

Description

[0001] This invention relates to a box, more particularly to a plastic box with a slidable cover.

[0002] Conventional boxes for storing small articles, such as nails, screws, and the like, normally include a box body with two opposite sides that are folded to form a pair of rail grooves, and a cover that has two opposite first side edges which are slidably and respectively received in the rail grooves so as to permit sliding movement of the cover between open and closed positions. The aforesaid box is disadvantageous in that engagement between the cover and the box body is relatively loose and that undesired removal of the cover can happen quite often.

[0003] Another type of conventional boxes include a box body and a cover that is pivotally connected to a side edge of a distal end of the box body. An interlocking member is formed on the distal end of the box body and the cover so as to lock the cover upon closing the same. The box can eliminate the aforesaid loose problem as encountered in the aforesaid box. However, both the aforesaid boxes are difficult to open using only one hand. Moreover, opening of the conventional boxes to a desired extent is difficult to control.

[0004] Therefore, it is an object of the present invention to provide a box that is capable of overcoming the aforementioned drawbacks of the prior art.

[0005] According to this invention, there is provided a box that comprises: an open box body including a base wall and a peripheral wall that projects from the base wall in a transverse direction relative to the base wall and that has a distal end which is distal from the base wall and which confines a box opening, the peripheral wall including opposite first side wall portions that extend in a longitudinal direction, and a second side wall portion transverse to and interconnecting the first side wall portions; a cover mounted slidably on the distal end of the peripheral wall so as to be slidable in the longitudinal direction between a closed position, in which, the cover covers the box opening, and an open position, in which, the cover is moved away from the second side wall portion to expose the box opening, the cover having two opposite first side edges that extend in the longitudinal direction, and a second side edge that interconnects the first side edges, the cover being formed with a pair of slits disposed between the first side edges and extending from the second side edge in the longitudinal direction so as to form an elastic arm therebetween, the elastic arm having a base end and a free end that is opposite to the base end and that is elastically turnable relative to the base end so as to permit movement of the free end toward and away from the second side wall portion of the peripheral wall of the box body, the cover further having a hook that projects from the free end of the elastic arm in a direction toward the base wall of the box body so as to engage elastically the second side wall portion in a snap engagement manner when the cover

is positioned at the closed position; and a rail unit formed on the first side edges of the cover and the first side wall portions of the peripheral wall of the box body so as to permit sliding movement of the cover along the distal end of the peripheral wall of the box body in the longitudinal direction.

[0006] In drawings which illustrate an embodiment of the invention,

Fig. 1 is a perspective view of a box embodying this invention;

Fig. 2 is an exploded perspective view of the box of Fig. 1;

Fig. 3 is a sectional view of the box of Fig. 1, with a cover thereof illustrated at a closed position;

Fig. 4 is a sectional view of the box of Fig. 1, with the cover illustrated at an open position; and
Figs. 5 and 6 are schematic views to illustrate how the cover can be moved using only one hand.

[0007] Figs. 1 to 3 illustrate a box embodying this invention. The box 3, which is preferably made from a plastic material, includes: an open box body 31 having a base wall 30 and a peripheral wall 35 that projects from the base wall 30 in a transverse direction relative to the base wall 30 and that has a distal end 350 which is distal from the base wall 30 and which confines a box opening 351, the peripheral wall 35 including two opposite first side wall portions 311 that extend in a longitudinal direction, and a second side wall portion 314 transverse to and interconnecting the first side wall portions 311; a cover 32 mounted slidably on the distal end 350 of the peripheral wall 35 so as to be slidable in the longitudinal direction between a closed position (see Figs. 3 and 6), in which, the cover 32 covers the box opening 351, and an open position (see Figs. 4 and 5), in which, the cover 32 is moved away from the second side wall portion 314 to expose the box opening 351, the cover 32 having two opposite first side edges 327 that extend in the longitudinal direction, and a second side edge 328 that interconnects the first side edges 327, the cover 32 being formed with a pair of slits 322 disposed between the first side edges 327 and extending from the second side edge 328 in the longitudinal direction so as to form an elastic arm 323 therebetween, the elastic arm 323 having a base end 320 and a free end 329 that is opposite to the base end 320 and that is elastically turnable relative to the base end 320 so as to permit movement of the free end 329 toward and away from the second side wall portion 314 of the peripheral wall 35 of the box body 31, the cover 3 further having a hook 325 that projects from the free end 329 of the elastic arm 323 in a direction toward the base wall 30 of the box body 31 so as to engage elastically the second side wall portion 314 in a snap engagement manner when the cover 32 is positioned at the closed position; and a rail unit formed on the first side edges 327 of the cover 32 and the first side wall portions 311 of the peripheral wall 35 of the box

body 31 so as to permit sliding movement of the cover 32 along the distal end 350 of the peripheral wall 35 of the box body 31 in the longitudinal direction.

