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

(54) **Container-holding apparatus**

(57) An apparatus is devised to hold at least one container. The apparatus includes a track (10), at least one holding element (20) and at least one controlling element (30). The track (10) includes a groove (11) defined therein. The holding element (20) includes a sliding portion (21) movably disposed in the groove (11) and a holding portion (23) used to hold the container. The controlling element (30) is pivotally connected to the holding element (20) and pivoted between a first position for allowing the sliding portion (21) to slide in the groove (11) and a second position for preventing the sliding portion (21) from sliding in the groove (11) by pressing the sliding portion (21) against the wall of the groove (11).

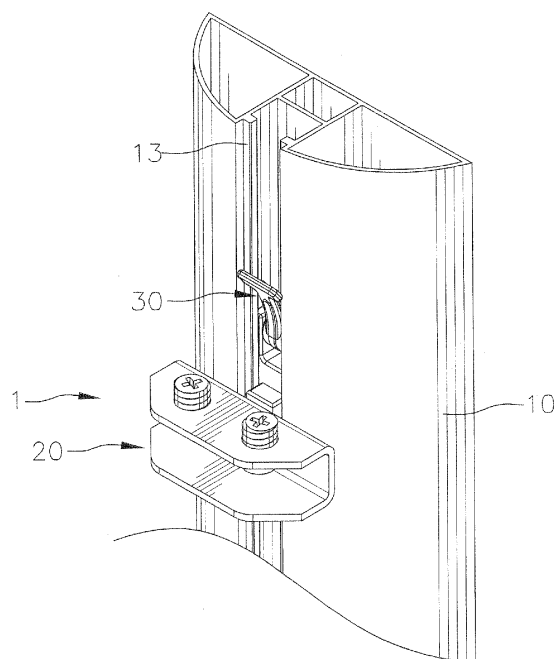


Fig.1

## Description

### BACKGROUND OF INVENTION

#### 1. FIELD OF INVENTION

**[0001]** The present invention relates to an apparatus for quickly holding at least one pen and/or a hanger.

#### 2. RELATED PRIOR ART

**[0002]** A conventional apparatus has been disclosed to hold platforms 10 in Taiwanese Patent Publication No. 485778. The conventional apparatus includes a track 11 and holding elements 20. The track 11 includes a groove 13 defined therein. Each of the holding elements 20 includes a slide 22 disposed in the groove 13 and a beam 21 extended from the slide 22. The slide 22 includes two chamfered corners 23 and 24 and two sharp corners 25 and 26. The distance between the chamfered corners 23 and 24 is longer than the distance between the sharp corners 25 and 26. When each of the holding elements 20 is tilted, the chamfered corners 23 and 24 are closer to the wall of the groove 13 than the sharp corners 25 and 26, but not pressed against the wall of the groove 13. Thus, the slide 22 is allowed to slide in the groove. When each of the holding elements 20 is located horizontally, the sharp corners 25 and 26 are closer to the wall of the groove 13 than the chamfered corners 23 and 24, and pressed against the wall of the groove 13. Thus, the slide 22 cannot slide in the groove 13. Things could however fall from the platforms 10 for at least two reasons. Firstly, the holding elements 20 could be tilted. Secondly, there is not railings or wall formed on each of the platforms 10.

**[0003]** The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

### SUMMARY OF INVENTION

**[0004]** According to the present invention, an apparatus is devised to quickly hold at least one container. The apparatus includes a track, at least one holding element and at least one controlling element. The track includes a groove defined therein. The holding element includes a sliding portion movably disposed in the groove and a holding portion used to hold the container. The controlling element is pivotally connected to the holding element and pivoted between a first position for allowing the sliding portion to slide in the groove and a second position for retaining the sliding portion in position in the groove by pressing the sliding portion against the wall of the groove.

**[0005]** The primary advantage of the apparatus according to the present invention is that the holding element can easily be moved along and retained on the track without tilt because of the controlling element.

**[0006]** Other advantages, objectives and features of

the present invention will become apparent from the following description referring to the attached drawings.

### BRIEF DESCRIPTION OF DRAWINGS

**[0007]** The present invention will be described via detailed illustration of the preferred embodiment referring to the drawings.

Fig. 1 is a perspective view of an apparatus for quickly holding at least one pen and/or hanger according to the preferred embodiment of the present invention.

Fig. 2 is an exploded view of the apparatus shown in Fig. 1.

Fig. 3 is a cross-sectional view of the apparatus shown in Fig. 1.

Fig. 4 is a cross-sectional view of the apparatus in another position than shown in Fig. 3.

Fig. 5 is a perspective of three pens held by the apparatus shown in Fig. 1.

Fig. 6 is a perspective view of a hanger held by the apparatus shown in Fig. 1.

Fig. 7 is an exploded view of the hanger shown in Fig. 6.

Fig. 8 is a perspective view of a plastic bag hung on the hanger shown in Fig. 6.

Fig. 9 is a perspective view of another hanger held by the apparatus shown in Fig. 1.

Fig. 10 is an exploded view of the hanger shown in Fig. 9.

Fig. 11 is a perspective view of a plastic bag hung on the hanger shown in Fig. 9.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

**[0008]** Referring to Fig. 1, there is shown an apparatus 1 for quickly holding at least one pen and/or hanger according to the preferred embodiment of the present invention. The apparatus 1 includes a track 10, at least one holding element 20 and at least one controlling element 30.

**[0009]** Referring to Fig. 2, the track 10 includes a groove 11 defined therein vertically. The groove 11 looks like a "T" in a cross-sectional view. The groove 11 may alternatively be a dovetail groove. The track 10 includes two flanges 13 extending from the top thereof to the bottom thereof. The flanges 13 are located before the groove 11.

**[0010]** The holding element 20 includes a sliding portion 21, a holding portion 23 and a connective portion 22 formed between the sliding portion 21 and the holding portion 23. The holding portion 23 includes a horizontal upper plate 231, a horizontal lower plate 232 and a wall 233 formed between the plates 231 and 232. Two screw holes 234 are defined in the upper plate 232. Two threaded bolts 235 are driven in the screw holes 234.

**[0011]** The connective portion 22 is formed between the wall 233 of the holding portion 23 and the sliding portion 21. The width of the connective portion 22 is smaller than that of the sliding portion 21.

**[0012]** The sliding portion 21 includes two separate ears 24 formed on the top thereof. An aperture 25 is defined in each of the ears 24. The sliding portion 21 is movably disposed in the groove 11.

**[0013]** The controlling element 30 includes a cam 31 and a lever 33 extended from the cam 31. An aperture 32 is eccentrically defined in the cam 31. Inherently, the cam 31 includes a lobe. The cam 31 is disposed between the ears 24. A pin 26 is fit in the apertures 25 and the aperture 32 so that the cam 31 is pivotally connected to the ears 24.

**[0014]** Referring to Fig. 3, the controlling element 30 is located in a first position where the lobe of the cam 31 is not pressed against the track 10 while the sliding portion 21 of the holding element 20 is not pressed against the flanges 13. Therefore, the sliding portion 21 of the holding element 20 is movable along the groove 11. That is, the elevation of the holding element 20 can be adjusted.

**[0015]** When holding element 20 is moved to a desired point, the controlling element 30 can be moved from the first position shown in Fig. 3 to a second position shown in Fig. 4 by operating the lever 33.

**[0016]** Referring to Fig. 4, the controlling element 30 is located in the second position where the lobe of the cam 31 is pressed against the track 10 while the sliding portion 21 of the holding element 20 is pressed against the flanges 13. Therefore, the sliding portion 21 of the holding element 20 is not movable along the groove 11. That is, the elevation of the holding element 20 cannot be adjusted.

