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(54) Title: A PAINT CONTAINER WITH A RELEASABLY SECURED LINER

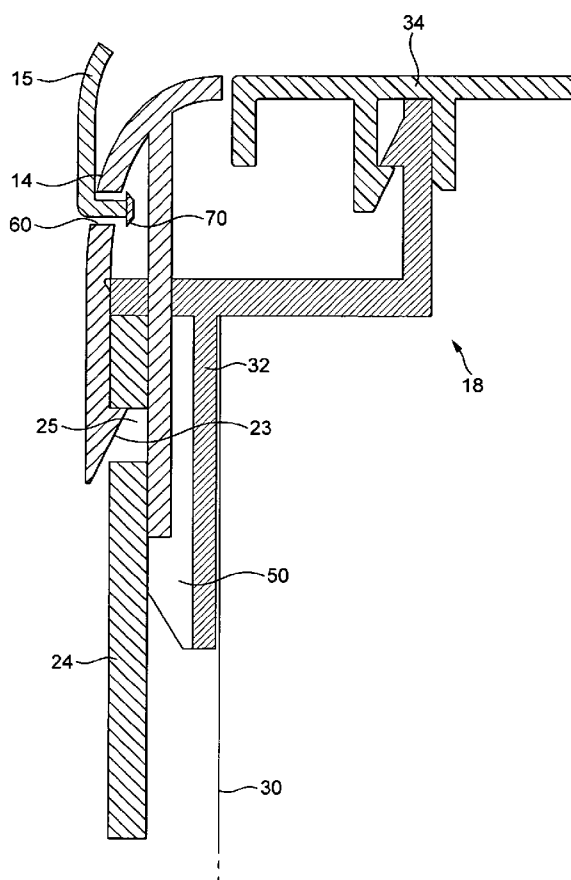


FIG. 9

(57) Abstract: A paint container (10) including a main body (12), a liner assembly (18) which locates inside the main body, and a shroud (14), in which the shroud cooperates with the liner assembly and the main body so as to releasably secure the liner assembly to the main body.



OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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A PAINT CONTAINER WITH A RELEASABLY SECURED LINER

The present invention relates to a paint container, specifically to a paint container where some of the components can be recycled and/or reused.

Typically, paint containers comprise a main body (cylindrical or rectangular cross section) made from metal, or plastic, and the paint contained therein is in direct contact with the main body. Recycling or re-use of the paint container is made difficult because the main body has been contaminated with paint.

This can be overcome by the use of a plastic liner which locates inside the main body, and receives the paint, thereby preventing contact between the main body and the paint. The contaminated liner is disposed of after use, and the main body can be re-used/recycled.

The problem with known paint containers comprising liners is the security of the liner itself within the paint container.

An object of the present invention is to provide a paint container that incorporates a liner that is more secure.

According to the present invention there is provided a paint container including a main body, a liner assembly which locates inside the main body, and a shroud, in which the shroud cooperates with the liner assembly and the main body so as to releasably secure the liner assembly to the main body.

Advantageously, the liner can be releasably secured to the main body, and the provision of both a liner assembly and a shroud, i.e. two separate components, enables easier plastic moulding when compared to a one-piece construction.

Preferably the liner assembly is releasably attachable to the shroud which enables the non-contaminated shroud to be recycled/re-used, and the contaminated liner assembly to be disposed of, thereby decreasing the amount of material to be disposed of.

The invention will now be described with reference to the accompany drawings, in which:

Figures 1 and 2 are perspective views of a paint container according to the present invention,

Figure 3 is a top plan view of the paint container of Figure 1,

Figure 4 is a bottom plan view of the paint container of Figure 1,

Figures 5 to 7 are side views of the paint container of Figure 1,

Figure 8 is a sectional (A-A) perspective view of the paint container of Figure 1,

Figure 9 is a sectional (A-A) side view of the view of the paint container of Figure 1,

Figure 10 is a sectional (A-A) perspective view of the paint container of Figure 1,

Figures 11 to 17 are sectional (A-A) side views and perspective views showing assembly of the paint container of Figure 1,

Figure 18 is a sectional (A-A) side view showing part of the paint container of Figure 1,

Figures 19 to 22 are sectional (A-A) side views and perspective views showing disassembly of the paint container of Figure 1,

Figures 23 to 25 are perspective views of an alternative paint container,

Figure 26 is a sectional (B-B) view of the paint container of Figure 23,

Figure 27 is a side sectional view of an alternative paint container.