[0008] The rail unit includes a pair of rails 33 that are respectively formed on the first side edges 327 of the cover 32. Each rail 33 defines a rail groove 330 that extends in the longitudinal direction. The rail unit further includes a pair of rail guides 34 that are respectively formed on the first side wall portions 311 of the peripheral wall 35 of the box body 31 and that are respectively and slidably received in the rail grooves 34.

[0009] The cover 32 further has a third side edge 321 that is opposite to the second side edge 328 in the longitudinal direction, and a pair of stoppers 324 projecting toward the base wall 30 of the box body 31 and disposed adjacent to the third side edge 321 and respectively adjacent to the first side edges 327 of the cover 32 in such a manner that the stoppers 324 abut respectively against the rail guides 34 so as to arrest further closing movement of the cover 32 when the cover 32 is moved to the closed position.

[0010] Referring to Figs. 5 and 6, the cover 32 can be moved between the closed and open positions using only one hand. As illustrated in Fig. 5, disengagement of the hook 325 from the second side wall portion 314 of the peripheral wall 35 of the box body 31 can be easily performed by using a finger to pull the elastic arm 323 away from the second side wall portion 314 of the peripheral wall 35.

[0011] The hook 325 has a curved guide face 326 (see Fig. 4) that faces toward an edge of the second side wall portion 314 of the peripheral wall 35 of the box body 31 so as to permit snap engagement between the hook 325 and the second side wall portion 314 when the cover 32 is moved from the open position (see Fig. 5) to the closed position (see Fig. 6).

[0012] A hanging tab 36 (see Fig. 2) projects from the second side wall portion 314 of the peripheral wall 35 of the box body 31, and is formed with a hole 312 so as to permit hanging of the box 3 on a wall.

[0013] With the inclusion of the elastic arm 323, the box 3 can be opened using only one hand, thereby eliminating the drawbacks as encountered in the aforementioned prior art.

Claims

1. A box characterized by:

an open box body (31) including a base wall (30) and a peripheral wall (35) that projects from said base wall (30) in a transverse direction relative to said base wall (30) and that has a distal end (350) which is distal from said base wall (30) and which confines a box opening (351), said peripheral wall (35) including opposite first side wall portions (311) that extend in

a longitudinal direction, and a second side wall portion (314) transverse to and interconnecting said first side wall portions (311);

a cover (32) mounted slidably on said distal end (350) of said peripheral wall (35) so as to be slidable in said longitudinal direction between a closed position, in which, said cover (32) covers said box opening (351), and an open position, in which, said cover (32) is moved away from said second side wall portion (314) to expose said box opening (351), said cover (32) having two opposite first side edges (327) that extend in said longitudinal direction, and a second side edge (328) that interconnects said first side edges (327), said cover (32) being formed with a pair of slits (322) disposed between said first side edges (327) and extending from said second side edge (328) in said longitudinal direction so as to form an elastic arm (323) therebetween, said elastic arm (323) having a base end (320) and a free end (329) that is opposite to said base end (320) and that is elastically turnable relative to said base end (320) so as to permit movement of said free end (329) toward and away from said second side wall portion (314) of said peripheral wall (35) of said box body (31), said cover (32) further having a hook (325) that projects from said free end (329) of said elastic arm (323) in a direction toward said base wall (30) of said box body (31) so as to engage elastically said second side wall portion (314) in a snap engagement manner when said cover (32) is positioned at said closed position; and

a rail unit formed on said first side edges (327) of said cover (32) and said first side wall portions (311) of said peripheral wall (35) of said box body (31) so as to permit sliding movement of said cover (32) along said distal end (350) of said peripheral wall (35) of said box body (31) in said longitudinal direction.

2. The box of Claim 1, **characterized in that** said rail unit includes a pair of rails (33) that are respectively formed on said first side edges (327) of said cover (32), each of said rails (33) defining a rail groove (330) that extends in said longitudinal direction, said rail unit further including a pair of rail guides (34) that are respectively formed on said first side wall portions (311) of said peripheral wall (35) of said box body (31) and that are respectively and slidably received in said rail grooves (34).