**[0017]** Referring to Fig. 5, the apparatus 1 includes three holding elements 20 for holding three pens 2. Each of the pens 2 includes a floor 201, two apertures or recesses 202 defined in the floor 201 and railings 203 formed on the floor 201. The railings 203 are made of a proper height to keep things, if any, in each of the pens 2.

**[0018]** Two threaded bolts 235 are driven in the screw holes 234 of each of the holding elements 20 and the apertures or recesses of a related one of the pens 2. Thus, the elevation of each of the pens 2 can be adjusted.

**[0019]** The apparatus 1 and the pens 2 may be installed in a bathroom. Clothes may be put in the upper one of the pens 2 so that the clothes will not get wet when a person has a shower. Things that are useful for a bath may be put in the middle and lower ones of the pens 2 so that the person can easily take any of these things from the middle or lower ones of the pens 2, and vice versa.

**[0020]** Referring to Figs. 6 and 7, the apparatus 1 includes two holding elements 20, the upper one for holding a hanger 3 and the lower one for holding a platform 4. The upper holding element 20 is used together with a controlling element 30 so that the elevation of the hanger

3 can easily be adjusted. The lower holding element 20 is however not used together with the controlling element 30 so that the elevation of the platform 4 cannot easily be adjusted.

**[0021]** The hanger 3 includes an external frame 301 held by the upper holding element 20, an internal frame 302 pivotally connected to the external frame 301 and a cover 303 pivotally connected to the external frame 301.

**[0022]** The external frame 301 includes an annular body 3011, two ears 305 formed on an internal side of the annular body 3011 and a block 3013 formed on an external side of the annular body 3011. The internal side of the annular body 3011 is tapered in a downward direction. A pivot 3012 is formed on each of the ears 305 so that the pivots 3012 extend towards each other. The block 3013 includes two apertures or recesses 3014 defined therein vertically and two recesses 3015 defined therein horizontally. The recesses 3015 are located on opposite sides of the block 3013.

**[0023]** Two threaded bolts 235 are driven in the screw holes 234 of the upper holding element 20 and the apertures or recesses 3014 of the external frame 301. Thus, the external frame 301 is held by the upper holding element 20.

**[0024]** The internal frame 302 includes an annular body 3021, two ears 3022 formed on the annular body 3021 and an aperture 307 defined in each of the ears 3022. The ears 3022 of the internal frame 302 are located between the ears 305 of the external frame 301 while the pivots 3012 of the external frame 301 are fit in the apertures 307 of the internal frame 302. Thus, the internal frame 302 is pivotally connected to the external frame 301.

**[0025]** The cover 303 includes two ears 3031 formed on the edge thereof and a pivot 309 formed on each of the ears 3031. The pivots 309 extend towards each other. The ears 3031 of the cover 303 are located beside the block 3013 of the external frame 301 while the pivots 309 are fit in the recesses 3015 of the external frame 301. Thus, the cover 303 is pivotally connected to the external frame 301.

**[0026]** The platform 4 is held by the lower holding element 20. The lower holding element 20 is used together with a threaded bolt instead of a controlling element 30.

**[0027]** Referring to Fig. 8, a plastic bag 5 is hung on the hanger 3 and supported by the platform 4. The plastic bag 5 includes an open end and a closed end. The plastic bag 5 includes an edge around the open end thereof. To hang the plastic bag 5, the internal frame 302 and the cover 303 are lifted. The edge of the plastic bag 5 is directed beyond the internal frame 302 and turned over on the internal frame 302. The internal frame 302 is returned so that the edge of the plastic bag 5 is hung on the internal frame 302 and sandwiched between the internal frame 302 and the external frame 301.

**[0028]** Referring to Figs. 9 and 10, the apparatus 1 includes two holding elements 20, the upper one for holding a hanger 6 and the lower one for holding a platform

4. The upper holding element 20 is used together with a controlling element 30 so that the elevation of the hanger 6 can easily be adjusted. The lower holding element 20 is however not used together with the controlling element 30 so that the elevation of the platform 4 cannot easily be adjusted.

**[0029]** The hanger 6 includes a block 601 held by the upper controlling element 20, a frame 602 connected to the block 601, two clips 603 extended from the frame 602 and a cover 604 pivotally connected to the block 601.

**[0030]** The frame 602 includes a block 6011 formed on. The block 6011 includes two apertures or recesses 606 defined therein vertically and two recesses 6011 defined therein horizontally. The recesses 6011 are located on two opposite sides of the block 601.

**[0031]** Two threaded bolts 235 are driven in the screw holes 234 of the upper holding element 20 and the apertures or recesses 606 of the external frame 301. Thus, the block 601 is held by the upper holding element 20.

**[0032]** The frame 602 is made of a wire. The clips 603 are also made of wires and connected to the frame 602. The clips 603 are shaped and used like paper clips.

**[0033]** The cover 604 includes two ears 6041 formed on the edge thereof and a pivot 608 formed on each of the ears 6041. The pivots 608 extend towards each other. The ears 6041 are located beside the block 601 while the pivots 608 are fit in the recesses 6011. Thus, the cover 604 is pivotally connected to the frame 602.

**[0034]** The platform 4 is held by the lower holding element 20. The lower holding element 20 is used together with a threaded bolt instead of a controlling element 30.

**[0035]** Referring to Fig. 11, a plastic bag 5 is hung on the hanger 6 and supported by the platform 4. To hung the plastic bag 5, the cover 604 is lifted. The edge of the plastic bag 5 is directed beyond the frame 602 and turned over on the frame 602. The edge of the plastic bag 5 is clipped by the clips 603.

**[0036]** The apparatus according to the present invention exhibits several advantages. Firstly, the holding elements 20 can easily be moved along and retained on the track 10 without tilt due to the use of the controlling elements 30. Secondly, it can be used to hold various containers such as pens, platforms and hangers.

**[0037]** The present invention has been described via the detailed illustration of the preferred embodiment. Those skilled in the art can derive variations from the preferred embodiment without departing from the scope of the present invention. Therefore, the preferred embodiment shall not limit the scope of the present invention defined in the claims.

## Claims

1. An apparatus for quickly holding at least one container, the apparatus comprising:

a track (10) comprising a groove (11) defined

therein;

at least one holding element (20) comprising a sliding portion (21) movably disposed in the groove and a holding portion (23) used to hold the container; and

at least one controlling element (30) pivotally connected to the holding element and pivoted between a first position for allowing the sliding portion to slide in the groove and a second position for retaining the sliding portion in position in the groove by pressing the sliding portion against the wall of the groove.

2. The apparatus according to claim 1 wherein the holding element comprises a connective portion (22) formed between the sliding portion and the holding portion.

3. The apparatus according to claim 1 wherein the controlling element comprises a cam (31) pivotally connected to the holding element and a lever (33) extended from the cam so that the lobe of the cam is pressed against the wall of the groove in the second position and the cam can be pivoted by operating the lever.

4. The apparatus according to claim 1 wherein the holding element comprises two separate ears (24) to which the controlling element is pivotally connected.

5. The apparatus according to claim 1 wherein the groove looks like a "T" in an end view.

6. The apparatus according to claim 1 wherein the holding element comprises an upper plate (231), a lower plate (232) and a wall formed between the upper and lower plates so that a portion of the container can be clipped between the upper and lower plates.

7. The apparatus according to claim 6 comprising at least fastener (235) driven through at least one screw hole (234) defined in the upper plate and pressed against the container.

8. The apparatus according to claim 1 wherein the holding element is used to hold a pen (2) including a floor (201) and at least one recess (202) defined in the floor and used to receive a fastener driven through the holding element.

9. The apparatus according to claim 8 wherein the pen comprises railings (203) formed on the floor and made of a proper height to keep things, if any, in the pen.

