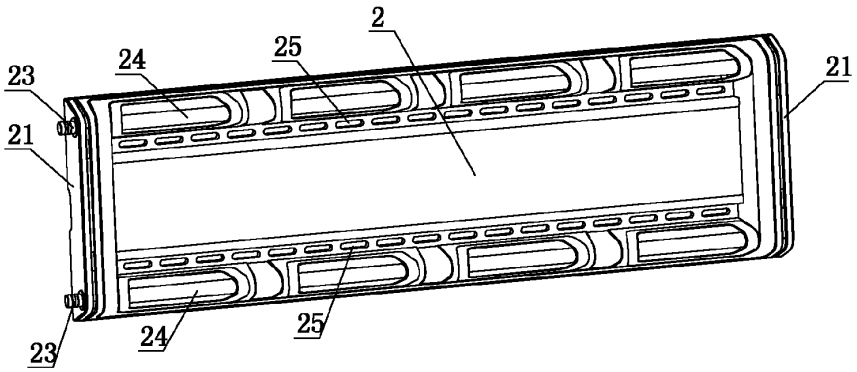


图 3

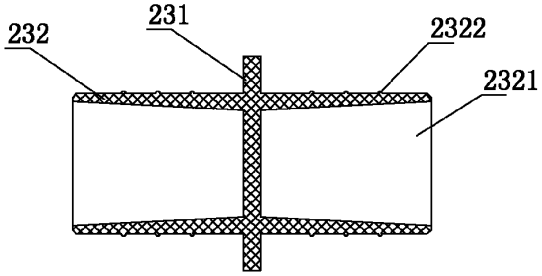


图 4

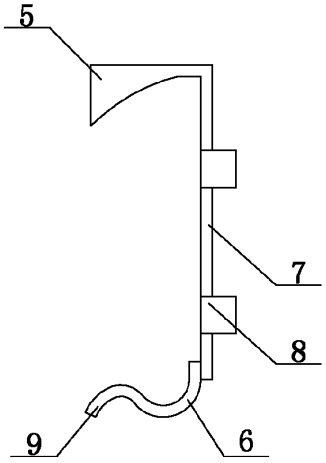


图 5

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 483
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

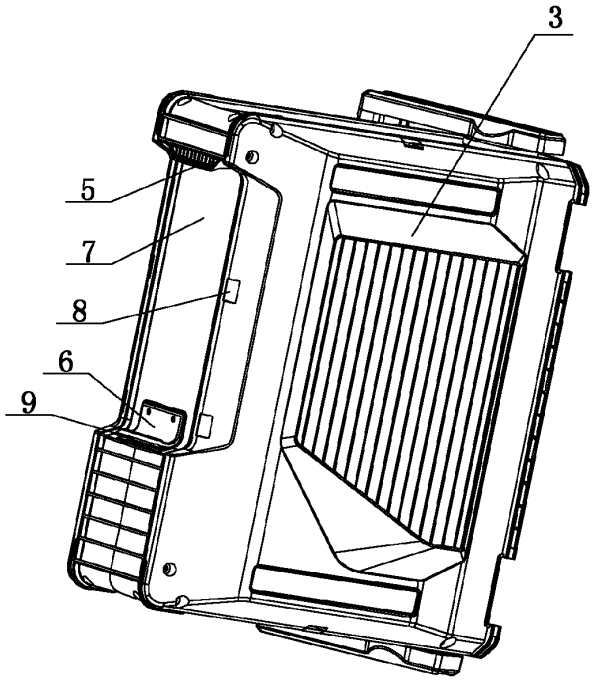


图 6

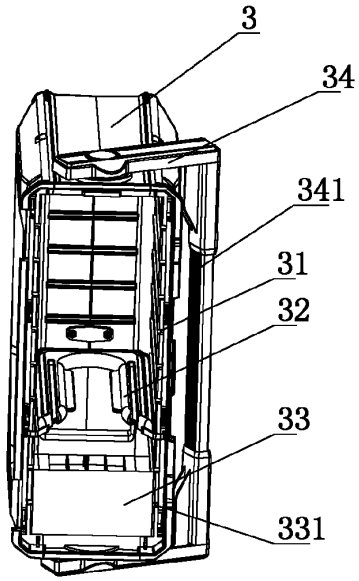


图 7

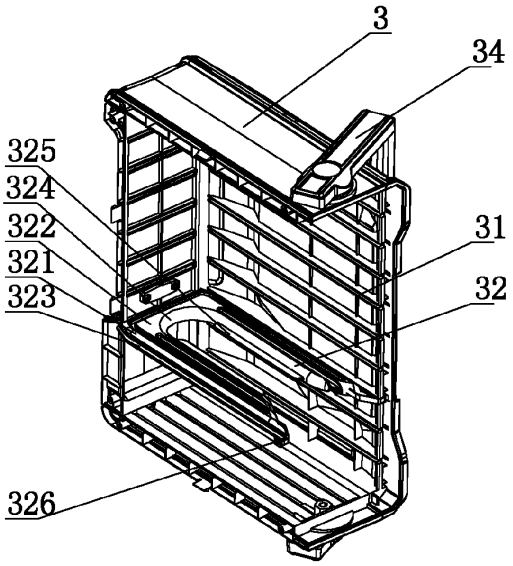


图 8

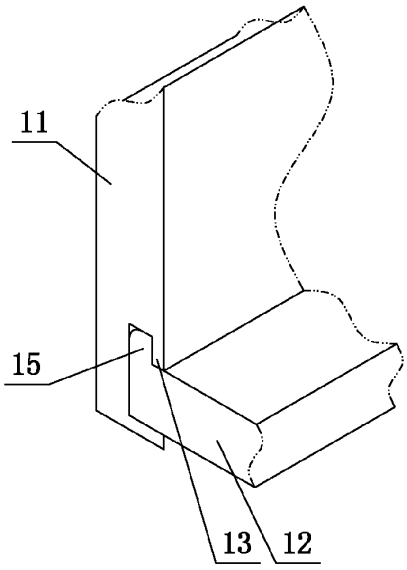


图 9

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 484
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

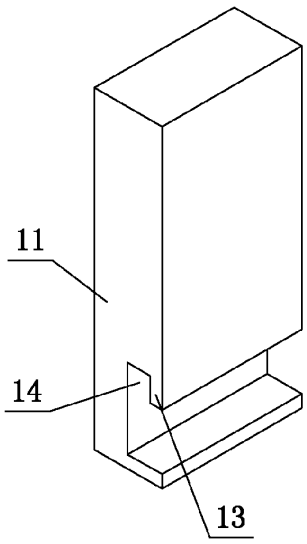


图 10

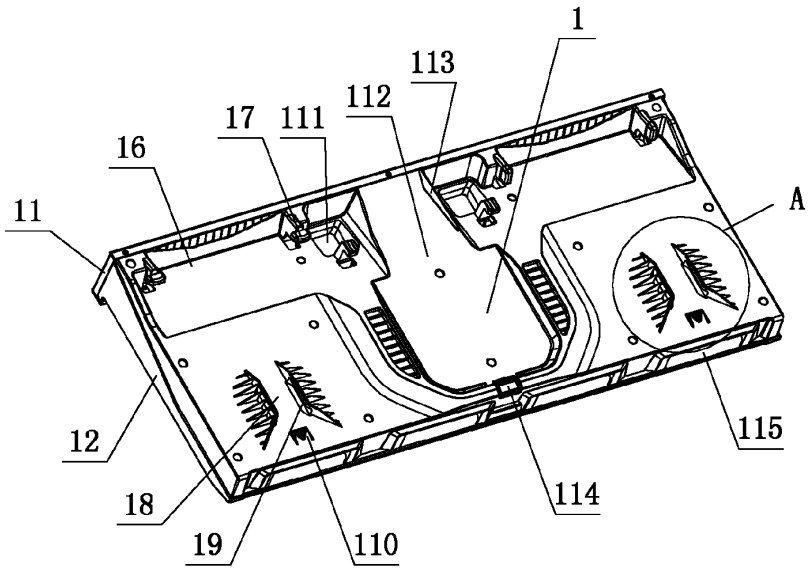


图 11

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 485
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

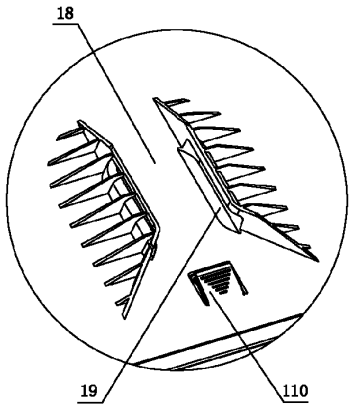


图 12

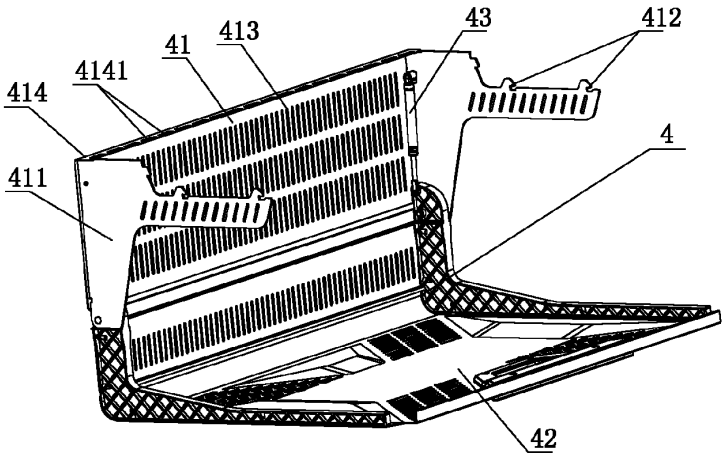


图 13

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 486
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

Bibliographic data: CN102469899 (A) — 2012-05-23

Adapter device for a portable cleaning appliance and cleaning device having an adapter device and a cleaning appliance

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Applicant(s): KAERCHER GMBH & CO KG ALFRED ± (KAERCHER GMBH. & CO. KG. ALFRED)

Classification: **- international:** ***A47L9/00; B25H3/00***
- cooperative: **A47L9/0009**; **A47L9/009**; **B25H3/00**

Application number: CN200980160516 20090720

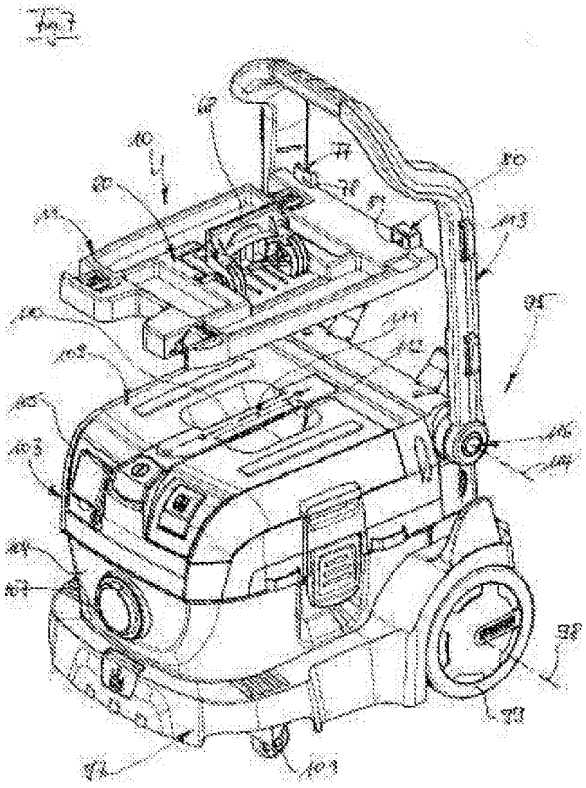
Priority number(s): WO2009EP59320 20090720

Also published as: CN102469899 (B) DK2456341 (T3) EP2456341 (A1) EP2456341 (B1) RU2012105755 (A) more

Abstract of CN102469899 (A)

The invention relates to an adapter device (10) for the arrangement of a container (120) on the housing (105) of a portable cleaning appliance (95). The adapter device (10) comprises an adapter plate (11), which can be placed on the top surface (109) of the housing (105) and which has a storage surface (20) on the top side for placing the container (120), and a locking device (60) for detachably locking the adapter plate (11) to the housing (105) of the cleaning appliance (95) without tools. The invention further relates to a cleaning device comprising a cleaning appliance (95) and such an adapter device (10).

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 487
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 488
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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B25H 3/00(2006.01)

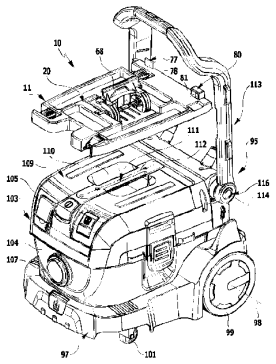
权利要求书 2 页 说明书 8 页 附图 10 页

(54)发明名称

用于能携带的清洁器的适配设备以及具有适配设备和清洁器的清洁装置

(57)摘要

适配设备(10),用于将容器(120)布置在能携带的清洁器(95)的壳体(105)上。该适配设备(10)包括适配盘(11),该适配盘能安放到壳体(105)的覆盖面(109)上,并且在上侧具有:用于放置容器(120)的搁放面(20);以及用于使适配盘(11)与清洁器(95)的壳体(105)免工具可拆卸地锁紧的锁紧装置(60)。具有清洁器(95)和这种适配设备(10)的清洁装置。



CN 102469899 A

1. 适配设备，用于容器 (120) 在能携带的清洁器 (95) 的壳体 (105) 上的布置，其特征在于，所述适配设备 (10) 具有适配盘 (11)，所述适配盘能安放到所述壳体 (105) 上并且在上侧具有：用于放置所述容器 (120) 的搁放面 (20)；以及用于使所述适配盘 (11) 与所述清洁器 (95) 的所述壳体 (105) 免工具能拆卸地锁紧的锁紧装置 (60)。

2. 根据权利要求 1 所述的适配设备，其特征在于，所述适配盘 (11) 能借助所述锁紧装置 (60) 与所述清洁器 (95) 的所述壳体 (105) 的能从后方抓握的壳体件 (111) 免工具能拆卸地锁紧。

3. 根据权利要求 1 或 2 所述的适配设备，其特征在于，所述适配盘 (11) 能借助所述锁紧装置 (60) 与所述清洁器 (95) 的携带抓握件 (111) 免工具能拆卸地锁紧，所述携带抓握件布置在所述清洁器 (95) 的所述壳体 (105) 的上侧上。

4. 根据权利要求 1、2 或 3 所述的适配设备，其特征在于，所述锁紧装置 (60) 具有至少一个锁紧构件 (65、66)，所述至少一个锁紧构件以能在锁紧位置与释放位置之间来回运动的方式保持在所述适配盘 (11) 上。

5. 根据权利要求 4 所述的适配设备，其特征在于，所述锁紧装置 (60) 具有能由用户抓取的锁紧把手 (68)，所述锁紧把手与所述至少一个锁紧构件 (65、66) 连接。

6. 根据权利要求 5 所述的适配设备，其特征在于，在所述至少一个锁紧构件 (65、66) 的所述释放位置中所述锁紧把手 (68) 由所述适配盘 (11) 的所述搁放面 (20) 突出，并且在所述至少一个锁紧构件 (65、66) 的所述锁紧位置中所述锁紧把手 (68) 不由所述适配盘 (11) 的所述搁放面 (20) 突出。

7. 根据权利要求 5 或 6 所述的适配设备，其特征在于，所述锁紧把手 (68) 设计为呈板形，并且在所述至少一个锁紧构件 (65、66) 的所述锁紧位置中所述锁紧把手 (68) 布置在所述搁放面 (20) 的平面中或所述搁放面 (20) 的平面下方。

8. 根据权利要求 4 至 7 中任一项所述的适配设备，其特征在于，所述至少一个锁紧构件 (65、66) 能绕摆动轴 (51) 摆动。

9. 根据权利要求 4 至 8 中任一项所述的适配设备，其特征在于，所述锁紧装置 (60) 具有彼此刚性连接的并且彼此保持距离布置的两个锁紧构件 (65、66)。

10. 根据权利要求 9 所述的适配设备，其特征在于，所述锁紧把手 (68) 将所述两个锁紧构件 (65、66) 彼此刚性地连接。

11. 根据权利要求 4 至 10 中任一项所述的适配设备，其特征在于，所述至少一个锁紧构件 (65、66) 设计为呈钩状或呈弓状并且在所述锁紧位置中从下方抓握所述清洁器 (95) 的壳体件 (111)。

12. 根据权利要求 5 至 11 中任一项所述的适配设备，其特征在于，所述适配盘 (11) 在上侧具有第一凹部 (22)，所述第一凹部容纳所述锁紧把手 (68)。

13. 根据前述权利要求中任一项所述的适配设备，其特征在于，所述适配设备 (10) 具有携带装置 (38)，所述携带装置具有至少一个携带抓握件 (43)，所述至少一个携带抓握件能由用户环握。

14. 根据权利要求 13 所述的适配设备，其特征在于，所述携带抓握件 (43) 能在携带位置与静止位置之间来回运动，在所述携带位置中所述携带抓握件由所述适配盘 (11) 的所述搁放面 (20) 突出，在所述静止位置中所述携带抓握件不由所述适配盘 (11) 的所述搁放

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 490
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

面 (20) 突出。

15. 根据权利要求 13 或 14 所述的适配设备，其特征在于，所述适配设备 (10) 的所述携带抓握件 (43) 能绕摆动轴 (51) 摆动。

16. 根据权利要求 14 或 15 所述的适配设备，其特征在于，所述适配盘 (11) 在上侧具有第二凹部 (24)，所述第二凹部容纳所述携带抓握件 (43)。

17. 根据权利要求 13 至 16 中任一项所述的适配设备，其特征在于，所述适配设备 (10) 的所述携带装置 (39) 能摆动地支承在所述适配盘 (11) 上。

18. 根据权利要求 13 至 17 中任一项所述的适配设备，其特征在于，所述锁紧装置 (60) 保持在所述携带装置 (38) 上。

19. 根据权利要求 18 所述的适配设备，其特征在于，所述锁紧装置 (60) 能运动地支承在所述携带装置 (38) 上。

20. 根据前述权利要求中任一项所述的适配设备，其特征在于，所述适配盘 (11) 具有由所述搁放面 (20) 突出的至少一个止档元件 (77、80)，所述容器 (120) 能贴靠到所述至少一个止档元件上。

21. 根据权利要求 20 所述的适配设备，其特征在于，至少一个止档元件 (80) 具有凹座 (81)，用于容纳所述容器 (120) 的凸块。

22. 根据前述权利要求中任一项所述的适配设备，其特征在于，所述适配设备 (10) 具有至少一个锁定元件 (85、88、91)，用于将所述容器 (120) 锁定在所述适配盘 (11) 的所述搁放面 (20) 上。

23. 根据权利要求 22 所述的适配设备，其特征在于，至少一个锁定元件 (85、88、91) 能运动地支承在所述适配盘 (11) 的上侧的凹部 (83、87、90) 中。

24. 清洁装置，其具有：能携带的清洁器 (95)，所述清洁器具有壳体 (104、105)；和根据前述权利要求中任一项所述的适配设备 (10)。

25. 根据权利要求 24 所述的清洁装置，其特征在于，所述清洁器 (95) 的所述壳体 (105) 具有能从后方抓握的壳体件 (111)，所述锁紧装置 (60) 与所述壳体件配合作用，用于使所述适配盘 (11) 与所述壳体 (105) 免工具能拆卸地锁紧。

26. 根据权利要求 24 或 25 所述的清洁装置，其特征在于，所述清洁器 (95) 具有携带抓握件 (111) 并且所述适配设备 (10) 的所述适配盘 (11) 能借助所述锁紧装置与所述携带抓握件 (111) 免工具能拆卸地锁紧。

27. 根据权利要求 24、25 或 26 所述的清洁装置，其特征在于，所述清洁器设计为吸尘器 (95)。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 491
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

用于能携带的清洁器的适配设备以及具有适配设备和清洁器的清洁装置

技术领域

[0001] 本发明涉及一种用于将容器布置在能携带的清洁器的壳体上的适配设备。

[0002] 此外，本发明涉及一种清洁装置，其具有：能携带的清洁器，该清洁器具有壳体；和前述类型的适配设备。

背景技术

[0003] 能携带的清洁器以例如能携带的吸尘器或能携带的高压清洁器的形式使用。这些清洁器例如在施工工地但也在其他使用地点使用。清洁器能由用户携带。通常清洁器也能行进并且为此具有适合的滚轮。

[0004] 为了运输到使用地点在很多情况下清洁器定位在运输车辆中，并且因为在大多数情况中运输车辆的储藏空间受限制，在运输期间将容器、例如工具箱或容纳器具的其他容器放到清洁器上。如果运输车辆到达其目的地，则容器同样如清洁器那样从运输车辆取出并且接下来携带到实际的使用地点。

[0005] 由 EP 0 916 302 B1 公知以吸尘器形式的清洁器，该清洁器的壳体在上侧构造成具有凹部的覆盖面，容器能插入到该凹部中。借此避免容器在壳体的覆盖面上滑动。额外地，容器能借助在覆盖面的凹部中的锁定元件锁定。这具有如下优势，即，吸尘器能与容器一起由用户以单个运输单元的形式运动。当然要求容器精确地具有在吸尘器覆盖面上的凹部的外型尺寸。也就是说容器和吸尘器必须在其外型尺寸方面精确地彼此匹配。

发明内容

[0006] 本发明的任务在于，提供一种设备，借助该设备能将容器布置在能携带的清洁器的壳体上，用于清洁器与容器一起的共同运输。

[0007] 根据本发明，该任务通过具有权利要求 1 的特征的适配设备解决。根据本发明的适配设备包括适配盘，该适配盘能安放到清洁器的壳体上。此外，适配设备包括锁紧装置，借助该锁紧装置适配盘与清洁器的壳体能免工具地可拆卸地锁紧。适配盘在上侧具有搁放面用于放置容器。

[0008] 在本发明中加入如下思想，即，通过提供适配盘能以简单的方式形成由容器、适配盘和清洁器组成的紧凑的运输单元用于共同的运输，该适配盘一侧地，也就是在其下侧上与能携带的清洁器的壳体匹配，并且另外一侧地，也就是在其上侧上为了与清洁器一起待运输的容器具有平面的搁放面。适配盘能安放到清洁器的壳体上并且能接下来借助锁紧装置与清洁器的壳体免工具地锁紧。锁紧装置与清洁器的壳体配合作用。在上侧，能安放容器、例如工具箱或附件箱到适配盘上。容器能在需要的情况下从适配盘上移除，额外地也能将适配盘从清洁器上拆卸。适配盘与清洁器壳体的锁紧和解锁不使用专用工具地进行，尤其不需要将适配盘与清洁器例如拧紧。

[0009] 适配盘因此如下地扩展了清洁器的应用可能性，即，容器、优选工具箱或附件箱能

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 492
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

放置在清洁器上并且与该清洁器共同运输。

[0010] 优选地适配盘借助锁紧装置能与清洁器壳体的可从后方抓握的壳体件免工具可拆卸地锁紧。例如壳体接板、可从后方抓握的壳体凸块或类似物可用作可从后方抓握的壳体件。额外地，清洁器上的锁紧元件能由此取消。

[0011] 如果适配盘借助锁紧装置能与清洁器的携带抓握件免工具可拆卸地锁紧，是特别有利的。携带抓握件优选地布置在清洁器壳体的上侧。该携带抓握件通常设计得非常坚固并且与清洁器的重量匹配，从而适配盘与携带抓握件的的锁紧能机械上非常能负载地设计。

[0012] 有利地，锁紧装置包括至少一个锁紧构件，该锁紧构件以能在锁紧位置与释放位置之间来回运动的方式保持在适配盘上。在至少一个锁紧构件的锁紧位置中，适配盘不可运动地固定在清洁器壳体上。为此至少一个锁紧构件能从后方抓握或环握例如在清洁器上侧上布置的可从后方抓握的壳体件、尤其携带抓握件。如果要将适配盘从清洁器上拆卸下来，则可以为此将至少一个锁紧构件无需使用工具地转移到释放位置，在该释放位置中锁紧构件释放壳体。

[0013] 如果锁紧装置具有可由用户抓取的、与至少一个锁紧构件相连接的锁紧把手，是特别有利的。借助该锁紧把手，用户能将至少一个锁紧构件以简单的方式不使用附加的工具地在该锁紧构件的锁紧位置与该锁紧构件的释放位置之间来回运动。

[0014] 在有利的实施方式中，在至少一个锁紧构件的释放位置中锁紧把手由适配盘的搁放面突出，并且在至少一个锁紧构件的锁紧位置中锁紧把手不由适配盘的搁放面突出。如果锁紧手柄占据如下定位，即在该定位中至少一个锁紧构件占据该锁紧构件的释放位置，则在锁紧把手的这类设计中搁放面在所有情况下会受妨碍。在该位置中适配盘能从清洁器上移除。但是，如果至少一个锁紧构件处在其锁紧位置中，则锁紧把手以如下方式布置，即，该锁紧把手不由搁放面突出并且因此不妨碍在搁放面上的容器的放置。

[0015] 例如能如下地设置，即，锁紧把手设计为呈板形的，其中，在至少一个锁紧构件的锁紧位置中该锁紧把手分布在搁放面的平面中或搁放面的平面下方。

[0016] 为了用户能以简单的方式抓取锁紧把手，如果锁紧把手能从后方抓握，是有利的。

[0017] 至少一个锁紧构件在本发明的有利的实施方式中可绕摆动轴摆动。因此该锁紧构件能在其锁紧位置与其释放位置之间来回摆动。摆动轴优选地能平行于在上侧在清洁器壳体上所布置的携带抓握件的纵轴地取向。

[0018] 有利地，锁紧装置包括两个彼此刚性相连的并且相对彼此保持距离地布置的锁紧构件。这提高了锁紧装置的机械负载能力和与携带抓握件锁紧的适配盘的机械负载能力。

[0019] 优选地，锁紧把手将两个锁紧构件彼此刚性地连接起来。

[0020] 有利地，至少一个锁紧构件设计为呈钩状或呈弓状的，并且在锁紧位置中从下方抓握清洁器的壳体件、例如携带抓握件。

[0021] 在优选的实施方式中，适配盘在上侧具有第一凹部，该第一个凹部容纳锁紧把手。在至少一个锁紧构件的锁紧位置中，锁紧把手能完全地沉入到适配盘的第一凹部中，从而适配盘的搁放面不通过锁紧把手受妨碍。

[0022] 如果锁紧把手在至少一个锁紧构件的锁紧位置中至少部分地盖住第一凹部并且扩展适配盘的搁放面，是特别有利的。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 493
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0023] 如已经阐释的，适配设备为了能携带的清洁器而设置。为了当适配盘与清洁器的壳体锁紧时，然后也能携带清洁器，在本发明的优选的实施方式中如此地设置，即，适配设备具有携带装置，该携带装置具有至少一个能由用户环握的携带抓握件。如果适配盘与清洁器的壳体锁紧，那么借助适配设备的携带抓握件能携带由清洁器和适配设备所组成的完整的清洁装置。

[0024] 有利地，适配设备的携带抓握件可在携带位置与静止位置之间来回运动，在携带位置中携带抓握件由适配盘的搁放面突出，在静止位置中携带抓握件不由适配盘的搁放面突出。因此携带抓握件为了将适配设备连同清洁器一起携带对用户来说能够以简单的方式在搁放面的区域内达到，该携带抓握件在其携带位置由搁放面突出。但是，如果要将容器放置到搁放面上，则可以将适配设备的携带抓握件转移到静止位置，在该静止位置中携带抓握件不突出搁放面进而也不妨碍搁放面的大小。

[0025] 优选地，适配设备的携带抓握件能绕摆动轴摆动。这使适配设备的携带抓握件的由其静止位置到其携带位置并且回到静止位置中的转移更容易。在每个位置中，适配设备的携带抓握件对用户来说能以简单的方式达到。摆动轴能优选地平行于在上侧在清洁器壳体上所布置的携带抓握件的纵轴地取向。

[0026] 可以设置，适配盘在上侧具有第二凹部，该第二凹部容纳携带抓握件。适配设备的所述携带抓握件在其静止位置中完全沉入到适配盘的第二凹部中。需要的时候用户能由适配盘的第二凹部中取出适配设备的携带抓握件，并且转移到该携带抓握件的携带位置，在该携带位置中携带抓握件由搁放面突出。

[0027] 如果适配设备的携带抓握件在其静止位置中至少部分地填满第二凹部并且扩展了适配盘的搁放面，是有利的。

[0028] 有利地，适配设备的携带装置能摆动地支承在适配盘上。

[0029] 如果锁紧装置保持在适配设备的携带装置上，是有利的。这使适配设备不仅在与清洁器的壳体锁紧时而且在与清洁器一起携带时的处理简化。此外，使得将锁紧装置保持在携带装置上成为可能，在第一装配步骤中将锁紧装置装配在携带装置上，并且然后在第二装配步骤中能将由锁紧装置和携带装置所组成的结构单元装配在适配盘上。由此能使装配成本低地保持。

[0030] 可以设置，锁紧装置和携带装置刚性地彼此相连，并且在适配盘上可运动地保持。在此情况下可以设置，由锁紧装置和携带装置组成的结构单元能在如下第一位置与第二位置之间经过第二位置来回运动，在第一位置中至少一个锁紧构件从后方抓握清洁器的壳体件并且适配设备的携带抓握件占据其静止位置，在第二位置中至少一个锁紧构件同样地从后方抓握清洁器的壳体件，但适配设备的携带抓握件占据其携带位置，在第三位置中至少一个锁紧构件释放清洁器的壳体件并且适配设备的携带抓握件占据不工作位置。根据由锁紧装置和携带装置组成的结构单元的位置的不同，适配盘可以与清洁器的壳体件锁紧或解锁并且适配设备的携带抓握件可以占据其静止位置或也可以占据其携带位置。

[0031] 在本发明的优选设计方案中，锁紧装置可运动地支承在携带装置上。这给出了如下的可能性，即，锁紧装置相对于携带装置运动。尤其在这种实施方式中至少一个锁紧构件能在该锁紧构件的锁紧位置与释放位置之间来回运动，而携带装置不需要在此改变相对于适配设备的该携带装置的状况 (Lage)。相反地携带抓握件可以改变其相对于适配设备的定

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 494
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

位，而不需要改变锁紧装置的位置。由此，携带抓握件能在其静止位置与其携带位置之间来回运动，而不影响适配盘与清洁器壳体的锁紧。

[0032] 在有利的实施方式中设置，锁紧装置可摆动地支承在携带装置上。

[0033] 有利地锁紧装置和携带装置保持在适配盘上，其中，锁紧装置和携带装置能彼此无关地各绕共同的摆动轴以 90° 摆动。在此情况下，共同的摆动轴可以平行于在上侧在清洁器壳体上所布置的携带抓握件的纵轴地取向。

[0034] 在有利的实施方式中，适配设备的装配由此简化，即，锁紧装置能与携带装置锁止。

[0035] 如已经阐释过的那样，容器、例如工具箱或附件箱能放置到适配盘的搁放面上。在此情况下有利的是，适配盘具有至少一个由搁放面突出的止档元件，容器可以贴靠到该止档元件上。止档元件使容器在适配盘的搁放面上的定位更容易。

[0036] 有利地至少一个止档元件具有用于容纳容器的凸块的凹座。容器可以具有例如呈塞形的凸块，这些凸块由适配设备的止档元件的凹座所容纳。

[0037] 如果适配设备具有至少一个用于将容器锁定在适配盘的搁放面上的锁定元件，是特别有利的。由此，能可靠地防止容器从搁放面的无意地松开。

[0038] 优选地至少一个锁定元件在适配盘的上侧的凹部中可运动地、尤其可摆动的受支承。该锁定元件可以为了锁定容器由适配盘的所配属的凹部里运动出来、尤其摆动出来，以便然后与容器的互补的锁定元件配合作用。

[0039] 如开头所提到的那样，本发明不仅涉及前文述及类型的适配设备，而且还涉及具有这种适配设备和能携带的清洁器的清洁装置。

[0040] 优选地清洁器包括可从后方抓握的壳体件、例如壳体接板或壳体凸块或类似物，并且适配设备的锁紧装置与可从后方抓握的壳体件配合作用，用于免工具可拆卸地将适配盘与壳体锁紧。因此不需要清洁器上的附加的用于锁紧适配盘的锁紧元件。