3. The box of Claim 2, further **characterized in that** said cover (32) further has a third side edge (321) that is opposite to said second side edge (328) in said longitudinal direction, and a pair of stoppers (324) projecting toward said base wall (30) of said

box body (31) and disposed adjacent to said third side edge (321) and respectively adjacent to said first side edges (327) of said cover (32) in such a manner that said stoppers (324) abut respectively against said rail guides (34) so as to arrest further closing movement of said cover (32) when said cover (32) is moved to said closed position.

10

15

20

25

30

35

40

45

50

55

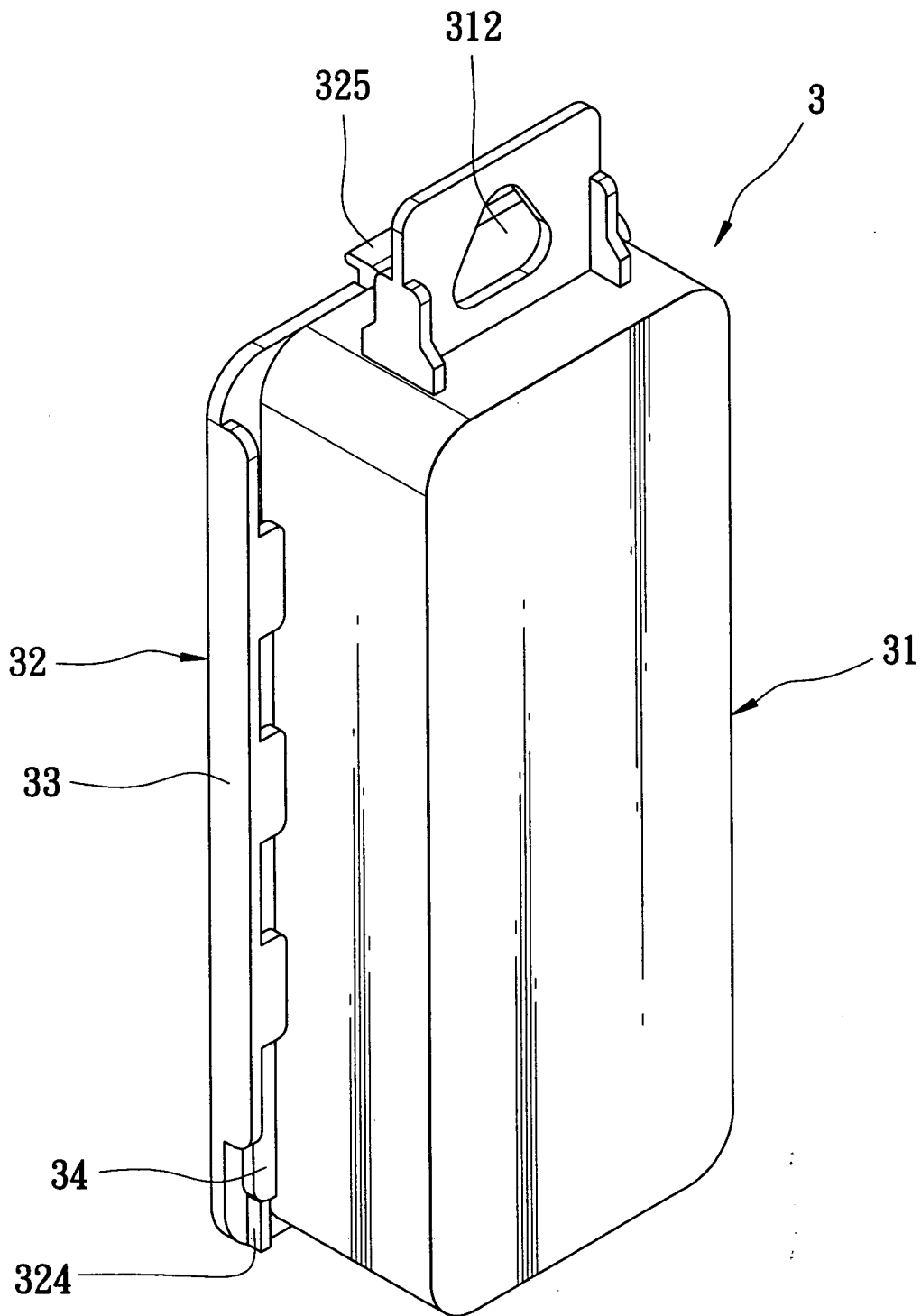
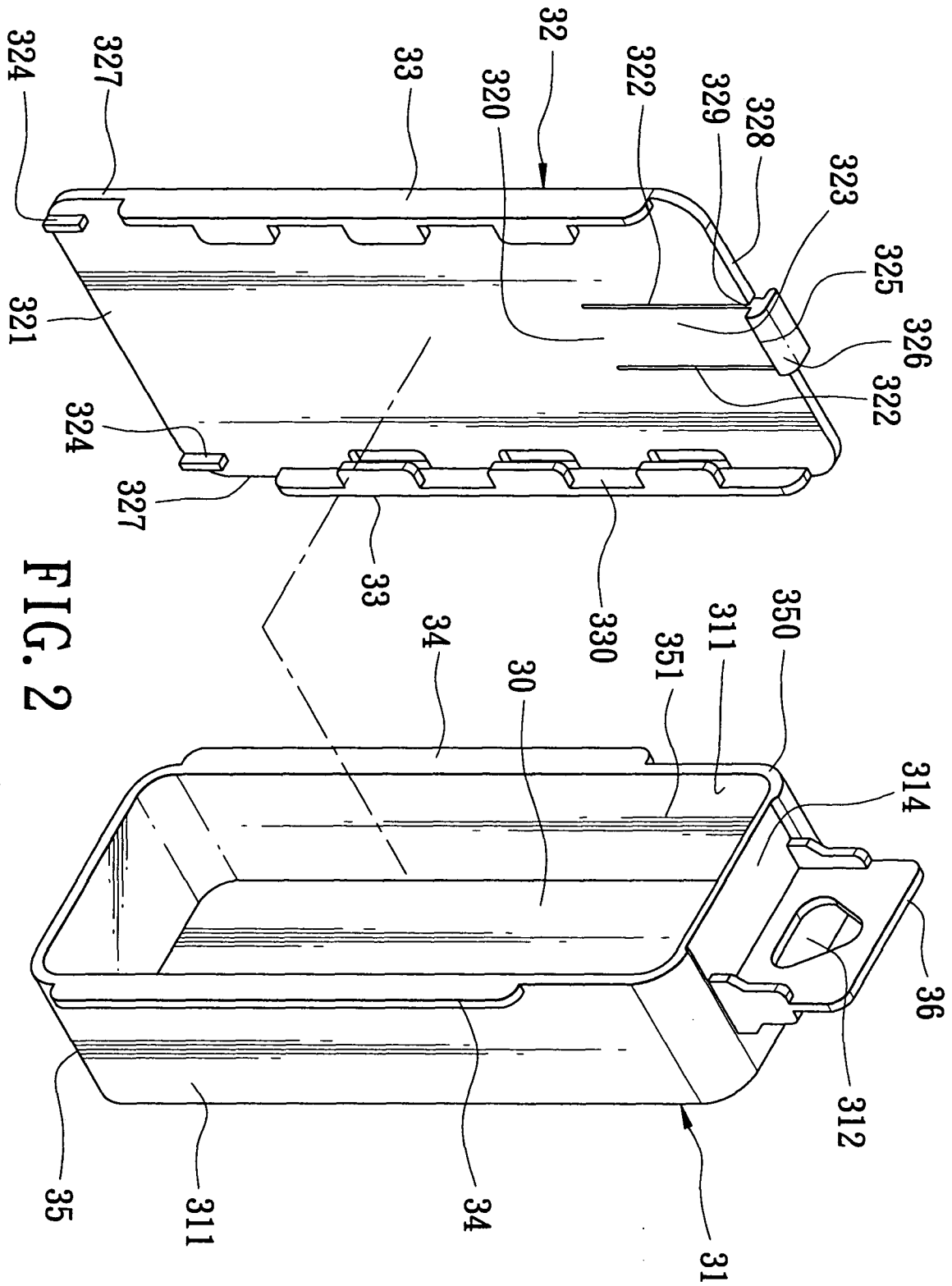


