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(54) **Tool stand**

(57) A tool stand includes a cabinet (10), two posts (20), at least one tray (30) and at least two collars (40). The posts are supported on the cabinet. The tray includes a wall (31) extending thereon and two arched slots defined therein. Each of the collars is movably supported on a related one of the posts and formed with a pin (40) inserted in a related one of the arched slots so that the tray can be pivoted between a horizontal position and a tilted position.

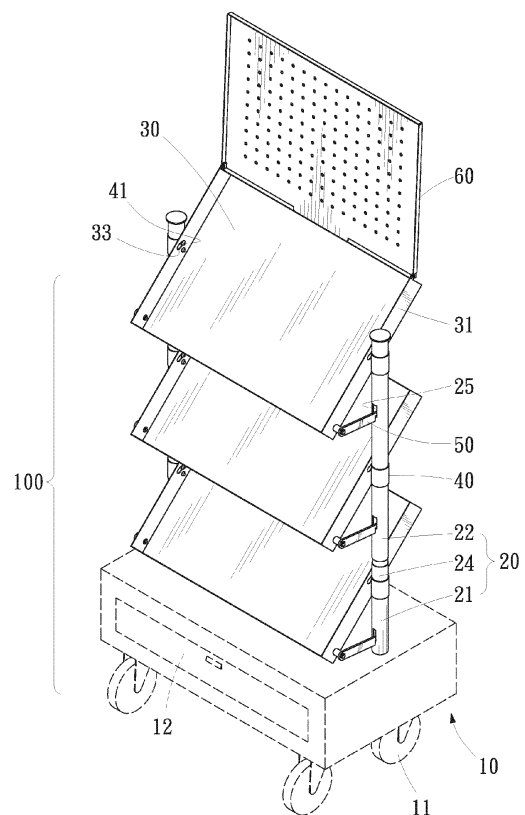


FIG. 7

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Description

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

[0001] The present invention relates to a tool stand and, more particularly, to a tool stand for easy storage and display of tools.

2. RELATED PRIOR ART

[0002] As disclosed in U.S. Patent No. 7699413 and Taiwanese Patent Publication No. 554811, a conventional tool stand generally includes a cabinet supported on casters so that the tool stand can be moved around on the casters. The cabinet includes several drawers movably supported thereon. The drawers are used to store various tools. The drawers however look like one another, and it is impossible to know what tools are stored in which drawer. The drawers have to be opened one after another so that the tools contained therein can be observed and a needed tool can be taken from the related drawer for use. This is however a waste of time.

[0003] As disclosed in German Patent No. 1580171, a conventional tool stand includes lower, upper and middle boxes and two posts. The lower box is located on the ground or a floor. The posts are supported on the lower box. The middle and upper boxes are supported on the posts. Tools are stored in the boxes. The tools are visible since there is an adequate distance between the lower and middle boxes and another adequate distance between the middle and upper boxes. The conventional tool stand is however bulky because of the distances between the boxes.

[0004] As disclosed in US Patent 2819938, another conventional tool stand includes two boxes 1 and 7, a tray 8 and two columns 5 and 6. The box 1 is supported on two casters 2 and two casters 3. The columns 5 and 6 are supported on the box 1. The box 7 and the tray 8 are movably supported on the columns 5 and 6. Each of the columns 5 and 6 includes apertures defined therein. A locking pin 21 can be inserted in a selected one of the apertures of the column 5 and another locking pin 21 can be inserted in a related one of the apertures of the column 6 to lock the box 7 in a desired elevation. Another locking pin 21 can be inserted in a selected one of the apertures of the column 5 and another locking pin 21 can be inserted in a related one of the apertures of the column 6 to lock the tray 8 in a desired elevation. The locking pins 21 can be removed from the apertures of the columns 5 and 6 to allow the box 7 to rest on the box 1 and the tray 8 to rest on the box 7. Similar conventional tool stands can be found in US Patent Nos. 4466628 and 4913453 and German Patent No. 955219. The conventional tool stand does not look bulky when the boxes 1 and 7 and the tray 8 are located on one another. The columns 5 and 6 however stick out and look weird.

[0005] As disclosed in German Patent No. 7807246, another conventional tool stand includes several boxes and two telescopic posts. The telescopic posts are supported on the lowermost one of the boxes. The other boxes are movably supported on the telescopic posts. Each of the telescopic posts includes several tubes connected to one another and spring-biased detents operable to keep the tubes in desired elevations relative to one another. Thus, the effective length of each of the telescopic posts is adjustable.

[0006] On the other hand, as disclosed in UK Patent No. 1455551, another conventional tool stand includes several boxes and two collapsible posts. Each of the collapsible posts includes an upper rod pivotally connected to a lower rod. The lower rods are supported on the lowermost one of the boxes. The upper rods can be located in an upright position to be in line with the lower rods. Now, the other boxes are movable along and then retained in desired elevations on the collapsible posts. When the boxes are located on one another, the upper rods can be located in a horizontal position to rest on the uppermost one of the boxes.

[0007] The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

SUMMARY OF INVENTION

[0008] It is the primary objective of the present invention to provide a tool stand for easy storage and display of tools.

[0009] To achieve the foregoing objectives, the tool stand includes a cabinet, two posts, at least one tray and at least two collars. The posts are supported on the cabinet. The tray includes a wall extending thereon and two arched slots defined therein. Each of the collars is movably supported on a related one of the posts and formed with a pin inserted in a related one of the arched slots so that the tray can be pivoted between a horizontal position and a tilted position.

[0010] Other objectives, advantages and features of the present invention will be apparent from the following description referring to the attached drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0011] The present invention will be described via detailed illustration of two embodiments referring to the drawings wherein:

FIG. 1 is a perspective view of a tool stand in a standby mode according to the first embodiment of the present invention;

FIG. 2 is an exploded view of the tool stand shown in FIG. 1;

FIG. 3 is an enlarged, partial, cross-sectional view of the tool stand shown in FIG. 1;

FIG. 4 is an enlarged, partial, cross-sectional view

of the tool stand in another position than shown in FIG. 3;

FIG. 5 is another enlarged, partial, cross-sectional view of the tool stand shown in FIG. 3;

FIG. 6 is an enlarged, partial, side view of the tool stand shown in FIG. 3;

FIG. 7 is a perspective view of the tool stand in an operative mode other than the standby mode shown in FIG. 1; and

FIG. 8 is a perspective view of a tool stand in a standby mode according to the second embodiment of the present invention.