10. The apparatus according to claim 1 wherein the holding element is used to hold a hanger (3; 6); wherein the hanger comprises:

an external frame (301) held by the holding element;  
 an internal frame (302) pivotally connected to the external frame so that a bag (5) can be hung on the internal frame and retained between the internal and external frames; and  
 a cover (303) pivotally connected to the external frame and used to cover an open end of the bag.

11. The apparatus according to claim 10 wherein the external frame comprises an annular body (3011) formed with an internal side that is tapered in a downward direction and a block (3013) formed on the annular body and made with at least one recess (3014) for receiving at least one fastener (235) driven through a screw hole (234) defined in the holding element.
12. The apparatus according to claim 10 wherein the hanger comprises:  
  
a block (601) held by the holding element;  
a frame (602) extended from the block so that a bag (5) can be hung on the frame; and  
a cover (604) pivotally connected to the block and used to cover an open end of the bag.
13. The apparatus according to claim 12 wherein the hanger comprises two clips (603) shaped like a pen clip and extended from the frame and used to clip the bag.
14. The apparatus according to claim 10 comprising another holding element (20) attached to the track and used to hold a platform (4) for supporting the bag.
15. The apparatus according to claim 1 wherein the holding portion is extended from the sliding portion.

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

1. An apparatus for quickly holding at least one container and/or hanger, the apparatus comprising:  
  
a track (10) comprising a groove (11) defined therein and having a wall;  
at least one holding element (20) comprising a sliding portion (21) movably disposed in the groove (11) and a holding portion (23) used to hold the container and/or hanger; and  
at least one controlling element (30) comprising a cam (31) pivotally connected to the sliding portion (21) of the holding element (20),  
  
wherein the cam (31) of the controlling element (30) is pivoted between a first position in which the cam

(31) and the sliding portion (21) are not pressed against the wall of the groove (11) for allowing the sliding portion (21) to slide in the groove (11), and a second position in which the cam (31) and the sliding portion (21) are pressed against the wall of the groove (11) for retaining the sliding portion (21) in position in the groove (11).

2. The apparatus according to claim 1 wherein the holding element (20) comprises a connective portion (22) formed between the sliding portion (21) and the holding portion (23).
3. The apparatus according to claim 1 wherein the controlling element (30) comprises a lever (33) extended from the cam (31) so that the cam (31) can be pivoted by operating the lever (33).
4. The apparatus according to claim 1 wherein the holding element (20) comprises two separate ears (24) to which the controlling element (30) is pivotally connected.
5. The apparatus according to claim 1 wherein the groove (11) looks like a "T" in an end view.
6. The apparatus according to claim 1 wherein the holding element (20) comprises an upper plate (231), a lower plate (232) and a wall formed between the upper and lower plates (231, 232) so that a portion of the container and/or hanger can be clipped between the upper and lower plates (231, 232).
7. The apparatus according to claim 6 comprising at least fastener (235) driven through at least one screw hole (234) defined in the upper plate (231) and pressed against the container and/or hanger.
8. The apparatus according to claim 1 wherein the holding element (20) is used to hold a container (2) including a floor (201) and at least one recess (202) defined in the floor (201) and used to receive a fastener (235) driven through the holding element (20).
9. The apparatus according to claim 8 wherein the container (2) comprises railings (203) formed on the floor (201) and made of a proper height to keep things, if any, in the container (2).
10. The apparatus according to claim 1, wherein the holding element (20) is used to hold a hanger (3; 6); wherein the hanger (3) comprises:

an external frame (301) held by the holding element (20);  
 an internal frame (302) pivotally connected to the external frame (301) so that a bag (5) can be hung on the internal frame (302) and retained

between the internal and external frames (302, 301); and  
a cover (303) pivotally connected to the external frame (301) and used to cover an open end of the bag (5).

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**11.** The apparatus according to claim 10 wherein the external frame (301) comprises an annular body (3011) formed with an internal side that is tapered in a downward direction and a block (3013) formed on the annular body (3011) and made with at least one fastener (235) driven through a screw hole (234) defined in the holding element (20).

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**12.** The apparatus according to claim 10 wherein the hanger (6) comprises:

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a block (601) held by the holding element (20);  
a frame (602) extended from the block (601) so that a bag (5) can be hung on the frame (602);  
and  
a cover (604) pivotally connected to the block (601) and used to cover an open end of the bag (5).

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**13.** The apparatus according to claim 12 wherein the hanger (6) comprises two clips (603) shaped like a paper clip and extended from the frame (602) and used to clip the bag (5).

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**14.** The apparatus according to claim 10 comprising another holding element (20) attached to the track (10) and used to hold a platform (4) for supporting the bag (5).

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**15.** The apparatus according to claim 1 wherein the holding portion (23) is extended from the sliding portion (21).