FIG. 1



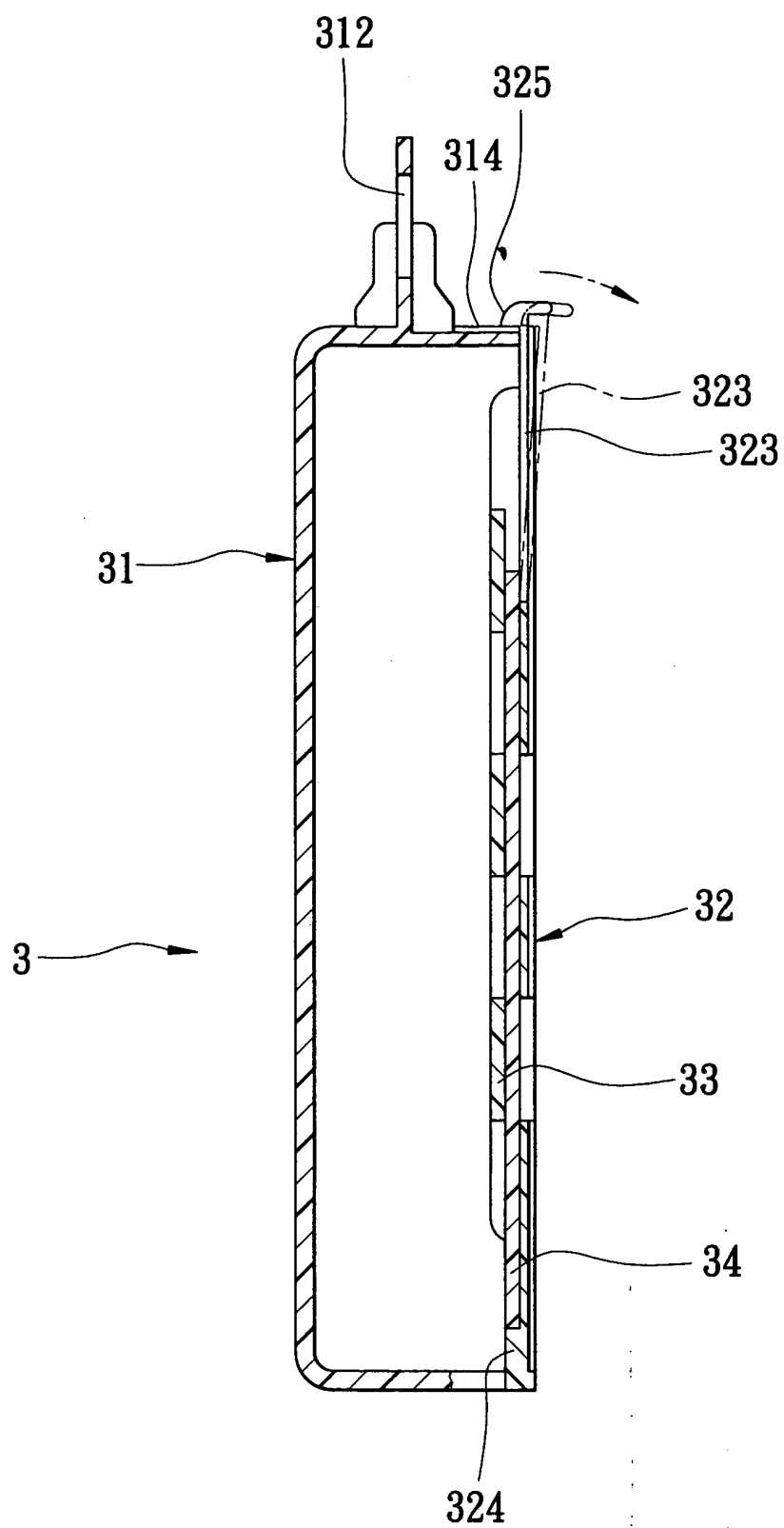


FIG. 3