[0041] 如果清洁器具有携带抓握件并且适配设备的适配盘能借助锁紧装置与该携带抓握件免工具可拆卸地锁紧是尤其特别有利的。

[0042] 在本发明的有利的设计方案中，携带抓握件布置在清洁器壳体的上侧上。尤其可以设置，该携带抓握件整合到壳体的上侧覆盖面中，适配盘能安放到该覆盖面上。

[0043] 清洁器优选地设计为吸尘器。当然也能设置，清洁器以高压清洁器的形式构造。

[0044] 在根据本发明的清洁装置的特别优选的实施方式中，清洁器具有可行进的、其上可转动地支承有滚轮的基座以及在该基座上所布置的具有抓握弓形件的清洁机组(Reinigungsaggregat)，其中，该清洁机组具有壳体，适配盘能与该壳体锁紧，并且其中，抓握弓形件在竖立的位置中基本垂直于在该壳体上锁定的适配盘的搁放面取向。在这种实施方式中，清洁器借助基座可行进，并且在适配盘与清洁器的壳体锁紧后，容器能摆放到适配盘的搁放面上，然后该容器也可以支撑在竖立的抓握弓形件上。该抓握弓形件在其竖立位置中基本上垂直于适配盘的搁放面地取向。因此容器能超过适配盘凸出并且容器在其凸出的区域中支撑在抓握弓形件上。

[0045] 如果清洁器与至少一个布置在适配盘的搁放面上的容器一起能绕两个滚轮的共同的转动轴摆动，是特别有利的。清洁器能然后与锁定在清洁器上的适配设备和至少一个容器一起按照袋式手拖车的形式行进。容器能借助适配设备可靠地定位在清洁器上，优选

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 495
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

地该容器能锁定在适配盘上。在此情况下如果容器在上侧具有携带抓握件是特别有利的，从而用户能在如下步骤之后将容器与适配设备和清洁器一起携带，即，事先在第一步骤中将适配盘锁定在清洁器的壳体上并且然后将容器锁定在适配盘上。用户可以然后选择，他是否将整个清洁装置连同在上侧布置的容器一起绕清洁器的两个滚轮的共同转动轴摆动，并且使带有容器的清洁器按照袋式手拖车的形式行进，或者他是否为了越过台阶将容器连同清洁器和在容器与清洁器之间布置的适配设备一起在容器的携带抓握件处提起。

附图说明

[0046] 本发明的优选实施方式的随后的描述用于关联详细阐释的附图。示出：

[0047] 图 1 根据本发明的适配设备的立体图示；

[0048] 图 2 由图 1 所示适配设备的俯视图；

[0049] 图 3 适配设备的沿图 2 中的线 3-3 的剖视图；

[0050] 图 4 根据分解图形式的适配设备的图示；

[0051] 图 5 适配设备的立体图示，其中，携带抓握件占据该携带抓握件的携带位置并且锁紧装置占据该锁紧装置的锁紧位置；

[0052] 图 6 适配设备的立体图示，其中，携带抓握件占据该携带抓握件的静止位置并且锁紧装置占据该锁紧装置的释放位置；

[0053] 图 7 根据本发明的清洁装置的根据分解图形式的立体图示，该清洁装置具有清洁器和适配设备，其中适配设备的锁紧装置占据所述锁紧装置的释放位置；

[0054] 图 8 清洁装置的立体图示，其中，适配设备与清洁器锁紧；

[0055] 图 9 清洁装置的立体图示，其中，适配设备与清洁器锁紧，并且适配设备的携带抓握件占据其携带位置；和

[0056] 图 10 带有两个在清洁装置上方布置的容器的清洁装置的立体图示。

具体实施方式

[0057] 在图 1 至图 6 中示出根据本发明的适配设备 10，该适配设备能安放到在图 7 至图 10 所示出的清洁器的壳体的覆盖面上并且在该适配设备的方面为容器形成了搁放面，该容器如在图 10 中所示的那样。

[0058] 适配设备 10 具有适配盘 11，该适配盘在俯视图中基本构型为呈矩形的，其中，该适配盘在前缘 12 处具有中心凹口 13。适配盘 11 的后缘 15 构造为呈直线型的，并且第一纵向缘 16 同样如第二纵向缘 17 那样具有略微凸出的向外弯曲的构型。两个纵向缘 16 和 17 彼此背离并且各将后缘 15 与前缘 12 连接。

[0059] 适配盘 11 的上侧 19 具有平面的搁放面 20 以及居中的基本呈 U 形的第一凹部 22 和与该第一凹部联接的、呈矩形的第二凹部 24，与第二纵向缘 17 紧邻地将第三呈矩形的凹部 26 联接到第二凹部 24 上。与第一纵向缘 16 紧邻地，适配盘 11 在其上侧 19 上具有第四呈矩形的凹部 28，并且与中心凹口 13 邻接地在第三和第四凹部 26、28 之间布置有第五呈矩形的凹部 30。

[0060] 在第一与第二凹部 22、24 之间的过渡区域中，第一止动凹座 34 和第二止动凹座 36 对齐彼此地造型到上侧 19 中。携带装置 38 锁止到两个止动凹座 34 和 36 中。携带装置 38

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 496
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

包括呈U形的具有第一携带臂41和第二携带臂42的携带弓形件40，这两个携带臂通过呈桥板状的携带抓握件43整体式地彼此相连接。在这两个携带臂的彼此背离的外表面45或46上，两个携带臂41和42在它们的自由端部处承载有第一关节销48或第二关节销49。两个关节销对齐彼此地取向并且能借助第一止动凹座34或借助第二止动凹座36锁止。在关节销48和49与止动凹座34和36锁止后，这两个关节销48和49限定了摆动轴51，该摆动轴垂直于后缘15分布并且携带装置38能绕该摆动轴摆动。这提供了如下可能性，即，携带弓形件40进而还有携带抓握件43在静止位置与携带位置之间来回摆动，在静止位置中携带弓形件完全沉入到呈U形的第一凹部22中，在携带位置中携带弓形件40垂直于搁放面20取向并且携带抓握件43能由用户环握。如携带位置例如在图5中所示出的那样，携带弓形件40进而还有携带抓握件43在携带位置中由搁放面20中突出。相反地在静止位置中携带弓形件40完全填满第一凹部22并且因此扩展了平面的搁放面20。这尤其由图1表明。

[0061] 在两个携带臂的彼此面朝的内表面54或55上，两个携带臂41和42对齐于关节销48和49承载有第三关节销57或第四关节销58。借助这些关节销锁止适配设备10的锁紧装置60。锁紧装置60为此具有两个止动夹62、63，这两个止动夹能借助第三或第四关节销57、58锁止，其中，锁紧装置60能够绕摆动轴51相对于携带装置38在图5中所示出的锁紧位置与在图6中所示出的释放位置之间来回摆动。

[0062] 锁紧装置60包括以第一个锁紧弓形件65形式的第一锁紧构件和以第二锁紧弓形件66形式的第二锁紧构件，这些锁紧构件相同地构型并且通过刚性地、呈板形地构造的锁紧把手68彼此相连接。这两个锁紧弓形件65和66在第二凹部24的底部70内各配属给穿孔71或72，这些穿孔能在锁紧装置60的锁紧位置中由锁紧弓形件65或66贯穿嵌接。因此在锁紧位置中，锁紧弓形件65和66借助它们的端部区域74和75由适配盘11的下侧突出。这尤其由图3表明。

[0063] 呈板形的锁紧把手68在锁紧装置60的锁紧位置中至少覆盖第二凹部24的部分区域，并且因此在锁紧位置中扩展了搁放面20。在锁紧装置60的锁紧位置中的锁紧把手68能由用户从后方抓握。为此，用户能在第二凹部24与第三凹部26之间的过渡区域中从后方抓握锁紧把手68。接下来该用户能将锁紧把手68与锁紧弓形件65和66一起绕摆动轴51向外摆动到在图6中所示出的释放位置中。在该位置中锁紧弓形件65和66的自由的端部区域74和75达到第二凹部24的底部70的高度，但这些锁紧弓形件不再在下侧由适配盘11中突出。

[0064] 在后缘15的区域中，适配盘11在其上侧19上承载有由搁放面20凸出的、具有相对于搁放面20基本垂直取向的第一止挡面78的第一止档件77。并且与第一止档件77保持距离地在后缘15的区域中，第二止档件80由搁放面20突出，其中，第二止档件80面朝第三凹部26地具有呈矩形的凹座81。

[0065] 在第一止档件77与第四凹部28之间的区域中，适配盘11在其上侧19上具有第六凹部83，该第六凹部汇入第一纵向缘18中并且在该凹部中可摆动地支承有以第一止动弓形件85形式的第一锁定元件。

[0066] 在第四凹部28与适配盘11的前缘12之间，第七凹部87造型到上侧19中，该第七凹部如第六凹部83那样基本相同地构型并且汇入第一纵向缘16中。在第七凹部87中，

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 497
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

以第二止动弓形件 88 形式的第二锁定元件可摆动地受支承。第二止动弓形件 88 如第一止动弓形件 85 那样相同地构型。

[0067] 在第三凹部 26 与适配盘 11 的前缘 12 之间，第八凹部 90 造型到上侧 19 中，该第八凹部基本如第六和第七凹部那样相同地构型，其中，该第八凹部但是以 90° 转动并且汇入前缘 12 中。在该第八凹部 90 中，以第三止动弓形件 91 形式的第三锁定元件可摆动地受支承，该第三止动弓形件如第二止动弓形件 88 和第一止动弓形件 85 那样相同地构造。

[0068] 如已经提到的那样，适配设备 10 为了将容器布置在能携带的清洁器的壳体上而使用。这种清洁器在图 7 至图 10 中以吸尘器 95 的形式示出。该吸尘器包括具有两个绕共同的转动轴 98 可自由转动的后滚轮和两个前滚轮的基座 97，在图中两个后滚轮中只示出了一个后滚轮 99，在图中两个前滚轮中只示出了一个前滚轮 101。借助滚轮 99、101，基座 97 能沿地面行进。

[0069] 抽吸机组 103 安放到基座 97 上，该抽吸机组具有壳体下部 104 和壳体上部 105。壳体下部 104 通常构造有污物收集容器，通过抽吸入口 107 抽吸空气与抽吸物一起能吸入到污物收集容器中。在抽吸入口 107 处通常能联接抽吸软管，该抽吸软管在其自由端部承载有抽吸嘴。这种抽吸软管和抽吸嘴对专业技术人员来说是公知的并且因此未在图中示出。

[0070] 壳体上部 105 通常容纳有抽吸涡轮，该抽吸涡轮由电动马达驱动。借助抽吸涡轮，壳体下部 104 的污物收集容器能用负压加载。

[0071] 壳体上部 104 在其上侧上具有包括中心凹部 110 的覆盖面 109，该中心凹部由携带抓握件 111 呈板桥状地桥接。借助携带抓握件 111 用户能携带吸尘器 95。

[0072] 在壳体上部 105 上在向后的区域中，基本呈 U 形的抓握弓形件 113 绕摆动轴 114 可摆动地受支承。抓握弓形件 113 能绕摆动轴 114 在图 7 至 10 中所示出的摆出的或竖立的位置与图中未示出的摆入的位置之间来回摆动。借助在抓握弓形件 113 的至少一个臂的自由端部上布置的固定装置 116，抓握弓形件 113 可以锁定在其摆出位置中。

[0073] 适配设备 10 能安放到吸尘器 95 的覆盖面 109 上，其中，携带装置 38 的和锁紧装置 60 的摆动轴 51 平行于携带抓握件 111 的纵轴 112 地取向。通过锁紧装置 60 从其在图 7 中所示出的释放位置出发摆动到在图 8 中所示出的锁紧位置中的方法，接下来适配盘 11 可以与吸尘器 95 的携带抓握件 114 锁紧。在锁紧位置中锁紧弓形件 65 和 66 的自由端部区段 74 和 75 从后方抓握吸尘器 95 的携带抓握件 111。因此携带抓握件 111 构造了吸尘器 95 的可从后方抓握的壳体件，利用该壳体件，适配盘 11 借助锁紧装置 60 能免工具可拆卸地锁紧。适配盘 11 由此不可运动地保持在覆盖面 109 上。接下来容器 120 摆放到适配盘 11 的搁放面 20 上，如该容器在图 10 中所示出的那样。其他的容器 122 能定位到容器 120 上。容器 120 能为了在搁放面 20 上的取向以如下方式地定位，即，该容器借助侧面区域碰撞第一止档件 77 的第一止挡面 78 并且借助侧向的呈塞形的凸块嵌入第二止档件 80 的凹座 81 中。接下来容器 120 可以借助止动弓形件 85、88 和 91 锁定在搁放面 20 上。然后容器 20 与适配设备 10 和吸尘器 95 一起共同构造了紧凑的运输单元，该运输单元可以借助基座 97 的滚轮 99 和 101 沿地面行进。此外，该运输单元能绕共同的转动轴 98 向后摆动并且然后按照袋式手推车的形式运动。

[0074] 如果在吸尘器 95 的携带抓握件 111 上锁定的适配盘 11 的搁放面 20 上没有摆放容器 120，则适配设备 10 能与吸尘器 95 一起由用户提起。为此，用户能从携带弓形件 40 的

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 498
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

静止位置开始将该携带弓形件摆动到该携带弓形件的携带位置中，在静止位置中携带弓形件完全沉入到第一凹部 22 中，在携带位置中携带弓形件和首要地携带抓握件 43 由搁放面 20 突出，从而用户能以手环握携带抓握件 43。这尤其由图 9 表明。

[0075] 因此适配设备 10 给出如下可能性，即，摆放容器 120 到吸尘器 95 上，尽管吸尘器 95 的覆盖面 109 至少在部分区域中拱形隆起并且此外设有凸起部。为此，适配盘 11 在其上侧 19 上限定了用于放置容器 120 的平面的搁放面 20，其中，搁放面 20 为了更容易地定位容器 120 具有向上突出的止档件 77 和 80。借助锁紧装置 60，适配盘 11 以简单的方式锁定在吸尘器 95 的壳体 105 上，从而由适配设备 10 和吸尘器 95 所形成的清洁装置能由用户在携带抓握件 43 处携带。

[0076] 适配设备 10 能由用户以需要的方式使用，其中，该用户能不使用特殊工具将该适配设备固定在吸尘器 95 的壳体 105 上，并且不借助工具又能将其拆卸。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 499
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

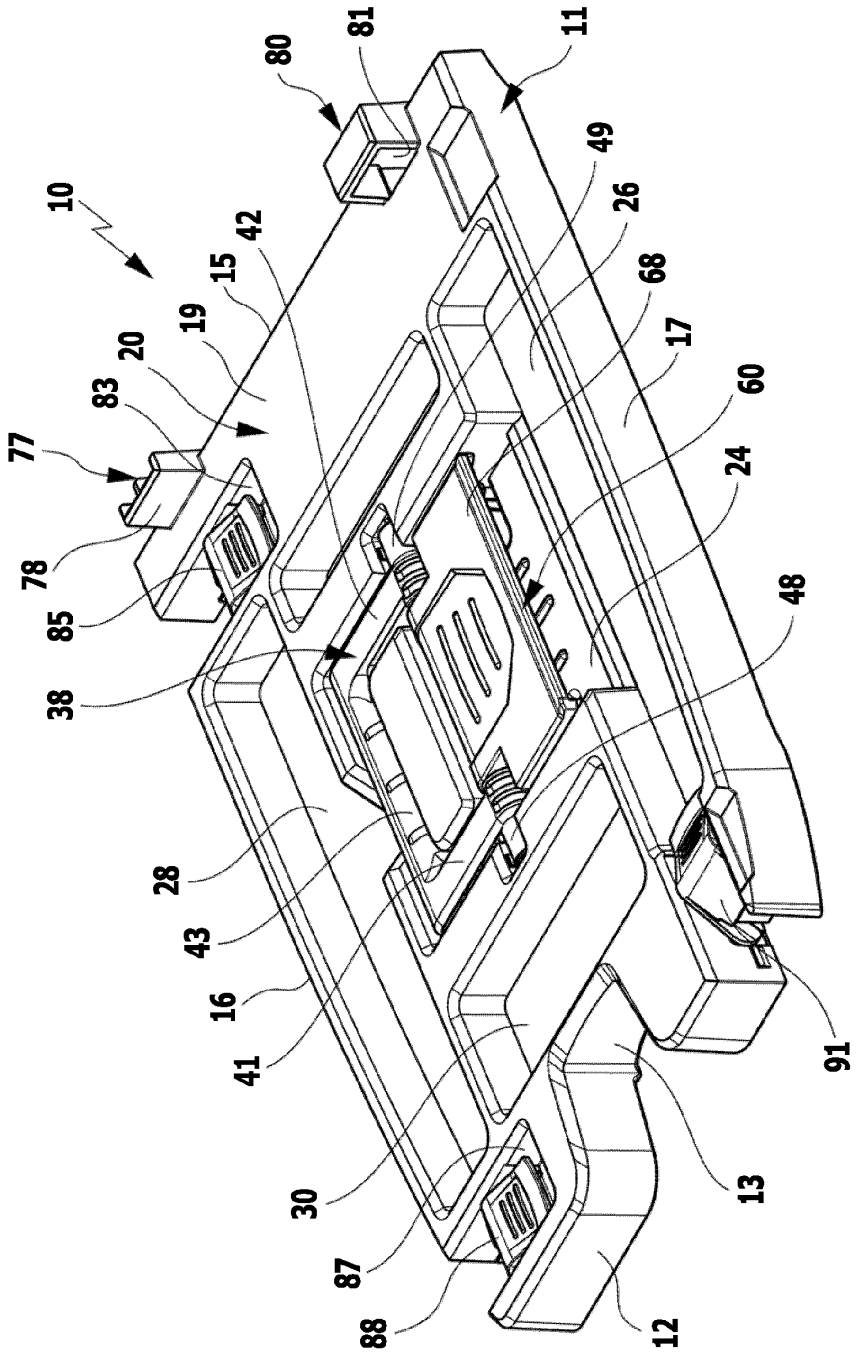


图 1

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 500
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

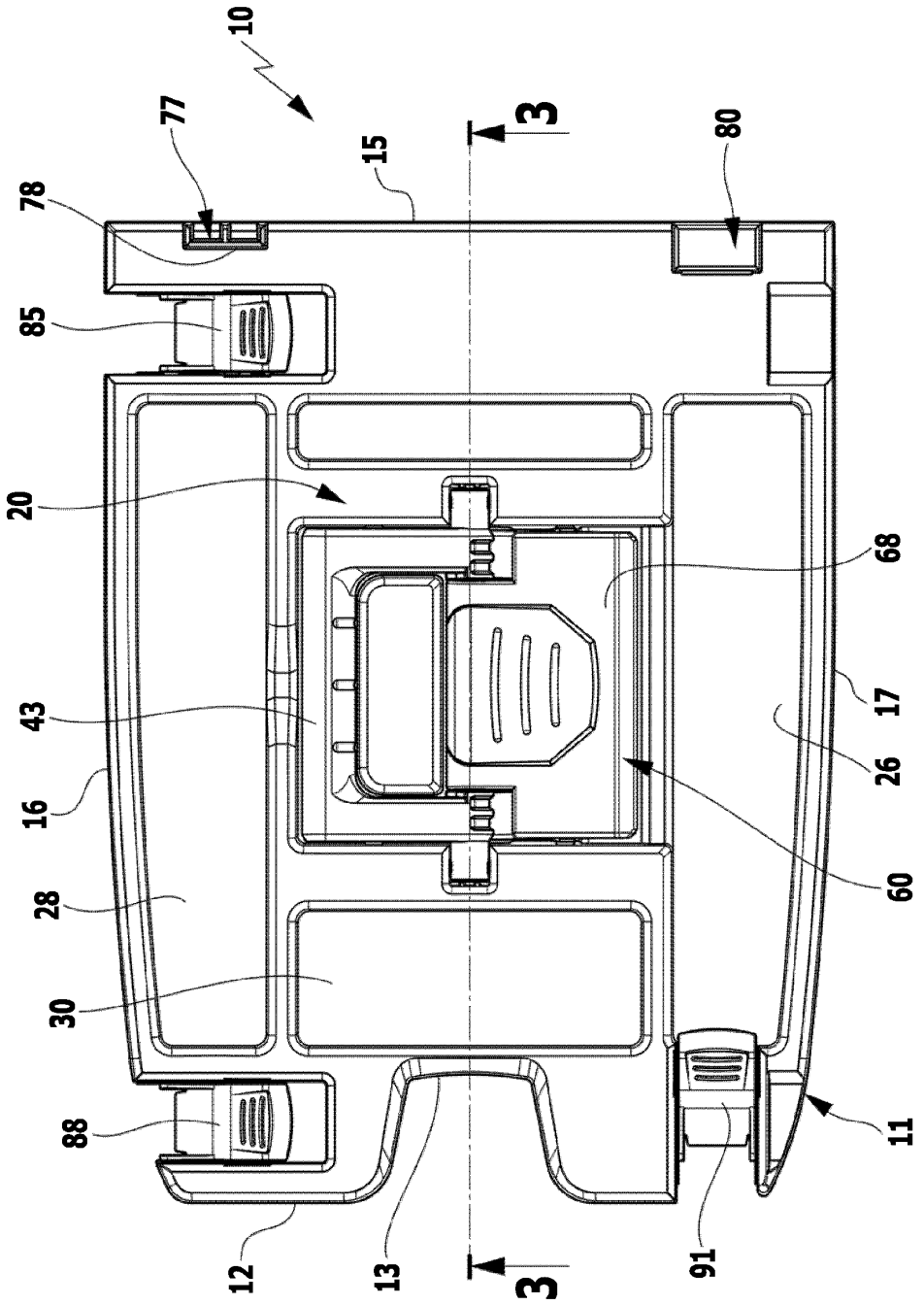


图 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 501
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

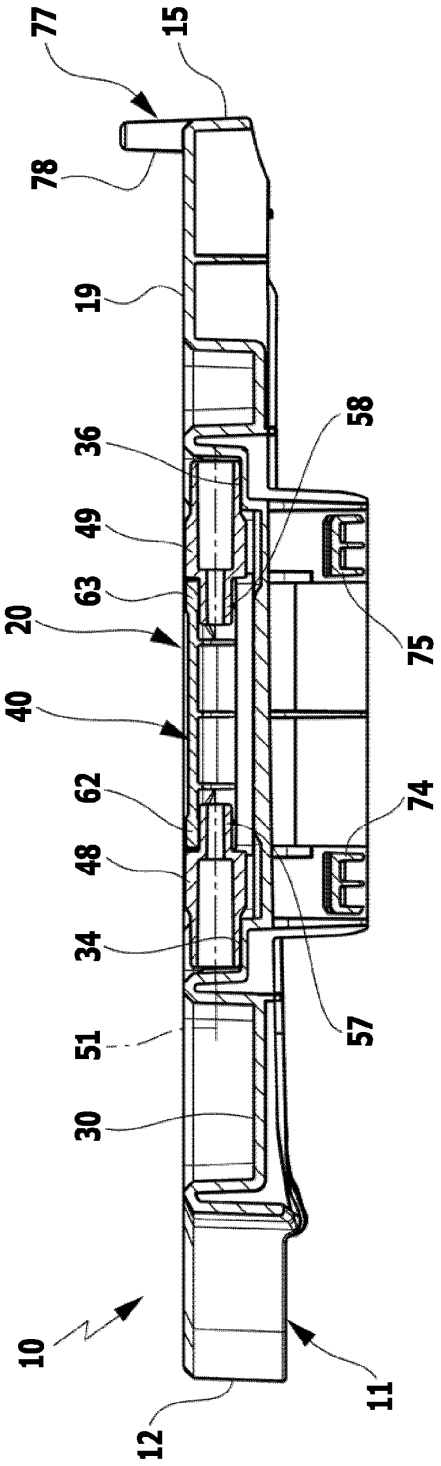


图 3

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 502
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

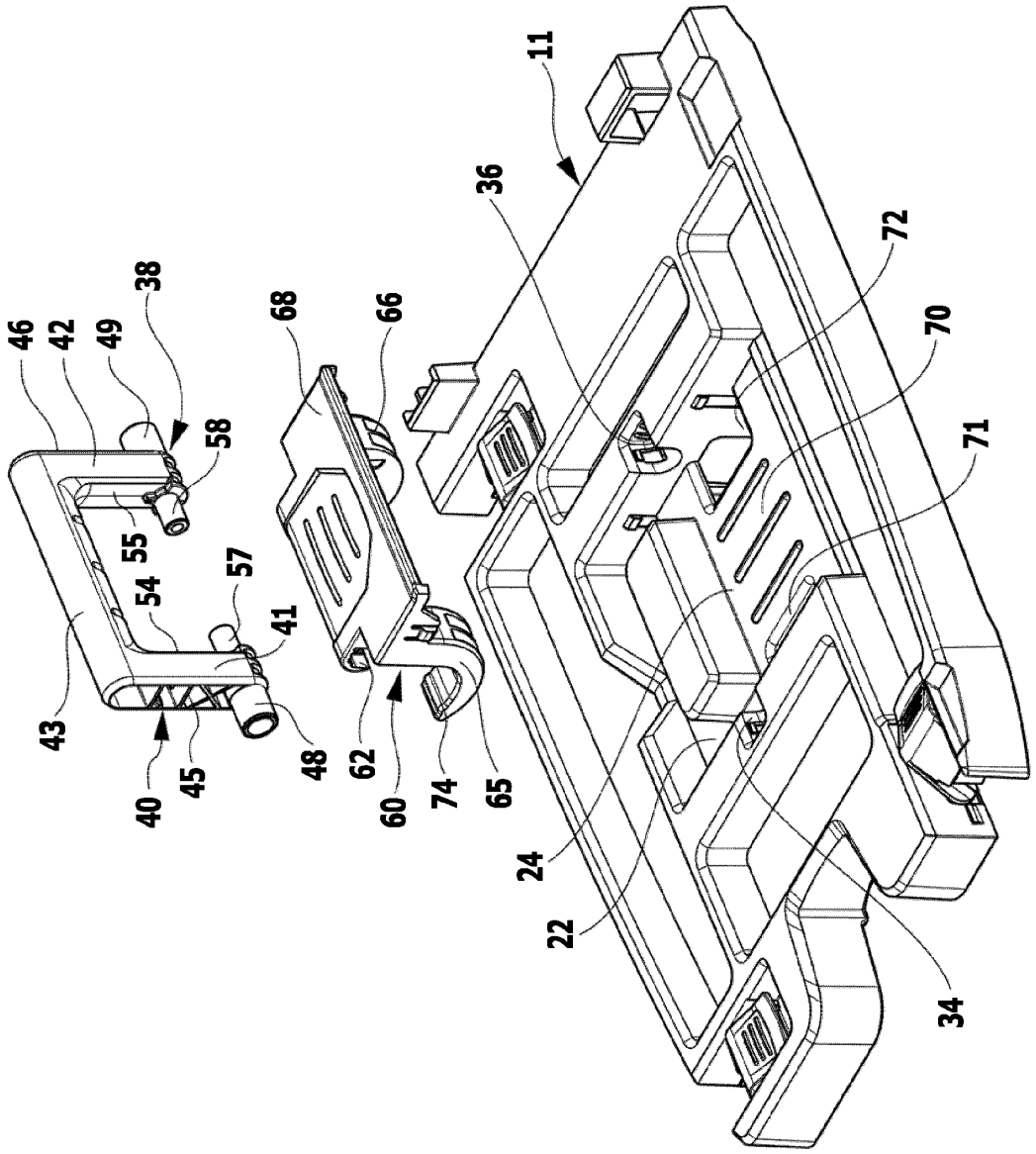


图 4

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 503
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

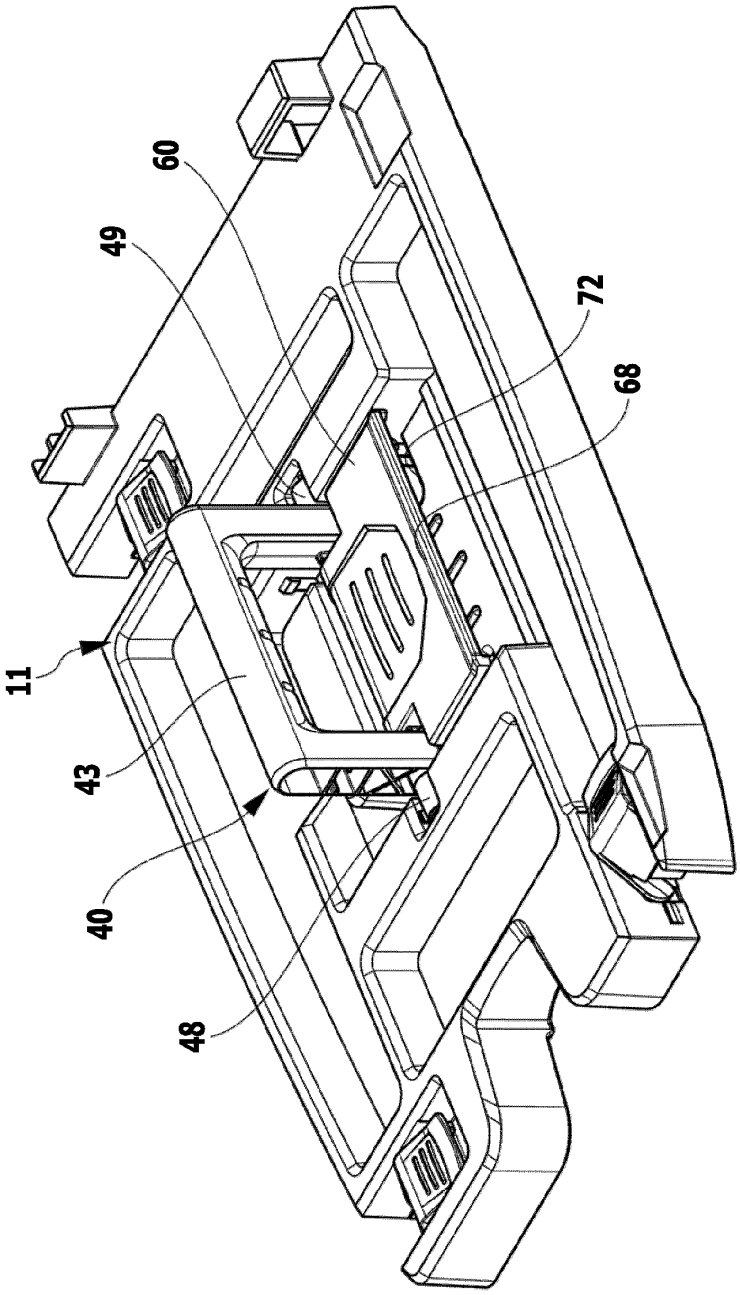


图 5

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 504
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

