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(54) Garbage bin with cushioning device

(57) A garbage-containing apparatus includes a base (10), a bin (20) installed on the base (10), a cover (30) installed on the bin (20), a pedal (23) installed on the bin (20) or the base (10), a linking device (11,33) for linking the pedal (23) to the cover (30) and a buffering device (40) provided between the linking device (11,33) and the bin (20) for buffering the cover (30) through the linking device (11,33) in a lowering stroke of the cover (30).

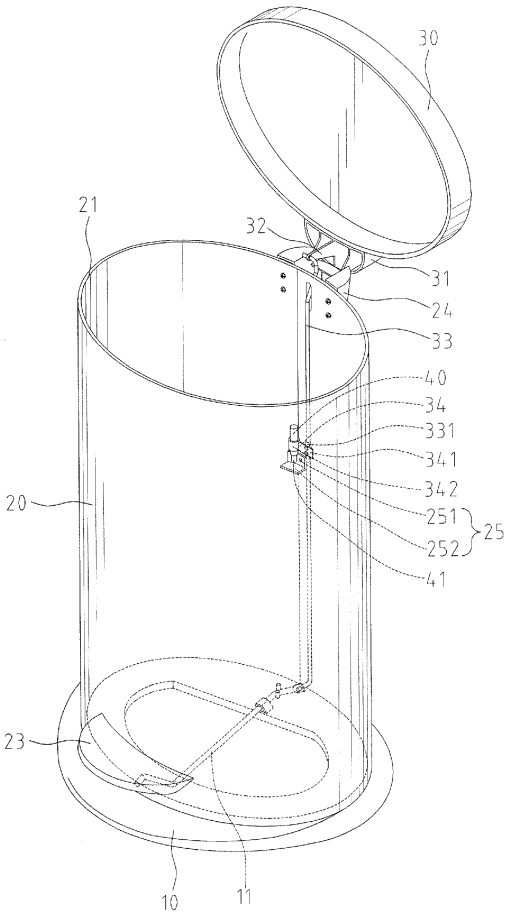

Fig.1

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Description

BACKGROUND OF INVENTION

1. FIELD OF INVENTION

[0001] The present invention relates to a garbage bin and, more particularly, to a garbage-containing apparatus that includes an internal bin for containing garbage, an external bin for decoratively concealing the internal bin, a cover for closing the internal and external bins and a buffer for buffering the cover in a lowering stroke.

2. RELATED PRIOR ART

[0002] There are various garbage-containing apparatuses. Some of the garbage-containing apparatuses are simple plastic garbage bins. Such a plastic garbage bin is generally used at an average home. Some other of the garbage-containing apparatuses each include a internal bin for containing garbage, a external bin for decoratively concealing the plastic internal bin and a cover for covering the plastic internal bin and the metal external bin. The internal bin is made of plastic in consideration of cost. The external bin is made of metal for the purposes of decoration. The cover is also made of metal for the purposes of decoration. Such a garbage-containing apparatus that includes two bins is generally used in a hotel. However, such a garbage-containing apparatus must be carefully maneuvered lest the metal cover would bump the metal external bin and makes large noises that are intolerable in a tranquil hotel.

[0003] Disclosed in Taiwanese Patent M240434 is a garbage-containing apparatus including a plastic bin 20 for containing garbage, a metal bin 1 for decoratively concealing the plastic bin 20, two covers 4 for closing the metal bin 1, a pedal 14 and a rod 2 for linking the pedal 14 to the covers 4. As the pedal 14 is trodden, the covers 4 are lifted. When the pedal 14 is released, the covers 4 are lowered. A cushion 5 is used to cushion the lowering stroke of the covers 4. The cushion 5 is a hydraulic or air cylinder provided between the rod 2 and a bracket 16 secured to the internal side of the metal bin 1. The hydraulic or air cylinder 5 is however heavy, bulky, complicated and expensive. Moreover, the hydraulic or air cylinder 5 requires careful maneuvering and intense maintenance or it will soon be damaged.

[0004] The present invention is therefore intended to obviate or at least alleviate the problems encountered in prior art.

SUMMARY OF INVENTION

[0005] According to the present invention, a garbage-containing apparatus includes a base, a bin installed on the base, a cover installed on the bin, a pedal installed on the bin or the base, a linking device for linking the pedal to the cover and a buffering device provided between the linking device and the bin for buffering the cover through the linking device in a lowering stroke of the cover.

[0006] An advantage of the garbage-containing apparatus of the present invention is its light total weight since the buffer adds only a little to the total weight.

[0007] Another advantage of the garbage-containing apparatus of the present invention is its low total cost since the buffer adds only a little to the total cost and it requires little reengineering to incorporate the buffer.

[0008] Another advantage of the garbage-containing apparatus of the present invention is its simple structure.

[0009] Another advantage of the garbage-containing apparatus of the present invention is durability.

[0010] Another advantage of the garbage-containing apparatus of the present invention a low cost in use for not requiring intense maintenance.

[0011] Other advantages and features of the present invention will become apparent from the following description referring to the drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0012] The present invention will be described through detailed illustration of two embodiments referring to the drawings.

[0013] Fig. 1 is a perspective view of a garbage-containing apparatus according to the first embodiment of the present invention.

[0014] Fig. 2 is a cross-sectional view of the garbage-containing apparatus shown in Fig. 1.

[0015] Fig. 3 is another cross-sectional view of the garbage-containing apparatus shown in Fig. 2.

[0016] Fig. 4 is a cross-sectional view of the garbage-containing apparatus in another position than shown in Fig. 3.

[0017] Fig. 5 is a cross-sectional view of the garbage-containing apparatus in another position than shown in Fig. 2.

[0018] Fig. 6 is a perspective view of a garbage-containing apparatus according to the second embodiment of the present invention.

[0019] Fig. 7 is an exploded view of the garbage-containing apparatus shown in Fig. 6.

[0020] Fig. 8 is a cross-sectional view of the garbage-containing apparatus shown in Fig. 6.

[0021] Fig. 9 is a cross-sectional view of the garbage-containing apparatus in another position than shown in Fig. 8.

[0022] Fig. 10 is a cross-sectional view of the garbage-containing apparatus in another position than shown in Fig. 9.