With reference to Figure 1 there is shown a paint container 10 comprising a main body 12, a plastic shroud 14, and a disposable liner assembly 18.

The plastic shroud 14 is attached to a handle 15. It can be seen from Figures 1 and 3 that the handle 15 is arranged such that (in the closed position – Figures 1 and 3), an outer periphery is defined by the handle 15 and the plastic shroud 14. The handle 15 is hingeable attached to the shroud 14 such that it can be moved between a resting position (Figure 1) and a carrying position (Figure 2).

The main body 12 is of rectangular construction comprising a front 20, rear 22, left 24, and right 26 side walls, and a base 28. The main body 12 is constructed of cardboard, (often referred to as paperboard) typically comprising multiple layers to increase rigidity. It is to be understood that the invention is not limited to cardboard only main bodies, and also includes composite structures which include a barrier layer, typically metallic. However, the advantage of using a main body constructed cardboard only is the easier ability to recycle and/or reuse.

The main body 12 has two through apertures 25 located in each of its four side walls (Figure 2 where only two apertures on each of the left and front side walls are shown).

The shroud 14 is of rectangular construction corresponding to the main body 12, and includes four sides, left 41, front 43, right 45, and rear 47 (Figure 1) which are defined by an outboard downwardly extending portion 17. The downwardly extending portion 17 has retaining tabs 23 located at its lowermost end, and a downwardly extending rib 19. In Figures 1, each of the four sides 41,43,44,45 has two retaining tabs.

The retaining tabs 23, and through apertures 25 are located such that there is snap fit engagement therebetween when the shroud 14 is assembled onto the main body 12 (see below).

In Figures 8 and 9, the liner assembly 18 comprises a plastic liner in the form of a bag 30, a plastic neck insert 32 and a lid 34.

The bag 30 has a closed end and an open end 33 so that it can receive and store liquid content such as paint.

The neck insert 32 is fixed (typically by welding although other joining techniques such as the use of adhesives are envisaged) to the bag 30 at its open end 33. The neck insert 32 has a similar rectangular plan profile when compared to the main body of the container (albeit slightly smaller such that the neck insert fits inside the main body), and has four sides corresponding to the main body such that it can locate on the main body.

The bag 30 is both shaped and dimensioned such that it can utilise most if not substantially all of the volume inside the container when filled with paint.

The bag 30 includes a reinforcing ring 40, and a lower ring 90. The lower ring 90 optionally locates into notches 92 in the main body of the container.

The handle 15 locates inside aperture 60 of the shroud 14 and is retained on the shroud 14 by a snap-fit feature 70 (only shown in Figure 9). It will be appreciated that when the container is being held by the handle 15, the weight is transferred to the shroud 14 and then to the main body 12 via retaining tabs 23.

The neck insert, shroud, handle, and lid are all plastic components, typically elastomers suitable for injection molding. A suitable plastic would be Polyethylene, be that high, medium or low density.

In an alternative embodiment, both the neck insert and the bag can be moulded from a single plastic component thereby negating the need for a joining process.

The container 10 is assembled as follows:

The liner assembly 18 is inserted into the main body 12 of the container 10 by lowering neck insert 14 in the direction of arrow Y (Figure 11) until the shoulder 52 on the neck insert 14 abuts against top surface 54 of the main body 12 of the container 10 (Figure 12). In Figure 12, the liner assembly 18 is now positioned in the main body 12, but not yet securely retained in the vertical direction (arrow Y).

The shroud 14 is lowered in the direction of arrow Y (Figure 13 and 13A) such that the downwardly extending rib 19 passes through aperture 21 (only one shown). As the shroud 14 is lowered further, retaining tab 23 bulges outwards in the direction of arrow X (Figure 14 and 14A) by virtue of engagement with the main body 12 and the fact that the shroud material is sufficiently thin walled to flex, until the retaining tab 23 snap-fits into aperture 25 of the main body 14 (Figure 15 and 15A). It is to be understood that each of the eight retaining tabs (two on each of the four side walls of the shroud 14) snap-fit into each of the eight corresponding apertures 25 on the main body 12 to securely retained. As the shroud 14 is lowered onto the main body 12, ribs 50 of the neck insert compress the side walls of the main body between the shroud and the neck insert so as to provide an interference fit of the side walls between the shroud and the neck insert in addition to the snap-fit engagement between the shroud and the main body.