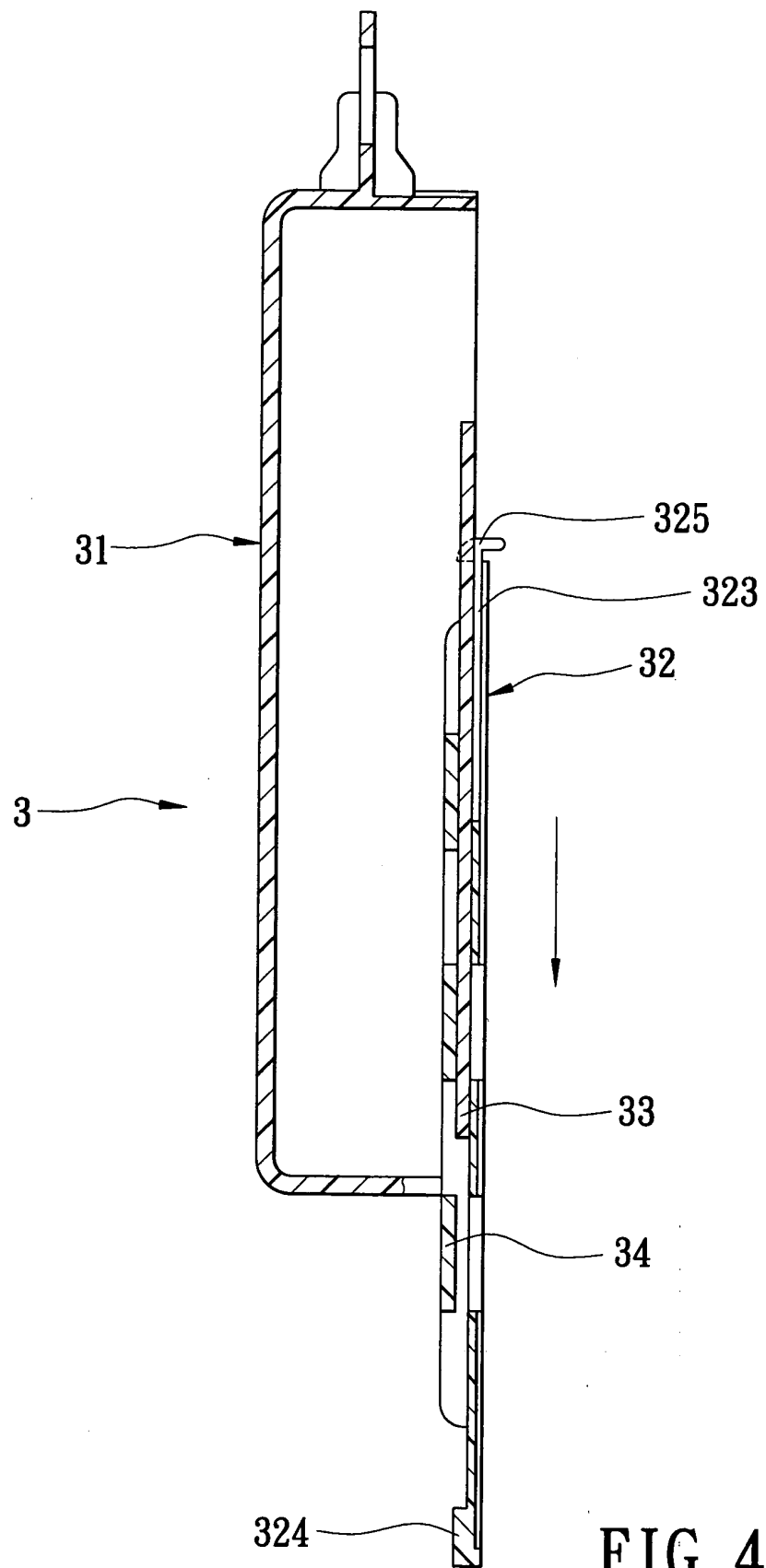


FIG. 4