DETAILED DESCRIPTION OF EMBODIMENTS

[0023] Shown in Figs. 1 and 2 is a garbage-containing apparatus according to a first embodiment of the present invention.

[0024] The garbage-containing apparatus includes a base 10 for installation on the ground or a floor, a plastic bin 22 for containing garbage, a metal bin 20 for decoratively concealing the plastic bin 22, a metal cover 30 for covering the metal bin 20 and the plastic bin 22, a pedal 23 installed on the metal bin 22 or the base 10 and a linking device for linking the pedal 23 to the metal cover 30. The metal bin 20 defines an opening 21. As the pedal 23 is trodden, the metal cover 30 is lifted. As the pedal 23 is released, the metal cover 30 is lowered. The garbage-containing apparatus includes a buffering device for buffering the metal cover 30 during the lowering stroke.

[0025] The linking device includes a crank shaft 11 and a rod 33. The crank shaft 11 is positioned horizontally. The crank shaft 11 includes a first crank at an end and a second crank at an opposite end. The first crank is connected to the pedal 23.

[0026] The rod 33 is positioned vertically. The rod 33 includes a lower end, an upper end and a flat middle portion 331 between the ends. The lower end of the rod 33 is connected to the second crank.

[0027] The cover 30 includes a lug 31 pivotally connected to a lug 24 installed on the metal bin 20. The cover 30 includes an extension 32 extended from the lug 31. The extension 32 is connected to the upper end of the rod 33.

[0028] The buffering device includes a mount 34 secured to the rod 33, a buffer 40 secured to the mount 34 and a bracket 25 for contact with the buffer 40 during the lowering stroke of the cover 30.

[0029] The bracket 25 includes a vertical portion 251 secured to the internal side of the metal bin 20 by welding or fasteners such as rivets and threaded bolts.

[0030] The mount 34 includes a flat end 341 and a looped end 342. The flat end 341 of the mount 34 is connected to the flat middle portion 331 by welding or fasteners such as rivets and threaded bolts.

[0031] The buffer 40 is fit in the looped end 342 of the mount 34. The buffer 40 includes a tongue 41 extended from the interior thereof to the exterior. The tongue 41 comes into contact with the horizontal portion 252 of the bracket 25 during the lowering stroke of the cover 30. The buffer 40 is an inexpensive element that is often used in interior decoration. Preferably, the buffer 40 is so-called German buffer.

[0032] Referring to Fig. 3, the pedal 23 is trodden so that the crank shaft 11 is rotated. The rod 33 is lifted and so is the cover 30. The buffer 40 is removed from the horizontal portion 252 of the bracket 25. The tongue 41 of the buffer 40 is extended.

[0033] Referring to Figs. 4 and 5, the pedal 23 is released to allow the lowering of the cover 30 subject to its own weight. The rod 33 is lowered and so is the mount 34. Hence, the buffer 40 is lowered, and the tongue 41 is abutted against the horizontal portion 252 of the bracket 25 and retracted into the buffer 40. By definition, the tongue 41 is retracted into the buffer 40 slowly for buffering the cover 30 through the rod 33 during the lowering stroke.

[0034] Referring to Figs. 6 through 10, there is shown a garbage-containing apparatus according to a second embodiment of the present invention. The second embodiment is like the first embodiment except two things. Firstly, a buffer 50 is attached to the internal side of the metal bin 20 instead of the buffer 40 attached to the rod 33. Secondly, an abutment element 35 is attached to the rod 33 instead of the bracket 25 attached to the internal side of the metal bin 20.

[0035] The buffer 50 includes a shell, a fin 52 extended from the shell and a tongue 51 retractably extended from the interior of the shell. The buffer is like the buffer 40 except including the fin 52. The fin 52 is secured to the metal bin 20 by a plurality of fasteners such as rivets 53.

[0036] The abutment element 35 includes a first portion attached to the rod 33 and a second portion for contact with the tongue 51 of the buffer 50. The first portion of the abutment element 35 defines a slit 351 for receiving the flat middle portion 331 of the rod 33. Two major fasteners such as threaded bolts 352 are driven into the flat middle portion 331 of the rod 33 through the abutment element 35 so that the flat middle portion 331 of the rod 33 is abutted against the abutment element 35. To this end, the abutment element 35 defines two, and the flat middle portion 331 of the rod 33 defines two screw holes into which the threaded bolts 352 are driven through the apertures defined in the abutment element 35. A minor fastener such as a threaded bolt 353 is driven through a screw hole defined in the abutment element 35 so that the tip of the threaded bolt 353 is abutted against the flat middle portion 331 of the rod 33. Hence, the abutment element 35 is secured to the flat middle portion 331 of the rod 33.

[0037] Referring to Fig. 8, the cover 30 is lifted by a user. The rod 33 is lifted. The abutment element 35 is moved from the tongue 51 of the buffer 50. The tongue 51 of the buffer 50 is in an extended position.

[0038] Referring to Figs. 9 and 10, the cover 30 is released from the user and lowered because of its own weight. The rod 33 is lowered. The abutment element 35 is moved to the tongue 51 of the buffer 50. While the abutment element 35 is pushing the tongue 51 into the shell of the buffer 50, the tongue 51 is buffering the lowering of the abutment 35. The cover 30 comes into contact with the upper edge of the bin 20 so that no annoying noise is made.

[0039] The garbage-containing apparatus according to the present invention exhibits several advantages. Firstly, it is light in weight since the buffer adds only a little to its total weight. Secondly, it is inexpensive since the buffer adds only a little to the total cost and it requires little reengineering to incorporate the buffer. Thirdly, it is simple in structure. Fourthly, it is durable since the buffer is durable. Fifthly, it can be used at a low cost for not requiring intense maintenance.

[0040] The present invention has been described

through the description 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 defined in the claims.

Claims

1. A garbage-containing apparatus comprising:

a base (10);
a bin (20) installed on the base;
a cover (30) installed on the bin;
a pedal (23) installed on one of the bin and the base;
a linking device for linking the pedal to the cover; and
a buffering device provided between the linking device and the bin for buffering the cover through the linking device in a lowering stroke of the cover.

2. The garbage-containing apparatus according to claim 1 wherein the linking device comprises a crank shaft (11) connected to the pedal and a rod (33) provided between the crank shaft and the cover.