Lid 34 is secured onto liner assembly via snap-fit engagement with neck insert 32 (shown removed in Figure 16, and secured in Figure 17).

Figure 18 shows in more detail that there is a vertical separation V_{LH} between the upper surface of the lid 34 and the upper surface of the handle 14, and specifically that the handle sits vertically above the lid 34. This is advantageous as this allows the weight of a similar second container stacked on top to be transmitted and born by the handle and not

the lid. The stacked second container can have its base adapted in such a way to accommodate the protruding handle.

The shroud 14 is removed by inserting a tool such as a screwdriver 60 under tab 23 (Figure 19 and 19A) and prizing it away from the main body such that a weakened section 62 enables the tab 23 to break away from the main body (Figure 20, 20A and 20B). The tab 23 is no longer biased towards the main body, and the shroud 14 can be lifted vertically such that it detaches itself from the main body (Figure 21).

The liner assembly 18 can now be removed from the main body 14 since it is no longer retained by the shroud (Figure 22).

The liner assembly 18 can be disposed of since it is contaminated with paint.

The plastic shroud 14 can be recycled easily as it is no longer attached to the liner assembly 18 or the cardboard main body 14.

The cardboard main body 14 can be recycled easily since it is no longer attached to the contaminated liner assembly 18 or the plastic shroud 14.

Thus, the present invention allows both the plastic shroud, and the cardboard body to be recycled, and easy disposal of the contaminated liner assembly. This compares to known containers where the liner assembly, plastic shroud, and neck insert cannot be separated, and therefore more plastic material has to be disposed of.

In the above embodiment, the shroud 14 is separated from the main body by releasing the snap-fit between the tab and the notch in the main body. In an alternative embodiment, the main body could include tear bands which are removed such that shroud 14 can be removed from the main body without the need to mechanically disengage the tab from the notch.

With reference to Figure 23 there is shown an alternative container 110 comprising a main body 112 and a liner assembly 118.

The main body 112 is identical to main body 12 of the embodiment of Figures 1 to 22.

The liner assembly 118 comprises a bag 130 identical to the bag 30 of the embodiment of Figures 1 to 22, a plastic neck insert 132, and a lid 134.

The plastic neck insert and bag 130 are welded together.

The lid 132 secures to the plastic neck insert in the same way as in the embodiment of Figures 1 to 22.

The plastic neck insert 132 includes an integral handle 115 which includes a live hinge 170 to enable it to move between the resting (Figure 23) and carrying (Figure 24) positions.

In contrast to the embodiment of Figures 1 to 22, the snap-fit tab 123 is incorporated on the neck insert 132 as opposed to the shroud, i.e. there is no separate shroud on container 110. Accordingly, the neck insert 132 and the bag 130 can be assembled onto and removed from main body 112 in the same way as in the embodiment of Figures 1 to 22 with the exception that no shroud is required to secure the neck insert (and hence the liner assembly) onto the main body.

As in the embodiment of Figures 1 to 22, the handle is arranged such that it vertically extends above the lid 134, thereby acting to carry the load of a second container stacked above.

In another embodiment, the neck insert 232 could engage, for example via a snap-fit feature, directly with the main body 312 of the paint container so as to secure the liner

assembly to the paint container. The shroud 314 could then engage (via a snap-fit for example) with the main body as described in the previous embodiments via aperture 325.

Alternatively, the shroud could snap-fit onto the liner assembly by provision of a corresponding feature on the liner assembly (not shown), with no requirement for the shroud to snap-fit to the main body.

Claims

1. A paint container including a main body, a liner assembly which locates inside the main body, and a shroud, in which the shroud cooperates with the liner assembly and the main body so as to releasably secure the liner assembly to the main body.
2. A paint container according to claim 1 in which the shroud is releasably attachable to the main body.
3. A paint container according to claim 2 in which the shroud directly engages with the main body, preferably via a snap-fit engagement.
4. A paint container according to claim 3, in which the main body includes at least one aperture, the shroud include at least one snap-fit feature, and engagement is between the at least on aperture and the at least one snap-fit feature.
5. A paint container according to any preceding claim in which the liner assembly is releasably attachable to the shroud.
6. A paint container according to any preceding claim in which the liner assembly is releasable attachable to the main body.
7. A paint container according to claim 6 in which the liner assembly directly engages with the main body, preferably via a snap-fit engagement.
8. A paint container according to any preceding claim in which the liner assembly comprises a neck insert which is attached to a flexible bag.
9. A paint container according to claim 8 in which the shroud engages with the neck insert.
10. A paint container according to claim 9 in which the engagement between the neck insert and the shroud is a snap-fit engagement.