DETAILED DESCRIPTION OF EMBODIMENTS

[0012] Referring to FIGS. 1 through 7, there is shown a tool stand 100 according to a first embodiment of the present invention. As shown in FIGS. 1 and 2, the tool stand 100 includes a cabinet 10, two posts 20, three trays 30, six collars 40, six buckles 50 and a lid 60. The cabinet 10 is supported on four casters 11 so that the cabinet 10 and therefore the tool stand 100 can smoothly be moved around on the casters 11. The cabinet 10 includes a drawer 12 movably supported thereon.

[0013] Each of the posts 20 includes a first (or "lower") tube 21, a second (or "upper") tube 22, a joint 23 and a ring 24. The first tube 21 includes a slot 25 defined therein and an aperture 28 defined therein. A lower end of the first tube 21 is secured to the cabinet 10. An upper end of the first tube 21 is formed with a reduced diameter as shown in FIGS. 3 and 4.

[0014] The second tube 22 includes two slots 25 defined therein and two apertures 28 defined therein. A lower end of the second tube 22 is formed with a reduced diameter and pivotally connected to the first tube 21 by a related one of the joints 23 as shown in FIGS. 3 and 4.

[0015] Each of the rings 24 is movably provided on a related one of the posts 20 so that it is movable along the upper end of the first tube 21, the joint 23 and the lower end of the second tube 22. Moreover, it should be noted that each of the rings 24 is restrained on the upper end of the first tube 21 and the lower end of the second tube 22.

[0016] A lower spring-biased detent 26 is located in the first tube 21 so that the lower spring-biased detent 26 is inserted in the aperture 28 of the first tube 21. A middle spring-biased detent 26 and an upper spring-biased detent 26 are provided in the second tube 22 so that the middle and upper spring-biased detents 26 are inserted in the apertures 28 of the second tube 22.

[0017] Each of the six collars 40 includes a pin 41 formed thereon and an aperture 42 defined therein. Three of the six collars 40 are movably provided on one of the posts 20 while the other collars 40 are movably provided on the other post 20. For the convenience of the description, the three collars 40 provided on each of the posts 20 will be referred to as the lower collar 40, the middle collar 40 and the upper collar 40. Along each of

the posts 20, the upper, middle and lower collars 40 are movable past the ring 24.

[0018] Referring to FIG. 6, each of the trays 30 includes a wall 31, two opposite apertures 32 defined in the wall 31, and two opposite arched slots 33 defined in the wall 31. For the convenience of the description, the trays 30 will be referred to as the lower tray 30, the middle tray 30 and the upper tray 30.

[0019] The pin 41 of each of the lower collars 40 is inserted in a related one of the arched slots 33 of the lower tray 30 so that the lower tray 30 is connected to the lower collars 40. The pin 41 of each of the middle collars 40 is inserted in a related one of the arched slots 33 of the middle tray 30 so that the middle tray 30 is connected to the middle collars 40. The pin 41 of each of the upper collars 40 is inserted in a related one of the arched slots 33 of the upper tray 30 so that the upper tray 30 is connected to the upper collars 40.

[0020] Each of the buckles 50 includes a recess 51 defined therein near an end. For the convenience of the description, the buckles 50 will be referred to as the lower buckles 50, the middle buckles 50 and the upper buckles 50. Each of the lower buckles 50 is pivotally connected, at an opposite end, to the wall 31 of the lower tray 30. Each of the middle buckles 50 is pivotally connected, at an opposite end, to the wall 31 of the middle tray 30. Each of the upper buckles 50 is pivotally connected, at an opposite end, to the wall 31 of the upper tray 30.

[0021] The lid 60 is pivotally connected to the wall 31 of the upper tray 30. By the lid 60, the upper tray 30 is closed or opened.

[0022] Referring to FIG. 3, on each of the posts 20, the ring 24 is moved to an upper position so that it is provided on the lower end of the second tube 22 but disengaged from the upper end of the first tube 21. Thus, the second tube 22 can be pivoted between a horizontal position as shown in FIG. 1 and a vertical position as shown in FIG. 2. In the horizontal position, the second tube 22 is located on the upper tray 30.

[0023] Referring to FIG. 4, on each of the posts 20, the ring 24 is moved to a lower position so that it is provided on the lower end of the second tube 22 and the upper end of the first tube 21. Thus, the second tube 22 is retained in the vertical position as shown in FIG. 2.

[0024] Regarding each of the posts 20, as the second tube 22 is retained in the vertical position, the upper, middle and lower collars 40 are movable past the ring 24 along the post 20. Referring to FIG. 7, the lower collar 40 is located on the first tube 21 while the middle and upper collars 40 are moved onto the second tube 22.

[0025] Referring to FIG. 5, for each of the posts 20, the lower spring-biased detent 26 is inserted in the aperture 28 of the first tube 21, the aperture 42 of the lower collar 40 and the aperture 32 of the lower tray 30 so that the lower tray 30 and the lower collar 40 are positioned on the first tube 21.

[0026] Similarly, the middle spring-biased detent 26 can be inserted in one of the apertures 28 of the second

tube 22, the aperture 42 of the middle collar 40 and the aperture 32 of the middle tray 30. Thus, the middle tray 30 and the middle collar 40 are positioned on the second tube 22.

[0027] Similarly, the upper spring-biased detent 26 can be inserted in the other aperture 28 of the second tube 22, the aperture 42 of the upper collar 40 and the aperture 32 of the upper tray 30. Thus, the upper tray 30 and the upper collar 40 are positioned on the second tube 22.

[0028] Accordingly, the trays 30 are separated from one another by adequate distances. Therefore, the trays 30 can be tilted as shown in FIG. 7.