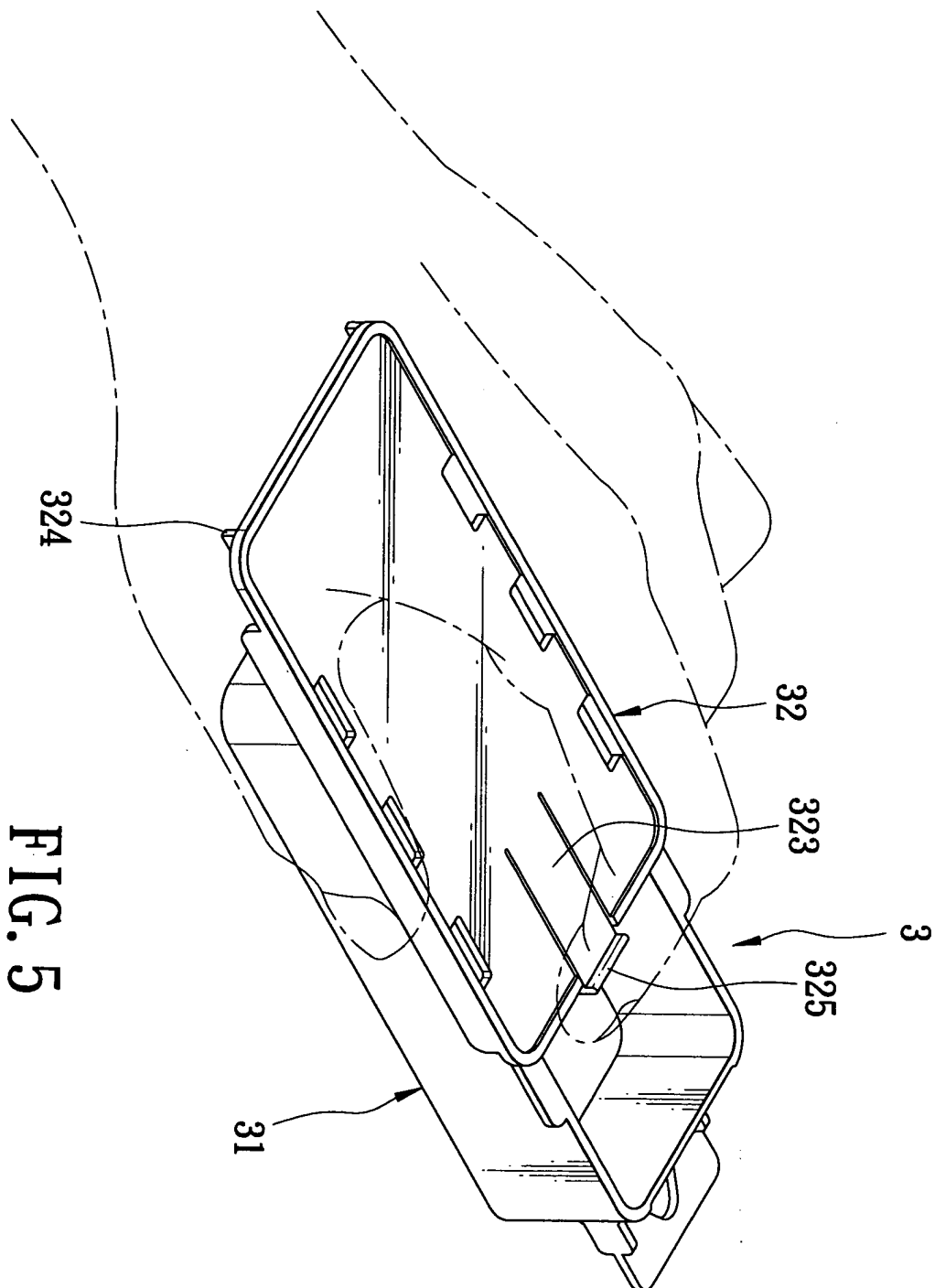
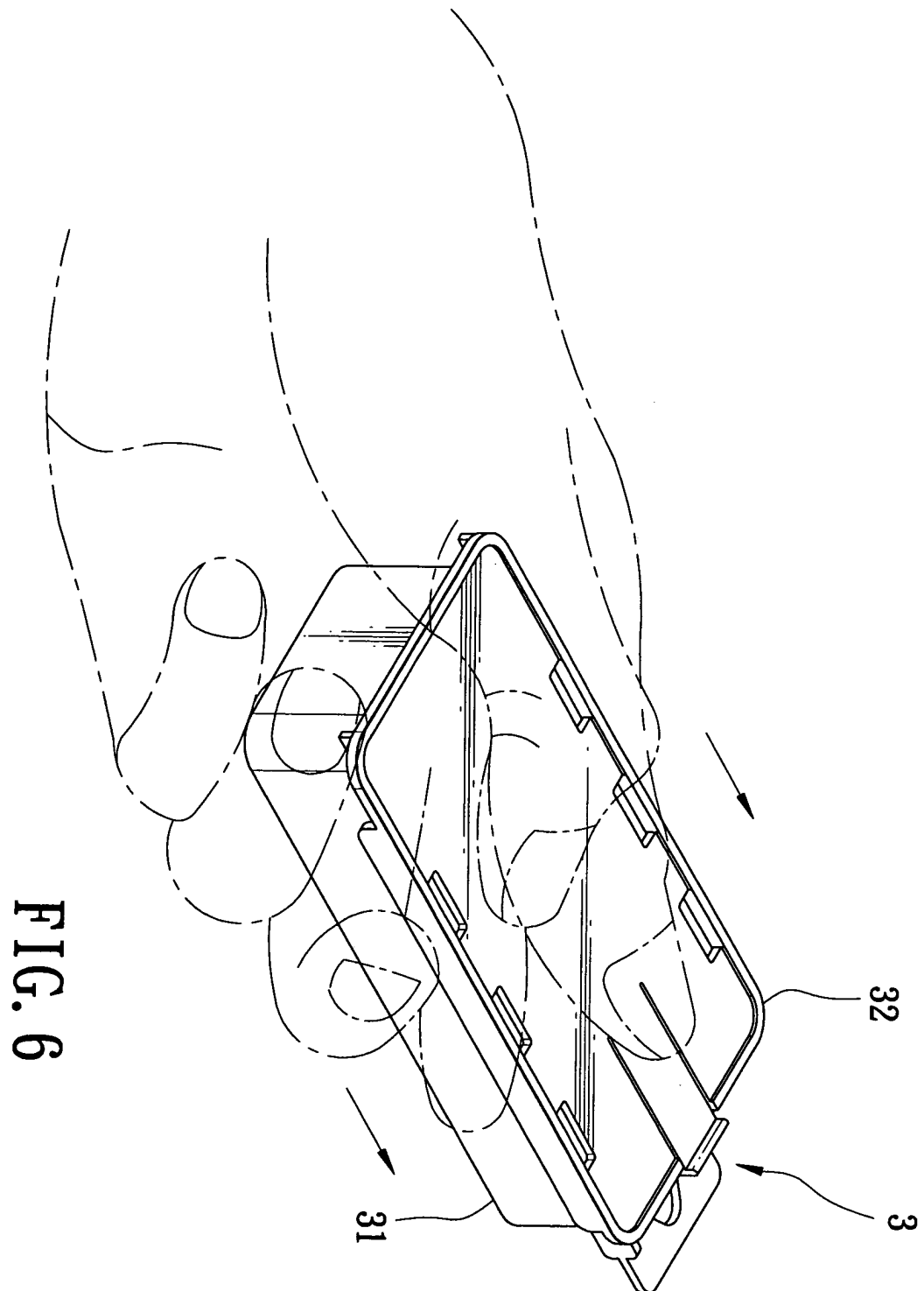