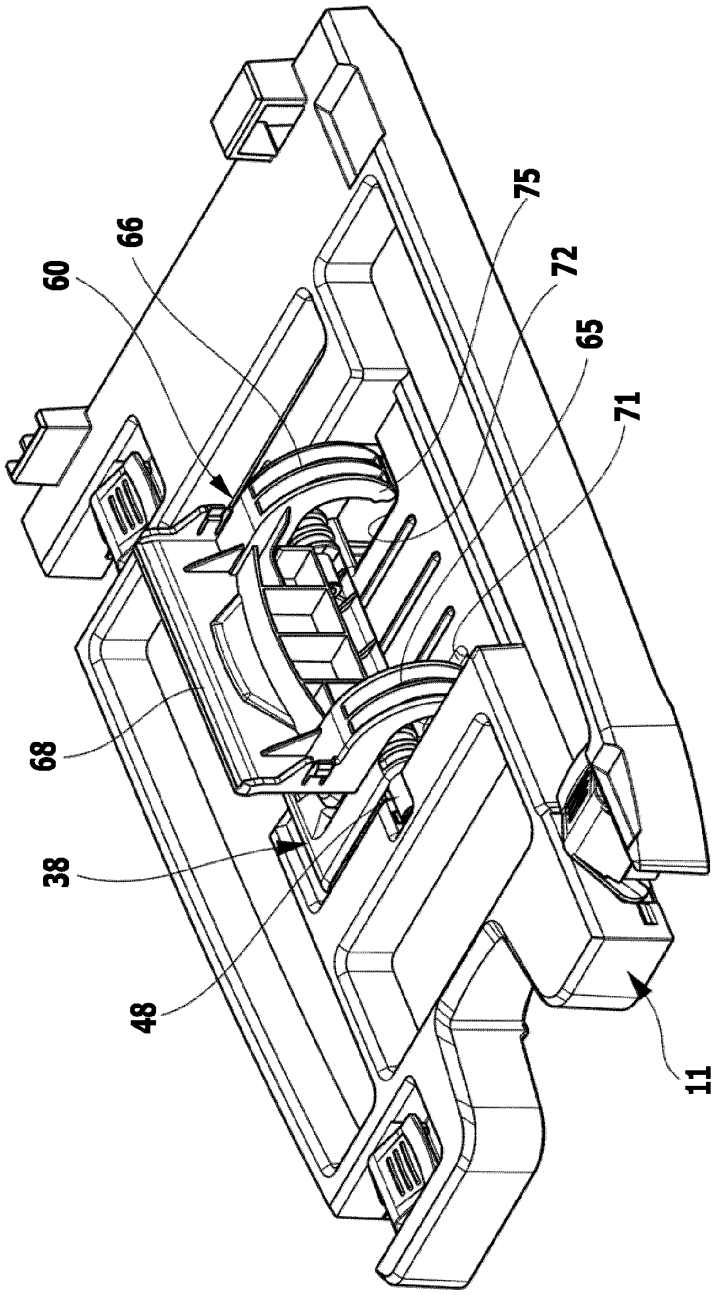


图 6

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 505
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

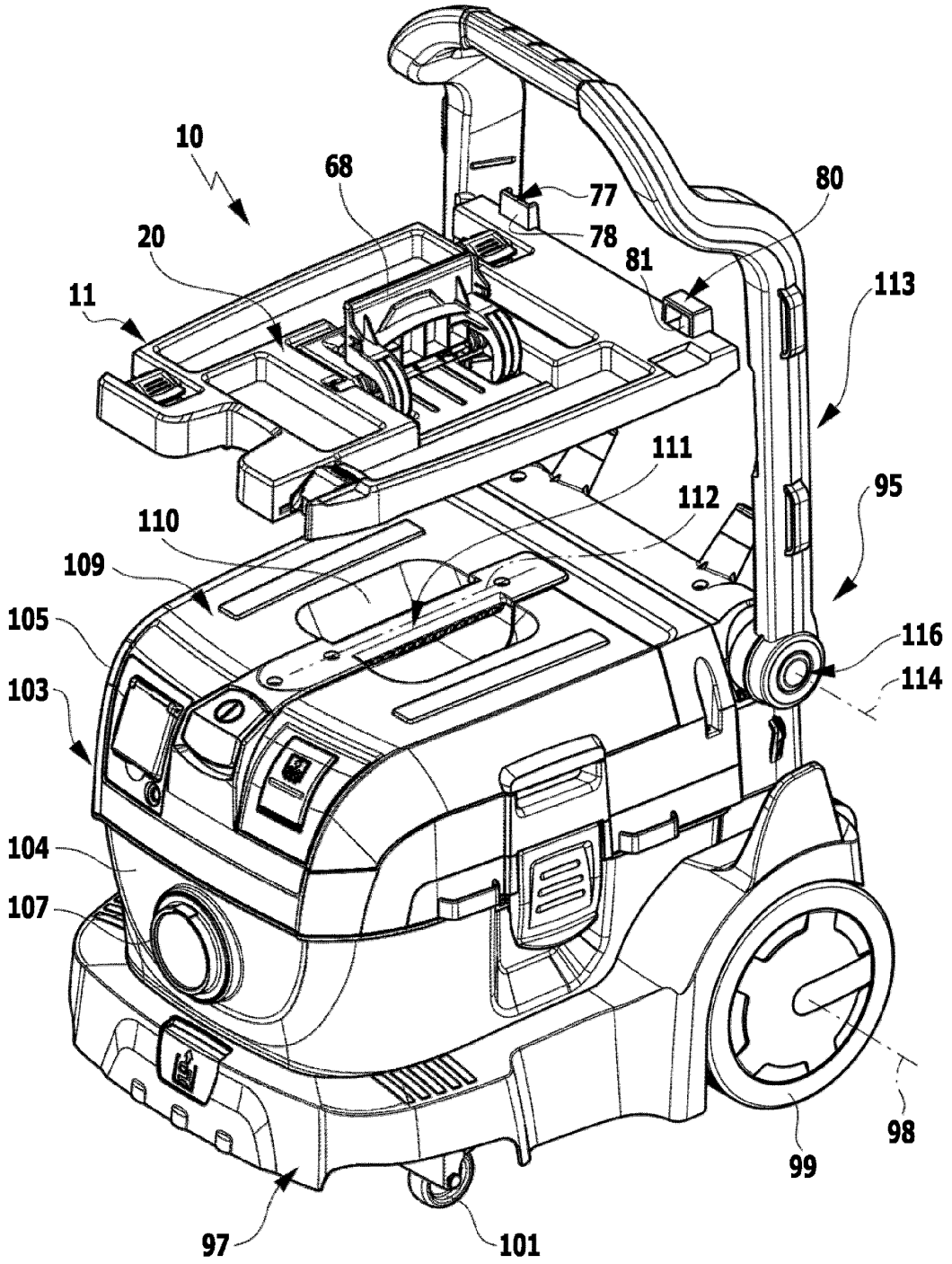


图 7

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 506
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

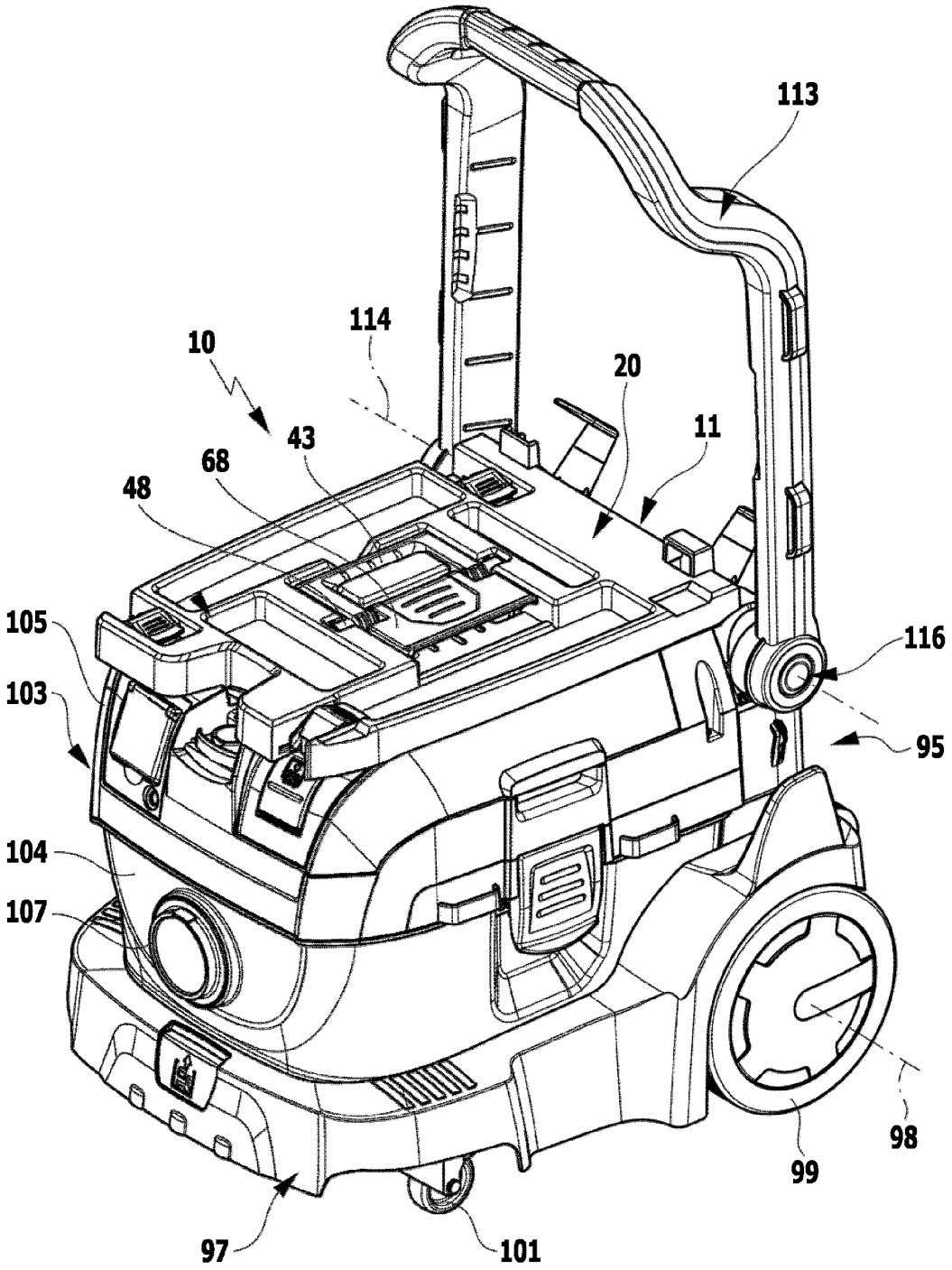


图 8

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 507
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

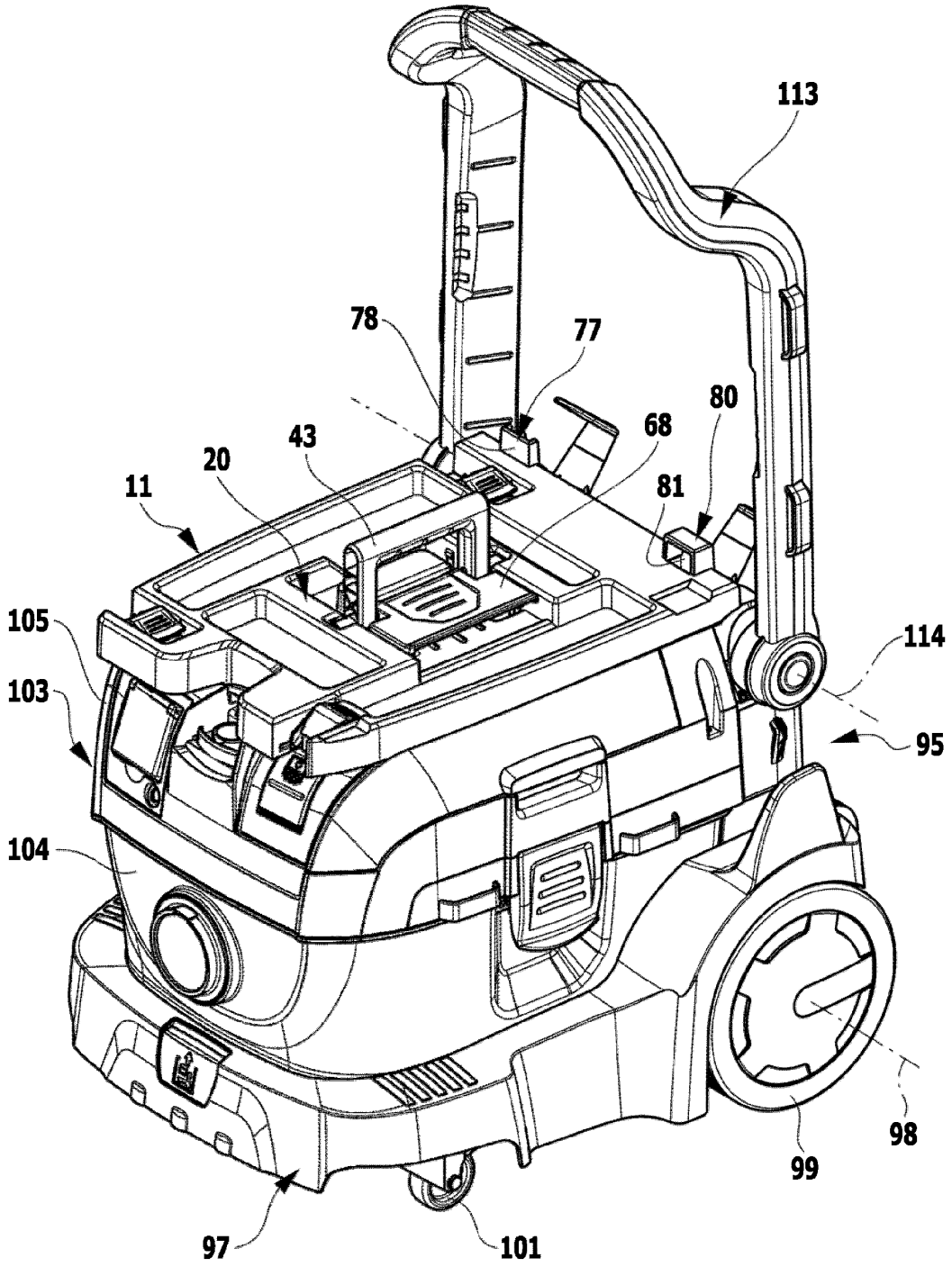


图 9

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 508
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

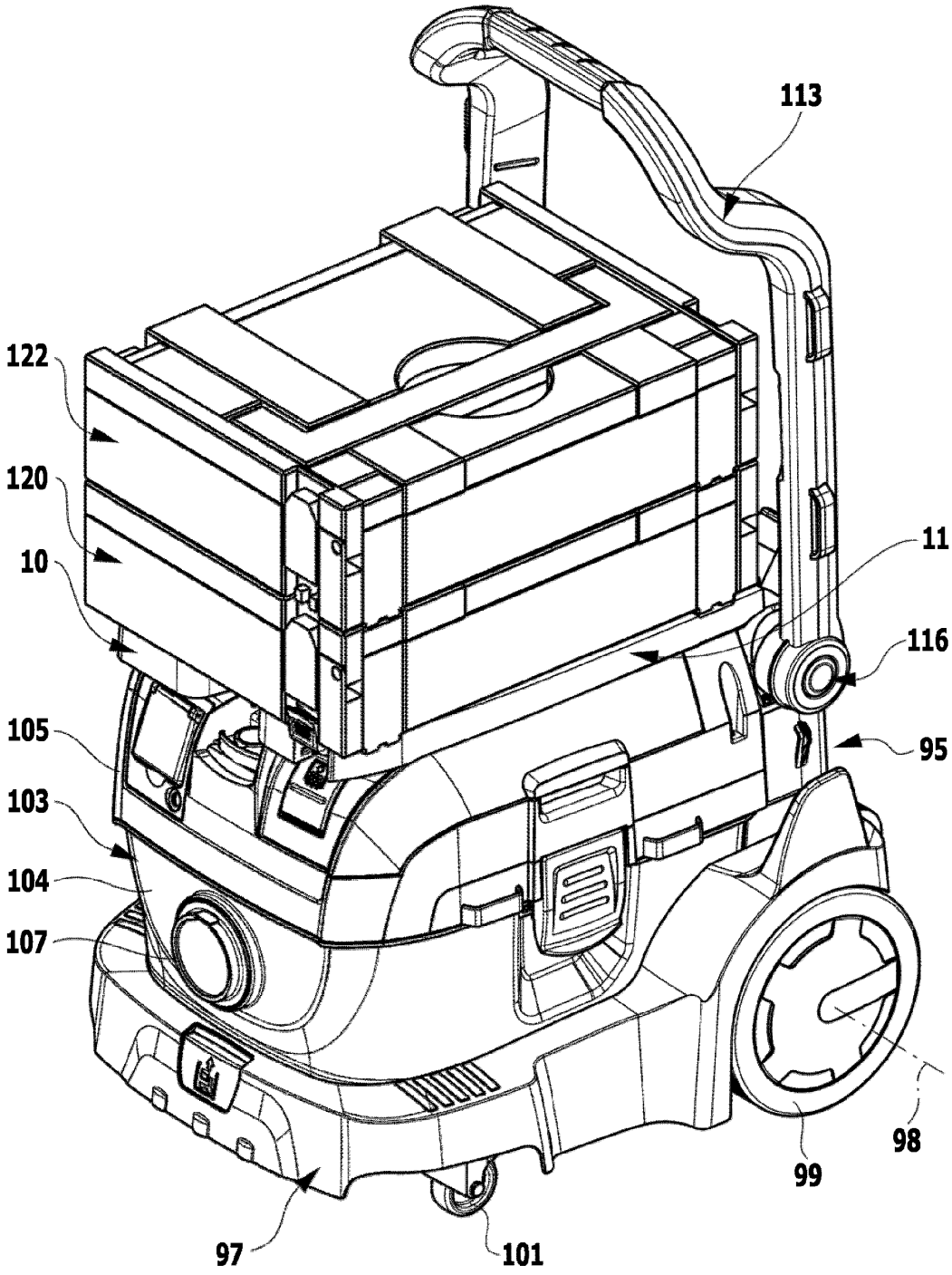


图 10

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 509
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

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Cleaning appliance with a storage area for setting down a container

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- cooperative: **A47L11/4091; A47L9/0018; B25H3/02**

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Also published as: CN102834035 (B) DE102010003756 (A1) DK2555661 (T3) EP2555661 (A1) EP2555661 (B1) more

Abstract of CN102834035 (A)

The invention relates to a cleaning appliance having a housing which has a storage area for setting down a container and having castors for moving the cleaning appliance. In order to develop the cleaning appliance in such a manner that the container can be fixed simply to the storage area, at least one retaining element is arranged on a first edge of the storage area, which retaining element projects out of the storage area and has a concave receptacle for a carrying handle which is articulated on one side of the container which is set down on the storage area, said receptacle being on the end face thereof which faces away from the storage area.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 510
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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A47L 11/40(2006.01)
B25H 3/00(2006.01)

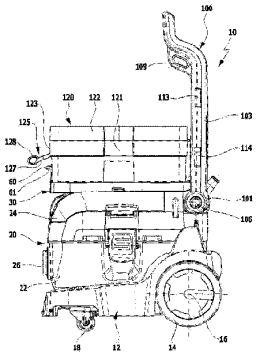
权利要求书 2 页 说明书 8 页 附图 8 页

(54)发明名称

带有用于搁放容器的放置面的清洁装置

(57)摘要

一种清洁装置，其带有：具有用于搁放容器的放置面的壳体；以及用于移动清洁装置的滚轮。为了如此地改进该清洁装置，即，容器可以简单的方式被固定在放置面处，在放置面的第一边缘处布置有至少一个从放置面突出的保持元件，该保持元件在其背对放置面的端侧处具有凹形的容纳部，其用于被铰接到搁放于放置面上的容器的一侧处的手柄。



CN 102834035 A

1. 清洁装置，其带有：具有用于搁放容器的放置面的壳体；以及用于移动所述清洁装置的滚轮，其特征在于，在所述放置面（38）的第一边缘（31）处布置有至少一个从所述放置面（38）突出的保持元件（51、58），所述保持元件（51、58）在所述保持元件（51、58）的背对所述放置面（38）的端侧处具有凹形的容纳部（54、61），所述凹形的容纳部（54、61）用于被铰接到搁放于所述放置面（38）上的容器（120）的一侧（123）处的手柄（125）。

2. 根据权利要求 1 所述的清洁装置，其特征在于，在所述放置面（38）的所述第一边缘（31）处彼此隔开间距地布置有两个保持元件（51、58）。

3. 根据权利要求 1 或 2 所述的清洁装置，其特征在于，至少一个所述保持元件（51、58）呈钩状地设计。

4. 根据权利要求 1、2 或 3 所述的清洁装置，其特征在于，至少一个所述保持元件（51、58）能弹性地变形。

5. 根据前述权利要求中任一项所述的清洁装置，其特征在于，至少一个所述保持元件构造成卡位元件（51、58），所述容器的手柄（125）与所述卡位元件（51、58）相卡位。

6. 根据前述权利要求中任一项所述的清洁装置，其特征在于，在所述放置面（38）的背对所述第一边缘（31）的第二边缘（32）处布置有至少一个从所述放置面突出的、带有第一止挡面（43）的第一止挡元件（42）。

7. 根据权利要求 6 所述的清洁装置，其特征在于，在所述放置面（38）的所述第一边缘（31）处布置有至少一个第二止挡元件（45、48），所述第二止挡元件（45、48）从所述放置面（38）突出并且具有朝向所述第一止挡面（43）的第二止挡面（46、49）。

8. 根据权利要求 7 所述的清洁装置，其特征在于，至少一个所述第二止挡元件（45、48）具有背对所述第二止挡面（46、49）的外侧（56、63），并且至少一个所述保持元件（51、58）具有突出超过所述第二止挡元件（45、48）的所述外侧（56、63）的保持部段（53、60）。

9. 根据权利要求 8 所述的清洁装置，其特征在于，所述保持部段（53、60）沿所述放置面（38）的面法线的方向超过所述第二止挡元件（45、48）。

10. 根据权利要求 7、8 或 9 所述的清洁装置，其特征在于，至少一个所述第二止挡元件（45、48）与保持元件（51、58）刚性地相连接。

11. 根据权利要求 7 至 10 中任一项所述的清洁装置，其特征在于，两个保持元件（51、58）彼此隔开间距地布置在所述放置面（38）的所述第一边缘（31）处，并且在所述保持元件（51、58）的彼此背对的侧面处定位有各一个第二止挡元件（45、48）。

12. 根据前述权利要求中任一项所述的清洁装置，其特征在于，侧面（74）连接到所述放置面的第一边缘（31）处，存储空间（71、72）的至少一个通入区域（76、84）通入到所述侧面（74）中，其中，在所述存储空间（71、72）中在存储位置中布置有至少一个张紧元件（90、95），所述张紧元件（90、95）经由所述通入区域（76、84）能从所述存储空间（71、72）中至少部分被取出并且能被转移到工作位置中，以用于将所述容器（120、130）固定在所述放置面（38）处。

13. 根据权利要求 12 所述的清洁装置，其特征在于，所述张紧元件（90、95）具有：被固定在所述存储空间中的第一端部（91、96）以及经由所述通入区域（76、84）从所述存储空间（71、72）外部能被触及的松动的第二端部（92、97）。

14. 根据权利要求 12 或 13 所述的清洁装置，其特征在于，所述张紧元件（90、95）能弹

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 512
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

性地伸展。

15. 根据权利要求 12、13 或 14 所述的清洁装置，其特征在于，所述通入区域（76、84）相邻于保持元件（51、58）地布置。

16. 根据权利要求 12 至 15 中任一项所述的清洁装置，其特征在于，所述通入区域（76、84）被定位在布置于所述放置面（38）的第一边缘（31）处的第二止挡元件（45、48）下方，所述第二止挡元件（45、48）从所述放置面（38）突出并且具有第二止挡面（46、49）。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 513
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

带有用于搁放容器的放置面的清洁装置

技术领域

[0001] 本发明涉及一种清洁装置，其具有：带用于搁放容器的放置面的壳体；以及用于移动清洁装置的滚轮。

背景技术

[0002] 这样的清洁装置例如能以吸尘器形式或以高压清洁装置形式来使用。其例如被使用在建筑工地上或在其它使用地处。该清洁装置装备有滚轮并且因此可沿着地面被移动。

[0003] 为了运输至使用地，该清洁装置经常被定位在运输车辆中。运输车辆中可供使用的储放空间经常受限制。因此，在许多情况中，将容器（例如工具箱或其它的容纳器具和配件的容器）搁放到定位于储放空间中的清洁装置上。当运输车辆到达其目的地时，则容器如同清洁装置那样被从运输车辆上取出，并且接下来被运输至真正的使用地。

[0004] 由 EP 0 916 302 B1 公知一种吸尘器形式的清洁装置，其壳体在上侧具有带有凹陷部的放置面。容器可被装入到凹陷部中，由此容器被确保在放置面上，以防止滑脱。附加地，容器可借助于卡位元件被卡位在凹陷部中。卡位元件设计成可推移的锁闩，其可被卡入到容器的对应的凹部中。容器在放置面处的卡位具有如下优点，即，吸尘器可与容器一起由使用者以唯一的运输单元形式来移动。然而如下是需要的，即，容器具有凹陷部的规格，以及具有可推移的锁闩能卡入其中凹部。

发明内容

[0005] 本发明的任务是，以如下方式改进先前所提及的类型的清洁装置，即，容器可以简单的方式被固定在放置面上。

[0006] 所述任务在该类型形式的清洁装置中，根据本发明以如下方式来解决，即：在放置面的第一边缘上布置有至少一个从放置面突出的保持元件，该保持元件在其背对放置面的端侧处具有被铰接到搁放于放置面上的容器的端侧上的手柄所用的凹形的容纳部。

[0007] 如下思想被一起纳入到本发明中，即，工具箱如同用于器具或配件的其它容器那样在绝大多数情况中在一侧上具有被可枢转地支承的手柄。在根据本发明的清洁装置中，容器的手柄被用于固定容器。为此，在容器可被搁放到其上的放置面的第一边缘处布置有至少一个从放置面突出的保持元件。保持元件在其背对放置面的端侧处具有凹形的容纳部。带有可枢转的手柄的容器能被以这样的定向搁放在放置面处，即，可枢转的手柄占据在放置面的第一边缘处的位置。可枢转的手柄于是可绕其枢转轴线被枢转，直至其沉入到至少一个保持元件的凹形的容纳部中。保持元件于是在上方嵌接手柄，从而使得容器以其手柄被固定在保持元件处。

[0008] 有利的是：在放置面的第一边缘处彼此隔开间距地布置有两个保持元件。保持元件在其背对放置面的端侧处具有各一个凹形的容纳部。这给予如下可能性，即，容器的可枢转的手柄被引入到两个容纳部中，并且由此被特别可靠地固定。

[0009] 容器的可枢转的手柄通常呈 U 形地设计，并且包括两个被铰接在容器的一侧处的

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 514
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

携带臂，该携带臂以其自由的端部经由携带接片彼此相连接。两个可布置在放置面的第一边缘处的保持元件可彼此占据这样的间距，即，手柄的携带臂体各可被抵靠到保持元件的一外侧处。在此，保持元件的外侧由保持元件的彼此背对的侧面构成。因此，呈U形的手柄在其间容纳两个保持元件，并且且由此确保容器防止在手柄的纵向上的滑脱。

[0010] 至少一个保持元件优选地呈钩状地设计。该保持元件于是能以其呈弧形的端部区域在上方嵌接手柄。

[0011] 优选的是，至少一个保持元件可弹性地变形。

[0012] 在根据本发明的清洁装置的一种特别优选的设计方案中，至少一个保持元件设计成卡位元件，凭借该卡位元件可对被搁放在放置面处的容器的手柄加以卡位。因此，借助于卡位元件可获得与被搁放在放置面处的容器的可松解的卡位连接。由此，容器能以设计上简单的方式被固定在放置面处。

[0013] 有利的是：在放置面的背对第一边缘的第二边缘处布置有至少一个从放置面突出的带有第一止挡面的第一止挡元件。止挡元件构成用于被搁放在放置面处的容器的侧向的支点。容器可被定位在布置于放置面的第一边缘处的至少一个保持元件与布置于放置面的第二边缘处的第一止挡元件之间，其中，容器贴靠在第一止挡面处，并且接下来手柄可被枢转到固定位置中，在固定位置中，手柄嵌接到至少一个保持元件的凹形的容纳部中。

[0014] 有利的是：在放置面的第一边缘处布置有至少一个从放置面突出的而且具有朝向第一止挡面的第二止挡面的第二止挡元件。这给予如下可能性，即，在放置面的第一边缘处不仅在至少一个保持元件处而且附加地同样还在第二止挡元件处对容器加以支撑。

[0015] 在此，有利的是：至少一个第二止挡元件具有背对第二止挡面的外侧，以及至少一个保持元件具有突出超过第二止挡元件的外侧的保持部段。保持部段可在上方嵌接容器的可被抵靠到至少一个第二止挡元件的外侧处的手柄，其中，保持部段沉入到保持元件的凹形的容纳部中。

[0016] 在本发明的一种有利的设计方案中，保持元件沿放置面的面法线的方向超过第二止挡元件。因此，保持部段不仅沿第二止挡元件的外侧的面法线的方向而且沿放置面的面法线的方向突出超过第二止挡元件，并且由此可靠地抓住容器的手柄。

[0017] 有利的是：至少一个第二止挡元件与保持元件刚性地相连接。这提高了保持元件还有止挡元件的机械负荷承载能力。

[0018] 优选地，在放置面的第一边缘处彼此隔开间距地布置有两个保持元件，并且在保持元件的彼此背对的外侧处定位有各一个第二止挡元件。

[0019] 在本发明的一种有利的实施方式中，以如下方式获得容器在放置面处的机械上特别能承载负荷的固定方案，即：侧面连接到放置面的第一边缘处，存储空间的至少一个通入区域通入到该侧面中，其中，在存储位置中在存储空间中布置有张紧元件，张紧元件经由通入区域可从存储空间中至少部分被取出并且可被转移到工作位置中，以便于将容器固定在放置面处。在根据本发明的清洁装置的这样的设计方案中，为了固定容器，附加于与容器的手柄共同起作用的至少一个保持元件地使用至少一个张紧元件，容器借助至少一个张紧元件可被固定在放置面处。为了固定容器，张紧元件可至少部分被从存储空间中取出。存储空间具有布置在连接到放置面的第一边缘处的侧面中的通入区域。经由通入区域，张紧元件可至少部分被从存储空间中取出。张紧元件可围绕搁放在放置面处的容器被引导。因为

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 515
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

存储空间的通入区域布置在连接到放置面的第一边缘处的侧面处，所以张紧元件为了固定容器此外同样围绕如下的容器手柄被引导，该容器手柄沉入到布置在第一边缘处的保持元件的凹形的容纳部中。由此，手柄朝凹形的容纳部的方向被张紧元件加载以张紧力，该张紧力将手柄固定在凹形的容纳部处。

[0020] 张紧元件在存储空间中被清洁装置一并引导，并且因此对于使用者而言随时可供用于容器的固定。根据需要，张紧元件又可被带回到其可被存储于其中的存储空间中。

[0021] 可作如下设置，即：清洁装置仅具有唯一的存储空间，该存储空间通入到连接到放置面的第一边缘处的侧面中，并且在其中仅布置有唯一的张紧元件。然而同样可作如下设置，即：清洁装置包括多个通入到连接到放置面的第一边缘处的侧面中的存储空间，存储空间容纳各一个张紧元件。此外可作如下设置，即：在清洁装置的至少一个存储空间中，多个张紧元件布置在从其中张紧元件可被转移到工作位置中的存储位置中。

[0022] 有利的是：至少一个存储空间布置在放置面下方。这给予如下可能性，即，被搁放在放置面上的容器以在设计上较简单的方式借助于至少一个张紧元件被固定在放置面处，其中，该容器借助可枢转的手柄附加地接受借助于至少一个保持元件的固定。张紧元件可由布置在放置面下方的存储空间经由通入区域至少以如下程度被取出，即：容器借助于张紧元件可被固定在放置面处。例如，容器（包含其手柄）可在周向上至少部分被张紧元件包嵌。

[0023] 放置面优选地布置在壳体的上侧处。这使得容器在放置面处的定位变得容易。

[0024] 在一种有利的实施方式中，张紧元件至少部分可从存储空间被抽出。这使得张紧元件的操作变得容易。

[0025] 有利的是，张紧元件逆着回复力的作用可从存储空间被至少部分抽出。

[0026] 在一种有利的实施方式中，以如下方式得出一种在将容器固定在壳体的放置面处的情况下特别简单的操作方案，即：张紧元件具有被固定在存储空间中的第一端部以及经由通入区域从存储空间外部可触及的松动的第二端部。张紧元件可在其松动的端部处被使用者抓住，并且然后至少部分被从存储空间中取出。张紧元件的背对松动的端部的端部被固定在存储空间中。使用者可围绕被搁放在放置面处的容器以及尤其地围绕其手柄引导松动的端部引导，并且可被固定在清洁装置处或在容器处。

[0027] 尤其地，在使用两个张紧元件的情况下，证实是有利的是：两个张紧元件各以一个端部被固定在存储空间中，并且以其另一端部被使用者抓住，并且可从存储空间中被抽出。