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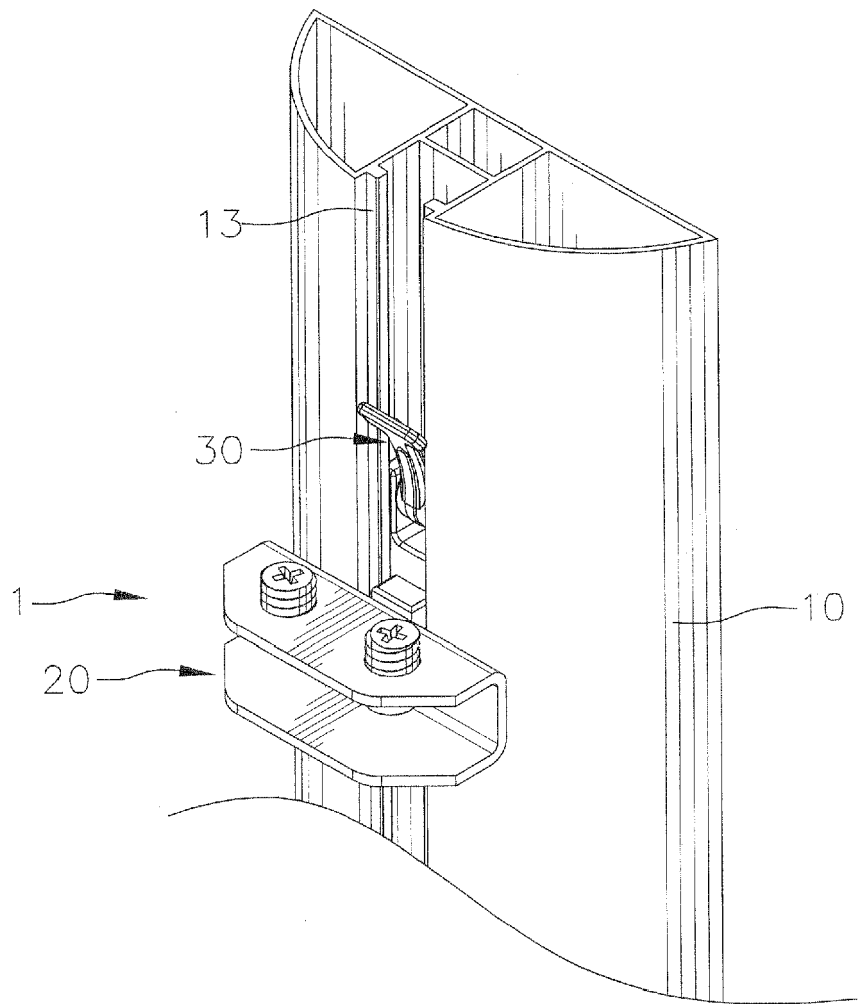