FIG. 5





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 25 7244

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 082 137 A (WEINSTEIN JACK) 21 January 1992 (1992-01-21) * column 2, line 15 - line 54; figure 3 * ---	1-3	B65D43/20 B65D43/12 B65D11/10
A	GB 2 186 315 A (MAH SING PLASTICS IND SENDIRIA) 12 August 1987 (1987-08-12) * page 1, line 115 - page 2, line 63; figures 2,3 * ---	1-3	
A	US 5 555 995 A (GALER HERBERT W) 17 September 1996 (1996-09-17) * column 1, line 60 - column 2, line 7; figures 5A,5B * ---	1-3	
A	EP 0 915 025 A (PROCTER & GAMBLE) 12 May 1999 (1999-05-12) * column 3, paragraph 9 * * column 5, paragraph 14; figure 1 * ---	1-3	
A	US 5 415 315 A (RAMIREZ BRUNO J) 16 May 1995 (1995-05-16) * figures 1,2,9 * ---	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	US 4 615 461 A (LIU JACKIE) 7 October 1986 (1986-10-07) * column 1, line 36 - line 48; figures 1-3 * -----	1-3	B65D
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 23 March 2004	Examiner Vesterholm, M
CATEGORY OF CITED DOCUMENTS 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		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 & : member of the same patent family, corresponding document	

2

EPO FORM 1503 03.92 (P04C01)

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

EP 03 25 7244

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

23-03-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5082137 A	21-01-1992	NONE	
GB 2186315 A	12-08-1987	NONE	
US 5555995 A	17-09-1996	US 5683008 A	04-11-1997
EP 0915025 A	12-05-1999	EP 0915025 A1	12-05-1999
		AU 9363498 A	24-05-1999
		BR 9815265 A	10-10-2000
		CA 2306136 A1	14-05-1999
		CN 1090137 B	04-09-2002
		CZ 20001425 A3	12-12-2001
		EG 22147 A	30-09-2002
		EP 0913336 A1	06-05-1999
		EP 1027262 A1	16-08-2000
		HU 0100104 A2	28-05-2001
		WO 9923003 A1	14-05-1999
		ID 24731 A	03-08-2000
		JP 2001521864 T	13-11-2001
		TR 200001151 T2	21-09-2000
		ZA 9809883 A	30-04-1999
US 5415315 A	16-05-1995	NONE	
US 4615461 A	07-10-1986	NONE	