[0028] 优选地，在至少一个张紧元件的松动的端部处布置有保持元件（例如固定钩）。借助于保持元件，张紧元件可以简单的方式在工作位置中被固定在清洁装置处或被固定在容器处，以便于将容器固定在放置面处。

[0029] 有利地，张紧元件可弹性地伸展。优选地，张紧元件可被伸展至少50%，这也就是说张紧元件可通过伸展负载被延长至少50%。特别有利的是，张紧元件可被伸展100%，这也就是说通过伸展负载可被伸展到两倍的长度上。

[0030] 张紧元件可根据张紧带或张紧绳索的形式来设计。

[0031] 在本发明的一种有利的实施方式的情况下，至少一个张紧元件以被拉长的构件形式布置在存储空间中。

[0032] 备选地可作如下设置，即，至少一个张紧元件在存储空间中被卷绕到卷轴上。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 516
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0033] 至少一个存储空间优选地呈管道状地设计。

[0034] 可例如作如下设置，即，清洁装置的壳体具有盖板，盖板在其上侧上构造成放置面，并且在放置面的第一边缘处包括至少一个保持部件，该保持部件为了将容器固定在放置面处与容器的手柄共同起作用，其中，至少一个存储空间被整合到盖板中。

[0035] 盖板有利地布置在清洁装置的壳体上部件处。优选地，盖板可与壳体上部件可松解地相连接。

[0036] 特别有利的是，盖板具有背对放置面的底面，至少一个存储空间成型到底面中。

[0037] 可例如作如下设置，即，至少一个存储空间构造成成型到盖板的底面中的容纳通道。容纳通道可在盖板的底视图中例如具有呈U形的或呈C形的走向。在本发明的一种优选的设计方案的情况下，张紧元件可从容纳通道中在通道纵向上被至少部分抽出。

[0038] 有利的是，清洁装置具有如下的保持元件，该张紧元件在其工作位置中可被固定在该保持元件处。保持元件可例如以固定孔眼或固定钩的形式构造，在张紧元件围绕一个或围绕多个搁放在放置面处的容器被引导之后，张紧元件可各以一端被固定在保持元件处。

[0039] 清洁装置优选地具有把手弓形件，因为这使得清洁装置沿着地面的移动变得容易。有利的是，在把手弓形件处布置有至少一个用于至少一个张紧元件的保持元件。把手弓形件可优选地占据垂直于放置面取向的位置，并且由此在侧向对被搁放在放置面处的容器加以支撑。在把手弓形件处可有利地布置有多个保持元件，在保持元件处各一个张紧元件能以一端被固定。保持元件(例如固定孔眼或固定钩)有利地以距放置面不同的间距来布置。这使得不同尺寸的容器借助于张紧元件的固定变得容易。

[0040] 如已经说明的那样，至少一个容纳空间通到清洁装置的连接到放置面的第一边缘处的侧面中。在放置面的第一边缘处布置有至少一个保持元件，该保持元件与容器的手柄共同起作用。有利的是，存储空间的通入区域相邻于保持元件地布置，因为这给予如下可能性，即，经由通入区域从存储空间中至少部分可取出的张紧元件直接在保持元件处沿着引导，其中，容器的手柄可占据在张紧元件与保持元件之间的位置。尤其地可作如下设置，即，容器的手柄可由张紧元件朝保持元件的凹形的容纳部的方向被加载以张紧力。这用于容器在放置面处的特别能承载负荷的固定方案。

[0041] 优选地，至少一个存储空间的通入区域被定位在布置于放置面的第一边缘处的第二止挡元件下方，第二止挡元件从放置面突出并且具有第二止挡面。在第二止挡元件下方，张紧元件因此可经由通入区域被从存储空间中以如下程度取出，即：张紧元件可包嵌容器(包含其手柄)，以便将容器固定在放置面处。

[0042] 特别有利的是，清洁装置与布置在放置面处的容器一起可绕两个滚轮的共同的转动轴线被枢转。清洁装置于是可与容器一起依照手推车的形式被移动。容器借助于至少一个与容器的手柄在卡位连接的意义上共同起作用的保持元件被可靠地固定在放置面上，并且可与清洁装置共同地被移动。

[0043] 有利的是，清洁装置是便携的。这使得清洁装置在不平的地面上以及在上阶梯的运输中变得容易。

[0044] 有利的是，清洁装置具有可被枢转到放置面中的装置把手。在不工作位置中，装置把手可被枢转到放置面中，其中，装置把手于是不从放置面突出，并且容器可被搁放到放置

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 517
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

面上，而不受装置把手影响。只要没有容器被定位在放置面上，装置把手可从放置面被枢转出来到工作位置中，在工作位置中，装置把手可被使用者抓住，以便于将清洁装置例如携带越过阶梯。

[0045] 如已经提及的那样，清洁装置优选地以吸尘器或高压清洁装置的形式来设计。

附图说明

[0046] 本发明的一种优选的实施方式的下面的描述与附图相联系地用于详细阐述。其中。

[0047] 图 1 示出了带有构造成用于一个或用于多个容器的放置面的盖板的清洁装置的透视性的图示；

[0048] 图 2 由斜向从上方示出了根据图 1 的盖板的透视性的图示；

[0049] 图 3 示出了根据图 1 的盖板的底视图；

[0050] 图 4 示出了在将带有可枢转的手柄的容器搁放在盖板的放置面上时，根据图 1 的清洁装置的透视性的图示；

[0051] 图 5 示出了在将容器搁放在盖板的放置面上时，根据图 1 的清洁装置的侧视图；

[0052] 图 6 示出了带有被搁放在放置面上的容器的根据图 1 的清洁装置的透视性的图示，其中，容器的手柄被盖板的卡位钩在上方嵌接；

[0053] 图 7 示出了图 6 中的细部 A 的放大的图示，以及

[0054] 图 8 示出了图 1 中的清洁装置的透视性的图示，其中，两个容器彼此相叠地布置在放置面上，并且被两个张紧元件包嵌。

具体实施方式

[0055] 在附图中示意性地示出了呈吸尘器 10 形式的根据本发明的清洁装置。吸尘器 10 包括基座 12，在基座 12 上绕共同的转动轴线 16 可转动地支承有两个滚轮。为了获得更好的概览，在附图中仅示出了一个滚轮 14。附加地，在基座 12 处可转动地支承有两个支撑轮，其中，在附图中仅可看到第一支撑轮 18。借助于滚轮 14 和支撑轮 18，吸尘器 10 可在地面上沿着移动。

[0056] 带有壳体下部件 22 和壳体上部件 24 的抽吸装置 20 被放置到基座 12 上。壳体下部件 22 通常构造成吸尘器 10 的污物收集容器。抽吸空气与抽吸物一起经由抽吸入口 26 可被吸入到污物收集容器中。抽吸软管（该抽吸软管在其自由的端部上带有吸嘴）通常可被连接到抽吸入口 26 上。这样的抽吸管路和吸嘴对本领域专业人士而言是已知的，并且因此为了获得更好的概览不在附图中示出。

[0057] 壳体上部件 24 通常包围由电机驱动的抽吸涡轮机。借助于抽吸涡轮机，壳体下部件 22 的污物收集容器可被以负压加载。

[0058] 在壳体上部件 24 上布置有与壳体上部件 24 可松解地相连接的盖板 30，盖板 30 大致上呈矩形地构造，并且具有正面的第一边缘 31 和背面的第二边缘 32 以及沿着盖板 30 的纵向侧延伸的第三边缘 33 和第四边缘 34。在正面的第一边缘 31 中，居中地成型有在顶视图中大致上呈 U 形的凹陷部 35。

[0059] 盖板 30 具有构造成用于将一个或多个容器搁放在吸尘器 10 上的放置面 38 的上

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 518
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

侧。这尤其地由图 6 和图 8 变得清楚。此外，盖板 30 具有背对放置面 38 的底面 40，盖板以底面 40 平放在壳体上部件 24 上。

[0060] 在放置面 38 的背面的第二边缘 32 处，第一止挡元件 42 从放置面 38 伸出，第一止挡元件 42 具有大致上垂直于放置面 38 取向的第一止挡面 43，第一止挡面 43 朝向放置面 38 和正面的第一边缘 31。

[0061] 在正面的第一边缘 31 处，在凹陷部 35 的第一侧处布置有从放置面 38 突出的第二止挡元件 45，第二止挡元件 45 具有大致上垂直于放置面 38 取向的第二止挡面 46。第二止挡面 46 朝向第一止挡面 43。

[0062] 在凹陷部 35 的第二侧处，在正面的第一边缘 31 处布置有第三止挡元件 48，第三止挡元件 48 从放置面 38 突出，并且构造成大致上垂直于放置面 38 取向的第三止挡面 49。第三止挡面 49 如同第二止挡面 46 那样朝向第一止挡面 43。

[0063] 在第二止挡元件 42 与中央的凹陷部 35 之间，在正面的第一边缘 31 处布置有呈第一卡位钩 41 形式的第一保持元件，第一保持元件具有从放置面 38 大致上垂直地伸出的杆 52。杆 52 在其自由的端部处带有呈弧形的保持部段 53。保持部段 53 在其背对放置面 38 的端侧上限定有凹形的容纳部 54，并且不仅向上（也就是说沿放置面 38 的面法线的方向）而且向前（也就是说沿第二止挡元件 45 的外侧 56 的面法线的方向）伸出超过第二止挡元件 45。

[0064] 在居于中央的凹陷部 35 与第三止挡元件 48 之间，在正面的第一边缘处布置有呈第二卡位钩 58 形式的第二保持元件。第二卡位钩 58 包括大致上垂直地从放置面 38 突出的杆 59，杆 59 带有呈弧形弯曲的保持部段 60。保持部段 60 在其背对放置面 38 的端侧上限定有凹形的容纳部 61，并且不仅向上（也就是说沿放置面 38 的面法线的方向）而且向前（也就是说沿第三止挡元件 48 的背对放置面 38 的外侧 63 的面法线的方向）伸出超过第三止挡元件 48。

[0065] 第二卡位钩 58 与第一卡位钩 51 相同地构造。两个卡位钩 51、58 可弹性地变形，并且如同止挡元件 42、45 和 48 那样一体式地与盖板 30 相连接。

[0066] 在放置面 38 中绕枢转轴线 66 可枢转地支承有装置把手 65。装置把手 65 大致上呈 U 形地构造成且在其在图 2 中示出的不工作位置中被在上侧成型到放置面 38 中的把手凹部 68 所容纳，装置把手 65 从把手凹部 68 中可被枢转出来至垂直于放置面 38 取向的工作位置中。在其工作位置中，装置把手 65 可被吸尘器 10 的使用者抓住，以便于拿持吸尘器 10。

[0067] 呈第一容纳通道 71 形式的第一存储空间和呈第二容纳通道 72 形式的第二存储空间被成型到盖板 30 的底面 40 中。第一容纳通道 71 在第二止挡元件 45 下方通到盖板 30 的正面 74 中。正面 74 在正面的第一边缘 31 处连接到放置面 38 处。居于中央的凹陷部 35 被成型到正面 74 中。

[0068] 在正面 74 的区域中，第一容纳通道 71 在第二止挡元件 45 下方构成第一通入开口 76。由第一通入开口 76 出发，第一容纳通道 71 以第一通道部段 78 朝背面的第二边缘 32 的方向延伸。平行于背面的第二边缘 32 延伸的第二通道部段 79 连接到第一通道部段 78 上，平行于纵向侧的第四边缘 34 延伸的第三通道部段 80 连接到第二通道部段 79 上，第三通道部段 80 大约在第四边缘 34 的中部的高度上在通道端部 81 处终止。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 519
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0069] 第二容纳通道 72 在第三止挡元件 48 下方通到盖板 30 的正面 74 中，并且在该区域中构造成第二通入开口 84。由第二通入开口 84 出发，第二容纳通道 72 以第一通道部段 85 朝背面的第二边缘 32 的方向延伸。第二通道部段 86 连接到第一通道部段 85 处，第二通道部段 86 平行于背面的第二边缘 32 延伸，并且第三通道部段 87 连接到第二边缘 32 上，第三通道部段 87 平行于纵向侧的第三边缘 33 延伸，并且大约在第三边缘 33 的中部的高度上在通道端部 88 处终止。

[0070] 第一容纳通道 71 容纳可弹性伸展的第一张紧元件 90，第一张紧元件 90 以第一端部 91 被固定在第一容纳通道 71 的通道端部 81 处，并且第一张紧元件 90 以第二端部 92 沉入到第一通入开口 76 中。在第二端部 92 处固定有呈第一固定钩 93 形式的固定元件。

[0071] 第二容纳通道 72 容纳第二张紧元件 95，第二张紧元件 95 以第一端部 96 被固定在第二容纳通道 72 的通道端部 88 处，并且第二张紧元件 95 的第二端部 97 沉入到第二通入开口 84 中。在第二端部 97 处固定有呈第二固定钩 88 形式的固定元件。

[0072] 在背后的区域中，把手弓形件 100 绕枢转轴线 101 可枢转地支承在在壳体上部件 24 上。把手弓形件 100 包括第一臂 102 和第二臂 103，第一臂 102 和第二臂 103 经由把手接片 104 彼此相连接。把手弓形件 100 可在图 1、图 4、图 5、图 6 和图 8 中示出的被枢转出来的或竖立的位置与在附图中未示出的枢转进去的位置之间被来回枢转。在枢转进去的位置中，把手弓形件 100 平行于放置面 38 地取向。借助于布置在把手弓形件 100 的至少一个臂的自由的端部处的固定设备 106，把手弓形件 100 可被卡位在其枢转出来的位置中。

[0073] 在第一臂 102 与把手接片 104 之间的过渡区域中，在第一臂 102 处成型有呈第一固定孔眼 108 形式的第一固定元件。在第二臂 103 与把手弓形件 101 之间的过渡区域中，在第二臂 103 处成型有呈第二固定孔眼 109 形式的第二固定元件。附加于固定孔眼 108、109 地，各两个另外的固定孔眼 111、112 或者 113、114 被以距放置面 38 不同的间距成型到两个臂 102、103 处。

[0074] 两个张紧元件 90 和 95 在其搁放位置中完全被相应的容纳通道 71 或者 72 容纳。张紧元件 90、95 以其两个端部 92 或者 97 对于使用者而言在盖板 30 的正面 74 处是可触及的。第一固定钩 93 和第二固定钩 98 可被使用者在正面 74 处抓持。于是，张紧元件 90、95 可以在纵向上伸展，其中，张紧元件 90、95 相应地可被以 100% 伸展，也就是说其可在其长度上被加倍。这给予如下可能性，即，利用张紧元件 90、95 在周向上至少部分地包嵌被搁放到放置面 38 上的一个或多个容器。这在下面还将作进一步说明。固定钩 93 和 98 于是可相应地被钩入到固定孔眼 108 或者 109 中或同样地到固定孔眼 111、112、113、114 中的其中一个中。因此，张紧元件 90、95 能凭借其固定钩 93、98 被以距放置面 38 不同的间距固定在把手弓形件 100 处。由此，不同大小的容器可借助于可弹性伸展的张紧元件 90、95 以简单的方式被固定在放置面 38 处。

[0075] 如已说明的那样，在放置面 38 上可搁放容器，容器于是可与吸尘器 10 共同地沿着地面被移动。在图 4 至 7 中示出了第一容器 120，第一容器 120 被搁放到放置面 38 上。第一容器 120 大致上呈方形地构造，并且包括容器下部件 121，在容器下部件 121 处可枢转地固定有容器上部件 122。在容器下部件 121 的端侧 123 处铰接有呈 U 形的手柄 125。手柄 125 具有第一携带臂 126 和第二携带臂 127，第一携带臂 126 和第二携带臂 127 经由携带接片 128 一体式地彼此相连接。在携带接片 128 处，手柄 125 可被使用者抓住，以便于拿持第

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 520
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

一容器 120。

[0076] 第一容器 120 可在第一止挡元件 42 与第二止挡元件 45 和第三止挡元件 48 之间被搁放在放置面 38 上，其中，端侧 123 可被抵靠到第二止挡面 46 和第三止挡面 49 处，且手柄 125 首先占据在卡位钩 51、58 上方的位置。容器 120 在背部被支撑在第一止挡元件 42 处，并且在正面被支撑在第二止挡元件 45 处和支撑在第三止挡元件 48 处。接下来，手柄 125 可向下朝向止挡元件 45 和 48 的外侧 56 和 63 的方向被枢转，直至携带接片 128 在第一卡位钩 51 和第二卡位钩 58 的弹性的变形之后卡入到两个卡位钩 51、58 的凹形的容纳部 54 和 61 中。在该卡位位置中，两个卡位钩 51、58 的保持部段 53 和 60 在上方嵌接携带接片 128。两个卡位钩 51、58 的彼此背对的外侧的间距与两个携带臂 126、127 的间距相应。因此，第一携带臂 126 贴靠在第一卡位钩 51 的背对卡位钩 58 的外侧，并且第二携带臂 127 贴靠在第二卡位钩 58 的背对第一卡位钩 51 的外侧处。这尤其地由图 7 变得清楚。

[0077] 由于手柄 125 与两个卡位钩 51、58 的共同起作用，被搁放在放置面 38 处的第一容器 120 被固定地保持在放置面 38 处。两个卡位钩 51、58 与第一容器 120 的可枢转的手柄 125 构造成可松解的卡位连接。

[0078] 附加于经由两个卡位钩 51、58 和手柄 125 的可松解的卡位连接地，第一容器 120 可借助于两个张紧元件 90、95 被固定在放置面 38 处。两个张紧元件为此可在固定钩 93、98 处被从容纳通道 71、72 中抽出，以便于在工作位置中包嵌第一容器 120。张紧元件 90、95 于是可相应地被固定在把手弓形件 100 的固定孔眼 108、109、111 至 114 中的其中一个处。在此，张紧元件 90、95 不仅可包嵌第一容器 120 而且附加地同样可包嵌与卡位钩 51、58 相卡位的手柄 125，其中，张紧元件 90、95 朝向凹形的容纳部 54、61 的方向施加张紧力到手柄 125 上，从而使得手柄 125 被特别有效地固定在卡位钩 51、58 处。

[0079] 第二容器 130 可放置到第一容器 120 上，第二容器 130 与第一容器 120 相同地构造成。这由图 8 变得清楚。两个容器 120、130 于是可共同地被两个张紧元件 90、95 包嵌，两个张紧元件 90、95 朝向凹形的容纳部 54 和 61 的方向对第一容器 120 的手柄 125 加载以张紧力。两个容器 120、130 由此被固定在放置面 38 处，并且可与吸尘器 10 一起以唯一的运输单元形式绕两个滚轮 14 的转动轴线 16 被向后枢转，从而使得容器 120、130 与吸尘器 10 一起依照手推车的形式可沿着地面被移动。

[0080] 在将固定钩 93、98 从固定孔眼 108、109 中松开之后，两个张紧元件 90、95 又可被储放到容纳通道 71、72 中。由于张紧元件 90、95 的弹性回复力，张紧元件 90、95 在由固定孔眼 108、109 松开之后自动地转到其搁放位置中。第二容器 130 然后可被从第一容器 120 上取下，并且接下来手柄 125 可在锁钩 51、58 的弹性变形的情况下被从凹形的容纳部 54、61 中枢转出来，从而使得在第一容器 120 与盖板 30 之间的卡位连接被松开。接下来，第一容器 120 然后同样可从放置面 38 上被取下。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 521
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

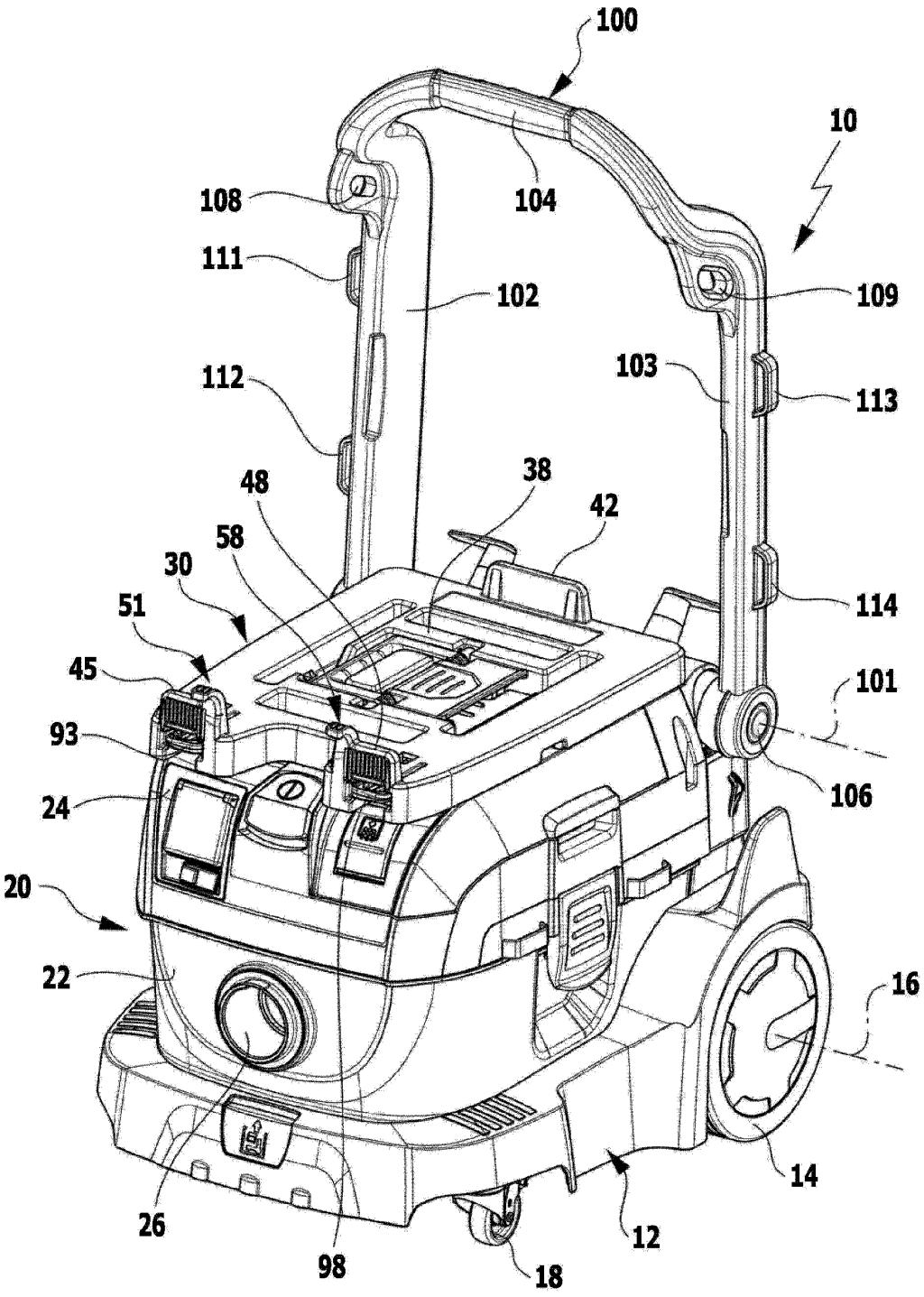


图 1

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 522
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

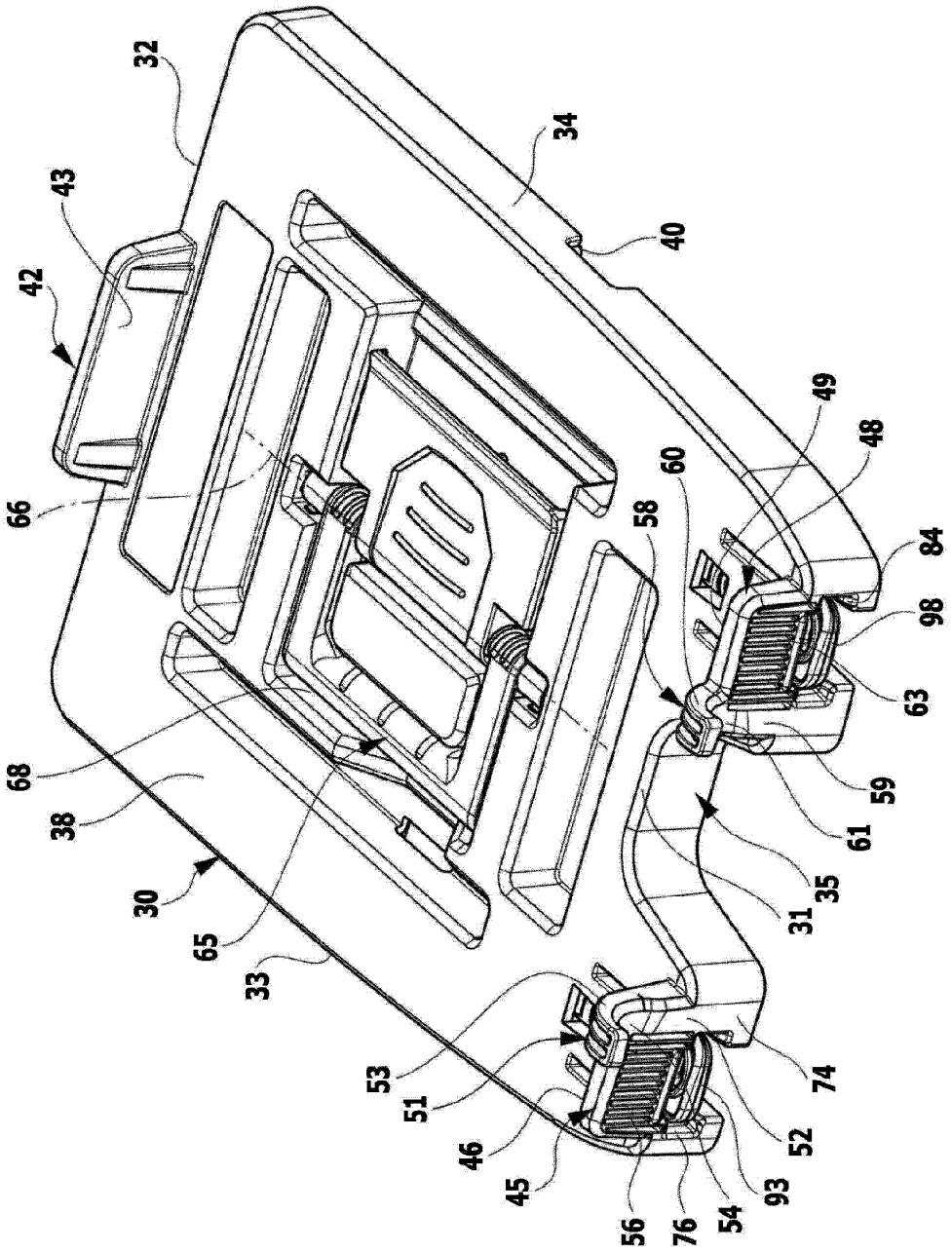


图 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 523
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

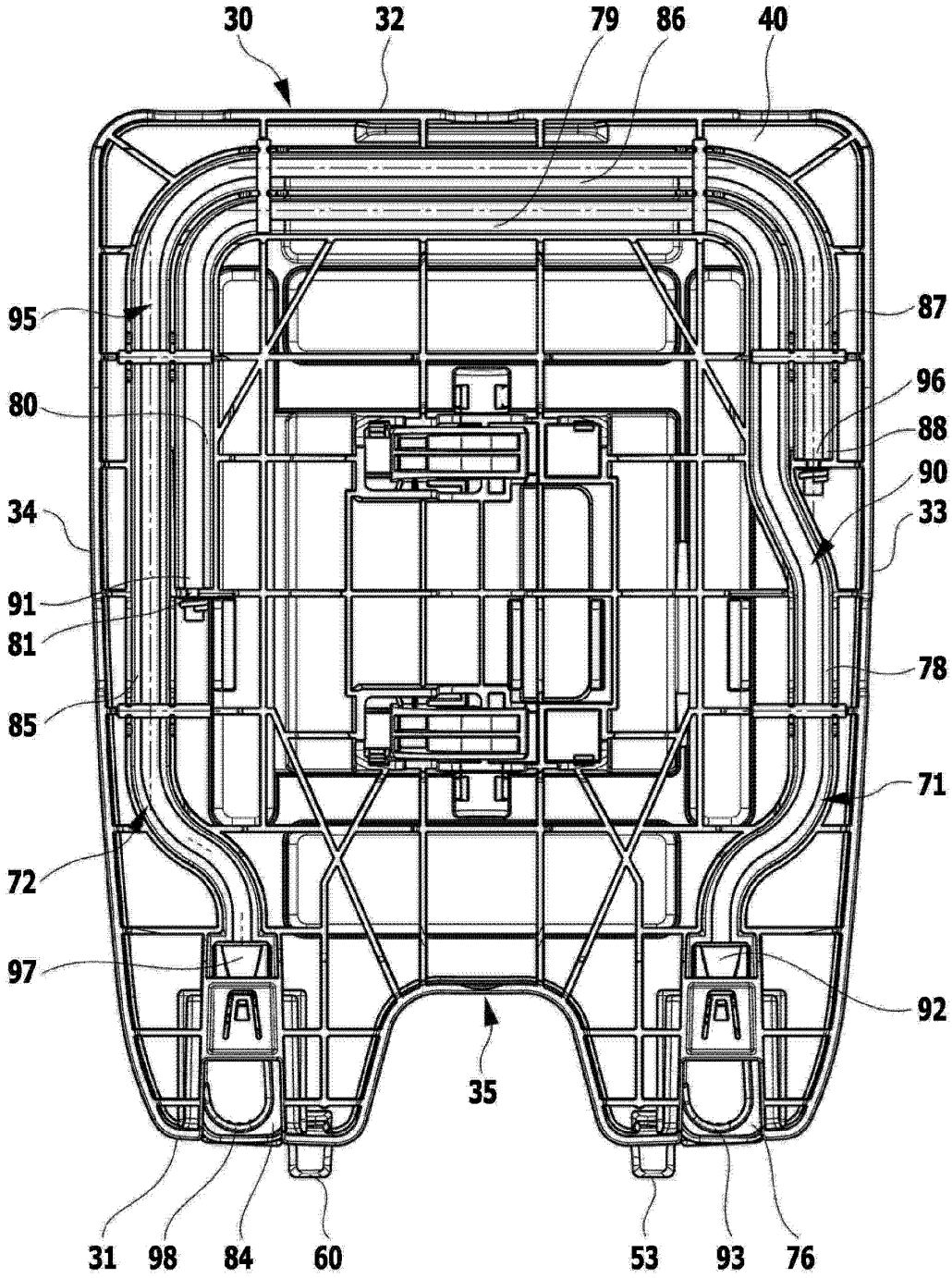


图 3

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 524
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