[0029] Referring to FIG. 6, regarding each of the posts 20, the lower buckle 50 is inserted in the slot 25 of the first tube 21 so that a portion of the first tube 21 is inserted in the recess 51 of the lower buckle 50. Thus, the lower tray 30 is retained in the tilted position.

[0030] Similarly, the middle buckle 50 can be inserted in one of the slots 25 of the second tube 22 so that a portion of the second tube 22 is inserted in the recess 51 of the middle buckle 50. Thus, the middle tray 30 is retained in the tilted position.

[0031] Similarly, the upper buckle 50 can be inserted in the other slot 25 of the second tube 22 so that another portion of the second tube 22 is inserted in the recess 51 of the upper buckle 50. Thus, the upper tray 30 is retained in the tilted position.

[0032] Referring to FIG. 8, there is shown a tool stand 101 according to a second embodiment of the present invention. The tool stand 101 is identical to the tool stand 100 except that each of the trays 30 includes two opposite rods 70 extending horizontally from the wall 31. The buckles 50 can be supported on the rods 70 as the rods 70 are inserted in the recesses 51. Thus, the buckles 50 would not tangle from the trays 30. The buckles 50 can be disengaged from the rods 70 and engaged with the posts 20.

[0033] The present invention has been described via the detailed illustration of the embodiments. Those skilled in the art can derive variations from the embodiments without departing from the scope of the present invention. Therefore, the embodiments shall not limit the scope of the present invention of the claims.

Claims

1. A tool stand including:

a cabinet 10;
two posts 20 supported on the cabinet 10;
at least one tray 30 including a wall 31 extending thereon and two arched slots 33 defined therein;
and
at least two collars 40 each movably supported on a related one of the posts 20 and formed with a pin 41 inserted in a related one of the arched slots 33 so that the tray 30 can be pivoted be-

tween a horizontal position and a tilted position.

2. The tool stand according to claim 1, including at least two spring-biased detents 26, wherein each of the posts 20 is a tubular element for receiving a related one of the spring-biased detents 26, wherein the tray 30 includes two apertures 32 defined in the wall 31, wherein each of the collars 40 includes an aperture 42 defined therein, wherein each of the spring-biased detents 26 can be inserted in the aperture 42 of a related one of the collars 40 and a related one of the apertures 32 of the tray 30.

3. The tool stand according to claim 2, including at least two buckles 50 pivotally connected to the wall 31 of the tray 30, wherein each of the posts 20 includes at least one slot 25 for receiving a portion of a related one of the buckles 50 so that the tray 30 is retained in the tilted position.

4. The tool stand according to claim 3, wherein each of the buckles 50 includes at least one recess 51 for receiving a portion of a related one of the posts 20 near the slot 25.

5. The tool stand according to claim 3, wherein the tray 30 includes at least two rods 70 formed thereon for supporting the buckles 50.

6. The tool stand according to claim 1, wherein each of the posts 20 includes:

a first tube 21 supported on the cabinet 10;
a second tube 22 pivotally connected to the first tube 21; and
a ring 24 movable between a locking position where the ring 24 is provided around the first and second tubes 21, 22 to retain the first and second tubes 21, 22 in line and an unlocking position where the ring 24 is provided around only one of the first and second tubes to allow pivotal of the second tube 22 relative to the first tube 21.

7. The tool stand according to claim 6, including a joint 23 for pivotally connecting the first tube 21 to the second tube 22.

8. The tool stand according to claim 1, including a lid 60 pivotally connected to the tray 30.

Amended claims in accordance with Rule 137(2) EPC.

1. A tool stand including:

a cabinet (10);

two posts (20) supported on the cabinet (10);
 at least one tray (30) including a wall (31) extending thereon and two arched slots (33) defined therein; and
 at least two collars (40) each movably supported on a related one of the posts (20) and formed with a pin (41) inserted in a related one of the arched slots (33) so that the tray (30) can be pivoted between a horizontal position and a tilted position.

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2. The tool stand according to claim 1, including at least two spring-biased detents (26), wherein each of the posts (20) is a tubular element for receiving a related one of the spring-biased detents (26), wherein the tray (30) includes two apertures (32) defined in the wall (31), wherein each of the collars (40) includes an aperture (42) defined therein, wherein each of the spring-biased detents (26) can be inserted in the aperture (42) of a related one of the collars (40) and a related one of the apertures (32) of the tray (30).

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3. The tool stand according to claim 2, including at least two buckles (50) pivotally connected to the wall (31) of the tray (30), wherein each of the posts (20) includes at least one slot (25) for receiving a portion of a related one of the buckles (50) so that the tray (30) is retained in the tilted position.

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4. The tool stand according to claim 3, wherein each of the buckles (50) includes at least one recess (51) for receiving a portion of a related one of the posts (20) near the slot (25).

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5. The tool stand according to claim 3, wherein the tray (30) includes at least two rods (70) formed thereon for supporting the buckles (50).

6. The tool stand according to claim 1, wherein each of the posts (20) includes:

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a first tube (21) supported on the cabinet (10);
 a second tube (22) pivotally connected to the first tube (21); and
 a ring (24) movable between a locking position where the ring (24) is provided around the first and second tubes (21, 22) to retain the first and second tubes (21, 22) in line and an unlocking position where the ring (24) is provided around only one of the first and second tubes to allow pivotal of the second tube (22) relative to the first tube (21).

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7. The tool stand according to claim 6, including a joint (23) for pivotally connecting the first tube (21) to the second tube (22).

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8. The tool stand according to claim 1, including a lid (60) pivotally connected to the tray (30).