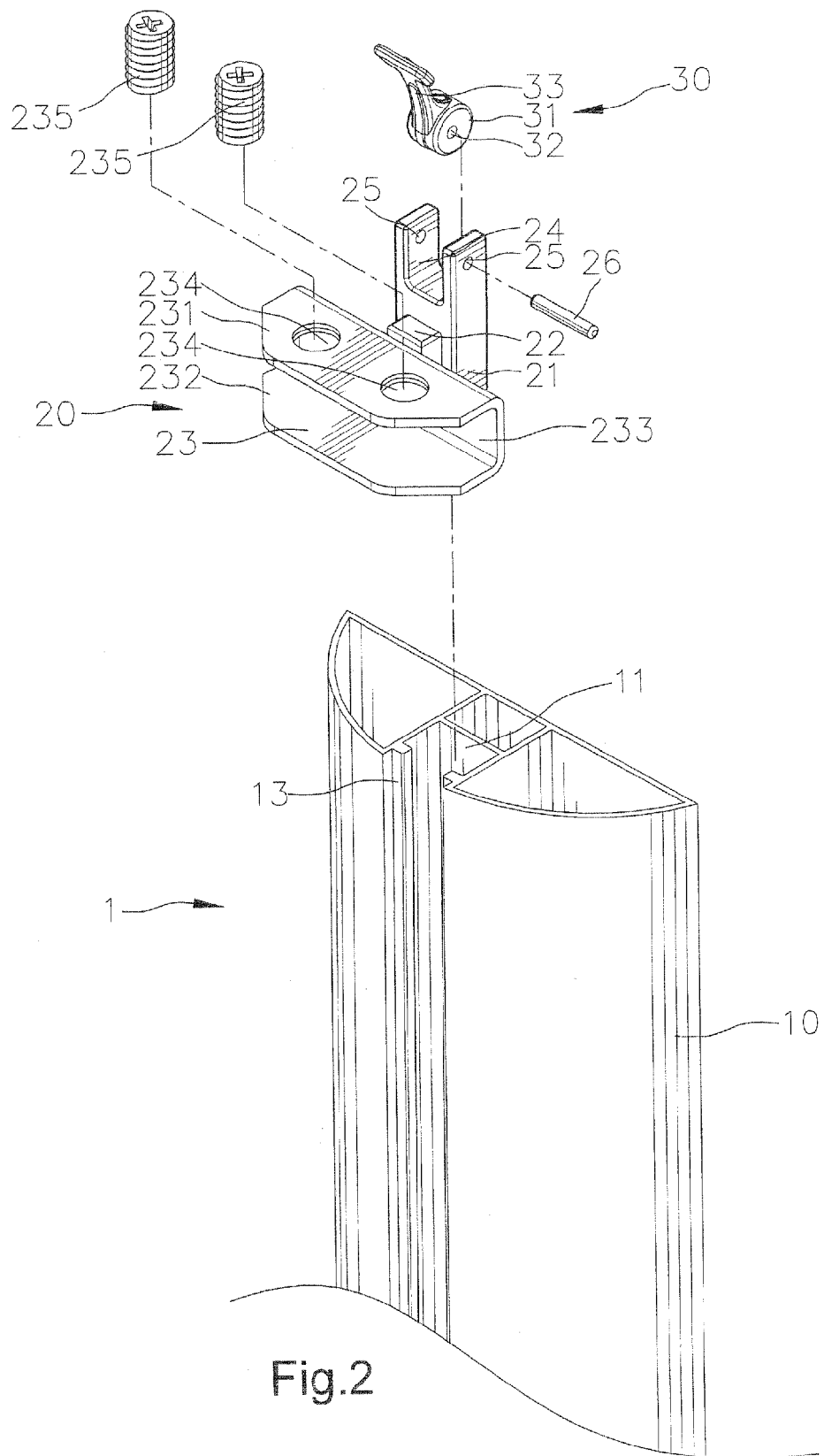
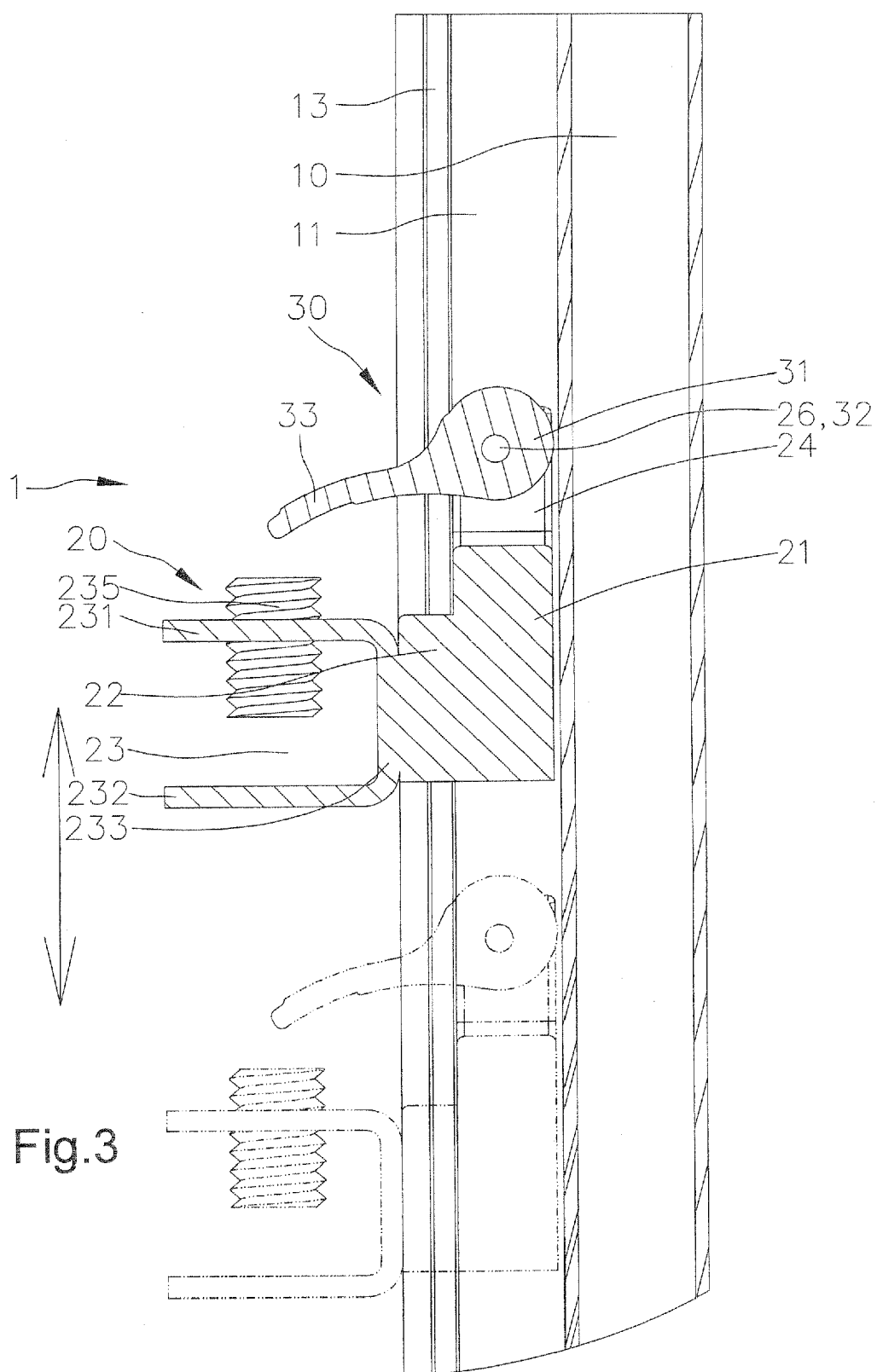
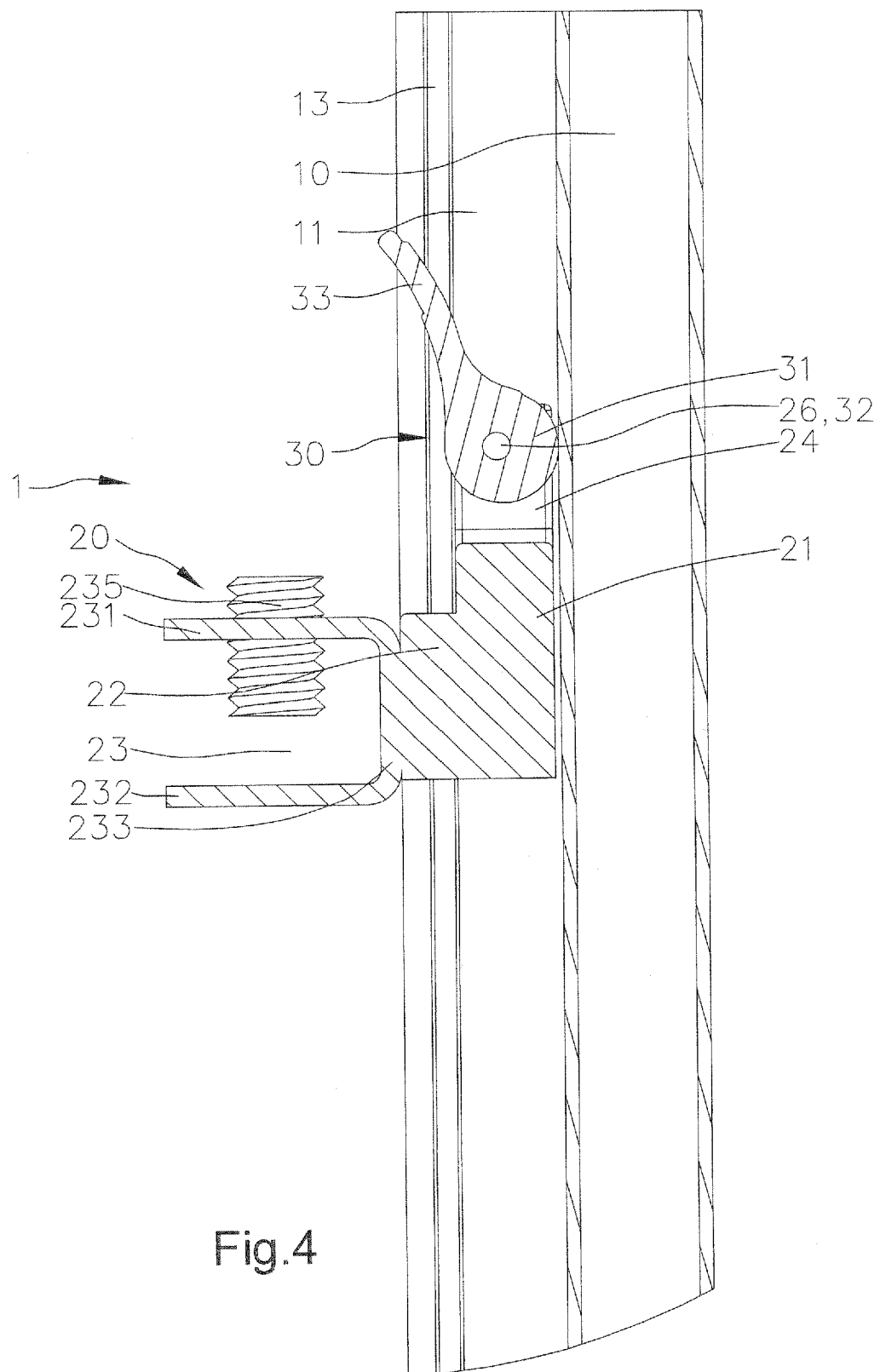