3. The garbage-containing apparatus according to claim 2 wherein the buffering device comprises a bracket (25) secured to the bin and a buffer (40) connected to the rod for buffering the bracket.

4. The garbage-containing apparatus according to claim 3 wherein the buffer comprises a tongue (41), wherein the bracket comprises a vertical portion (251) secured to the bin and a horizontal portion (252) for contact with the tongue.

5. The garbage-containing apparatus according to claim 3 wherein the buffering device comprises a mount (34) for mounting the buffer on the rod.

6. The garbage-containing apparatus according to claim 5 wherein the mount comprises a flat portion (341) secured to the rod and a looped portion (342) fit on the buffer.

7. The garbage-containing apparatus according to claim 6 wherein the rod comprises a flat portion (331) secured to the flat portion of the mount.

8. The garbage-containing apparatus according to claim 2 wherein the buffering device comprises an abutment element (35) secured to the rod and a buffer (50) connected to the bin for buffering the abutment element.

9. The garbage-containing apparatus according to claim 8 wherein the abutment element defines a slit (351) for receiving the rod.

10. The garbage-containing apparatus according to claim 9 wherein the rod comprises a flat portion (331) disposed in the slit of the abutment element.

11. The garbage-containing apparatus according to claim 10 wherein the buffering device comprises a major fastener (352) for fastening the abutment element to the flat portion of the rod.

12. The garbage-containing apparatus according to claim 11 wherein the major fastener is driven into the flat portion of the rod through the abutment element.

13. The garbage-containing apparatus according to claim 11 wherein the buffering device comprises a minor fastener (353) for fastening the abutment element to the flat portion of the rod.

14. The garbage-containing apparatus according to claim 13 wherein the minor fastener is driven onto the flat portion of the rod through the abutment element.

15. The garbage-containing apparatus according to claim 8 wherein the buffer comprises a retractable tongue (51) for contact with the abutment element and a fin (52) attached to the bin by a fastener.