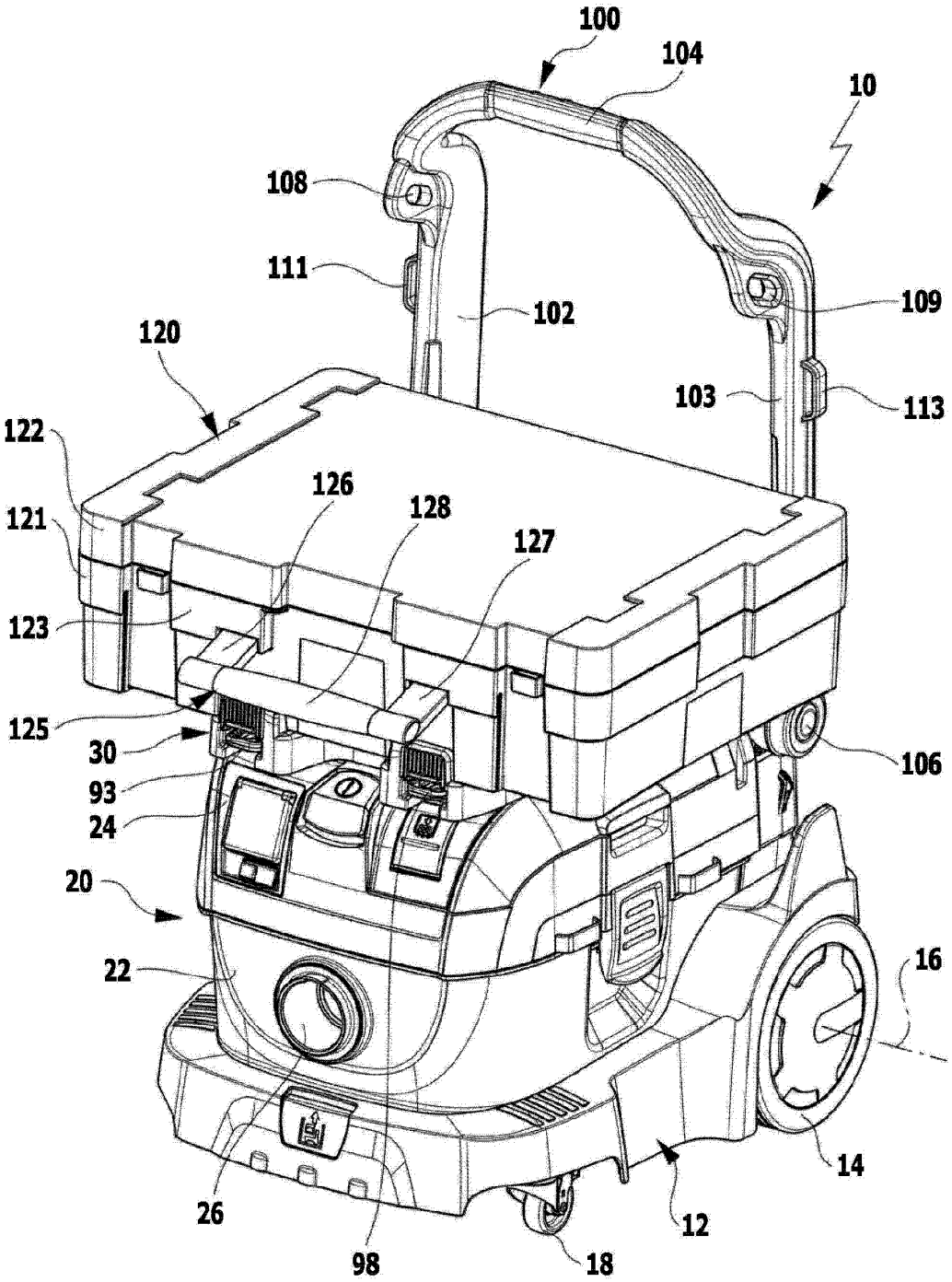


图 4

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 525
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

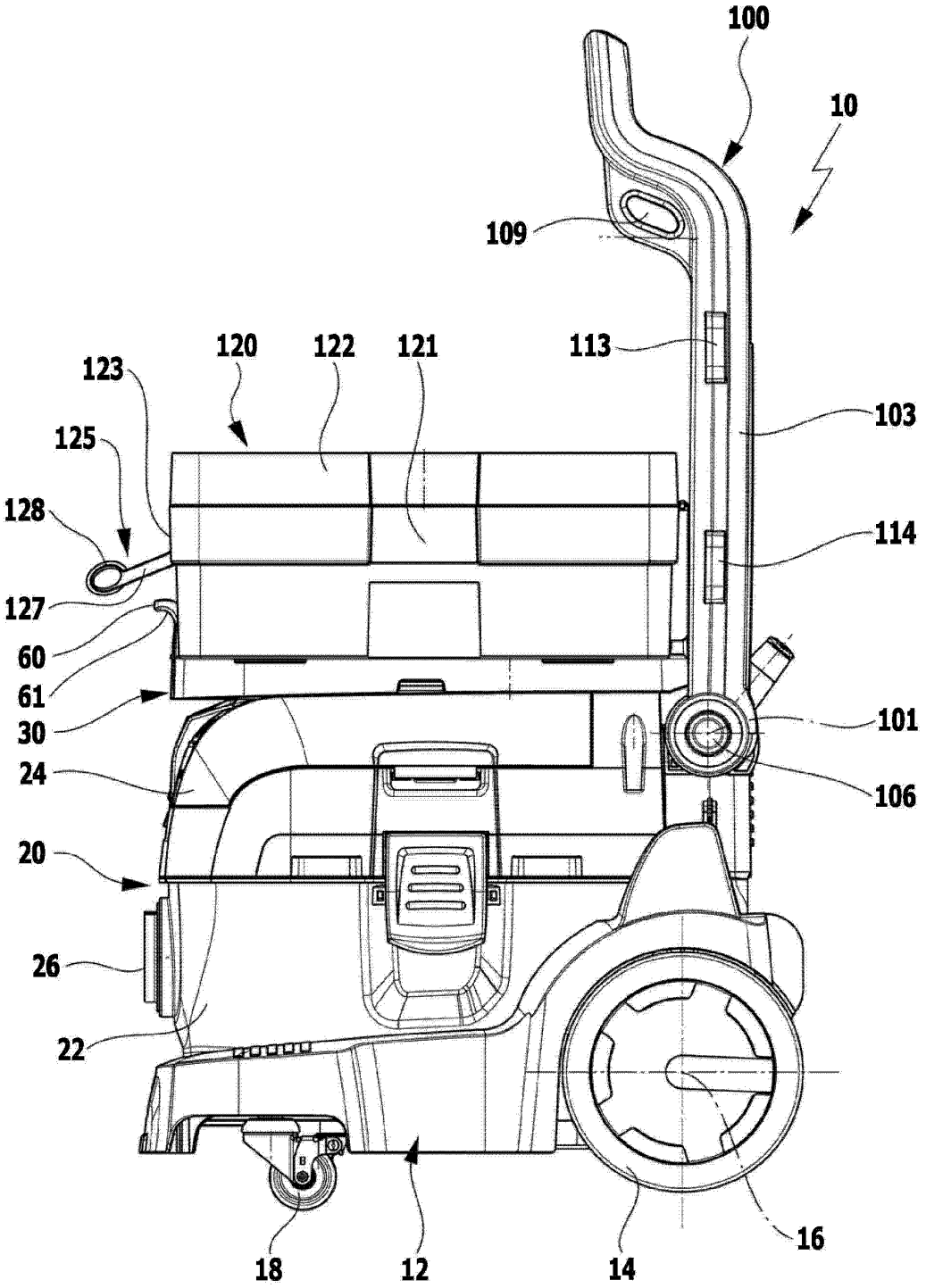


图 5

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 526
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

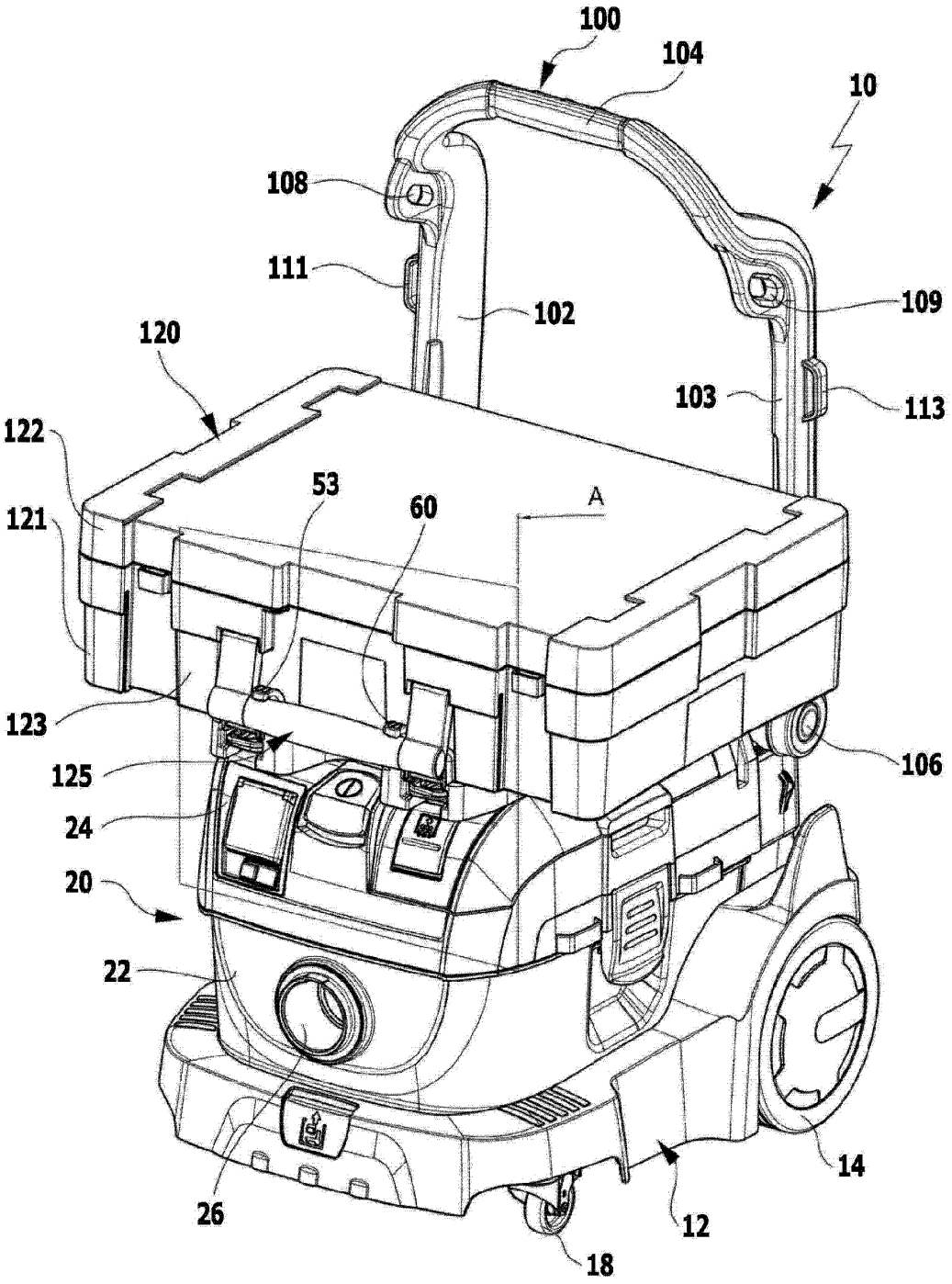


图 6

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 527
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

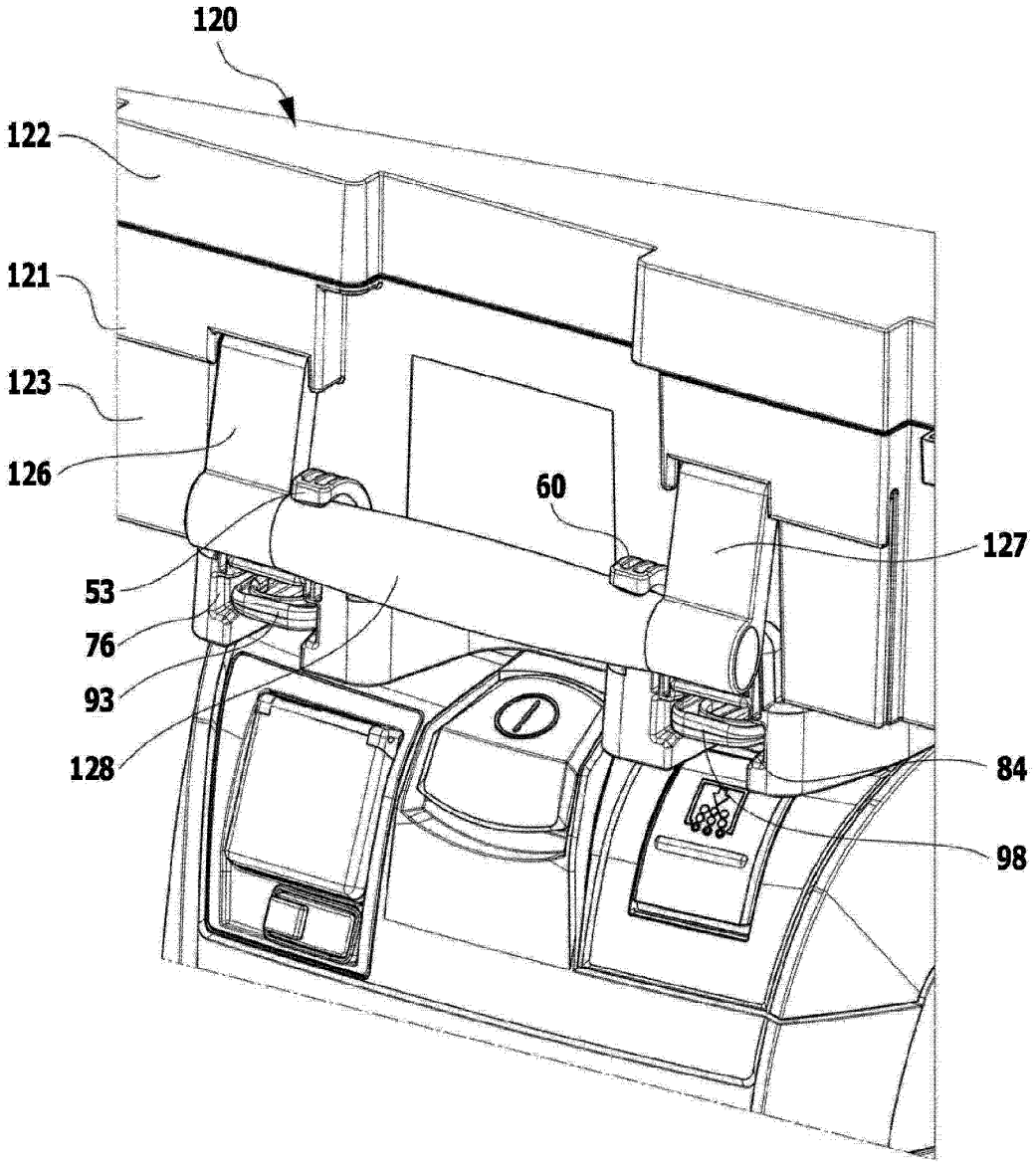


图 7

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 528
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

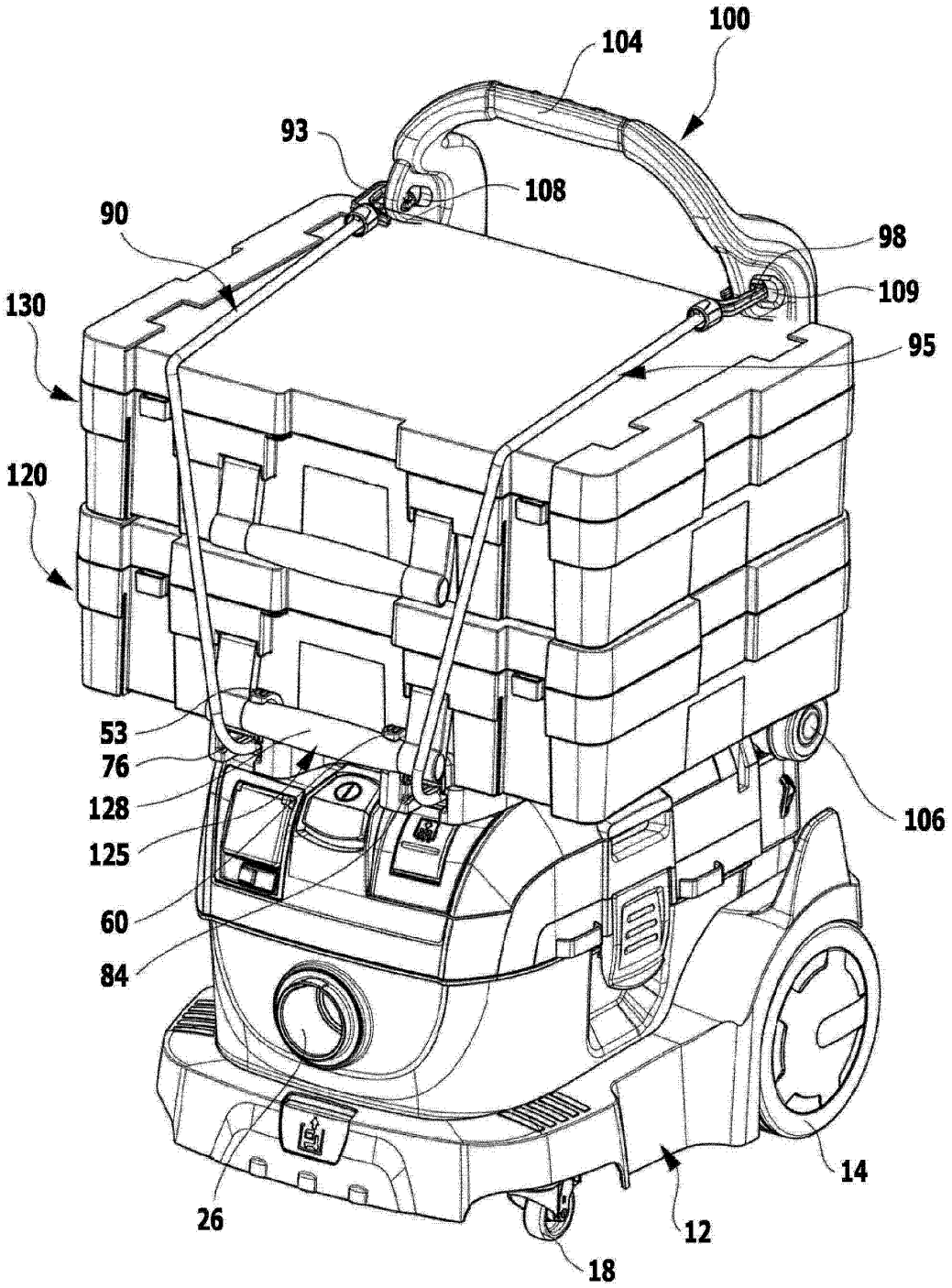


图 8

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 529
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

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Cleaning device

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Classification: - international: ***A47L11/40; A47L9/00***
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Priority number(s): WO2011EP55124 20110401 ; DE20101003754 20100408

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Abstract of CN103118578 (A)

The invention relates to a cleaning device having a housing comprising a storage surface for placing a container, and having rolling wheels for displacing the cleaning device. In order to refine the cleaning device such that a container can be affixed to the storage surface in a simple manner, according to the invention, the cleaning device comprises at least one storage space in which at least one clamping element is disposed in a stored position and can be at least partially removed from the storage space and can be transferred into a working position in order to affix the container to the storage surface.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 530
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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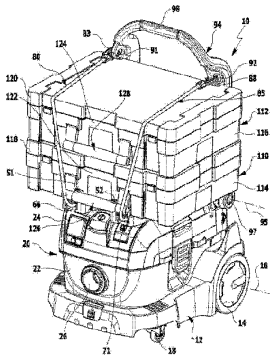
权利要求书1页 说明书6页 附图4页

(54)发明名称

清洁器

(57)摘要

本发明涉及一种清洁器，其带有具有用于存放容器的搁放面的壳体且带有用于移动清洁器的滚轮。为了如此地改进该清洁器，即，容器可以简单的方式被固定在搁放面处，根据本发明提出，清洁器具有至少一个存储空间，在该存储空间中在存储位置中布置有至少一个张紧元件，该张紧元件为了将容器固定在搁放面处至少部分可由存储空间被取出且可被转移到工作位置中。



CN 103118578 A

1. 一种清洁器，其带有具有用于存放容器的搁放面的壳体且带有用于移动所述清洁器的滚轮，其特征在于，所述清洁器(10)具有至少一个存储空间(62,64)，在所述存储空间中在存储位置中布置有至少一个张紧元件(80,85)，所述张紧元件为了将所述容器(110,112)固定在所述搁放面(38)处而至少部分能由所述存储空间(62,64)被取出且能被转移到工作位置中。

2. 根据权利要求1所述的清洁器，其特征在于，至少一个所述存储空间(62,64)布置在所述搁放面(38)之下。

3. 根据权利要求1或2所述的清洁器，其特征在于，所述张紧元件(80,85)至少部分能从所述存储空间(62,64)中被抽出。

4. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述张紧元件(80,85)能被弹性地拉伸。

5. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述张紧元件(80,85)具有被固定在所述存储空间(62,64)中的端部(81,86)以及从所述存储空间(62,64)之外能够接触到的松动的端部(82,87)。

6. 根据权利要求5所述的清洁器，其特征在于，在所述张紧元件(80,85)的松动的端部(82,87)处布置有固定元件(83,88)。

7. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述张紧元件(80,85)以拉长的构件形式布置在所述存储空间(62,64)中。

8. 根据前述权利要求中任一项所述的清洁器，其特征在于，至少一个所述存储空间(62,64)呈通道形地设计。

9. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述壳体具有如下盖板(30)，所述盖板在所述盖板的顶侧上构造有所述搁放面(38)，其中，至少一个所述存储空间(62,64)被集成到所述盖板(30)中。

10. 根据权利要求9所述的清洁器，其特征在于，至少一个所述存储空间(62,64)被成形到所述盖板(30)的底侧(40)中。

11. 根据前述权利要求中任一项所述的清洁器，其特征在于，至少一个所述存储空间设计成容纳通道(62,64)。

12. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述清洁器(10)具有至少一个固定元件(91,92,101,102,103,104)，在所述固定元件处所述张紧元件(80,81)能被固定在所述张紧元件的工作位置中。

13. 根据权利要求12所述的清洁器，其特征在于，所述清洁器(10)具有如下抓柄(94)，在所述抓柄处布置有至少一个固定元件(91,92,101,102,103,104)。

14. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述清洁器(10)是便携的。

15. 根据前述权利要求中任一项所述的清洁器，其特征在于，所述清洁器(10)具有至少一个止动钩(51,52)以用于锁止被存放在所述搁放面(38)处的容器的手柄(126)。

16. 根据权利要求15所述的清洁器，其特征在于，所述至少一个止动钩(51,52)布置在所述搁放面(38)的边缘(33)处且突出超过所述搁放面(38)。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 532
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

清洁器

技术领域

[0001] 本发明涉及一种清洁器，该清洁器带有具有用于存放容器的搁放面的壳体且带有用于移动清洁器的滚轮。

背景技术

[0002] 这样的清洁器例如以吸尘器形式或以高压清洁器形式得到使用。其例如被使用在建筑工地上或被使用在其它使用地。该清洁器装备有滚轮且因此可沿着地面移动。

[0003] 为了运输至使用地，清洁器经常被定位在运输车辆中。运输车辆中可供使用的存放空间经常受限制。因此，在许多情况中容器(例如工具箱或者容纳用具或附件的其它容器)被存放到定位在存放空间中的清洁器上。如果运输车辆到达其目的地，则容器与清洁器同样地被由运输车辆取出且紧接着被运输至实际的使用地。

[0004] 由 EP 0 916 302 B1 公知一种吸尘器形式的清洁器，该清洁器的壳体在顶侧具有带有容器可被插入到其中的凹入部的搁放面。容器由此被确保在壳体的搁放面上以防滑动。额外地，容器可借助于锁定元件被锁定在凹入部中。该锁定元件设计成可移动的锁销。容器在搁放面处的锁定具有如下优点，即，吸尘器连同容器一起由使用者以唯一的运输单元形式移动。然而如下是必要的，即，容器具有凹入部的尺寸。容器和吸尘器于是必须在其尺寸上彼此匹配。此外，为了锁定容器如下是必要的，即，所述容器具有与锁定元件配合作用的固定元件。

发明内容

[0005] 本发明的目的是，如此地改进一种开头所提及的形式的清洁器，即，容器可以简单的方式被固定在搁放面处。

[0006] 在该类型形式的清洁器的情形中，该目的根据本发明由此来实现，即，清洁器具有至少一个存储空间，在该存储空间中在存储位置中布置有至少一个张紧元件，所述张紧元件为了将容器固定在搁放面处可由存储空间至少部分被取出且可被转移到工作位置中。

[0007] 为了将容器固定在壳体的搁放面处，清洁器具有至少一个张紧元件，该张紧元件在存储位置中布置在由清洁器提供的存储空间中。为了将容器固定在搁放面处，张紧元件至少部分地可由存储空间被取出且可被转移到工作位置中。因为张紧元件由清洁器携带在存储空间中，所以张紧元件在任何时候可供使用者用于将容器或还有其它的物体固定在搁放面处。使用后，张紧元件又可返回到其可被存储在其中的存储空间中。

[0008] 可作如下设置，即，清洁器具有仅一个唯一的如下存储空间，在该存储空间中布置有唯一的张紧元件。然而其同样可作如下设置，即，清洁器包括多个存储空间，所述存储空间容纳各一个张紧元件。此外可作如下设置，即，在清洁器的至少一个存储空间中多个张紧元件布置在一个存储位置中，张紧元件可从该存储空间中被转移到工作位置中。

[0009] 如下是有利的，当至少一个存储空间布置在搁放面之下时。这给予如下可能性，即，存放在搁放面上的容器以在设计上简单的方式借助于至少一个张紧元件固定在搁放面

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 533
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

处。为此，张紧元件可从布置在搁放面之下的存储空间中至少被如此程度地取出，即，容器可借助于张紧元件固定在搁放面处。例如，容器可在圆周方向上至少部分被张紧元件包围。

[0010] 搁放面优选地布置在壳体的顶侧上。这使得容器在搁放面处的定位变得容易。

[0011] 在根据本发明的清洁器的一种有利的实施方式的情形中，张紧元件至少部分可从存储空间中被抽出。这使得张紧元件的操作变得容易。

[0012] 如下是有利的，即，张紧元件可逆着回复力的作用至少部分被从存储空间中抽出。

[0013] 有利地张紧元件可被弹性地拉伸。优选地，张紧元件可被拉伸至少 50%，也就是说通过拉伸负荷张紧元件的长度可被增大至少 50%。如下是特别有利的，即，张紧元件可被拉伸 100%，也就是说通过拉伸负荷可被拉伸到双倍长度。

[0014] 在一种有利的实施方式的情形中，由此得出一种在将容器固定在壳体的搁放面处时的特别简单的操作，即，张紧元件具有被固定在存储空间中的第一端部以及从存储空间之外可够到的松动的第二端部。张紧元件可在其松动的端部处被使用者抓住且然后至少部分被由存储空间取出。张紧元件的背离松动端部的端部被固定在存储空间中。使用者可绕被存放在搁放面处的容器引导松动的端部并且将其固定在清洁器处或在容器处。

[0015] 尤其地在使用两个张紧元件的情形中如下证实是有利的，即，所述两个张紧元件分别以一端部被固定在存储空间中且以其另一端部被使用者抓住且可从存储空间中被抽出时。

[0016] 优选地，在至少一个张紧元件的松动的端部处布置有固定元件(例如固定钩)。借助于固定元件，张紧元件可以简单的方式在工作位置中被固定在清洁器处或在容器处，以便于将容器固定在搁放面处。

[0017] 张紧元件可根据张紧带的或拉索的形式来设计。

[0018] 在本发明的一种有利的实施方式的情形中，至少一个张紧元件以拉长的构件形式布置在存储空间中。

[0019] 备选地可作如下设置，即，至少一个张紧元件在存储空间中被卷绕到绞盘上。

[0020] 根据本发明的清洁器的至少一个存储空间优选地呈通道形地设计。

[0021] 其可作如下设置，即，清洁器的壳体具有盖板，其在其顶侧上构造成搁放面并且至少一个存储空间被集成到其中。

[0022] 盖板有利地布置在清洁器的壳体上部处。优选地，盖板与壳体上部可松开地相连接。

[0023] 优选地，盖板在搁放面的边缘处具有至少一个带有突出超过搁放面的止挡面的止挡元件，其中，容器可被置放到止挡面处。这使得容器在搁放面处的定位变得容易。有利地，在搁放面的彼此背离的边缘处分别布置有至少一个其止挡面彼此朝向的止挡元件。

[0024] 如下是特别有利的，当盖板具有至少一个存储空间被成形到其中的背离搁放面的底侧时。由此制造成本可被保持较少。

[0025] 其例如可作如下设置，即，至少一个存储空间构造成被成形到盖板的底侧中的容纳通道。该容纳通道可在盖板的底视图中例如具有呈 U 形或呈 C 形的走向。在本发明的一种优选的设计方案的情形中，张紧元件可在通道纵向上至少部分被从容纳通道中抽出。

[0026] 如下是有利的，当容纳通道通入到盖板的侧面中、优选地通入到盖板的正面中时。在容纳通道的通口区域中，张紧元件在其存储位置中可被使用者抓住。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 534
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0027] 如下是有利的，当清洁器具有张紧元件在其工作位置中可被固定在其处的固定元件时。该固定元件可例如以固定孔眼或固定钩的形式构造成，在其处张紧元件可分别以一端部被固定，在其绕被存放在搁放面处的容器引导之后。

[0028] 清洁器优选地具有抓柄，因为其使得清洁器沿着地面的移动变得容易。在此如下是有利的，当在抓柄处布置有至少一个用于张紧元件的固定元件时。抓柄可优选地占据垂直于搁放面定向的位置且由此在侧向支撑被存放在搁放面处的容器。在抓柄处可有利地布置有多个固定元件，在其处张紧元件可分别以一端部被固定。固定元件(例如固定孔眼或固定钩)有利地布置在相对搁放面的不同距离上。这使得不同尺寸的容器借助于张紧元件的固定变得容易。

[0029] 如下是特别有利的，当清洁器连同布置在搁放面处的容器一起可绕两个滚轮的共同的转动轴线被摆动时。清洁器然后可连同容器一起根据行李车的形式被移动。容器借助于至少一个张紧元件可被可靠地固定在搁放面处且可连同清洁器一起被移动。

[0030] 如下是有利的，当清洁器是便携的时。这使得清洁器在不平的地面上或上阶梯的运输变得容易。

[0031] 如下是有利的，当清洁器具有可被摆入到搁放面中的器具把手时。在不工作状态中，器具把手可被摆入到搁放面中，其中，其于是不从搁放面突出且容器可被存放到搁放面上而不被器具把手影响。一旦无容器被定位在搁放面上，器具把手可从搁放面被摆出到工作位置中，在其中器具把手可被使用者抓住，以便于将清洁器提起到阶梯上。

[0032] 在一种特别优选的实施方式的情形中，清洁器具有至少一个止动钩以用于锁止被存放在搁放面处的容器的手柄。这使得容器的固定不仅借助于至少一个张紧元件成为可能，而且额外地容器可借助于至少一个止动钩被固定在搁放面处。止动钩与容器的手柄配合作用。容器可在如下这样的定向中被存放到搁放面上，即，其手柄可与清洁器的至少一个止动钩配合作用。尤其地可作如下设置，即，止动钩将容器的手柄搭接在止动位置中。为此，容器的手柄可被摆动到止动钩上，其中，止动钩首先在背离容器的手柄的方向上被变形，直至手柄占据在止动钩的松动的端部之下的位置，从而使得止动钩可占据在其中止动钩搭接容器的手柄的止动位置。

[0033] 有利地，清洁器包括两个尤其地相同地设计的止动钩，其与被存放在搁放面处的容器的手柄配合作用且在止动位置中搭接手柄。

[0034] 至少一个止动钩优选地布置在搁放面的边缘处，其中，其突出超过搁放面。

[0035] 在本发明的一种特别优选的设计方案的情形中，至少一个容纳腔通入到清洁器的侧面中，其中，在容纳腔的通口区域中张紧元件的松动的端部可被使用者包围，且与通口区域相邻地布置有与被存放在搁放面处的容器的用于构造止动连接的手柄配合作用的止动钩。这具有如下优点，即，在手柄与止动钩锁止之后张紧元件可被引导到容器的手柄之上且由此手柄可在朝向止动钩的方向上被加载以力。由此，容器被特别可靠地固定在搁放面处，而不存在容器滑动的危险。

附图说明

[0036] 本发明的优选的实施方式的下面的描述与附图相联系地用于进一步的说明。其中：

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 535
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0037] 图 1 :示出了带有构造有用于一个或多个容器的搁放面的盖板的清洁器的透视性的图示 ;

[0038] 图 2 :斜向上地示出了根据图 1 的盖板的透视性的图示 ;

[0039] 图 3 :示出了根据图 2 的盖板的底视图,且

[0040] 图 4 :示出了根据图 1 的清洁器的透视性的图示,其中,在搁放面上相叠地布置有两个容器且借助于两个张紧元件被固定。

具体实施方式

[0041] 在附图中示意性地示出了吸尘器 10 形式的根据本发明的清洁器,带有基座 12,在该基座处两个滚轮绕共同的转动轴线 16 可自由转动地受支承。为了获得更好的概览,在附图中仅示出了第一滚轮 14。额外地,在基座 12 处可转动地支承有两个支撑轮,其中,在附图中仅第一支撑轮 18 可被辨认出。借助于滚轮 14 和支撑轮 18,吸尘器 10 可沿着地面被移动。