Fig.1









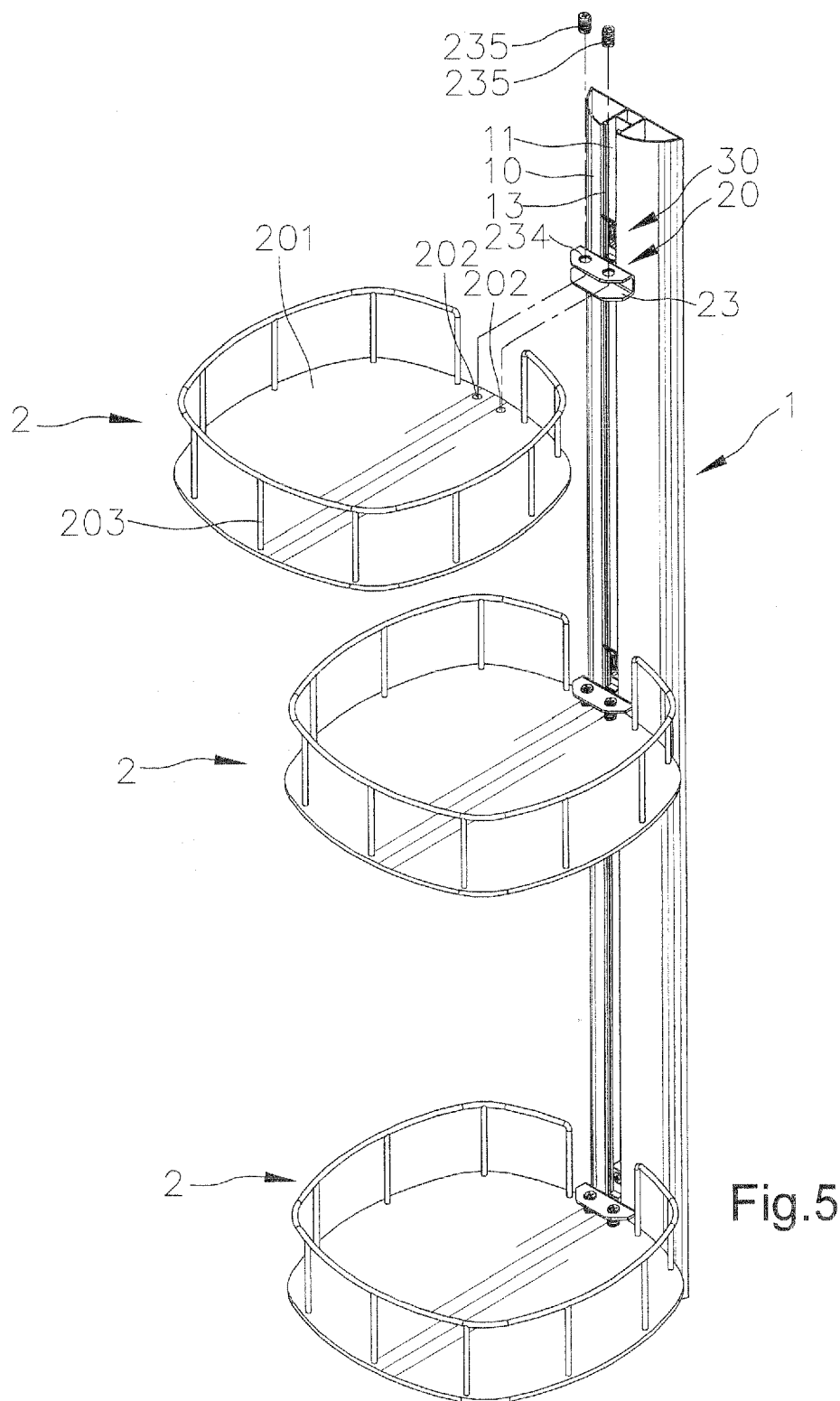
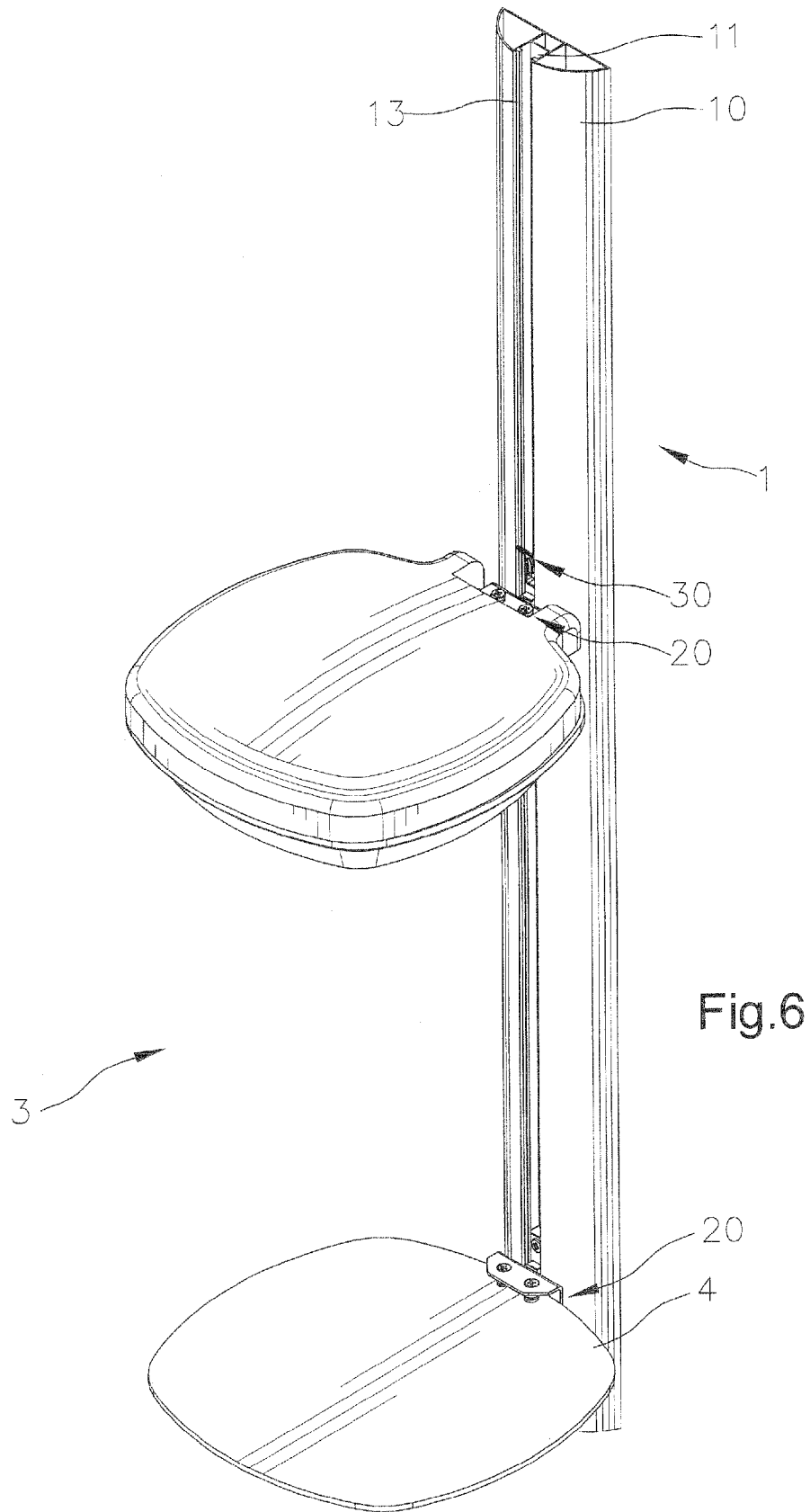