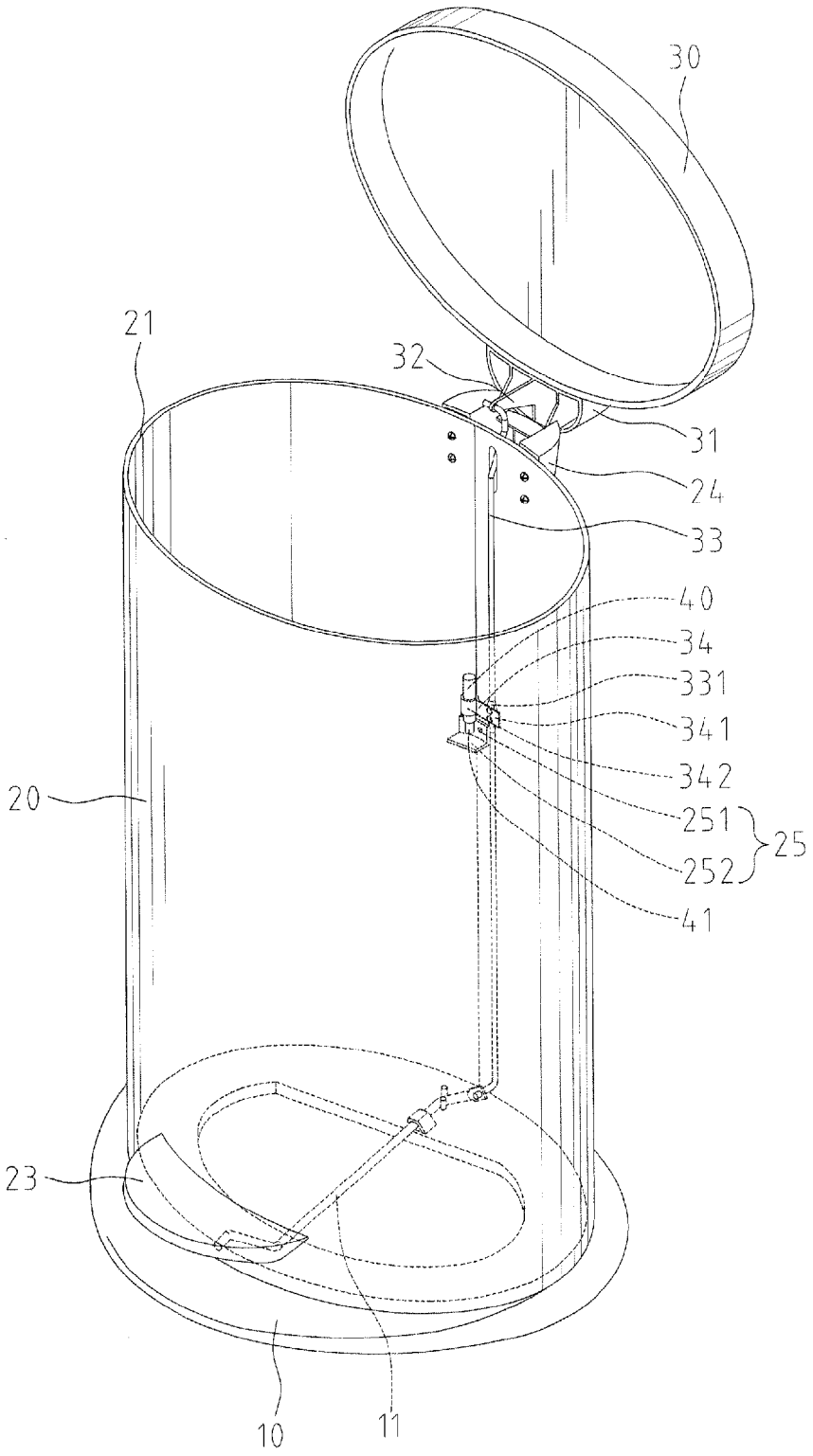

Fig.1

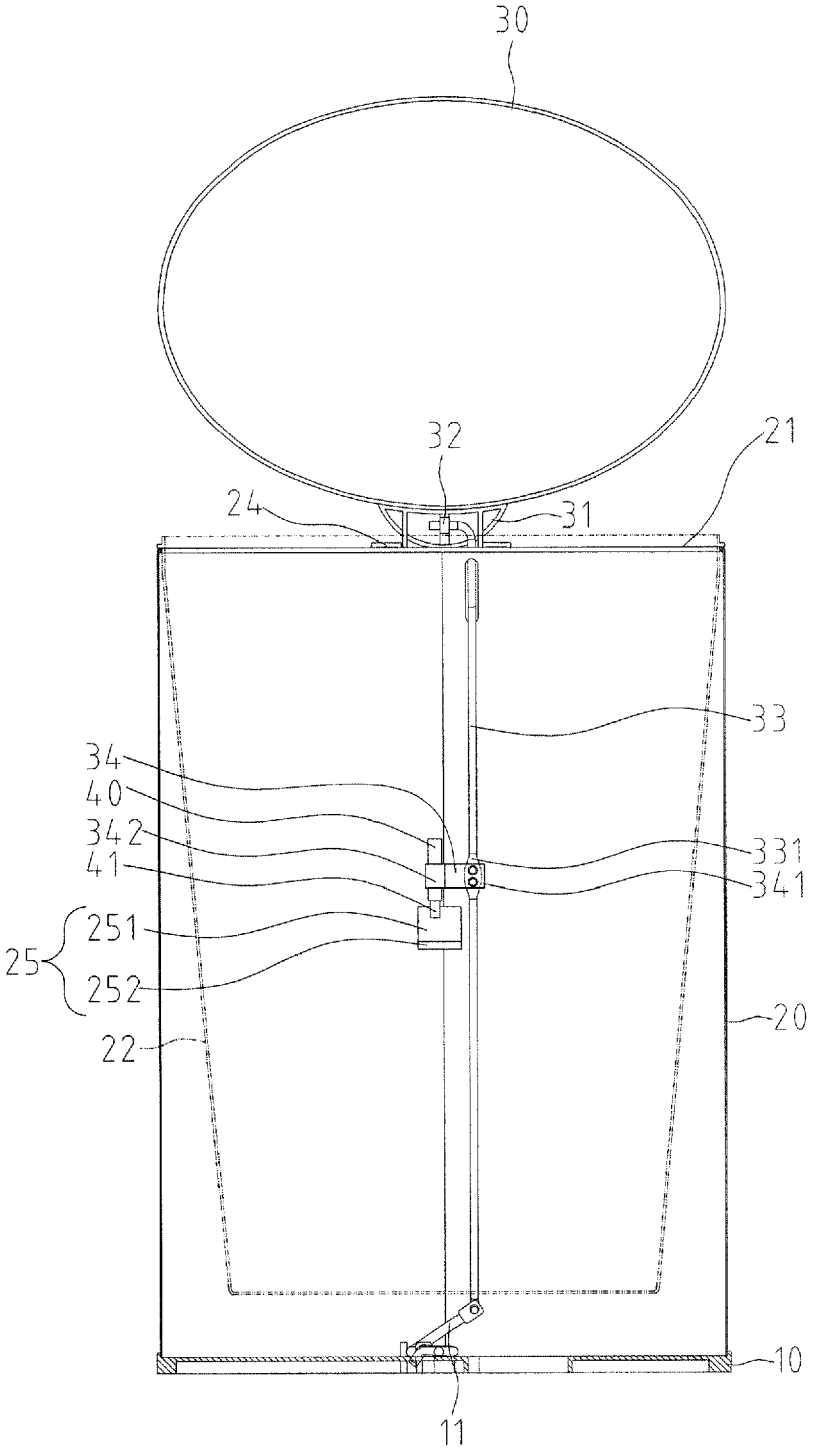

Fig.2

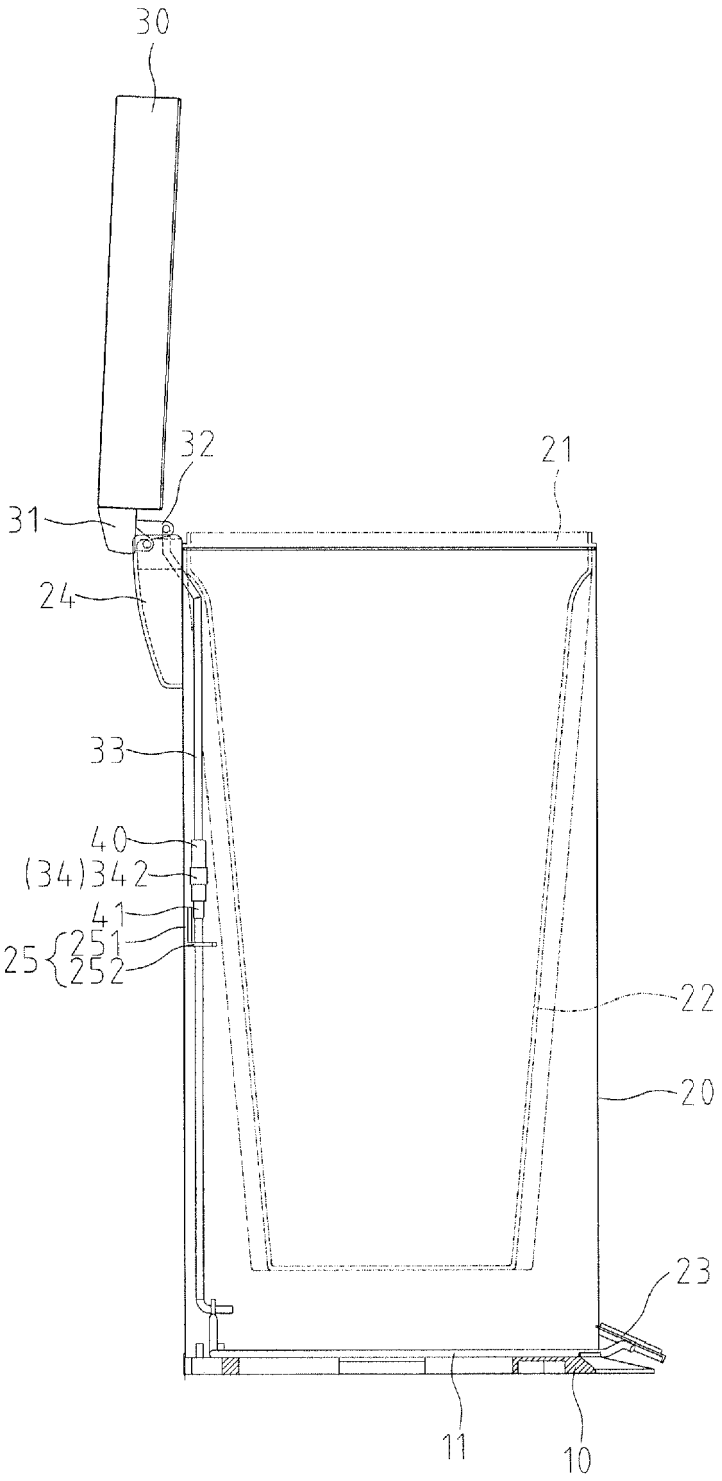

Fig.3

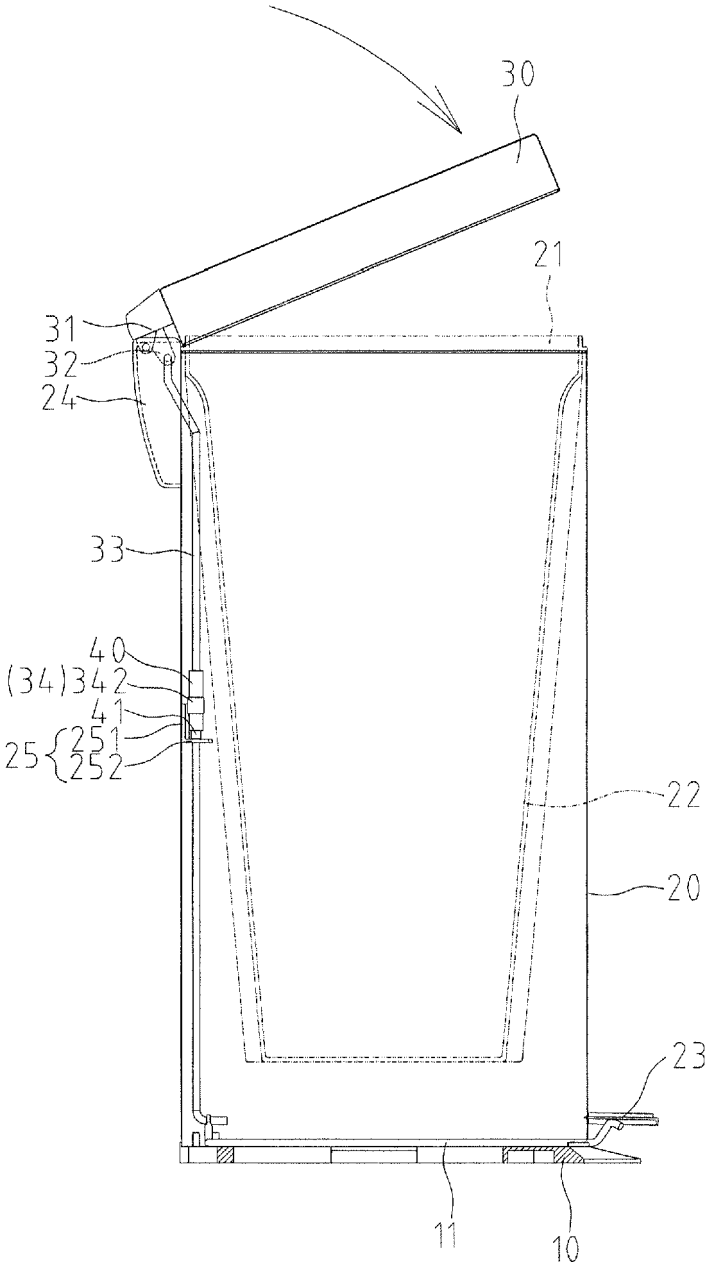

Fig.4

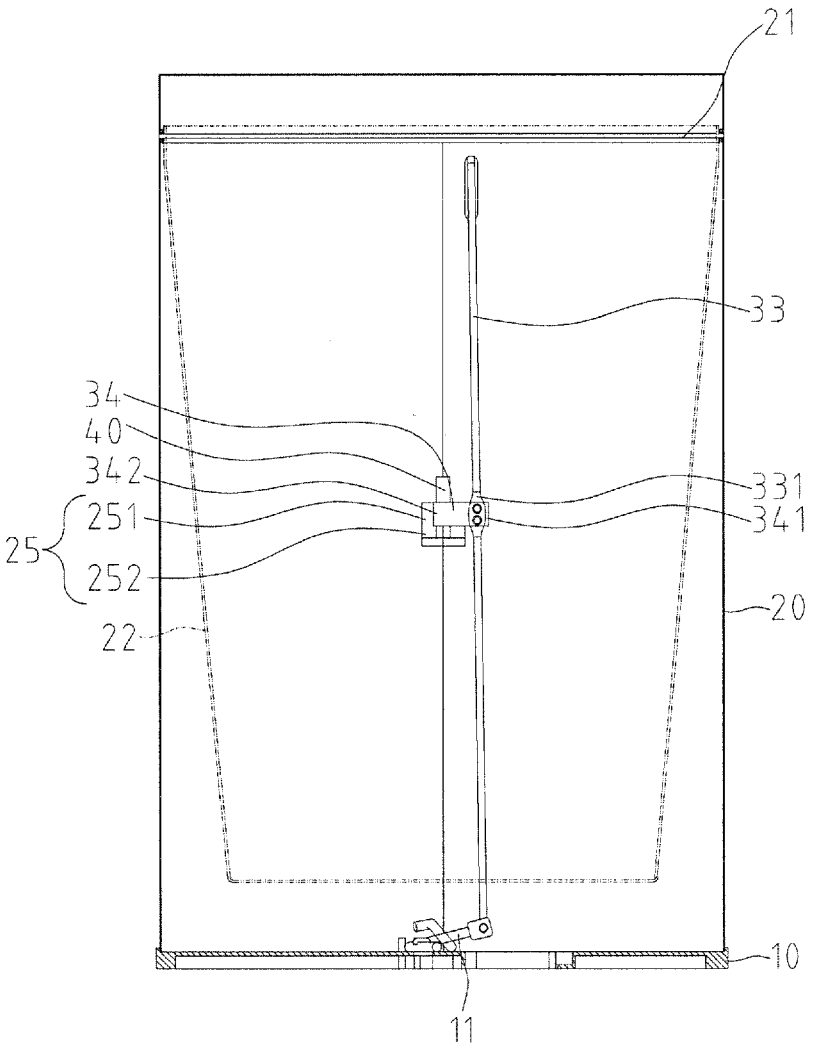

Fig.5

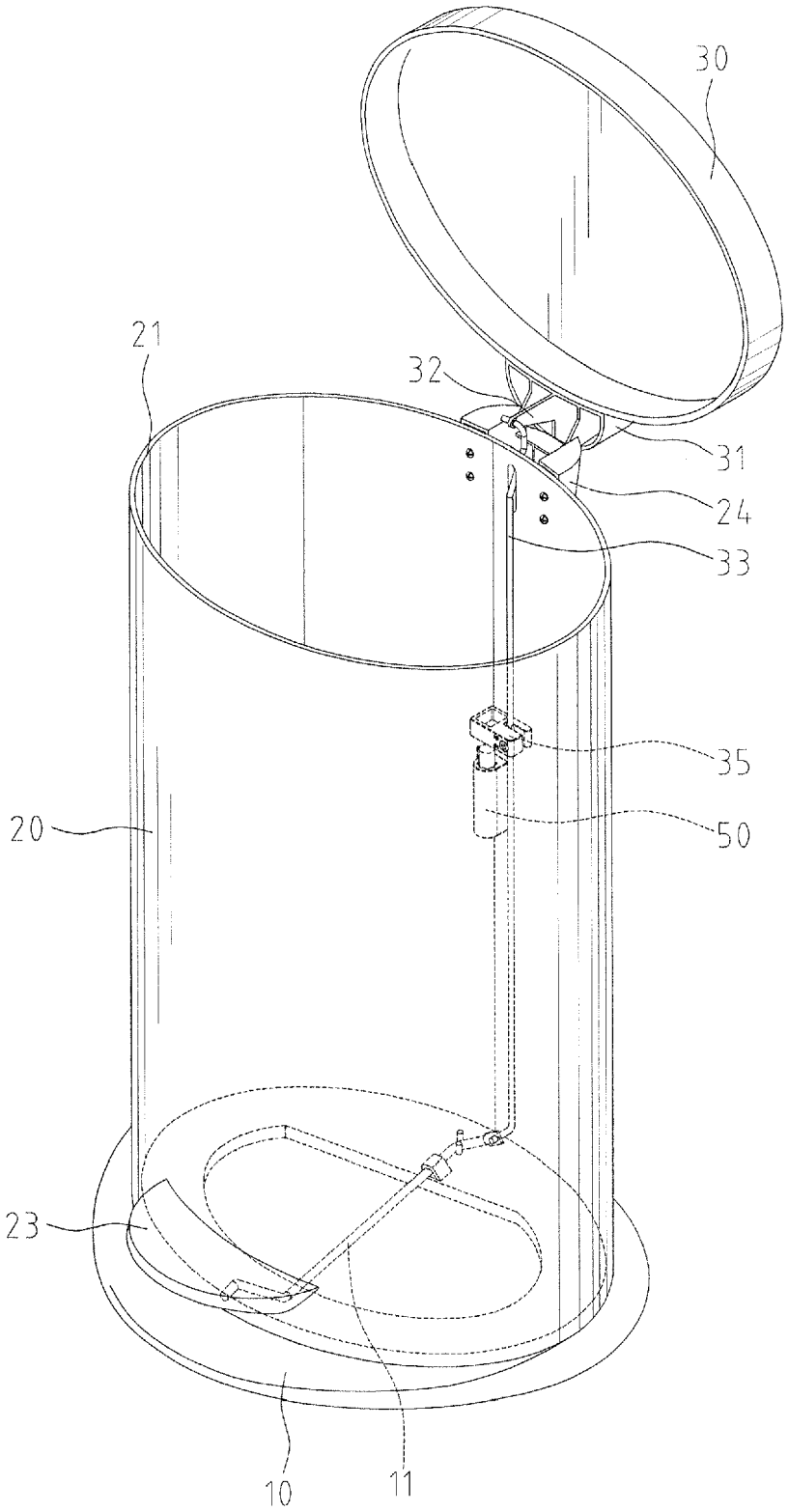

Fig.6

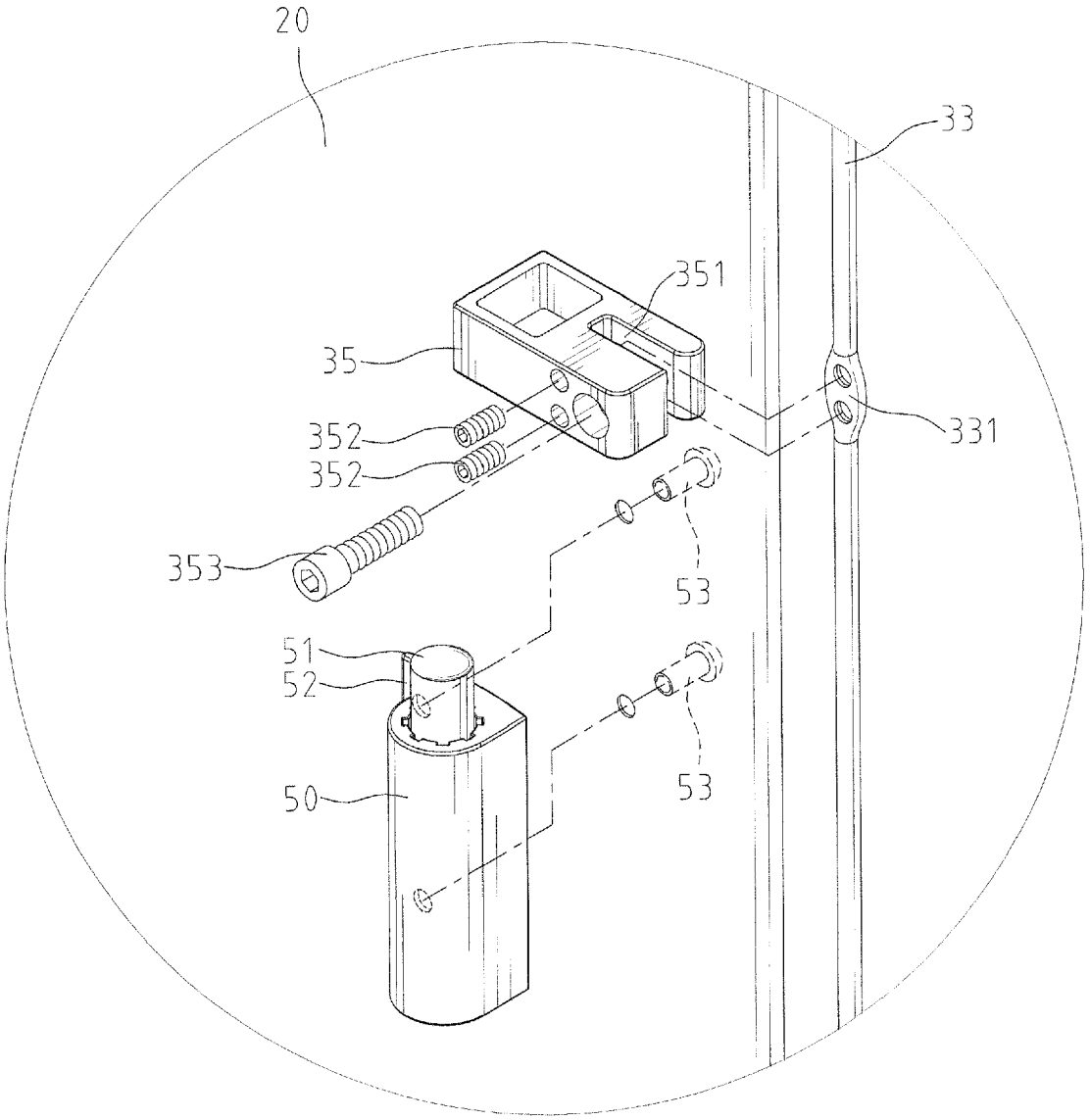