[0042] 在基座 12 上放置有吸入器 20,其具有壳体下部 22 和壳体上部 24。壳体下部 22 通常构造成污物收集容器,经由吸入口 26 可将吸入空气连同吸入物一起吸入到该污物收集容器中。在吸入口 26 处通常可联接吸入管道,该吸入管道在其松动的端部处承载吸嘴。这样的吸入管道和吸嘴对专业人士而言是本身公知的且因此为了获得更好的概览而在附图中未示出。

[0043] 壳体上部 24 通常包围吸入涡轮机,该吸入涡轮机由电机驱动。借助于吸入涡轮机,壳体下部 22 的污物收集容器可被加载以真空。

[0044] 在壳体上部 24 上布置有与壳体上部 24 可松开地连接的盖板 30,所述盖板基本上呈矩形地设计且具有第一纵向面 31、背离第一纵向面 31 的第二纵向面 32 以及正面 33 和背面 34。在俯视图中基本上呈 U 形的凹入部 36 居中地成形到正面 33 中。

[0045] 盖板 30 具有构造出用于存放一个或多个容器的搁放面 38 的顶侧。这由图 4 显而易见。此外,盖板 30 具有背离搁放面 38 的底侧 40,盖板 30 以该底侧安放壳体上部 24 上。

[0046] 在搁放面 38 的背面的边缘处,盖板 30 在其顶侧处承载从搁放面 38 中伸出的带有基本上垂直于搁放面 38 定向的第一止挡面 43 的第一止挡 42。在凹入部 36 与第一纵向面 31 之间,盖板 30 在搁放面 38 的正面的边缘、在其顶侧处承载从搁放面 38 中伸出的带有基本上垂直于搁放面 38 定向的第二止挡面 46 的第二止挡 45,且在凹入部 36 与第二纵向面 32 之间,盖板 30 在搁放面 38 的正面的边缘、在其顶侧处承载由搁放面 38 伸出的带有基本上垂直于搁放面 38 定向的第三止挡面 49 的第三止挡 48。第二止挡面 46 与第三止挡面 49 同样地朝向第一止挡面 43。

[0047] 在第二止挡 45 与凹入部 36 之间,在搁放面 38 的正面的边缘处从搁放面 38 中伸出第一止动钩 51,且在凹入部 36 与第三止挡 48 之间在搁放面 38 的正面的边缘处从搁放面 38 中伸出第二止动钩 42,该第二止动钩与第一止动钩 51 相同地构造。两个止动钩 51 和 52 背离第一止挡面 43 且可弹性地变形。

[0048] 在搁放面 38 中,器具把手 54 可绕摆动轴线 55 摆动地受支承。器具把手 54 基本上呈 U 形地构造且包括第一侧臂 56 和第二侧臂 57,所述第一侧臂和第二侧臂在其松动的端部处经由器具过梁 58 彼此一体式地相连接。在其在图 2 中示出的不工作位置中,器具把

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 536
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

手 54 由在顶侧成形到搁放面 38 中的把手容纳部 60 容纳，从该把手容纳部中，为了提起吸尘器 10 器具把手可被摆出到垂直于搁放面 38 定向的工作位置中。

[0049] 第一容纳通道 62 形式的第一存储空间和第二容纳通道 64 形式的第二存储空间被成形到盖板 30 的底侧 40 中。第一容纳通道 62 在第二止挡 45 之下通入到盖板 30 的正面 33 中且在该区域中构造第一通口区域 66。由第一通口区域 66 出发，第一容纳通道 62 以第一通道截段 67 在背面 34 的方向上分布。在第一通道截段 67 处，在相对背面 34 的较短的距离上连接平行于背面 34 分布的第二通道截段 68，在该第二通道段 68 处连接平行于第二纵向面 32 分布的第三通道截段 69，该第三通道截段大约在第二纵向面 32 的中间的高度上在通道端部 70 处截止。

[0050] 第二容纳通道 62 在第二止挡 48 之下通入到盖板 30 的正面 33 中且在该区域中构造成第二通口 71。由第二通口 71 出发，第二容纳通道 64 以第一通道截段 72 在背面 34 的方向上延伸。在第一通道截段 72 处，在相对背面 34 的较小的距离上连接第二通道截段 73，该第二通道截段平行于背面 34 分布且在第二通道截段上连接第三通道截段 74，该第三通道截段平行于第一纵向面 31 分布且大约在第一纵向面 31 的中间的高度上在通道端部 75 处截止。

[0051] 第一容纳通道 62 容纳可被弹性拉伸的第一张紧元件 80，该第一张紧元件以第一端部 81 被固定在第一容纳通道 62 的通道端部 70 处且该第一张紧元件以第二端部 82 陷入到第一通口 66 中。在第二端部 82 处固定有第一固定钩 83 形式的固定元件。

[0052] 第二容纳通道 64 容纳第二张紧元件 85，该第二张紧元件以第一端部 86 被固定在第二容纳通道 64 的通道端部 75 处且其第二端部 87 陷入到第二通口 71 中。在第二端部 87 处固定有第二固定钩 88 形式的固定元件。

[0053] 两个张紧元件 80 和 85 在其存储位置中完全被相应的容纳通道 62 或者 64 容纳。然而，张紧元件 80 和 85 以其第二端部 82, 87 对使用者而言在盖板 30 的正面 33 处可够到。在正面 33 处，第一固定钩 83 和第二固定钩 88 可被使用者够到。张紧元件 80 和 85 于是可在纵向上被拉伸，其中，其分别可被拉伸 100%，这也就是说其可在其长度上被加倍。这给予如下可能性，即，被存放到搁放面 38 上的一个或多个容器利用张紧元件 80 和 85 在圆周方向上至少部分被包围。固定钩 83 和 88 于是可分别在固定孔眼 91 或者 92 处被钩住。这由图 4 显而易见。

[0054] 固定孔眼 91 和 92 布置在基本上呈 U 形的抓柄 94 处，该抓柄在壳体上部 24 上、在背面的区域中、绕摆动轴线 95 可摆动地受支承，且具有第一侧臂 99 以及第二侧臂 100，所述第一侧臂以及第二侧臂经由提梁 98 彼此连接。该抓柄可在图 1 和 3 中示出的摆出的或竖立的位置中被往复摆动到在附图中未示出的摆入的位置中，在其中提梁平行于搁放面 38 定向。借助于布置在抓柄 94 的至少一个侧臂的松动的端部处的固定设备 97，抓柄 94 可被锁定在其被摆出的位置中。

[0055] 额外于固定孔眼 91 和 92，在相对搁放面 38 的不同距离上，两个另外的固定孔眼 101, 102 或者 103, 104 被分别模制到两个侧臂 99, 100 处。

[0056] 因此，张紧元件 80, 85 可以以其固定钩 83, 88 在相对搁放面 38 的不同距离上被固定在抓柄 94 处。由此，不同尺寸的容器可借助于可被弹性拉伸的张紧元件 80, 85 以简单的方式固定在搁放面 38 处。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 537
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0057] 在图 4 中，两个张紧元件 80, 85 分别在其工作位置中示出，在该工作位置中张紧元件包围两个彼此叠置的且被存放在搁放面 38 上的容器 110, 112。在示出的实施例中，两个容器 110, 112 相同地构造。所述两个容器包括各一个容器下部 114 或者 116 和可摆动地被保持在容器下部 114, 116 处的容器盖板 118 或者 120。手柄 126 或者 128 被铰接到容器下部 114, 116 的端面 122 或者 124 处。下部的容器 110 的手柄 126 被止动钩 51, 52 搭接。这用于下部的容器 110 在搁放面 38 处的额外的锁定。止动钩 51, 52 可弹性变形，从而使得手柄 126 在将下部的容器 110 存放在搁放面 38 上之后、在摆动时经由止动钩 51, 52 咬合到在图 4 中示出的止动位置中，在该止动位置中止动钩 51, 52 搭接容器手柄 126。

[0058] 张紧元件 80 和 85 可被如此程度地从容纳通道 62, 64 中抽出，即，两个容器 110, 112 由张紧元件 80, 85 在其端面 122, 124 的区域中且在上面的容器盖板 120 的区域中被包围。在背面，两个容器 110, 112 被抓柄 94 的侧臂 99, 100 支撑，从而使得其总体上得到在搁放面 38 处的可靠的固定。

[0059] 被固定在搁放面 38 处的容器 110, 112 可连同吸尘器 10 一起以唯一的运输单元形式绕两个滚轮 14 的转动轴线 16 向后摆动，从而使得容器 110, 112 连同吸尘器 10 一起能够以行李车的形式可沿着地面被移动。

[0060] 在将容器 110, 112 由搁放面 38 移除之后，两个张紧元件 80, 85 又被收藏在容纳通道 62, 64 中。由于张紧元件 80, 85 的弹性的回复力，所述张紧元件在由固定孔眼 91, 92 松开之后自动转移到其存储位置中。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 538
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

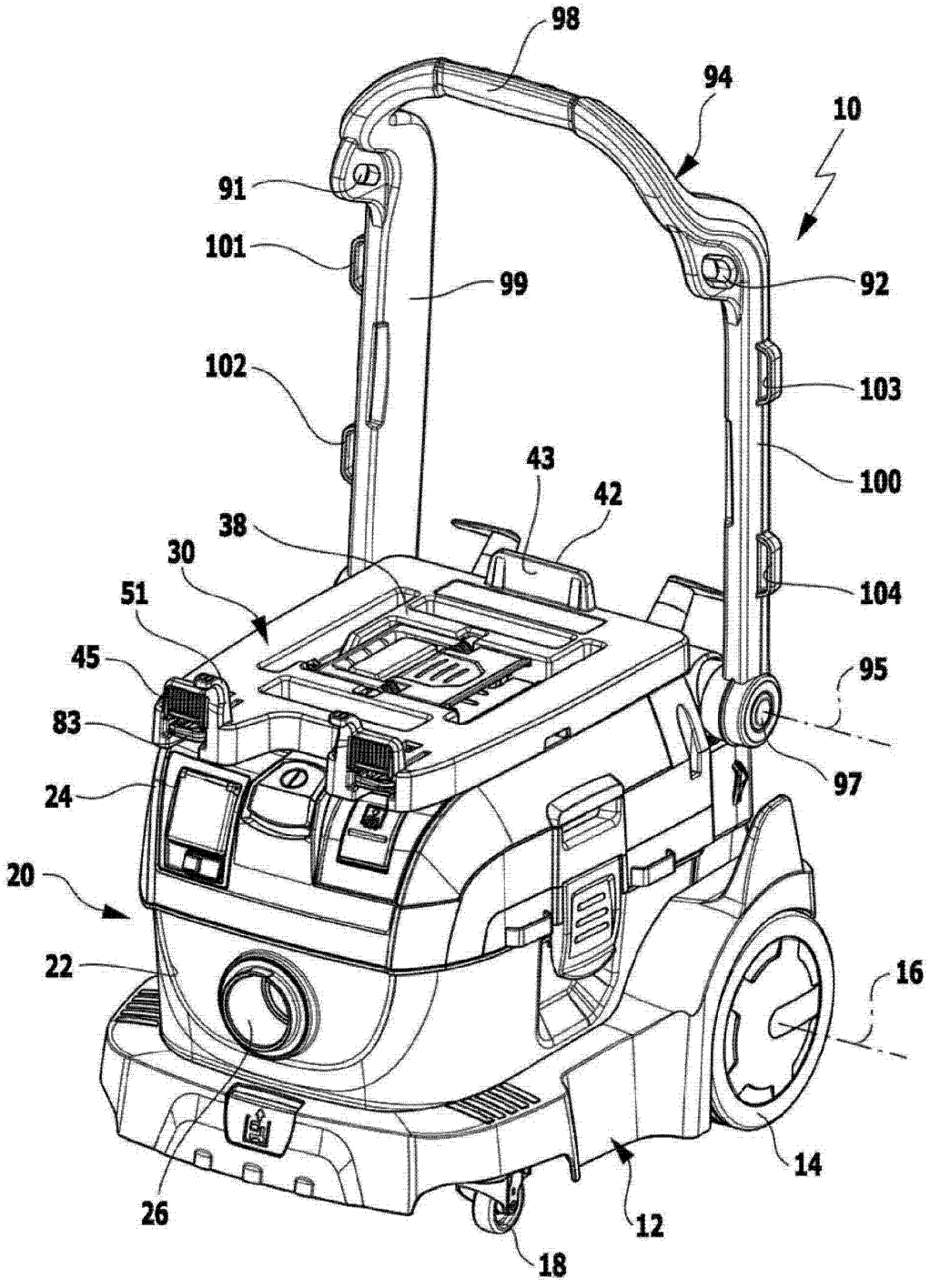


图 1

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 539
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

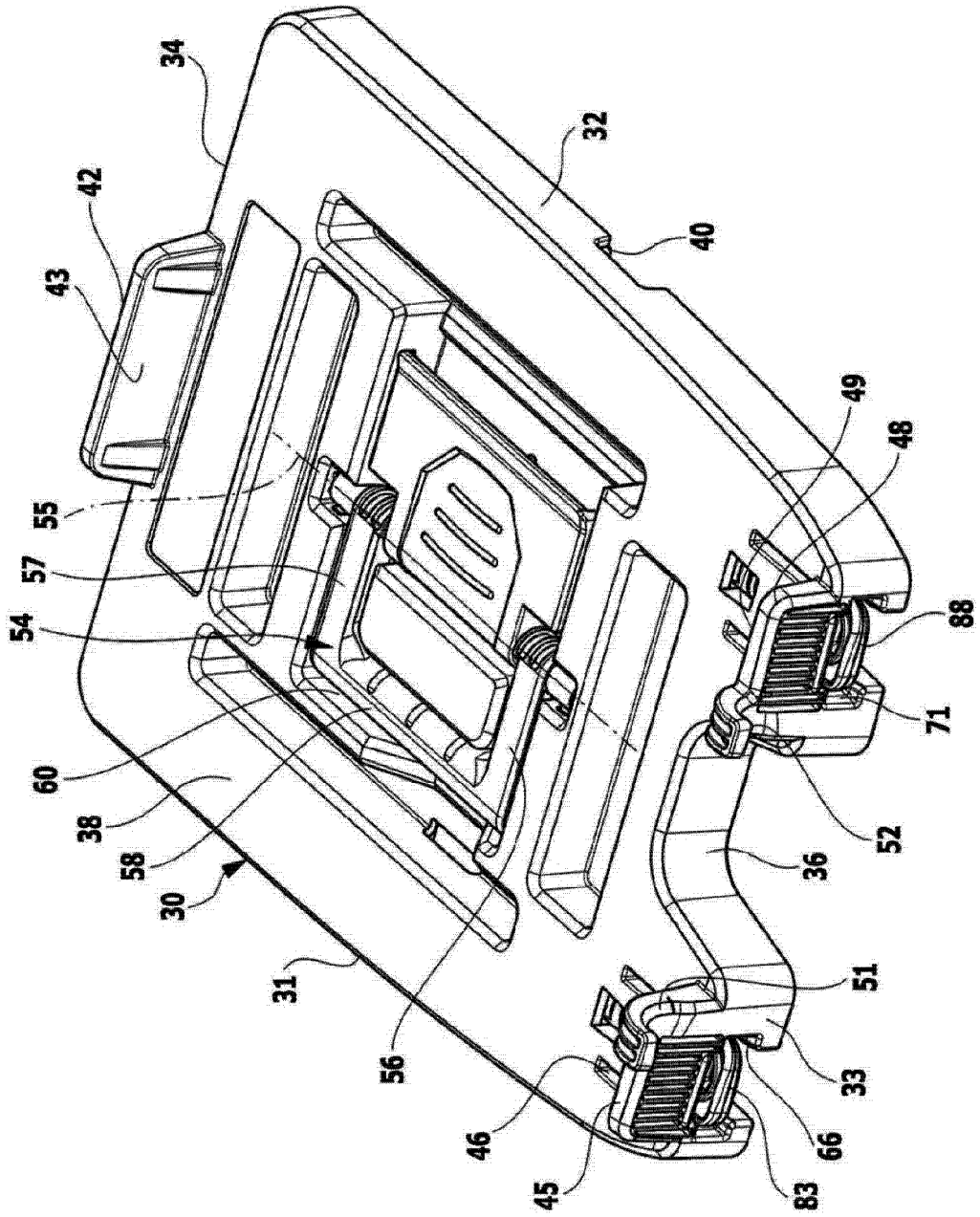


图 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 540
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

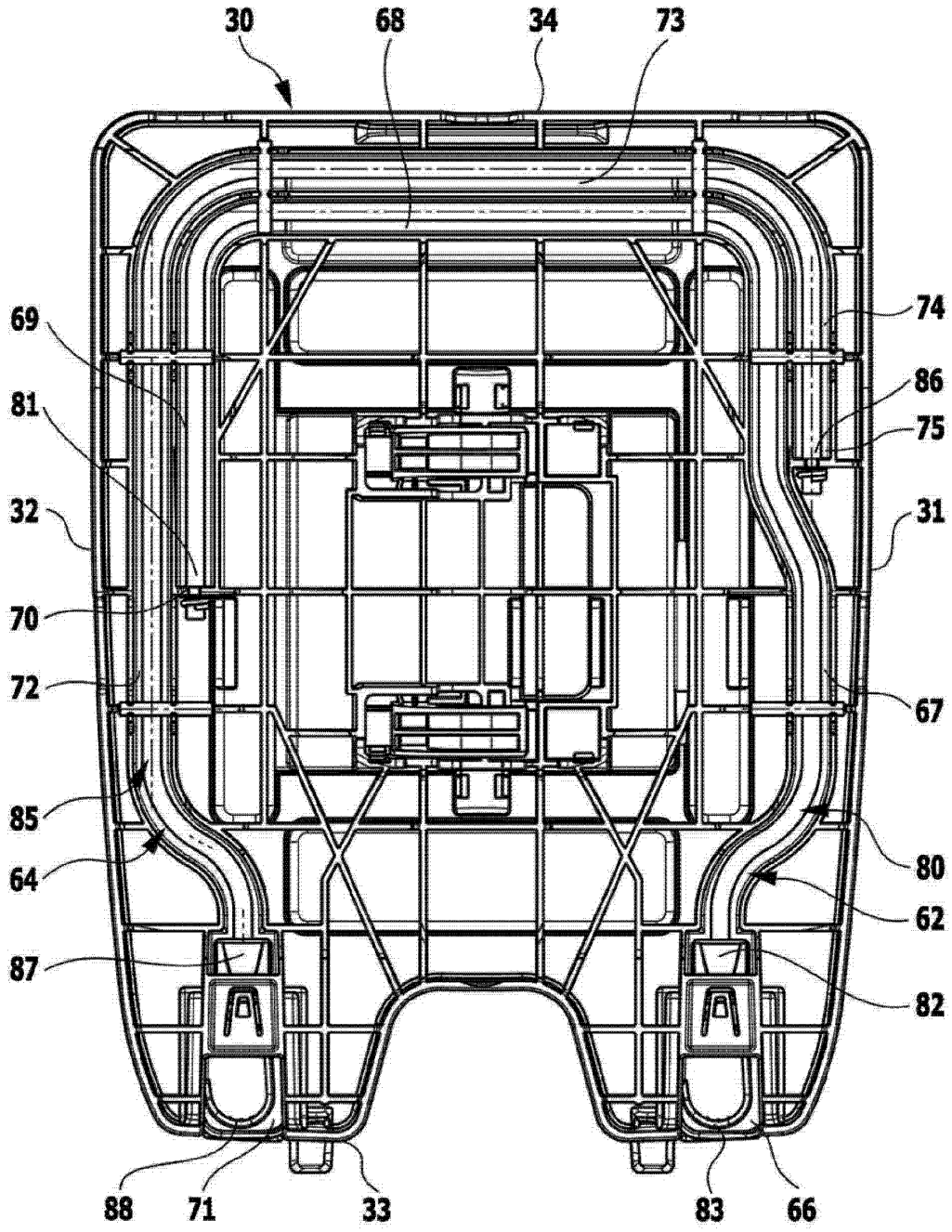


图 3

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 541
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

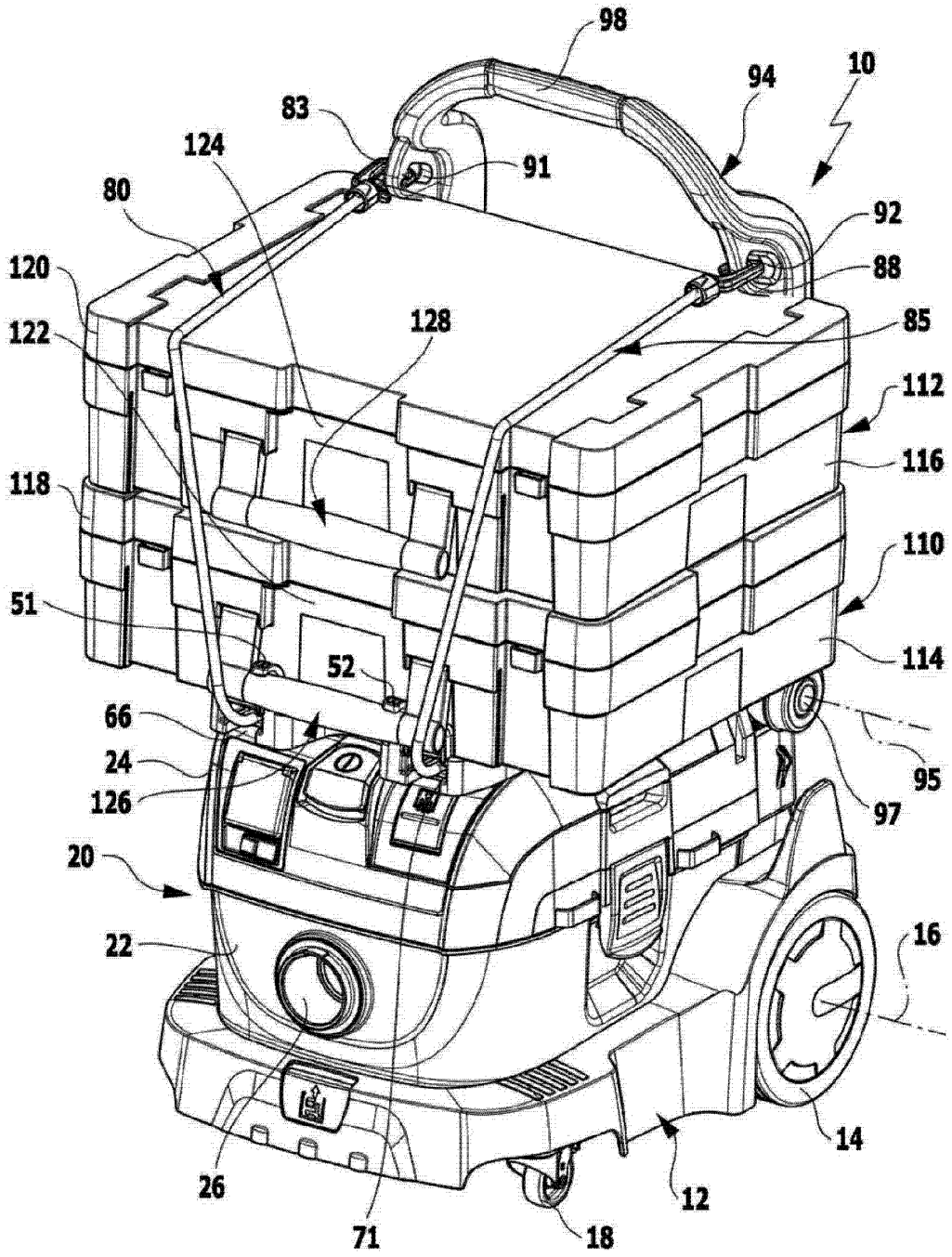


图 4

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 542
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

Bibliographic data: CN200947356 (Y) — 2007-09-12

Box seat

Inventor(s): FU GANG [CN] ± (GANG FU)

Applicant(s): FU GANG [CN] ± (FU GANG)

Classification: **- international:** ***A61F17/00; G12B9/08***
- cooperative:

Application number: CN20062063530U 20060829

Priority number(s): CN20062063530U 20060829

Abstract of CN200947356 (Y)

The utility model discloses a box-seat, which comprises a back board, a box-fixing device and a boxing-supporting device connected with the back board. The utility model is a wall-hanging box seat on which the box can be placed, and when taking the goods out from the box, the box can be preserved in the original position. The box-supporting device can turn to the wall and cling to the wall to save the space. The box-seat can be used not only for placing the first-aid kit but also for placing tool-box, haircut-box, small-sized electronic appliances, etc. with a high practicability.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 543
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
G12B 9/08 (2006.01)
A61F 17/00 (2006.01)

[12] 实用新型专利说明书

专利号 ZL 200620063530.1

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[11] 授权公告号 CN 200947356Y

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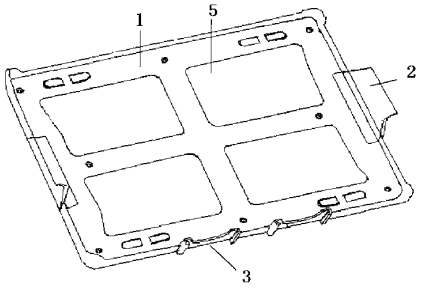
权利要求书 1 页 说明书 3 页 附图 1 页

[54] 实用新型名称

箱座

[57] 摘要

本实用新型公开了一种箱座，包括背板，还包括与背板连接的箱体固定器和箱体支撑器。 本实用新型为挂墙式箱座，不但可以摆放箱体，而且取放箱体内的物品时可以不搬下箱体，箱座的箱体支撑器可以向墙体方向转动，贴在墙体上，节省空间。该箱座不但可以用来放置急救箱，还可以广泛地用于放置工具箱、理发箱、小型电器等箱体，实用性强。



1. 一种箱座，包括背板，其特征在于它还包括与背板连接的箱体固定器和箱体支撑器。

2. 根据权利要求 1 所述的箱座，其特征在于所述箱体固定器为背板两侧各设置至少一个用于卡住箱体的勾形把手。

3. 根据权利要求 1 所述的箱座，其特征在于所述箱体固定器为背板两侧各设置至少一个皮带卡接器，皮带连接到两侧的相应位置的皮带卡接器上。

4. 根据权利要求 1 所述的箱座，其特征在于所述箱体固定器为连接背板两侧的环形金属框。

5. 根据权利要求 1 所述的箱座，其特征在于所述箱体支撑器与背板下边框集为一体的结构。

6. 根据权利要求 1 所述的箱座，其特征在于所述箱体支撑器与背板之间为活动连接。

7. 根据权利要求 5 或 6 所述的箱座，其特征在于所述箱体支撑器为背板下边框上设置的至少一个用于支撑箱体的托块。

8. 根据权利要求 7 所述的箱座，其特征在于所述托块设有插槽，固定座通过该插糟与托块连接。

9. 根据权利要求 5 或 6 所述的箱座，其特征在于所述箱体支撑器为托板。

10. 根据权利要求 1 所述的箱座，其特征在于所述背板内设有至少一个空位。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 545
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

箱 座

技术领域

本实用新型涉及一种固定装置，具体地说涉及一种用于固定箱体的挂墙式的箱座。

背景技术

传统的急救箱都没有挂墙的箱座，存放不方便，急救箱经常随便放置在地上、柜子或者占用其他地方，容易造成乱丢，急需时还要花费时间寻找，而且放置地上时灰尘很多，不卫生，而放置在柜子里或者高处时，使用的时候还要搬下来才能拿到物品，很不方便。

实用新型内容

本实用新型的目的就是为了克服上述缺点，提供一种箱座，这种箱座固定在墙体上，可以安全方便地挂好急救箱，挂与取操作方便，也可以直接打开急救箱直接取放物品，而不用把急救箱从箱座上搬下来，使用方便。

本实用新型是这样实现的:

本实用新型提供的箱座，包括背板，还包括与背板连接的箱体固定器和箱体支撑器。

在上述方案中:

箱体固定器可以是背板两侧各设置的一个或者多个用于卡住箱体的勾形把手，箱体放置到箱座上时，勾形把手刚好可以把箱体两侧相应的卡位卡住。

箱体固定器可以是背板两侧各设置的一个或者多个皮带卡接器，箱体放置到箱座上时，皮带可以连接到两侧的相应位置的皮带卡接器上，把箱体水平固定。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 546
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

箱体固定器可以是连接背板两侧的环形金属框。

箱体支撑器可以与背板下边框集为一体的结构。

箱体支撑器与背板之间可以为活动连接，箱体支撑器可以向上转动 90 度贴在墙体上，这样，平时不放箱体的时候可以节省空间。

箱体支撑器可以是背板下边框上设置的一个或多个用于支撑箱体的托块，该托块可以由背板的下边框支撑，与由背板的下边框连接成一体的结构，也可以是活动连接，平时不放箱体的时候把托块向上转动 90 度，使得托块贴在墙体上，节省空间。

所述托块可以设有插槽，固定座可以通过该插糟与托块连接，延长箱体的支撑面积，这样，箱体挂在墙时也可以固定 90 度打开箱子，不需要用手托住箱子就能取放物品。

箱体支撑器可以是托板，托板可以是整块的托板，也可以设有一个或多个空位，使得托板的重量减轻。

所述箱体的背板内可以设有一个或多个空位，使得背板的重量减轻。

箱体的背板上设有一个或多个大孔和小孔，方便用不同的钉子固定在墙上。

箱座采用这样的结构后，不但可以摆放急救箱，而且取放急救箱内的物品时可以不取下箱体，也可以不用手托扶，使用方便。箱座的箱体支撑器采用活动连接时，还可以节省空间。该箱座不但可以用来放置急救箱，还可以广泛地用于放置工具箱、理发箱、小型电器等箱体，实用性强。

附图说明

下面结合附图和具体实施方式详细描述本实用新型的实施方式。

图 1 是本实用新型箱座的示意图。

图 2 是固定座的示意图。

具体实施方式

下面结合附图对本实用新型作进一步说明。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 547
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

图 1 是本实用新型箱座的示意图，本实用新型箱座包括背板 1、箱体固定器和箱体支撑器；箱体固定器为两个勾形把手 2，各设置在背板 1 的左右边框上，可以卡住箱体相应的卡位；箱体支撑器为两个托块 3，托块 3 带有插槽，托块 3 用于支撑箱体；背板 1 设有 4 个空位 5，可以减轻背板 1 的重量。放置箱体时，可以把箱体直接卡入勾形把手 2，箱底用托块 3 托住，即可实现挂住，取时直接握住箱体把手向前拉开即可。

图 2 为本实用新型箱座的固定座示意图，固定座 4 安装在托块 3 上，对箱体起到支撑的作用，取放物品时，可以不取下箱体，直接打开箱盖即可固定 90 度打开，方便取放物品。

本实用新型不局限于上述具体实施方式，例如箱体的固定器可以换成皮带和配合皮带使用的皮带卡接器，或者环形的金属框，箱体的支撑器跟背板之间可以活动连接，只要是功能相同的简单结构形状变化，均落入本实用新型的保护范围。本实用新型可根据所述的技术方案结合具体的应用情况设计其他实施方式。

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 548
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

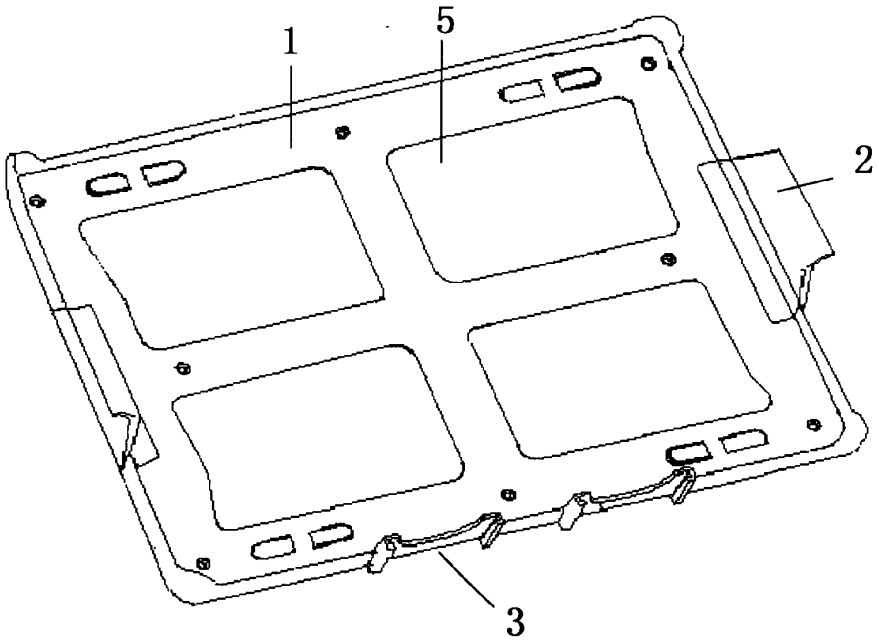


图 1

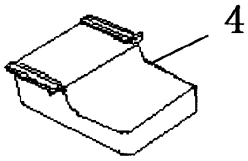


图 2

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 549
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Espacenet

Bibliographic data: DE102004057870 (A1) — 2006-06-01

Mobile drive for operation of pneumatically driven or suction device, designed as container for accommodation of tool

Inventor(s): TIEDE STEFFEN [DE]; HESSE JUERGEN [DE]; FUCHS FRANK [DE] ± (TIEDE, STEFFEN, ; HESSE, JUERGEN, ; FUCHS, FRANK)

Applicant(s): BOSCH GMBH ROBERT [DE] ± (ROBERT BOSCH GMBH)

Classification: - international: ***B25H3/02***
- cooperative: **A47L9/0009**; **A47L9/0027**; **A47L9/0036**; **A47L9/242**; **B25H3/006**

Application number: DE20041057870 20041130

Priority number(s): DE20041057870 20041130

Also published as: CN101068661 (A) EP1819487 (A1) US2008271280 (A1) WO2006058805 (A1)

Abstract of DE102004057870 (A1)

The device (10) is designed as a rectangular box (11) with rounded corners, comprising a lid (24) to be closed with swivel fasteners (30, 31) and with an integrated carrying handle (28). A connection to a blowing (33) as well as a connection to a suction device (32) are provided at one of the lateral panels (18). The cable can be wound up on a mushroom shaped projection located at the rear (16). The tool itself and the tubes to be connected can be stored inside the box (11).