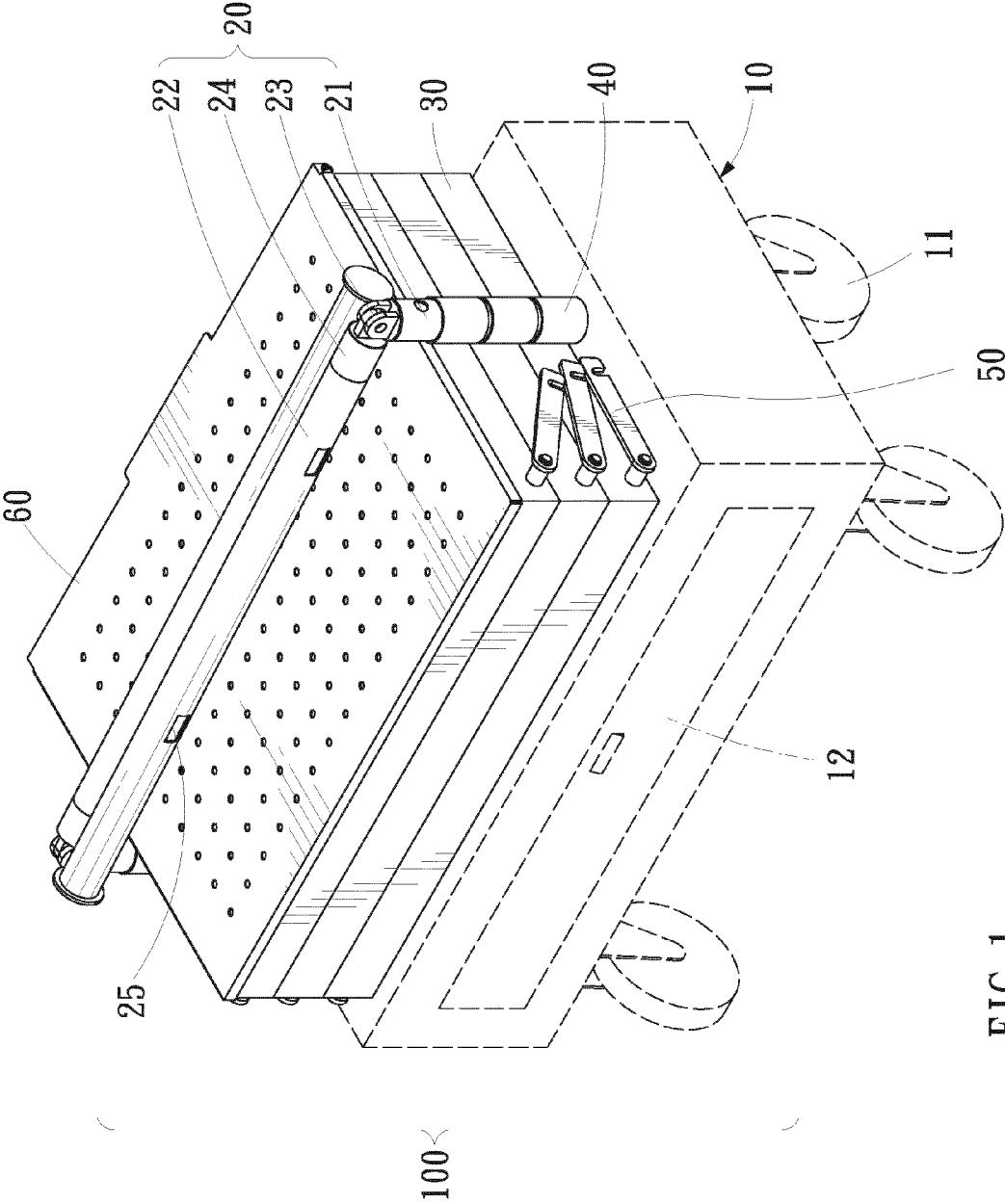


FIG. 1

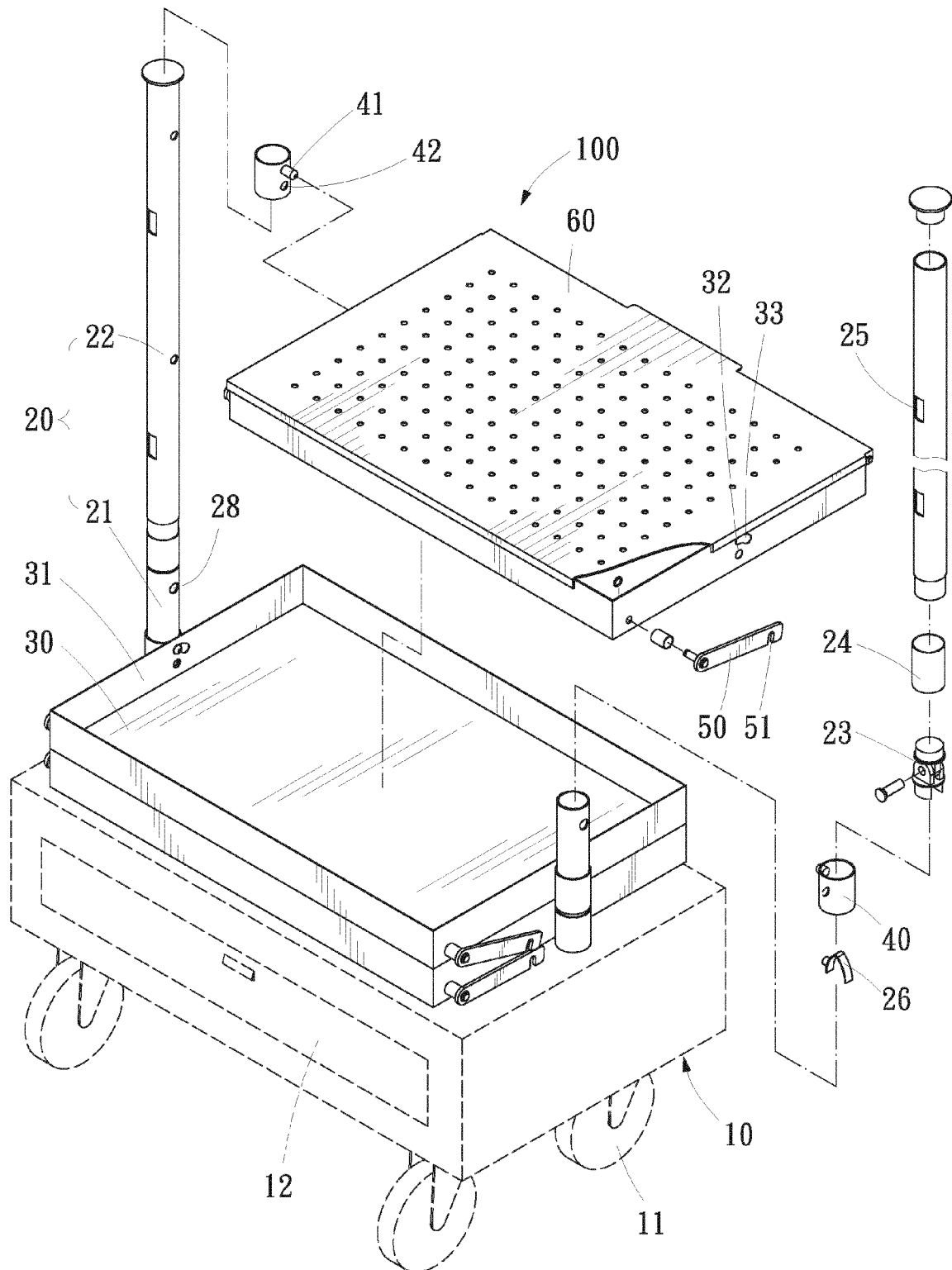


FIG. 2

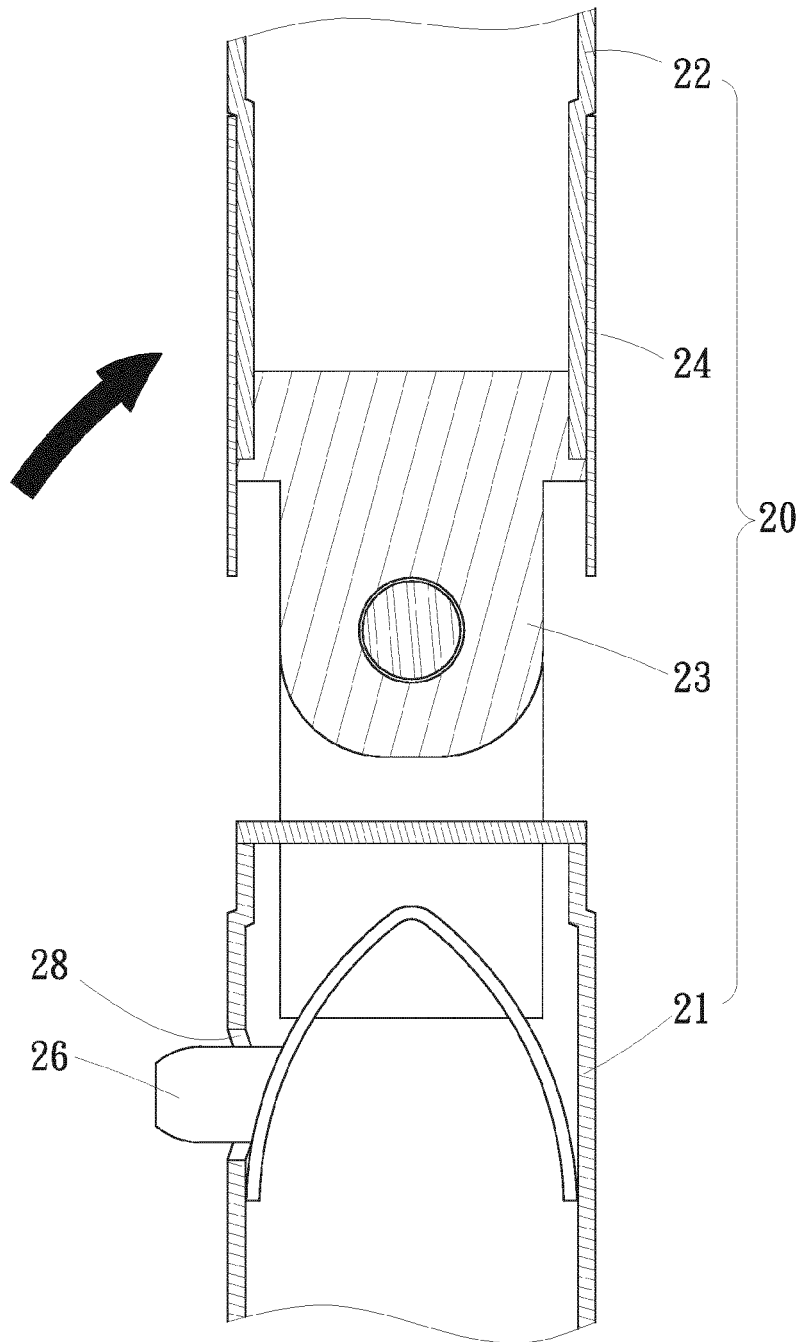


FIG. 3