Fig.7

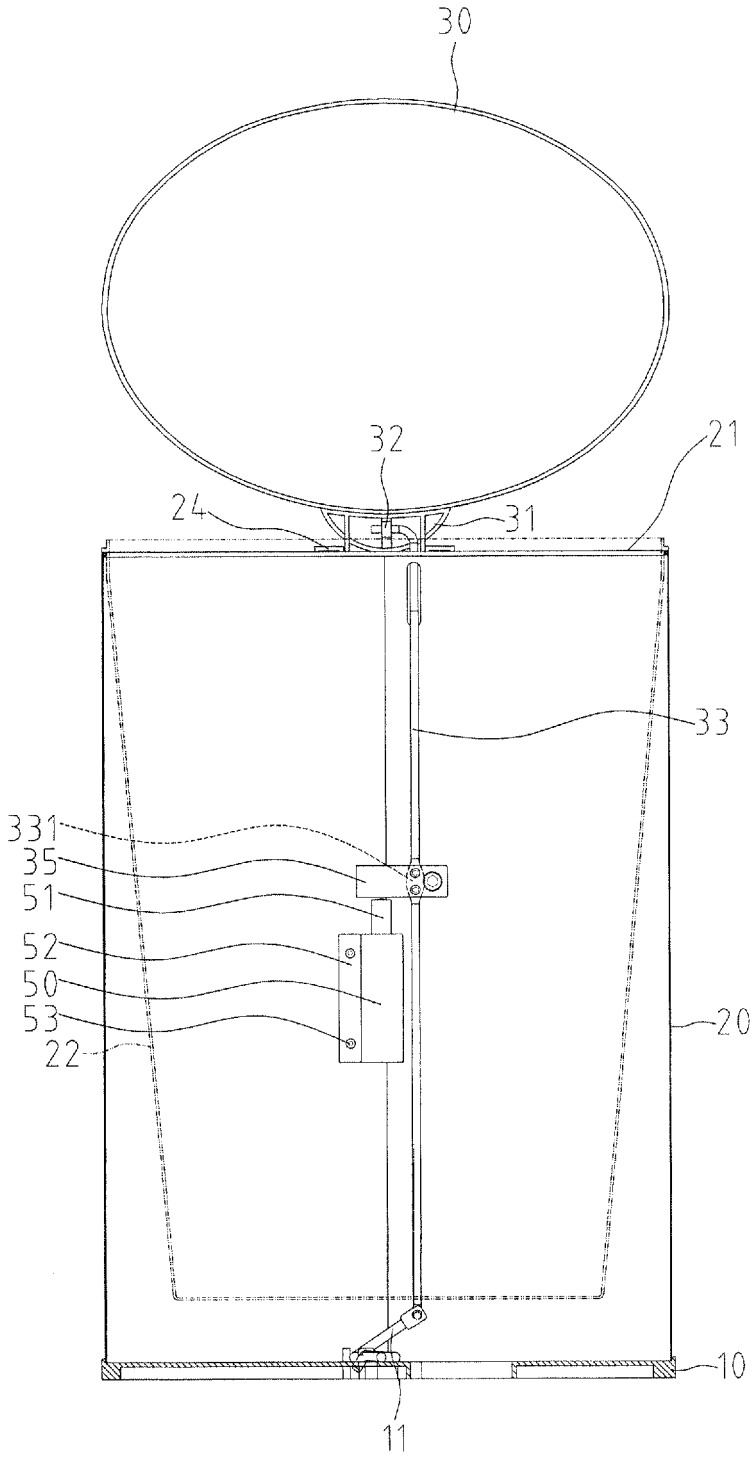

Fig.8

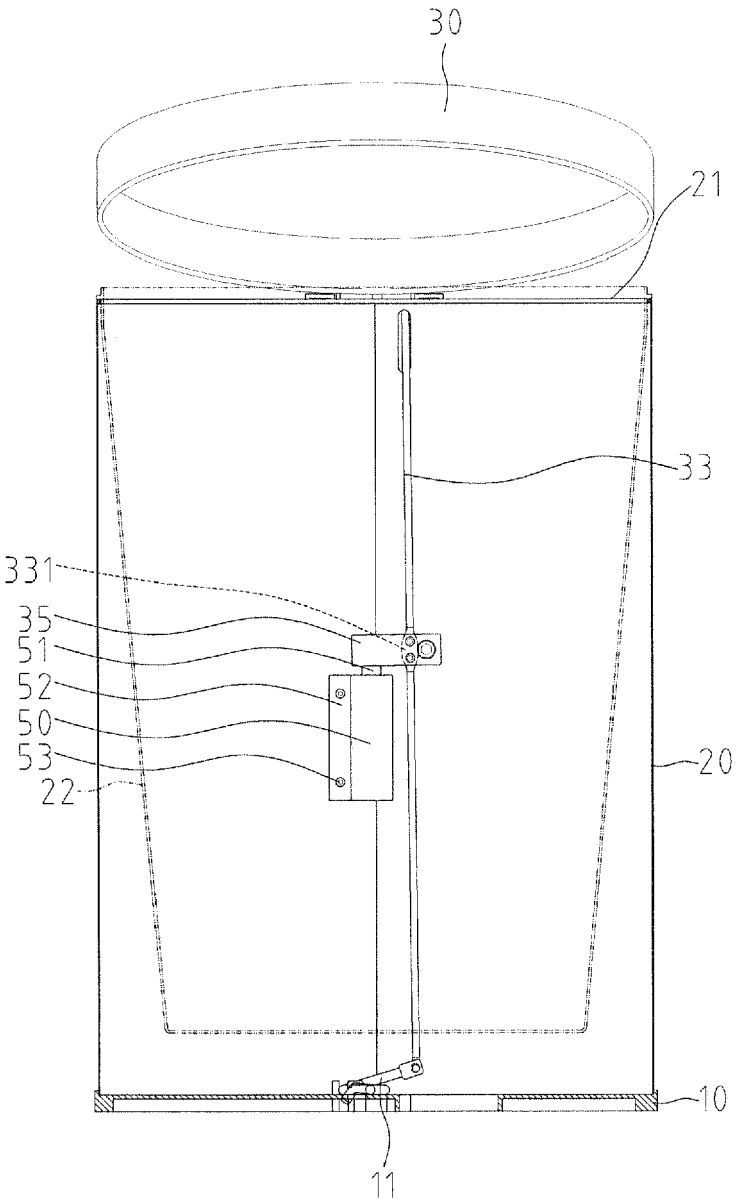

Fig.9

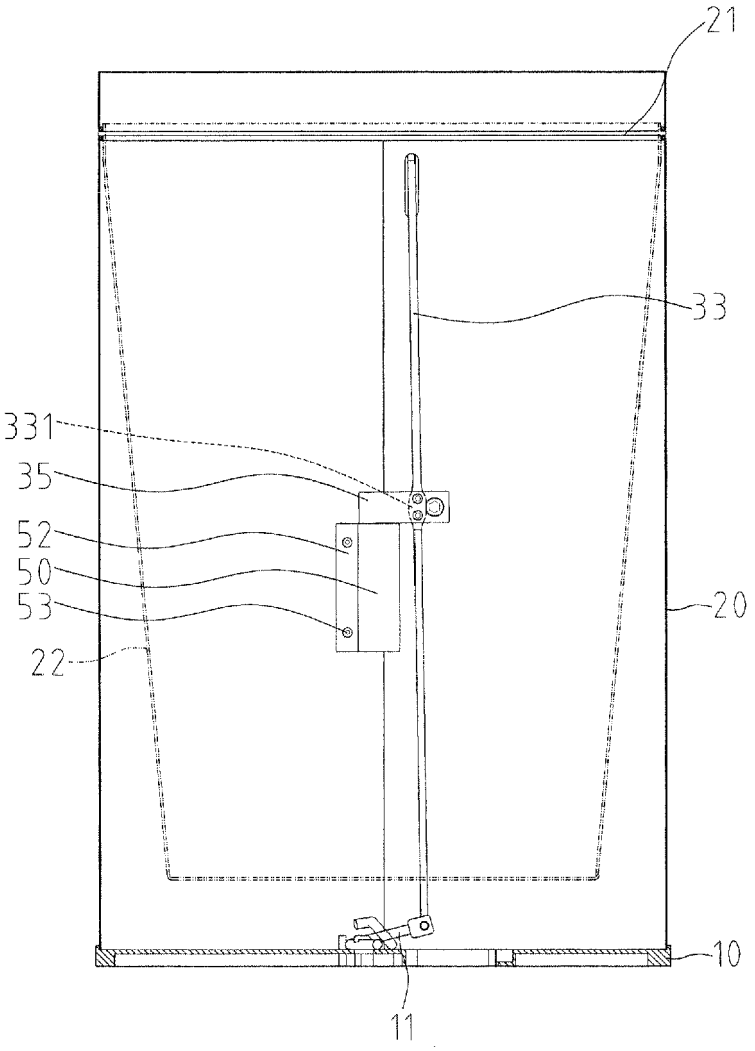

Fig.10

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 12 3541

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2004/164077 A1 (CH. KUO) 26 August 2004 (2004-08-26)	1	INV. B65F1/16
Y	* paragraph [0016] - paragraph [0024] *	3-5	
A	* figures 1-6 *	2,6,7	ADD. B65F1/08

X	DE 103 06 485 A (SH. HUANG ET AL.) 26 August 2004 (2004-08-26)	1,2,8,9	
Y	* paragraph [0014] - paragraph [0015] *	3-5	
A	* figures 1,1B *	10	

X	DE 203 11 737 U (SINCERE & WELL INDUSTRIAL CO. LTD.) 2 October 2003 (2003-10-02)	1	
A	* page 5, line 27 - page 6, line 29 * * figures 1,3 *	2-7	

X	DE 20 2004 010483 U (SEM TRADING B.V.) 18 November 2004 (2004-11-18)	1	
A	* paragraph [0016] - paragraph [0020] * * figures 2,3 *	2-7	

TECHNICAL FIELDS SEARCHED (IPC)

B65F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 June 2007	Smolders, Rob

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 06 12 3541

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18-06-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004164077 A1	26-08-2004	NONE	
DE 10306485 A	26-08-2004	NONE	
DE 20311737 U	02-10-2003	NONE	
DE 202004010483 U	18-11-2004	NL 1023822 C2	05-01-2005

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82