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 550
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

(19) Bundesrepublik Deutschland
Deutsches Patent- und Markenamt

(10) **DE 10 2004 057 870 A1** 2006.06.01

(12) **Offenlegungsschrift**

(21) Aktenzeichen: **10 2004 057 870.2**
(22) Anmeldetag: **30.11.2004**
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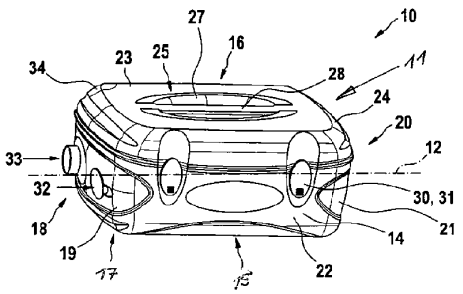
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(54) Bezeichnung: **Mobiles Antriebsaggregat**

(57) Zusammenfassung: Mobiles Antriebsaggregat (10) zum Betreiben einer Handwerkzeugmaschine (70) mittels Saug- und/oder Blasluft ist dadurch besonders handlich und platzsparend transportierbar, dass es ein Gehäuse (11) hat, das als mit einem Deckel (24) verschließbarer Kasten (13) ausgestaltet ist, und dass seine Luftförderleistung an den Leistungsbedarf der Handwerkzeugmaschine (70) angepasst ist und zur Aufbewahrung mindestens einer solchen oder ähnlichen Handwerkzeugmaschine (70), insbesondere mit Zubehör, sowie der Luftübertragungsrohre bzw. -schläuche dient.



Beschreibung

[0001] Die vorliegende Erfindung geht aus von einem mobilen Antriebsaggregat für saug- und/oder blasluftgetriebene Handwerkzeugmaschinen.

[0002] Es sind gemäß US 2003/0208874 A1 und EP 1 382 285 A2 kompakte Werkstattsauger bekannt, die als Reinigungswerkzeug dienen und mit unterschiedlichem Zubehör zum Saugen von Staub, Spänen und dergl. sowie von Flüssigkeiten versehen sind und die darüber hinaus auch im Blasmodus nutzbar sind.

[0003] Außerdem ist durch die WO 03/026841 A1 ein Werkzeugkoffer bekannt, der eine Staubabsaugeinheit enthält zur Aufnehmen von Spänen und Staub. Die bekannten Sauger oder Werkzeugkoffer sind nur bedingt geeignet als Antriebsaggregat und Transportbox für saug- oder blasluftgetriebene Handwerkzeugmaschinen.

Vorteile der Erfindung

[0004] Durch die vorliegende Erfindung mit den Merkmalen des Anspruchs 1 ist ein kompaktes, mobiles Antriebsaggregat geschaffen worden, das sowohl allein als Staubsauger als auch zum Antrieb luftstrombetreibbarer Werkzeugmaschinen, insbesondere Handwerkzeugmaschinen, mit gleichzeitiger Staubabsaugung beim Betreiben dieser Werkzeugmaschinen verwendbar ist und das als Transportbox für vorzugsweise mehrere, unterschiedliche handgeführte Werkzeugmaschinen dient und mit ihnen ein System für unterschiedliche Bearbeitungsverfahren bildet, die sowohl mit Saug- als auch mit Blasluft ausgeführt werden können.

[0005] Dadurch, dass das Antriebsaggregat ein Gehäuse hat, das als mit einem Deckel verschließbarer Kasten ausgestaltet ist, dessen Luftförderleistung an den Leistungsbedarf der Handwerkzeugmaschine angepasst ist und zugleich zum Aufbewahren mindestens einer Handwerkzeugmaschine, insbesondere mit Zubehör dient, sowie der Luftübertragungsrohre bzw. -schläuche, deren Durchmesser etwa 40 mm beträgt, ist ein neuartiges Handwerkzeugmaschinensystem geschaffen, das ohne direkten Stromanschluß der Handwerkzeugmaschine arbeitet und eine ausreichend hohe Arbeits- und Absaugleistung bereitstellt.

[0006] Dadurch, dass es ein Gehäuse hat, das als rechteckiger Kasten mit nach außen gewölbten Seitenflächen, abgerundeten Ecken und Kanten und ebener Ober und Unterseite, insbesondere mit mittig napfartig nach innen gewölbtem Deckel mit stegartigem Handgriff ausgestaltet ist, ist ein besonders bequem und handlich zu transportierendes Antriebsggregat für luftstromgetriebene, Handwerkzeuge geschaffen.

[0007] Dadurch, dass sein Gehäuse aus einem oben offenen, dort mittels eines, insbesondere um Scharnierelemente klappbaren, Deckels schließbaren Kastenteil besteht, sind darin verstaute Handwerkzeugmaschinen besonders gut geordnet verstaubar und bequem entnehmbar.

[0008] Dadurch, dass der Deckel aus zwei Schalen gebildet wird, von denen die obere Schale aus besonders biegesteifem, schlagfestem Material besteht und einen mittleren Durchbruch mit einer stegartigen Brücke sowie nach unten gebogene, gewölbte äußere Ränder und Ecken hat und von denen die untere Schale aus elastischerem, weicherem Material besteht und den mittleren Durchbruch der oberen Schale übergreift und von der stegartigen Brücke nach unten gewölbt absteht, ist ein besonders stabiler, das Transportgut gegen Stoß von außen schützender aber es zugleich innen schonend umgreifender Behälterteil geschaffen.

[0009] Dadurch, dass eine Seitenfläche des Kastenteils mindestens einen, insbesondere pilzartigen, Vorsprung trägt, um den ein zur Stromversorgung des Elektromotors vorgesehenes Elektrokabel wickelbar ist, wobei der mindestens eine Vorsprung als Stellfläche dient, auf der das Antriebsaggregat abstellbar ist und zugleich als Stoßfläche zum Abfangen ungewollter Stöße bei rauhem Baustellenbetrieb auf einen Scharnierbereich des Deckels dient, ist das Transportgut besonders sicher geschützt untergebracht.

[0010] Dadurch, dass im Kastenteil Halte-/Klemm-Elemente zur Unterbringung der Handwerkzeugmaschine, insbesondere zum vorgespannten Festhalten und/oder Klemmen derselben, vorgesehen sind, insbesondere in Gestalt aufblasbarer Luftkissenelemente, ist die Handwerkzeugmaschine gegen unkontrollierte Eigen- oder Relativbewegung im Inneren des Kastenteils beim Transport des Antriebsaggregats und somit gegen Beschädigung geschützt transportierbar.

[0011] Dadurch, dass auf einer der beiden kleineren Seitenflächen des Kastenteils je eine Lufteinlaß – und eine -Luftauslaßöffnung mit Mitteln zum Ankuppeln eines Schlauches nebeneinander angeordnet sind, ist – je nach Wahl der anzuschließenden Handwerkzeugmaschine – ein rascher, bequemer Wechsel der Betriebseinstellung des Antriebsaggregats von Saug- auf Blasmodus möglich.

[0012] Dadurch, dass skelettartige, die Kanten tragenden Verstärkungspartien im unteren Kastenteil in Gestalt rahmenartiger Basisteile vorgesehen sind, an die weichelastischere, seitliche Schalen anbaubar sind, sind stoßabsorbierende, aus teurerem und

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 552
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

schwererem Werkstoff bestehende Bereiche des Gehäuses mit sparsamem Werkstoffeinsatz geschaffen, wobei weniger stoßbelastete Flächen aus dem leichteren, kostengünstigeren Werkstoff bestehen und zugleich damit eine Stoßabsorption nach innen verbessern.

[0013] Dadurch, dass Aussparungen an den Verstärkungspartien vorgesehen sind, an denen die Schalen anbaubar sind, kann das Gewicht des Gehäuses gering gehalten werden.

[0014] Dadurch, dass bewegbare, zur Bedienung von Hand vorgesehene Teile, z.B. Deckel-Verschlußtasten, Dichtdeckel für Lufteintritt in einer Kontrastfarbe gegenüber der Farbe des Mobiles Antriebsaggregats gehalten sind, sind sie besonders schnell und bequem auffindbar.

[0015] Dadurch, dass das Kastenteil mindestens eine senkrechte Zwischenwand hat, die Staubsaugaggregat und Stauraum voneinander trennt, können das Handwerkzeug und dessen Zubehörteile besonders übersichtlich und sicher verstaut werden.

[0016] Dadurch, dass das Aggregat aus zwei nebeneinander angeordneten, insbesondere in den Kastenteil integrierten Kästen besteht, die, insbesondere mit jeweils einem Deckel, vorzugsweise überrastend, verschließbar sind, ist die Gehäusestruktur steif und verstaute Gegenstände sicher und geschützt angeordnet.

[0017] Dadurch, dass die beiden Kästen des Staubsaugaggregats als Motorkasten und als Staubkasten mit Staubkontrollöffnung ausgestaltet sind,, sind diese und ihr Inhalt unabhängig voneinander bei Stoß- und Schlagbeanspruchung des Gehäuses von außen insbesondere gegen Verwindung sicher geschützt..

[0018] Dadurch, dass auf der Innenseite des Deckels Rast-Klemmmittel für einen Saugschlauch angeordnet sind, der überrastend, parallel zur Deckelfläche spiralig gelegt/angeordnet ist, ist dieser besonders platzsparend und leicht handhabbar verstaut.

[0019] Dadurch, dass ein- Bypassventil auf dem Staubdeckel angeordnet ist, ist die Staubsaugeinheit gegen Überlastung geschützt.

[0020] Dadurch, dass Dichtlippen zwischen dem Deckel und dem Kastenteil angeordnet sind ist der Eintritt von Fremdluft bzw. Staubaustritt sicher ausgeschlossen.

[0021] Dadurch, dass schwarze Verstärkungsteile den grünen/blauen Kastenteil/Deckelteil umgreifen, sind die weicheren und härteren Bereiche des Gehäuses intuitiv voneinander unterscheidbar.

[0022] Dadurch, dass im Inneren des Antriebsaggregats, insbesondere im Kastenteil/Deckelteil, Beleuchtungsmittel angeordnet sind, insbesondere mit LED und/oder in Gestalt graphischer Zeichen und oder Symbole, vorzugsweise eines leuchtenden Markenschriftzugs, ist der jeweilige Inhalt im Staufach des Kastenteils besonders gut kontrollierbar.

[0023] Dadurch, dass die Außenflächen von Bedienelementen, insbesondere zum Öffnen und Schließen eines Deckels oder zum Betätigen einer Schalttaste zum Ein- oder Ausschalten des Antriebsaggregats, innerhalb der Außenkontur des Antriebsaggregats angeordnet ist, sind diese bzw. der darin verstaute Inhalt gegen ungewolltes Öffnen oder Beschädigung beim Transport geschützt.

[0024] Dadurch, dass die Schalttaste zum Ein- oder Ausschalten des Antriebsaggregats über einen Durchbruch im Deckel sowohl bei geschlossenem als auch bei geöffnetem Deckel für Fuß- oder Handbedienung von außen zugänglich ist, ist das Ein- und Ausschalten des Antriebsaggregats besonders bequem, einfach und sicher möglich.

[0025] Dadurch, dass ein Schlauchadapter am Luftauslaß einrastbar angeordnet ist, der gegen ein Ausblasgitter, insbesondere mit Staubfilter festhaltbar auswechselbar ist, kann der Wechsel zwischen Blas- und Saugmodus – bzw. umgekehrt – besonders schnell erfolgen.

[0026] Dadurch, dass ein austauschbarer Adapter für den Saugluftschlauch des Antriebsaggregats gegen einen vornehmlich zum Zweck des Staubsaugens verwendbaren Absaugadapter, insbesondere in Verbindung mit der für Elektrowerkzeuge vorgesehenen Staubabsaugung auswechselbar ist, ist das Antriebsaggregat zugleich bequem und mit minimaler Umrüstzeit als Staubsauger und als Absaugaggregat für Elektrohandwerkzeuge verwendbar. Dabei kann der Luftstrom zum Antreiben der Handwerkzeugmaschinen und zum gleichzeitigen Absaugen bzw. Blasen von Staub, Spänen usw. genutzt werden.

[0027] Dadurch, dass ein Zwischenkupplungsstück zum Anfügen eines zusätzlichen Saugschlauchstücks am Saugschlauch des Antriebsaggregats angeordnet ist, kann damit der Saugschlauch nach Bedarf verlängert werden.

[0028] Der Anwender hat so die Möglichkeit das Antriebsaggregat für unterschiedliche, handgeführte Werkzeugmaschinen zu nutzen, die mit Saug- und/oder Druckluft angetrieben werden und die keine direkte, eigene Stromversorgung benötigen.

Zeichnung

[0029] Nachstehend ist die Erfindung anhand eines

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 553
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Ausführungsbeispiels mit zugehöriger Zeichnung näher erläutert.

[0030] Es zeigen

[0031] Fig. 1 eine räumliche Darstellung des Antriebsaggregats schräg von vorn

[0032] Fig. 2 die Darstellung des Antriebsaggregat schräg von hinten

[0033] Fig. 3 das Antriebsaggregat gemäß Fig. 1 schräg von oben bei geöffnetem Deckel

[0034] Fig. 4 das Antriebsaggregat gemäß Fig. 1 schräg von links

[0035] Fig. 5 das Antriebsaggregat gemäß Fig. 3 mit spiralförmig eingelegtem Schlauch

[0036] Fig. 6 eine saugluftgetriebene Handschleifmaschine zum Betreiben mit dem Antriebsaggregat

[0037] Fig. 7 eine Explosionsdarstellung des Antriebsaggregats

[0038] **Fig.** 8a eine Schlauchkupplung zum Anschluss des Saugschlauches an das Antriebsaggregat bzw. an eine luftstromgetriebene Handschleifmaschine

[0039] **Fig.** 8b eine Deckplatte mit Anschlussstutzen zum Anschluss des Schlauchs an die Ausblasöffnung

[0040] **Fig.** 8c ein Kupplungsstück zum Anschluß des Augschlauchs an eine Elektro-Handwerkzeugmaschine mit Anschlußstutzen für einen 19-Millimeterschlauch

[0041] **Fig.** 8d ein Kupplungsstück zum zum Anschluß des Augschlauchs an eine Elektro-Handwerkzeugmaschine mit Anschlußstutzen für einen 35-Millimeterschlauch

[0042] **Fig.** 8e eine Schlauch Zwischenkupplung zum Anfügen eines Verlängerungsstücks and den Saugschlauch und

[0043] **Fig.** 8f eine Bohrhilfe für eine Handbohrmaschine zum Absaugen von Bohrstaub am Entstehungsort.

Beschreibung des Ausführungsbeispiels

[0044] Die in Fig. 1 gezeigte räumliche Darstellung eines kastenartigen Antriebsaggregats **10** schräg von vorn lässt dessen Längsachse **12** erkennen, die parallel zur Vorderseite **14** bzw. Hinterseite **16** verläuft. Der untere Bereich des Antriebsaggregats **10** ist ein oben offener, sechsseitiger, quaderförmiger Kasten **13**, der an seiner Unterseite **15** mittels eines Bodens **17** geschlossen ist. Der Kasten **13** hat außerdem eine linke und rechte Seite **18**, **20**, eine sowie eine Oberseite **25**, die durch einen Deckel **24** verkörpert wird.

[0045] Der Kasten **13** wird durch einen chassisartigen Skelettkasten **22** aus schlagzähem, hochwertigen Werkstoff gebildet, das eine linke und eine rechte Seitenschale **19**, **21** aus vergleichsweise elastischem, leichtem Werkstoff und den schwenkbar gelagerten Deckel **24** auf der Scharnierseite **25** angeschlagen trägt, der die Oberseite **26** des Antriebsaggregats **10** bildet.

[0046] Der Deckel **24** besteht aus einem Deckelrahmen **26**, der, wie der Skelettkasten **22** aus schlagzähem, hochwertigem Werkstoff besteht und an dem eine – von oben gesehen – konkave Deckelschale **27** befestigt ist. Der Deckelrahmen **26** bildet einen die Deckelschale **27** quer übergreifenden, mittigen Griffsteg **28**, der bequem mit der Hand umgreifbar ist und gutes ausbalanciertes Tragen des Antriebsaggregats **10** sichert.

[0047] An der Vorderseite **14** des Kastens **13** sind oben, benachbart zum Deckel **24** zwei Schnappverschlüsse **30**, **31** angeordnet, mit denen der Deckel **24** am Kasten **13** gegen ungewolltes Öffnen sicher verschließbar ist.

[0048] An der linken Seite **18** treten durch die linke Seitenschale **19** parallel zueinander eine Saugöffnung **32** und eine Ausblasöffnung **33**.

[0049] Auf der Oberseite des Kastens **13** ist in der Ecke zwischen linker Seite **18** und Hinterseite **16** eine Schalttaste **34** angeordnet, die mittels Federsystem **35** elastisch vorgespannt in ihrer Ausgangsposition gehalten wird, von der aus sie von oben in die Ein- bzw. die Ausschaltstellung drückbar ist. Die Schalttaste **34** durchtritt eine passende Öffnung **29** im Deckel **34**, so dass ihre Außenfläche bündig zur Außenfläche des Deckels **24** verläuft und auch bei geschlossenem Deckel **24** von außen mit dem Fuß oder von Hand betätigbar ist. Die Schalttaste **34** sitzt auf einem Oberteil **36**, das mit einem Schalter **37** betätigend verbunden ist.

[0050] Auf der Hinterseite **16** ist ein Kabelpilz **38** zum Halten eines darum wickelbaren Netzkabels **42** angeordnet, das durch eine nicht näher bezeichnete, wasserdichte Austrittsöffnung der Hinterseite **16** austritt und im Inneren des Kastens **13** über eine Kabelklemme **39** mit einem Motor **104** elektrisch kuppelbar ist. Im Inneren des Kastens **13** ist ein Kabelbaum **40** angeordnet, der den Schalter **37** mit dem Motor **104** und anderen, nichtdargestellten elektrischen Elementen verbindet.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 554
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

[0051] Am Rand des Kabelpilzes **38** ist ein Kabelhalter **41** festklemmbar, mit dem das freie Ende des Netzkabels **42** daran abnehmbar festklemmbar ist.

[0052] Zwischen einem Motorkastendeckel **61** und einem Motorkasten **62** zur Aufnahme des Motors **104** zum Antrieb eines nicht näher bezeichneten Sauggebläses ist eine Motorkastendichtung **42** angeordnet.

[0053] Die Saugöffnung **32** ist mittels eines abnehmbaren Saugdeckels **48** verschließbar, der verhindert, dass beim Transport des Antriebsaggregats **10** Staub und Späne aus seinem Staubkasten **55** fallen können. Die Ausblasöffnung **33** ist durch ein Auslassfilter **44** überdeckt und dieses mittels eines dort fixierbaren Auslassgitters **46** daran festgehalten.

[0054] Der Staubkasten **55** ist durch einen Staubdeckel **56** mittels Staubdichtung **57** im wesentlichen Luftdicht verschließbar, wobei der Staubdeckel **56** mittels eines klinkenartigen Vorsprungs **49** bequem zu öffnen oder zu schließen ist. Im Staubdeckel **56** ist ein Bypass **50** angeordnet, der bei überfülltem Staubkasten **55** ein Ventil **53** öffnet, über das Luft unter Umgehung der Saugöffnung **32** eintritt. Der Bypass **50** besteht aus einem Fixierdeckel **51**, der das Ventil **53** und eine Dichtung **52** trägt, wobei das Ventil **53** durch eine Feder **54** vorgespannt gehalten wird und erst ab einem Mindest-Unterdruck öffnet und zusätzliche Luft einläßt.

[0055] Der Motorkasten **62** ist mit dem Staubkasten **55** durch eine gemeinsame Öffnung verbunden, die durch ein Ansaugfilter **54** abgedeckt ist. Das Ansaugfilter **53** verhindert, dass angesaugte Luft Späne und Staub in den Motor **105** gelangen.

[0056] Der Motorkastendeckel **61** ist um ein nicht dargestelltes Scharnier zum Öffnen und Schließen schwenkbar. Auf der dem Scharnier gegenüberliegenden Seite ist er mit einem Fingereingriff **60** versehen, in den die Finger einer Hand zum Öffnen des Motorkastendeckels **61** griffig einlegbar sind.

[0057] Die Schnappverschlüsse **30**, **31** bestehen aus zwei Kniehebeln **64**, **65**, die mittels je einer Spanntaste **66** und je eines Rasthebels **67** um je eine Achse **68** schwenkbar sind. Damit ist der Deckel **24** – schwenkbar um eine Scharnierseite **26** – sicher gegen ungewolltes Öffnen gegenüber dem Kasten **13** verschließbar.

[0058] Fig. 2 zeigt das Antriebsaggregat **10** schräg von hinten mit Blick auf die Hinterseite **16**, wobei der Kabelpilz **38** mit dem Kabelhalter **41** deutlich erkennbar sind. Weiter ist erkennbar, dass die Fläche des Kabelpilzes **38** so groß ist, dass es als Stellfläche zum setzen des Antriebsaggregats dienen kann. Weiter ist die Schalenbauweise des Gehäuses **11** des Antriebsaggregats **10** erkennbar und die Anordnung der Saug- und Ausblasöffnung **32**, **33**.

[0059] Fig. 3 zeigt das Antriebsaggregat **10** gemäß Fig. 1 schräg von oben bei geöffnetem Deckel **24** mit Blick in dessen Inneres. Dabei wird die vorgesehene spiralige Anordnung des einzulegenden Saugschlauchs **78** und die Ausgestaltung der Halte- bzw. Klemmelemente **45** zu dessen Aufnahme im Deckel **24** sichtbar. Außerdem zeigt die Draufsicht auf den Kasten **13**, Schalttaste **34**, die Öffnung **29** im Deckel **24** zum Durchtritt der Schalttaste **34**, die Klinke **49** zum Schwenken/Öffnen des Staubdeckels **56** um sein Scharnier **560**, den darauf sitzenden Bypaß **50**, den Fingereingriff **60** zum Öffnen des Motorkastendeckels **61**, ein Staufach **63** zum Unterbringen eines Dreieckschleifers **70** bzw. von Zubehörteilen **98**. Dabei ist erkennbar, dass etwa ½ des Volumens des Kastens **13** für die Unterbringung des Dreieckschleifers und das gesamte Volumen des Deckels **24** für die Unterbringung des Saugschlauchs **78** ur Verfügung steht.

[0060] Fig. 4 zeigt das Antriebsaggregat **10** schräg von oben mit Blick auf die linke Seite **18** mit der Saugöffnung **32** und der Ausblasöffnung **33** und auf die Vorderseite **14** bzw. die Oberseite **25**, wobei die zuvor erläuterten Einzelheiten deutlicht werden, ohne dass diese wiederholt werden sollen.

[0061] Fig. 5 zeigt das Antriebsaggregat **10** mit innen in den geöffneten Deckel **24** spiralförmig eingelegtem Saugschlauch **78** ähnlich Fig. 3, wobei die Zubehörteile **98** sich unterscheiden..

[0062] Fig. 6 zeigt eine als Turbinen-Dreieckschleifer **70** ausgestaltete, saugluftgetriebene Handschleifmaschine zum Betreiben mit dem Antriebsaggregat **10**. Die Handschleifmaschine hat ein bügeleisenförmiges Gehäuse **71** mit einem von Hand umgreifbaren oberen Bereich, der als Führungshandgriff **72** dient. Nach hinten setzt sich das Gehäuse **71** in einem rohrförmigen Gehäusebereich **73** fort, der als bequem von der Bedienhand umgreifbarer Haupthandgriff dient.

[0063] Dieser öffnet sich in einen Kupplungsstutzen **80**, in den ein Schlauchkupplungsstück **81** des Saugschlauchs **78** überrastbar einsteckbar ist zwecks Anschluß des Dreieckschleifers **70** an ein Antriebsaggregat **10** zum Antrieb mit Saugluft. Oben im Bereich des Führungshandgriffs ist eine Schalttaste **74** angeordnet, mit der der Saugluftstrom reduzierbar ist. Mit der Saugluft wird eine nicht dargestellte Turbine im Inneren des Gehäuses **71** angetrieben, die einen Schleifteller **76** in eine Orbitalbewegung versetzt.

[0064] Das Schlauch-Kupplungsstück **81** ist über Rastnocken **82** formschlüssig überrastend mit dem Kupplungsstutzen **80** verbindbar und tritt dort in nicht näher beschriebene Rastöffnungen in der Wand des

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 555
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Kupplungsstutzens **80**.

[0065] Fig. 7 zeigt eine Explosionsdarstellung des Antriebsaggregats **10** – zerlegt in seine Einzelteile. Dabei werden die zu den vorigen Figuren erläuterten Einzelheiten und Merkmale besonders deutlich erkennbar.

[0066] **Fig.** 8a zeigt eine Schlauchkupplung zum Anschluss des Saugschlauchs an das Antriebsaggregat **10** bzw. an einen Dreieckschleifer **70** oder dergl. luftromgetriebenes Handwerkzeug..

[0067] **Fig.** 8b zeigt einen Ausblasadapter **83**, der aus einer Deckplatte **100** besteht, der mit einem Anschlussstutzen **101** versehen ist, der zum Anschluss des Saugschlauchs **78** an die Ausblasöffnung **33** dient, die gegen das beim Saugmodus angeordnete Auslaßgitter **46** mit Auslaßfilter **44** auswechselbar ist.

[0068] Dazu ist die Deckplatte an ihren seitlichen Enden mit Rastzungen **84** versehen, die außen an der linken Seite **18** im Bereich der Ausblasöffnung **33** anklipsbar sind.

[0069] **Fig.** 8c zeigt ein Schlauchkupplungsstück **85** zum Anschließen des Saugschlauchs **78** an einen schlanken (19mm) Absaugschlauch-Anschluß/Abluftstutzen einer Elektro-Handwerkzeugmaschine mit geringer bis mittlerer Staubentwicklung.

[0070] **Fig.** 8d zeigt ein anderes Kupplungsstück **88** zum Anschließen des Saugschlauchs **78** an einen etwas weniger schlanken (35mm) Absaugschlauch-Anschluß einer Elektro-Handwerkzeugmaschine mit mittlerer bis starker Staubentwicklung.

[0071] **Fig.** 8e zeigt eine Schlauch-Zwischenkupplung **91** zum Kuppeln eines Absaugschlauch-Verlängerungsstücks dessen Durchmesser mit dem des Absaugschlauchs **78** übereinstimmt.

[0072] **Fig.** 8f zeigt eine Bohrhilfe **93** zum Durchtritt eines Bohrers zum Absaugen des beim Bohren entstehenden Bohrstaubs.

[0073] Bei Anschluss an die Saugöffnung **32** kann das Antriebsaggregat **10** z.B. folgende Geräte mit dem Saugluftstrom betreiben und gleichzeitig den entstehenden Staub/Schmutz, der durch ein beliebiges Filtersystem abgeschieden wird, absaugen: Schwing-/Multischleifer, Exzenterschleifer, Gipskartonschneider, Bohrhilfe.

[0074] Bei Anschluss an die Ausblasöffnung **33** kann das Antriebsaggregat **10** folgende Geräte mit dem „Druck"-Luftstrom betreiben: Farbsprühpistole, Ausblasdüse/Fugendüse, Heißluftpistole, Vorsatzventil zum Aufblasen von Schlauchboten und Luftmatzatzen etc.

[0075] Im Kasten **13** des Antriebsaggregats **10** gibt es ein Staufach **63** für den Dreieckschleifer **70** und Saug-Funktionszubehör z. B. Fugendüse, Bohrhilfe **93**, Adapter für Powertools **85**, **88**, Adapter für Saugerzubehör, Schleifpapier (Z) oder dergl.

[0076] Das Netzkabel **42** wird an der Hinterseite **16** des Antriebsaggregat **10** um den Kabelpiltz **38** gewickelt und mit einem klipsartigen Kabelhalter **41** am Kabelpilz **38** befestigt. Der Kabelpilz **38** kann außerdem als Stellfläche verwendet werden, um das Antriebsaggregat **10** hochkant zu verstauen.

[0077] Der Ausblasadapter **83** zum Wechseln mit dem Ausblasgitter **44** dient verbessertem Luftdurchsatz beim Saugen und besserem Druckaufbau beim Blasen.

[0078] Der Saugschlauch **78** hat einen als Schnellverschluss dienenden Kupplungsstuzten **80**, mit dem er an Staubsauger, Turbinen-Dreieckschleifer oder sonstige zugehörige Geräte anschließbar ist.

[0079] Die Schalttaste **34** an der oberen Kante/Ecke dient dem bequemen Ein-/Ausschalten mit dem Fuß, wobei Ein-/Ausschalten bei geöffneten sowie geschlossenem Deckel möglich ist.

[0080] Der Kastens **13** ist durch Seitenschalen **19**, **21**, versteift, die gegen den Skelettkasten **22** verspannt und/oder verschraubt werden. Durch nur partielle Verwendung eines steiferen/hochwertigeren Materials kann die Festigkeit des Skelettkastens **22** erhöht werden, ohne das teurere Material für das gesamte Gehäuse **11** verwenden zu müssen.

[0081] Sowohl die Saugöffnung **32** als auch die Ausblasöffnung **33** mit Fingermulde sind in der einen Seitenschale **19** integriert, so dass dort ein großer Gestaltungsspielraum bei einfachere Entformbarkeit des Spritzgußteils besteht.

[0082] Die Deckelschale **23** ist ebenfalls als konkaves Einlegeteil zentral im Handgriffbereich des Griffstegs **28** im ebenen Deckel **24** angeordnet. Dadurch ist dieser Bereich besser aus dem Spritzgusswerkzeug entformbar, die Stapelbarkeit des Antriebsaggregats gewährleistet und bei der Benutzung die Ablage für Kleinteile oder Werkzeuge bei geschlossenem Deckel gesichert und als Designelement eingesetzt.