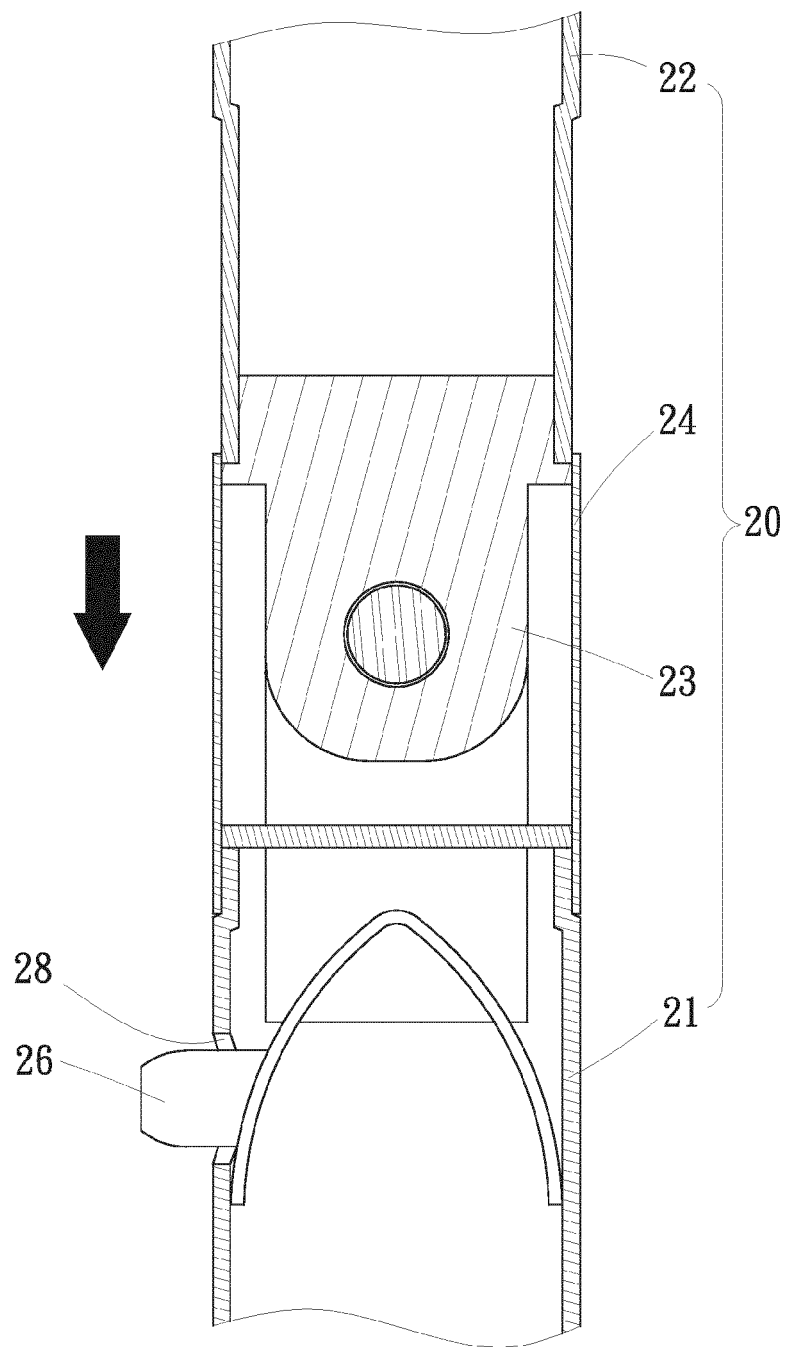


FIG. 4

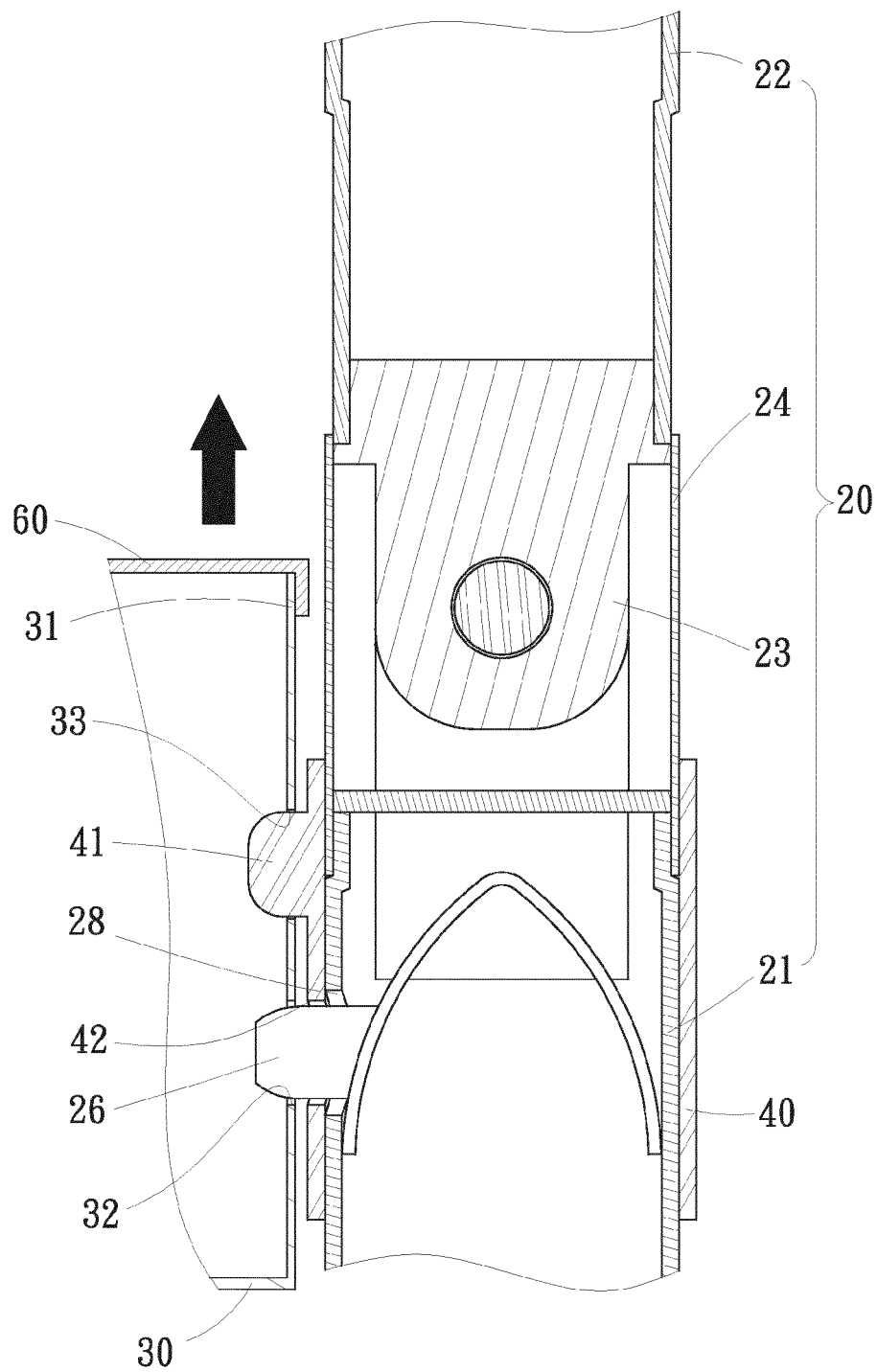


FIG. 5

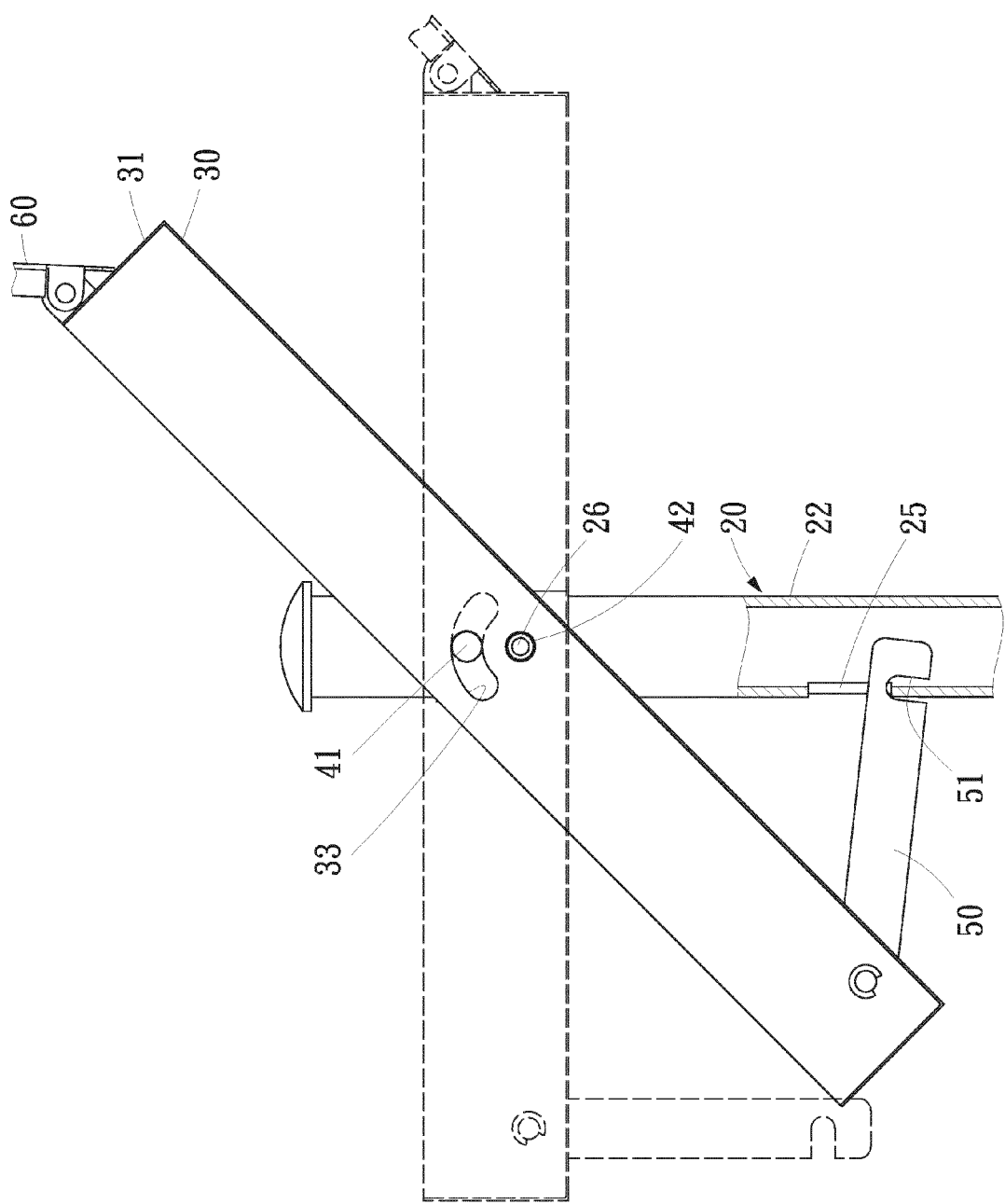


FIG. 6