Fig.5



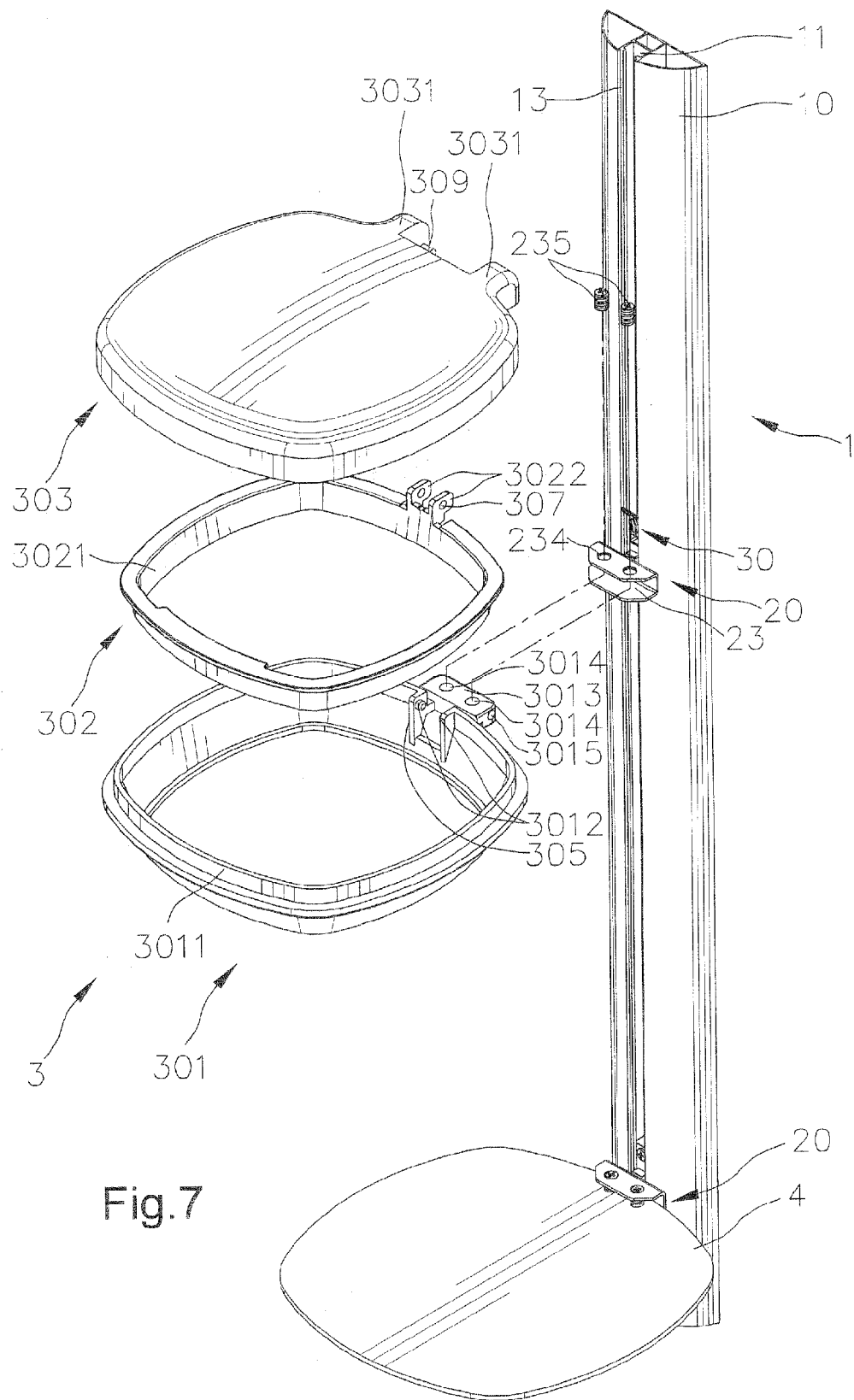


Fig.7

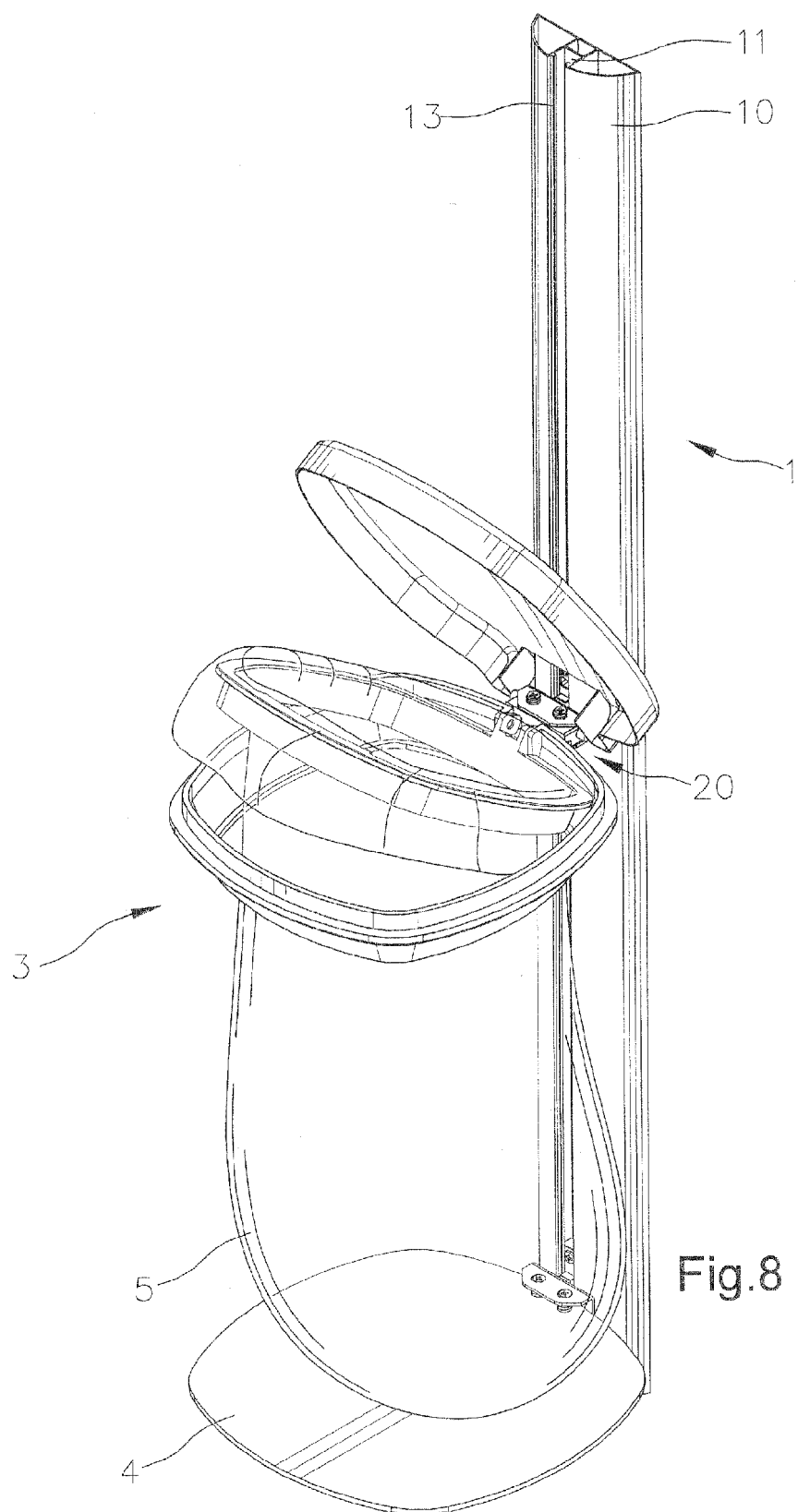


Fig. 8

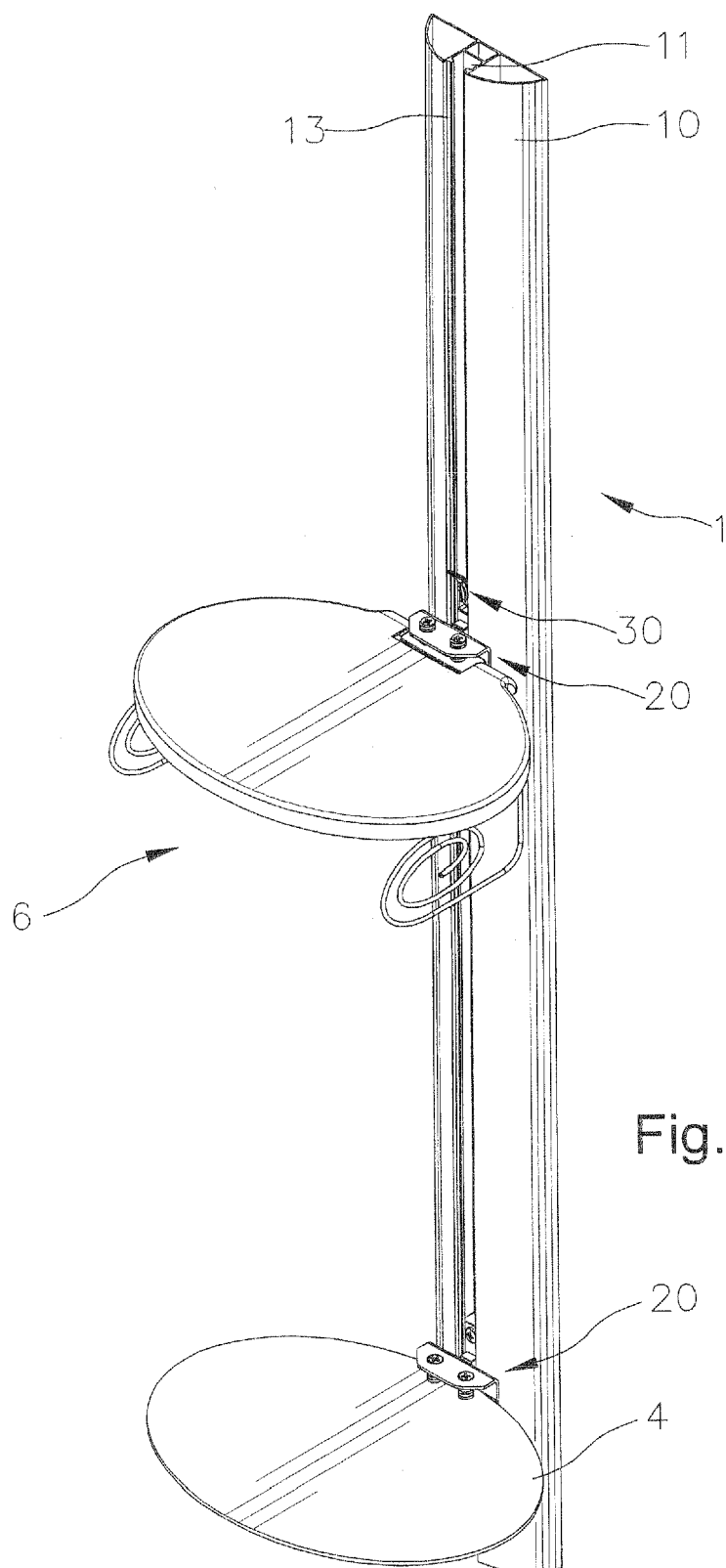


Fig.9

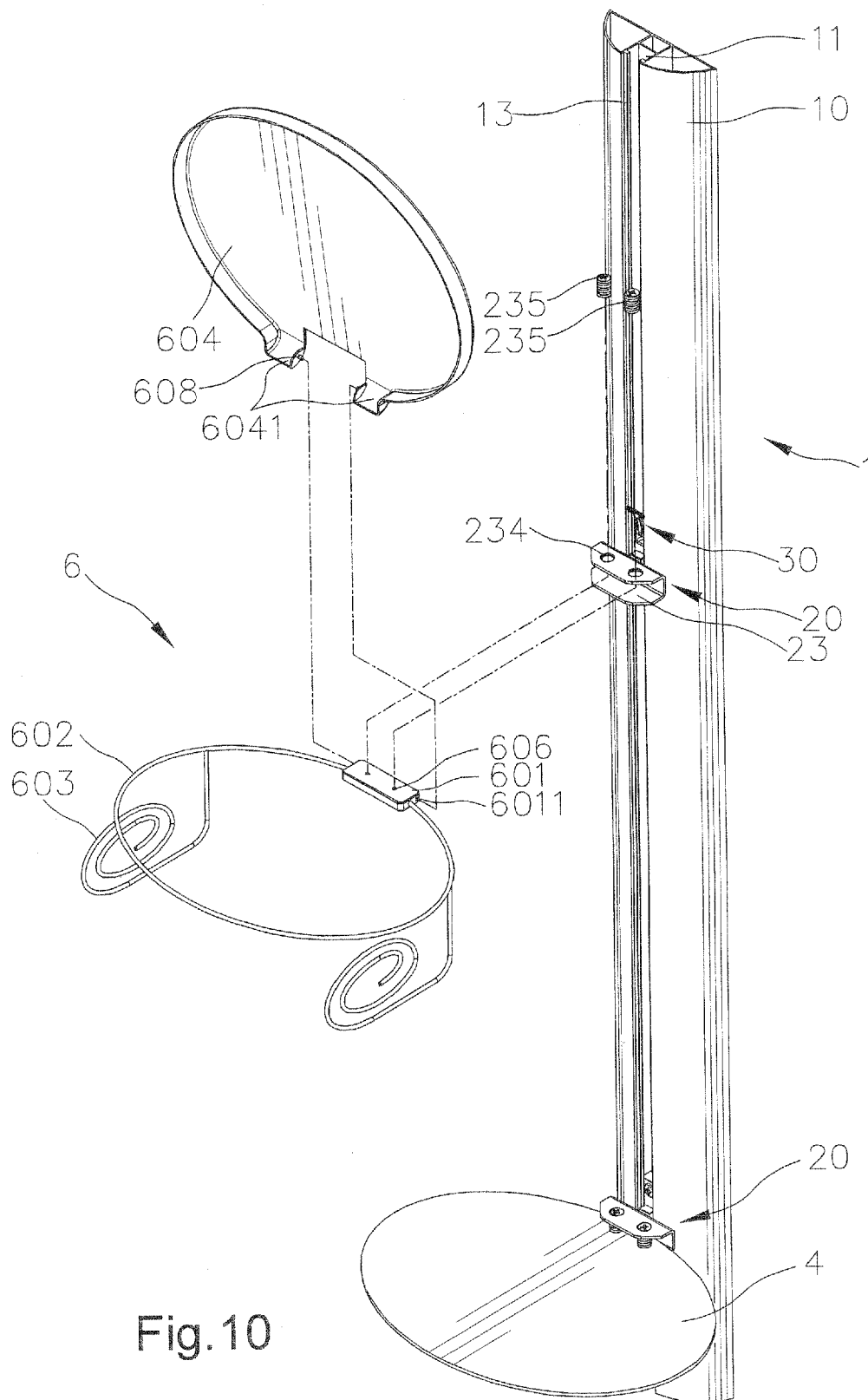


Fig.10



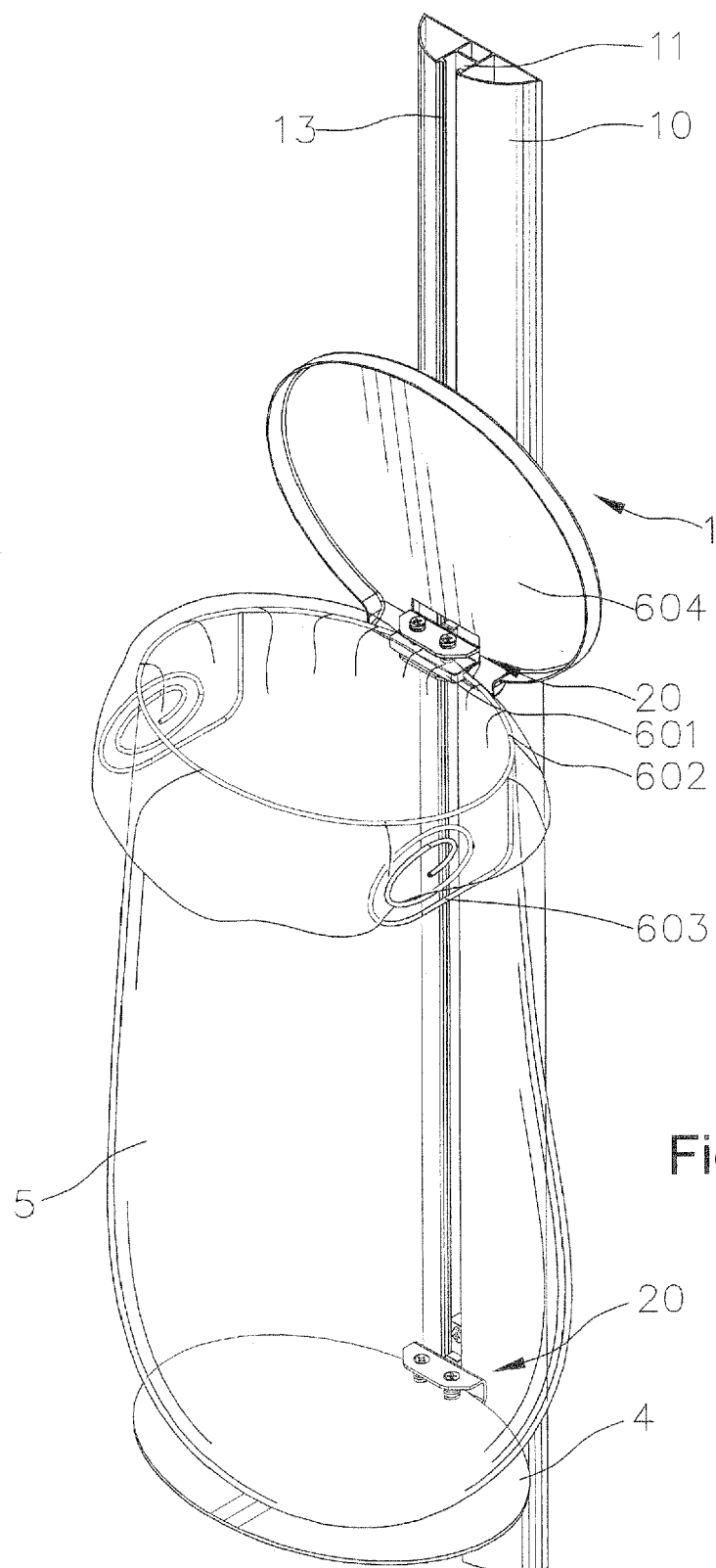


Fig.11



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 07 11 1297

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 20 November 2007	Examiner Smolders, Rob
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 07 11 1297

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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20-11-2007

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**REFERENCES CITED IN THE DESCRIPTION**

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