[0083] Das Bypassventil **50** im Staubdeckel **56** oder alternativ im Filtergehäuse sichert, das der Motor **104** bei zugesetztem Staubsack nicht unter Überlast läuft. Der Motor wird mit der Saugluft gekühlt. Ist durch das Schleifgut der Staubsack voll, bzw. dessen Poren zugesetzt, könnte die restliche Kühlluft ohne Bypassventil **50** den Motor **104** nicht mehr ausreichend kühlen. Dieser würde dann überhitzen. Das Unter-

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 556
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

druck-/Bypassventil **50** öffnet, sobald der Unterdruck im Filterraum, zwischen Staubfilter und Motorlüfter, unter einen bestimmten, über eine Feder **54** einstellbaren Wert sinkt. Durch das Öffnen des Bypassventils **50** wird unter Umgehungs des Filters zusätzlich Luft angesaugt um den Motor [**7**] ausreichend zu kühlen.

[0084] Beim Transportieren des Antriebsaggregats **10** wird das Austreten von Staub/Schutz aus der Saugöffnung **32** durch Anordnen des Saugdeckels **48** verhindert. Das Öffnen wird durch eine Griffmulde im Seitenteil [**24**] erleichtert, sowie das verlieren durch die Befestigung mit einem Pin am Seitenteil [**24**] verhindert.

Patentansprüche

1. Mobiles Antriebsaggregat (**10**) zum Betreiben einer Handwerkzeugmaschine (**70**) mittels Saug- und/oder Blasluft, **dadurch gekennzeichnet**, dass es ein Gehäuse (**11**) hat, das als mit einem Deckel (**24**) verschließbarer Kasten (**13**) ausgestaltet ist und dass seine Luftförderleistung an den Leistungsbedarf der Handwerkzeugmaschine (**70**) angepasst ist und zur Aufbewahrung mindestens einer solchen oder ähnlichen Handwerkzeugmaschine (**70**), insbesondere mit Zubehör, sowie der Luftübertragungsrohre bzw. -schläuche dient.

2. Mobiles Antriebsaggregat (**10**) nach Anspruch 1, dadurch gekennzeichnet, dass sein Gehäuse (**11**) als rechteckiger Kasten mit nach außen gewölbten Kanten, gerundeten Ecken und ebenem, mittig napfartig nach innen gewölbtem Deckel (**24**) sowie ebener Unterseite und Oberseite (**15**, **25**) ausgestaltet ist.

3. Mobiles Antriebsaggregat (**10**) nach Anspruch 1 oder 2, dadurch gekennzeichnet, dass sein Gehäuse (**11**) aus einem oben offenen Kastenteil (**13**) besteht, das oben mittels eines, insbesondere um einen Scharnierbereich (**26**), klappbaren Deckels (**24**) verschließbar ist.

4. Mobiles Antriebsaggregat (**10**) nach Anspruch 3, dadurch gekennzeichnet, dass der Deckel (**24**) aus zwei Teilen (**23**, **27**) gebildet wird, von denen eine ebene Deckelaußenschale (**23**) einen zentralen Durchbruch (**280**) hat, der von einer stegartigen Brücke (**28**) übergriffen wird, und der gewölbte Ränder und Ecken hat wobei eine Deckelinnenschale (**27**) den Durchbruch (**280**) von unten umgreift und zur stegartigen Brücke (**28**) einen Abstand nach unten hat.

5. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass eine Seitenfläche (**16**) des Kastens (**13**) mindestens einen, insbesondere pilzartigen, Vorsprung (**38**) trägt, um den ein Netzkabel (**42**) wickelbar und damit halterbar ist, wobei der Vorsprung (**38**) eine Stellfläche, auf der das Antriebsaggregat (**10**) abstellbar ist und zugleich eine Stoßfläche bildet zum Aufnehmen ungewollter Stöße z.B. beim rauhen Baustellenbetrieb, auf einen Scharnierbereich (**26**) des Deckels (**24**).

6. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass im Kasten (**13**) Elemente zum Festhalten der Handwerkzeugmaschine (**70**) angeordnet sind, insbesondere elastische Elemente zum Festhalten/Klemmen, vorzugsweise in Gestalt aufblasbarer Luftkissen.

7. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass auf einer der beiden kürzeren Seitenflächen (**18**, **20**) des Kastens (**13**) Saug- und Ausblasöffnung (**32**, **33**) mit Mitteln zum Ankuppeln eines Saugschlauchs (**78**), insbesondere nebeneinander, angeordnet sind,

8. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass der Kasten (**13**) aus einem Kastenskelett (**22**) besteht, das rippenartige Verstärkungspartien bildet.

9. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass Aussparungen (**69**) an den Verstärkungspartien (**45**) vorgesehen sind, die mittels anbaubarer elastischerer Schalen (**19**, **21**) aus weicherem, kostengünstigerem Material schließbar sind

10. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass handbetätigbare Teile, z.B. Deckel-Verschlußtasten, Dichtdeckel, eine Kontrastfarbe gegenüber dem Gehäuse (**11**) haben.

11. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass der Kasten (**13**) mindestens eine senkrechte Zwischenwand hat, die im Gehäuse (**11**) ein Staufach (**63**) für die Handwerkzeugmaschine (**70**) bildet.

12. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass das zwei nebeneinander angeordneten, insbesondere in den Kasten (**13**) integrierte Kästen (**55**, **62**) insbesondere mit jeweils einem Deckel (**48**, **61**), vorzugsweise überrastend, verschließbar sind den Motor (**105**) aufnehmen und als Staubkasten dienen.

13. Mobiles Antriebsaggregat (**10**) nach einem

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 557
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass die beiden Kästen einen Motorkasten (**62**) sowie einen Staubkasten (**55**) mit Staubkontrollmitteln.

14. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass an der Innenseite des Deckels (**24**) Haltemittel (**94**) zur Aufnahme des Saugschlauchs (**78**) angeordnet sind, der überrastend, parallel zum Deckel (**24**) spiralig anordenbar ist.

15. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass ein Bypassventil (**50**) auf dem Staubdeckel (**56**) angeordnet ist.

16. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass zwischen den Deckeln (**24**, **56**, **61**) und dem Kasten (**13**, **55**, **62**) Dichtmittel angeordnet sind

17. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass im Inneren des Antriebsaggregats (**10**), insbesondere im Staufach (**63**) bzw. im Inneren des Deckels (**24**) Beleuchtungsmittel angeordnet sind, insbesondere mit LED und/oder in Gestalt eines leuchtenden Markenschriftzugs.

18. Mobiles Antriebsaggregat (**10**) nach Anspruch 1, dadurch gekennzeichnet, dass handbetätigbare Bedienelemente (**30**, **31**, **34**), insbesondere zum Öffnen und Schließen eines Deckels oder zum Betätigen einer Schalttaste zum Ein- oder Ausschalten des Antriebsaggregats, innerhalb der Außenkontur des Gehäuses (**11**) angeordnet sind.

19. Mobiles Antriebsaggregat (**10**) nach einem der Ansprüche 1 oder 2, dadurch gekennzeichnet, dass die Schalttaste (**34**) zum Ein- oder Ausschalten des Antriebsaggregats über eine Öffnung (**29**) des Deckels (**24**) für Fuß- oder Handbedienung von außen zugänglich ist.

20. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass ein Ausblasadapter (**83**) an der Ausblasöffnung (**33**) fixierbar angeordnet ist und gegen ein Ausblasgitter (**46**), insbesondere mit Staubfilter (**44**), auswechselbar ist.

21. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass ein Adapter für den Saugschlauch (**78**) vorgesehen ist, mit dem dieser an Handwerkzeugmaschinen, beispielsweise Elektro-Handschwingschleifer, mit Absaugstutzen eines anderen Durchmessers als des Saugschlauchs (**78**) kuppelbar ist.

22. Mobiles Antriebsaggregat (**10**) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, dass eine Schlauchzwischenkupplung (**91**) vorgesehen ist zum Kuppeln des Saugschlauchs (**78**) mit einem Verlängerungs-Saugschlauchstück.

Es folgen 7 Blatt Zeichnungen

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 558
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Anhängende Zeichnungen

Fig. 1

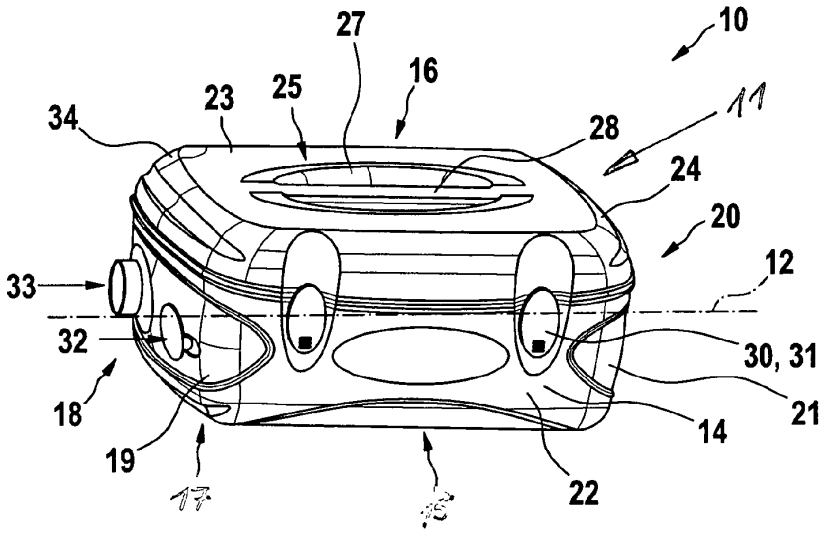
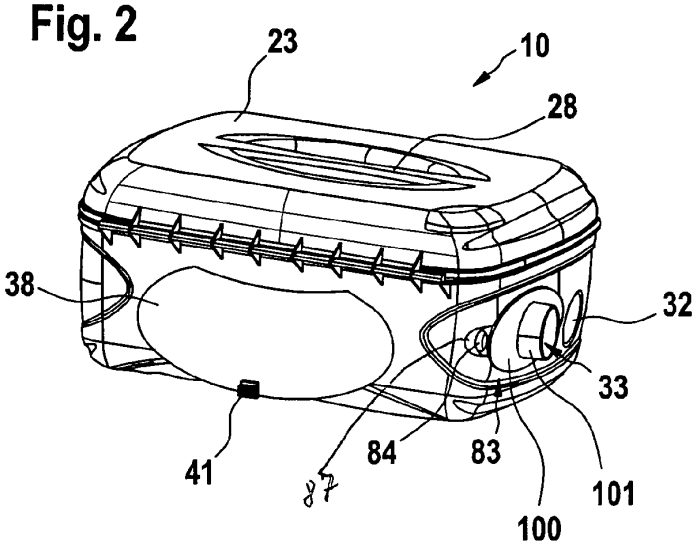
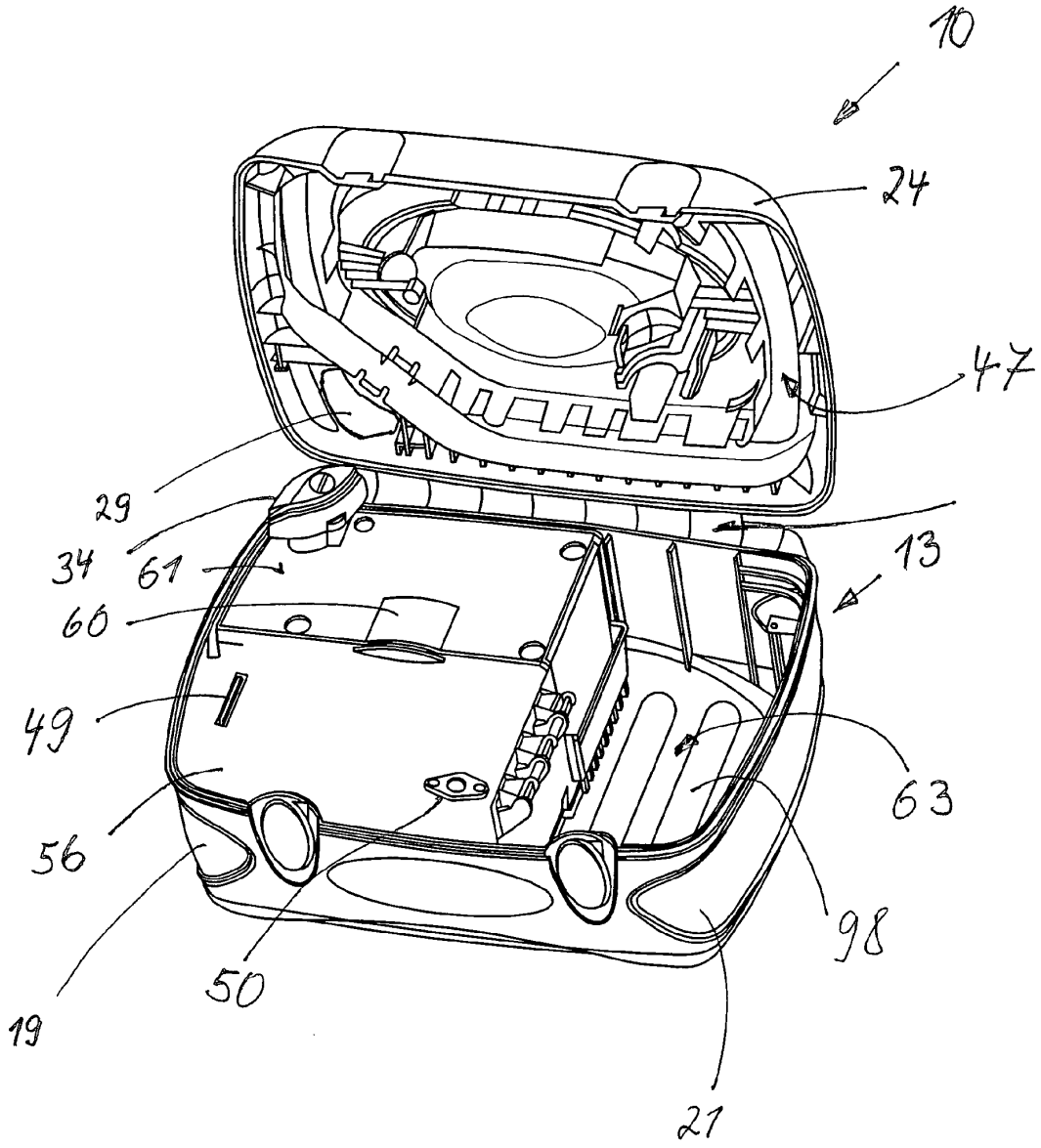


Fig. 2



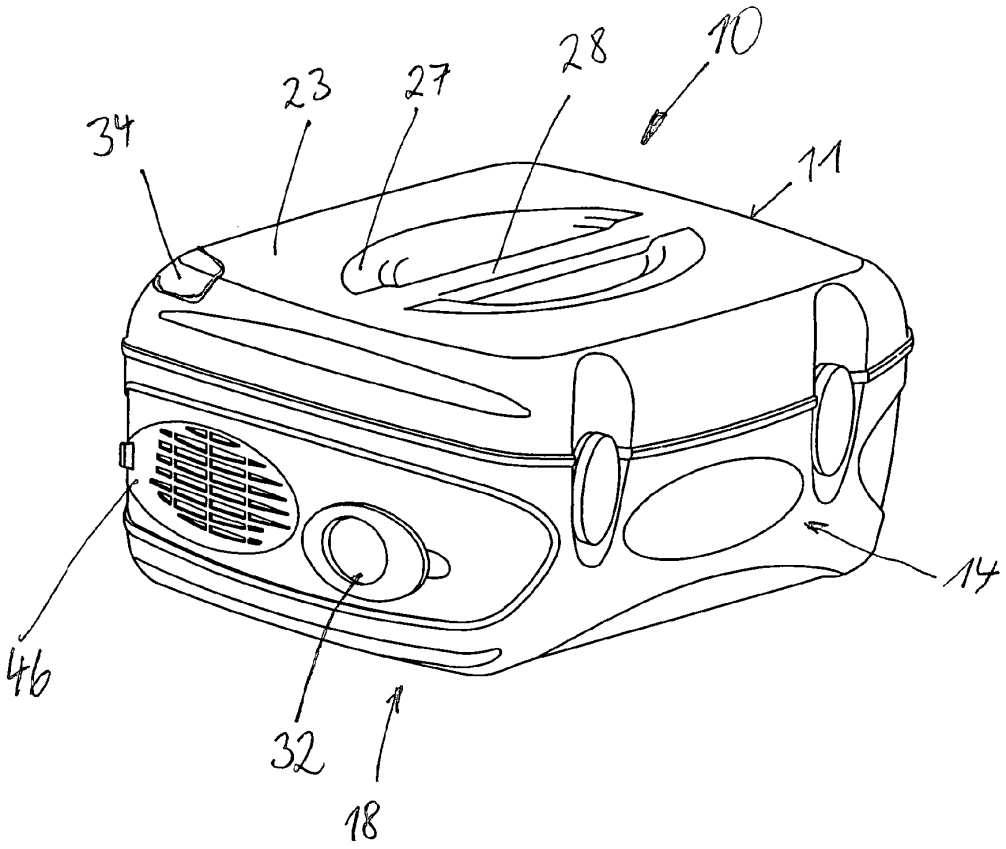
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 559
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Fig. 3



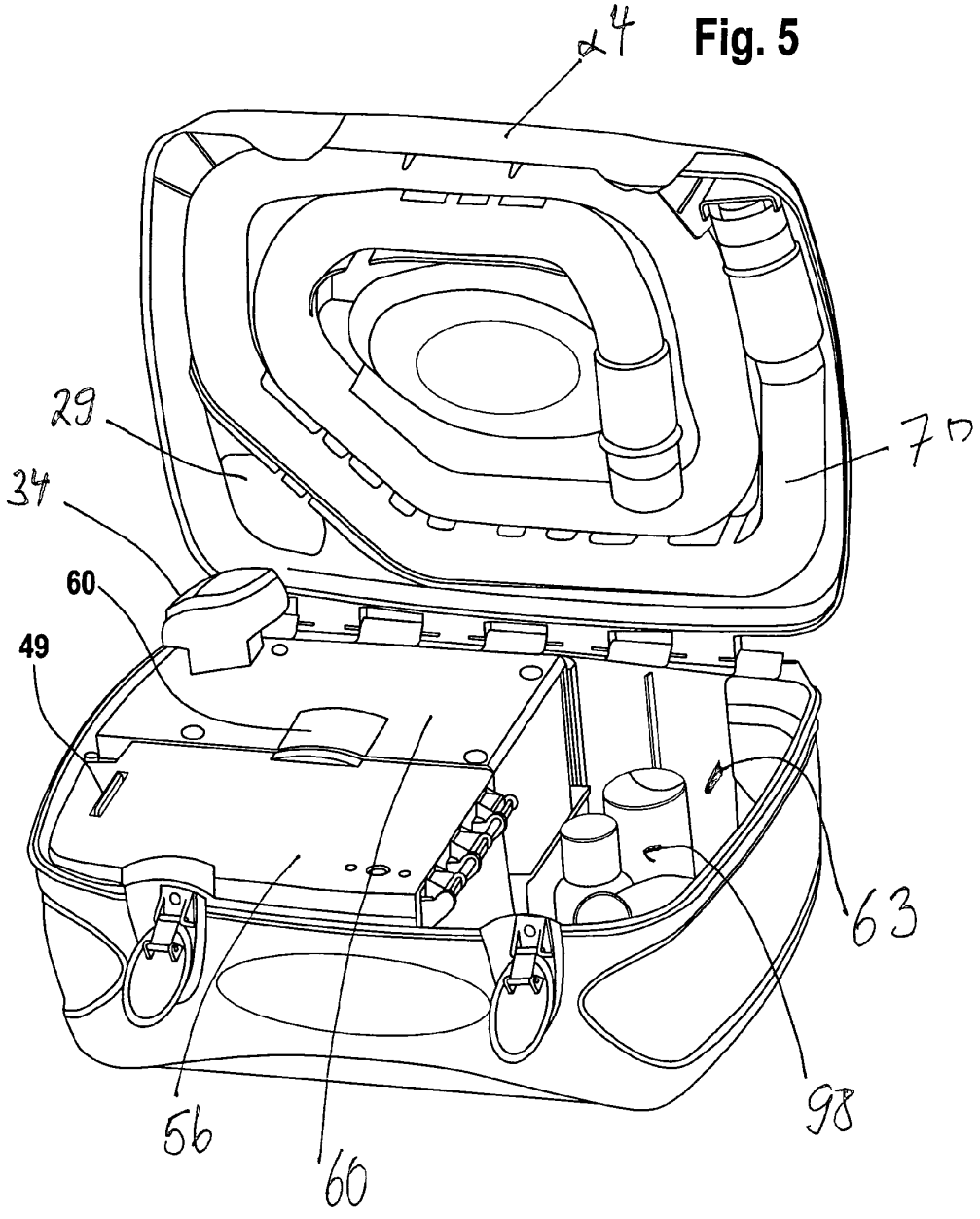
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 560
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Fig. 4



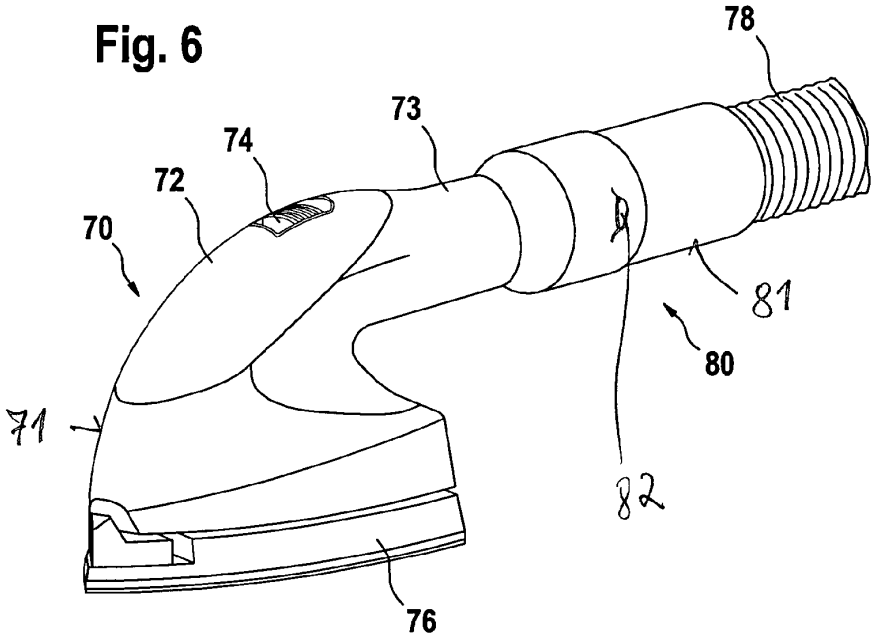
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 561
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Fig. 5



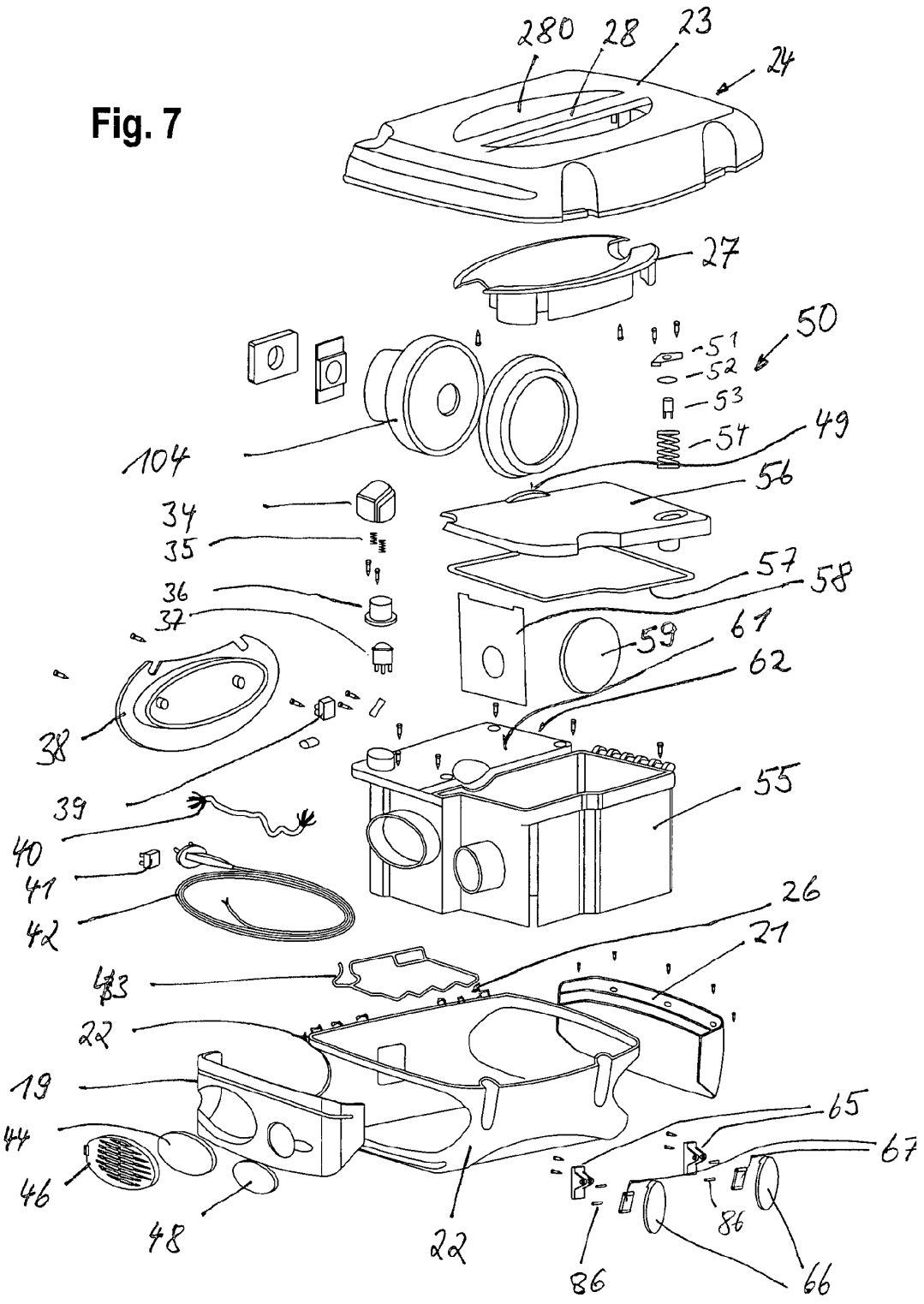
Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 562
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Fig. 6



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 563
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

Fig. 7



Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 564
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

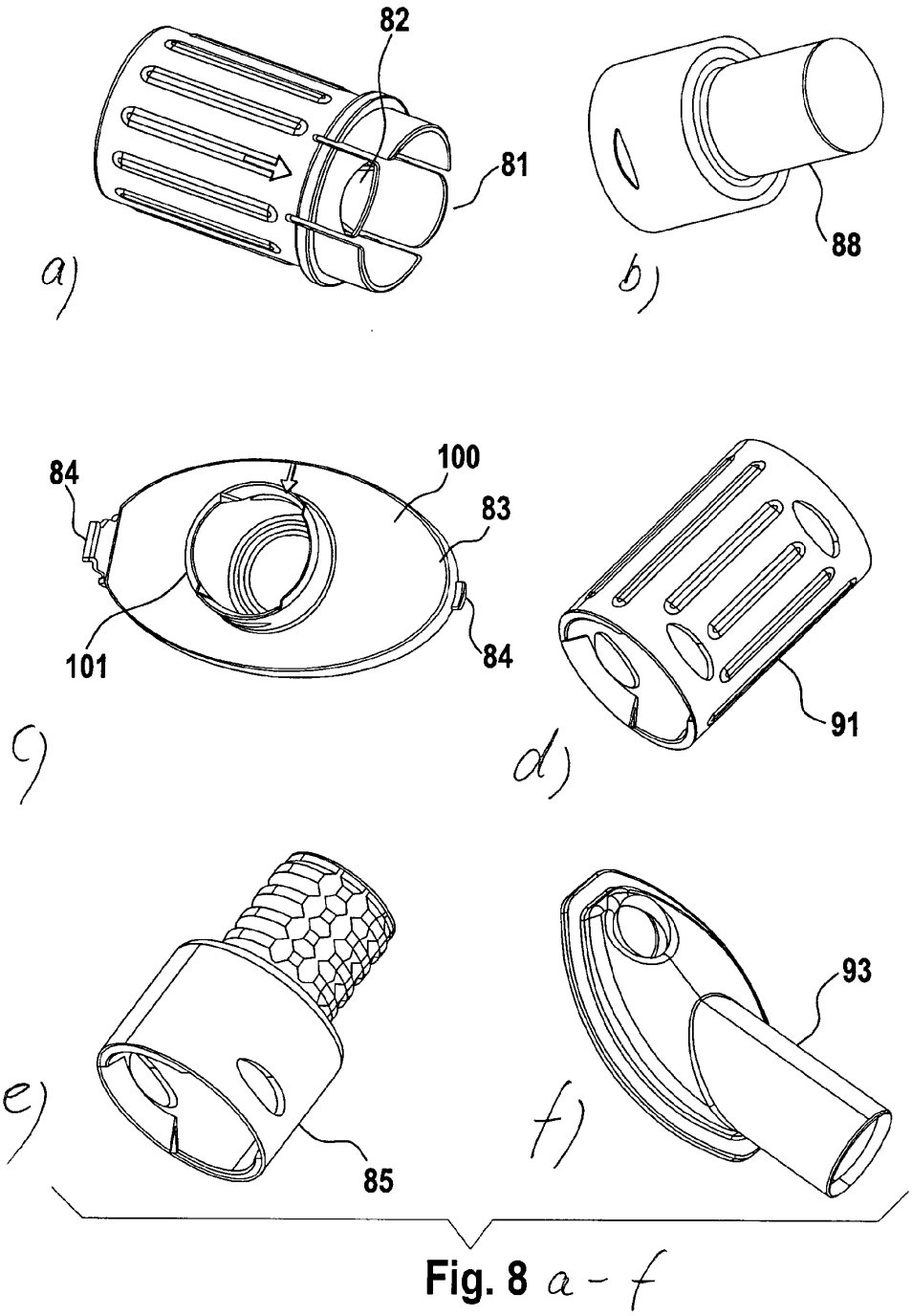


Fig. 8 a - f

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 565
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Abstract of DE102010003754 (A1)

Die Erfindung betrifft ein Reinigungsgerät mit einem Gehäuse, das eine Stellfläche zum Abstellen eines Behälters aufweist, und mit Laufrädern zum Verfahren des Reinigungsgerätes. Um das Reinigungsgerät derart weiterzubilden, dass ein Behälter auf einfache Weise an der Stellfläche festgelegt werden kann, wird erfindungsgemäss vorgeschlagen, dass das Reinigungsgerät mindestens einen Aufbewahrungsraum aufweist, in dem in einer Aufbewahrungsstellung zumindest ein Spannelement angeordnet ist, das zur Festlegung des Behälters an der Stellfläche dem Aufbewahrungsraum zumindest teilweise entnehmbar und in eine Arbeitsstellung überführbar ist.

Milwaukee Electric Tool, Keter Home and Garden Products – Ex. 2002 - Page 566
Klein Tools v. Milwaukee Electric Tool, Keter Home and Garden Products
IPR2024-01400

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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: **Reinigungsgerät**

(57) Zusammenfassung: Die Erfindung betrifft ein Reinigungsgerät mit einem Gehäuse, das eine Stellfläche zum Abstellen eines Behälters aufweist, und mit Laufrädern zum Verfahren des Reinigungsgerätes. Um das Reinigungsgerät derart weiterzubilden, dass ein Behälter auf einfache Weise an der Stellfläche festgelegt werden kann, wird erfindungsgemäß vorgeschlagen, dass das Reinigungsgerät mindestens einen Aufbewahrungsraum aufweist, in dem in einer Aufbewahrungsstellung zumindest ein Spannelement angeordnet ist, das zur Festlegung des Behälters an der Stellfläche dem Aufbewahrungsraum zumindest teilweise entnehmbar und in eine Arbeitsstellung überführbar ist.