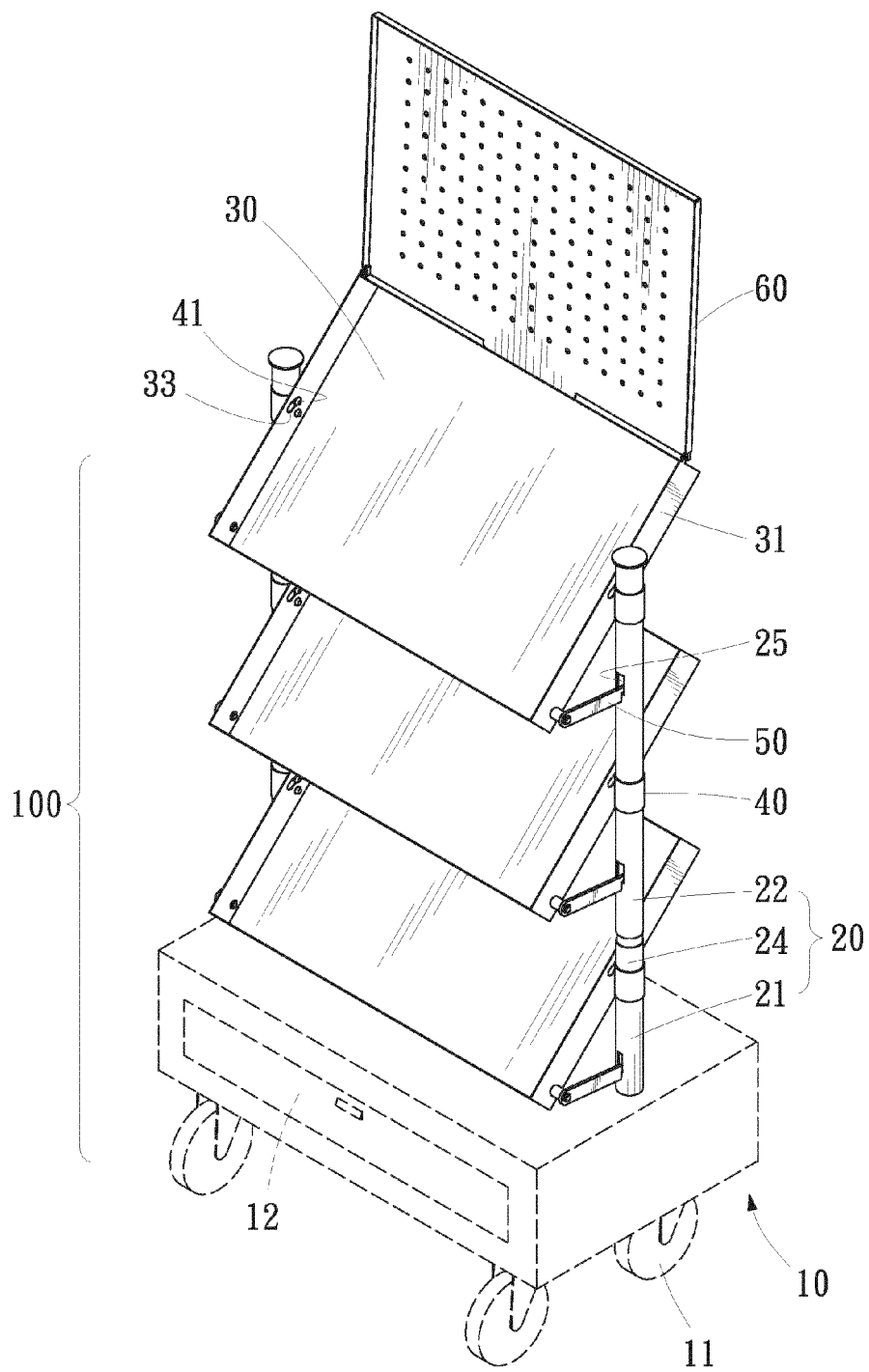


FIG. 7

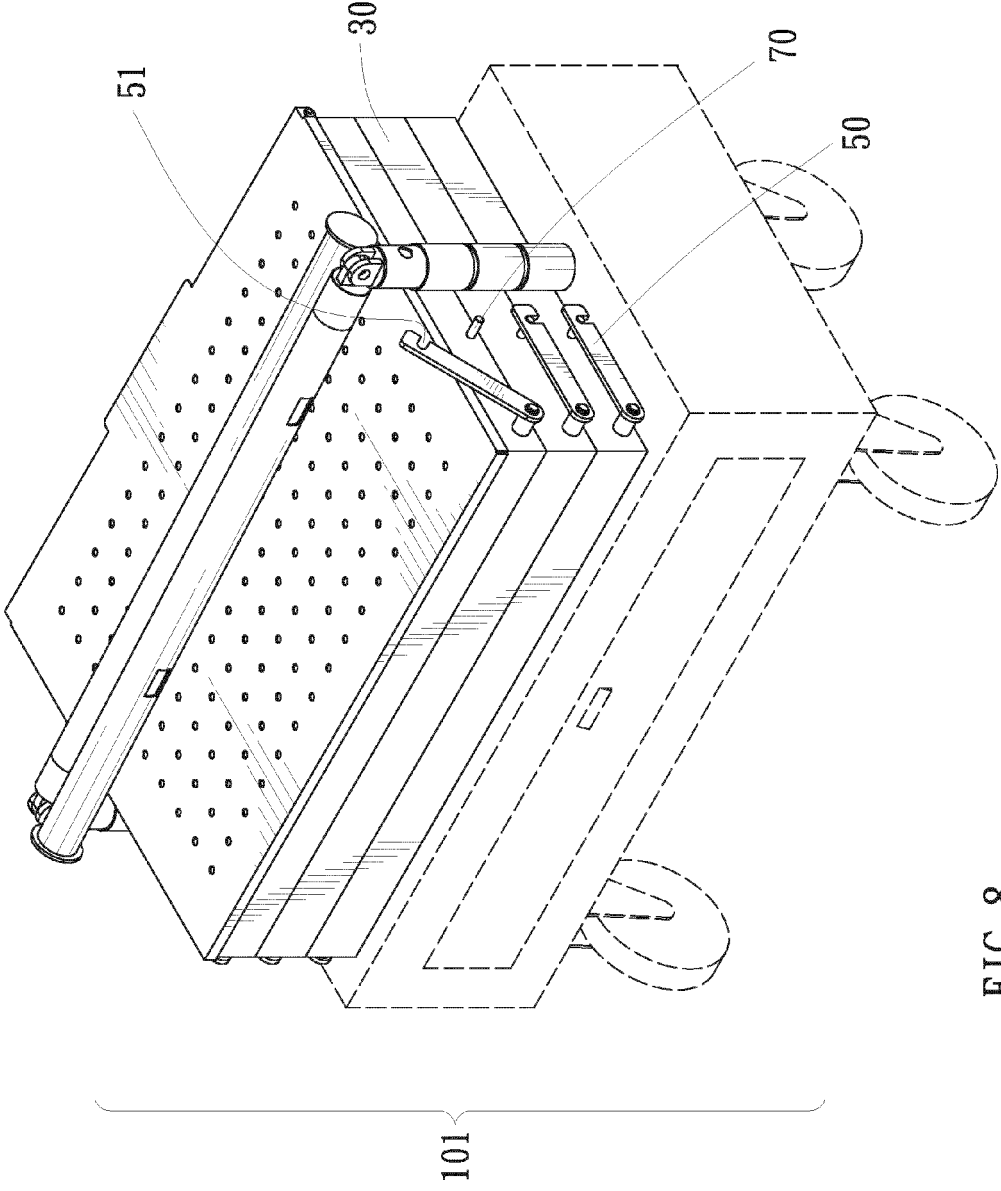


FIG. 8



EUROPEAN SEARCH REPORT

Application Number
EP 11 18 7981

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 20 March 2012	Examiner Flodström, Benny
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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The members are as contained in the European Patent Office EDP file on
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