11. A paint assembly according to any preceding claim in which the main body is sandwiched between the neck insert and the shroud so as to provide an interference fit.
12. A paint container including a main body, and a liner assembly, in which the liner assembly includes a snap-fit feature which engages with a corresponding feature on the main body to releasably secure the liner assembly to the main body.
13. A paint container according to claim 12 in which the feature on the main body is a through aperture.
14. A paint container according to any preceding claim in which the main body is made from cardboard.
15. A paint container according to any preceding claim further comprising a handle, in which the handle is attached to the shroud.
16. A paint container according to any preceding claim further comprising a cover.
17. A paint container according to claim 15 in which the cover engages with the liner assembly.
18. A paint container as substantially described herein with reference to the accompanying drawings.

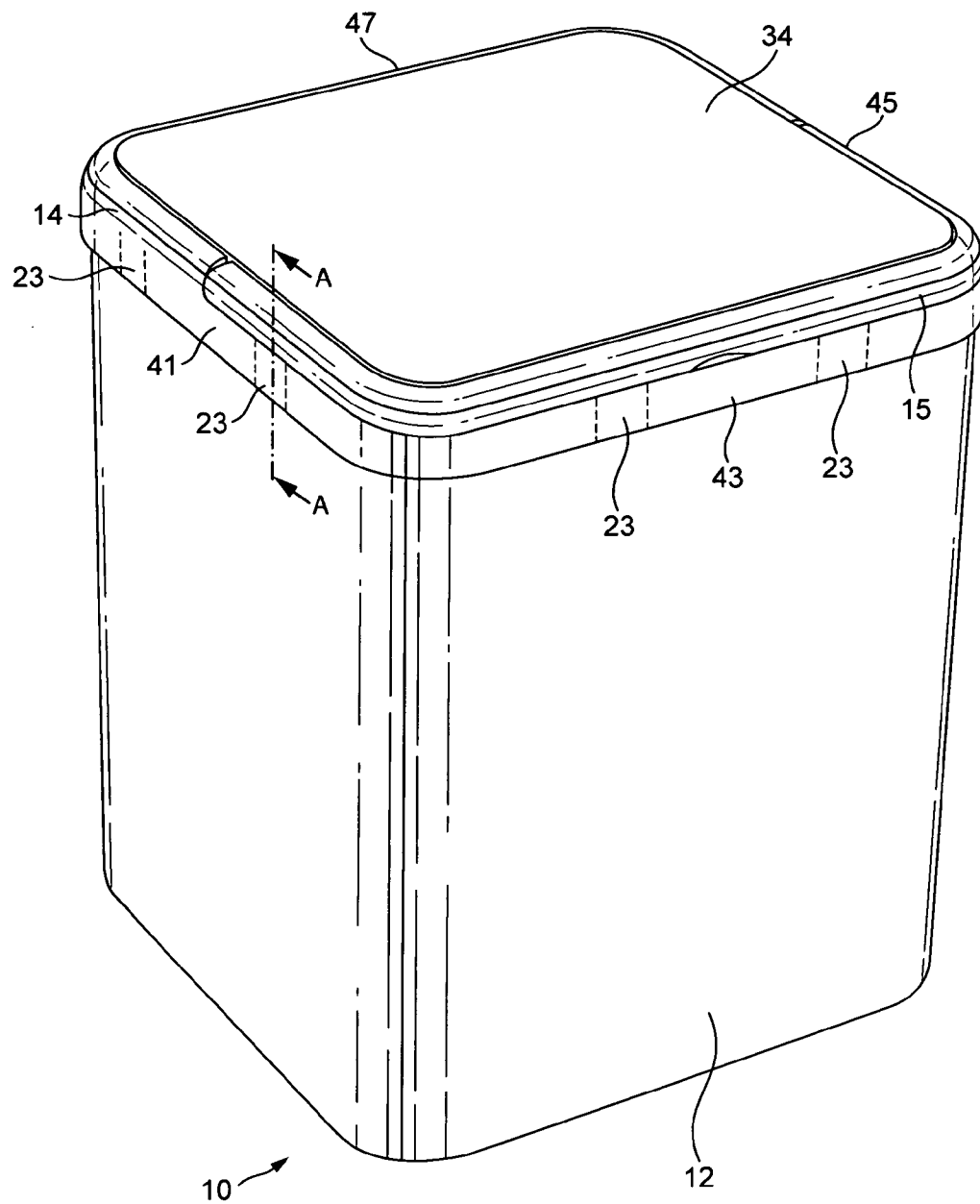


FIG. 1

2 / 18

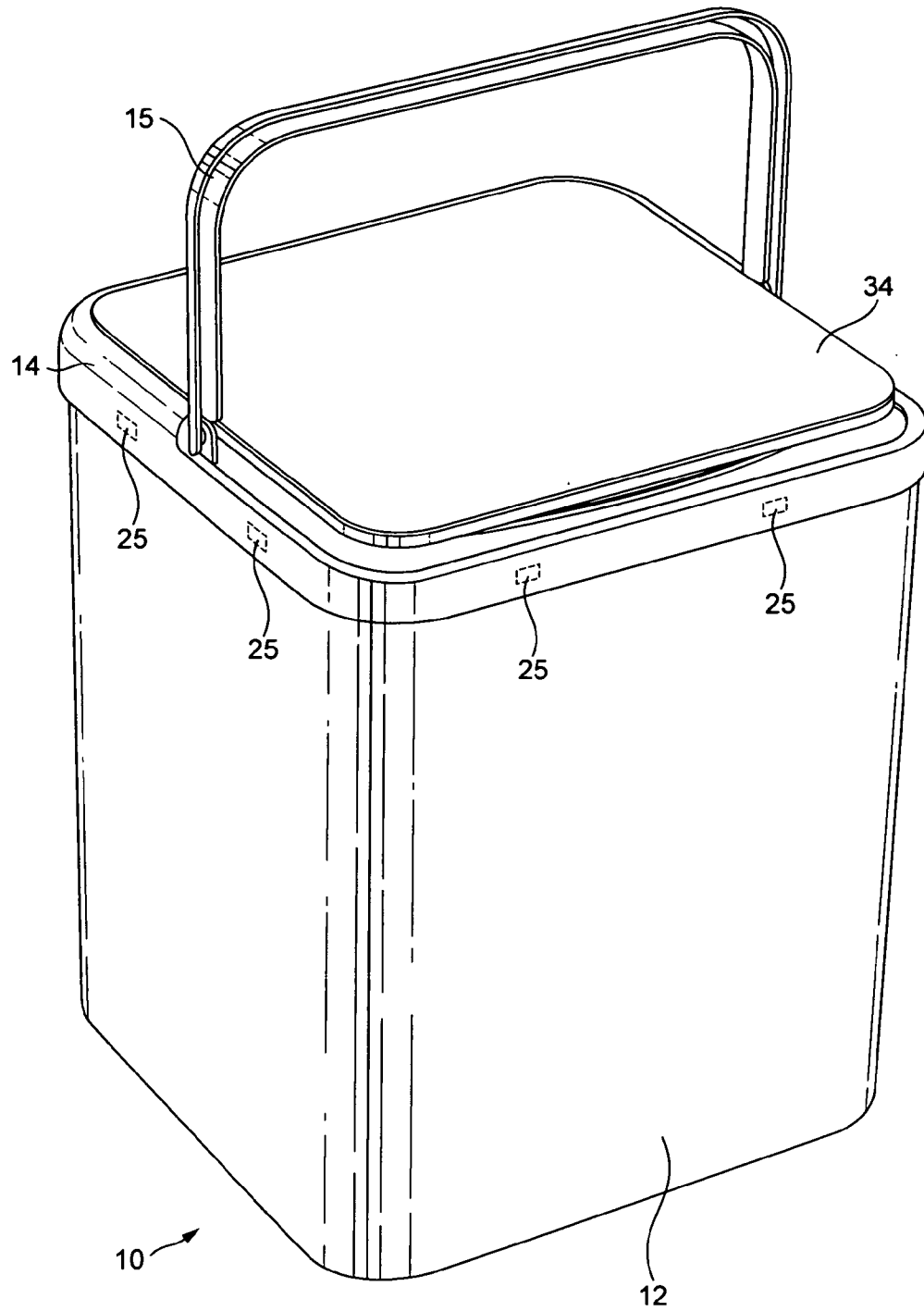


FIG. 2

3 / 18

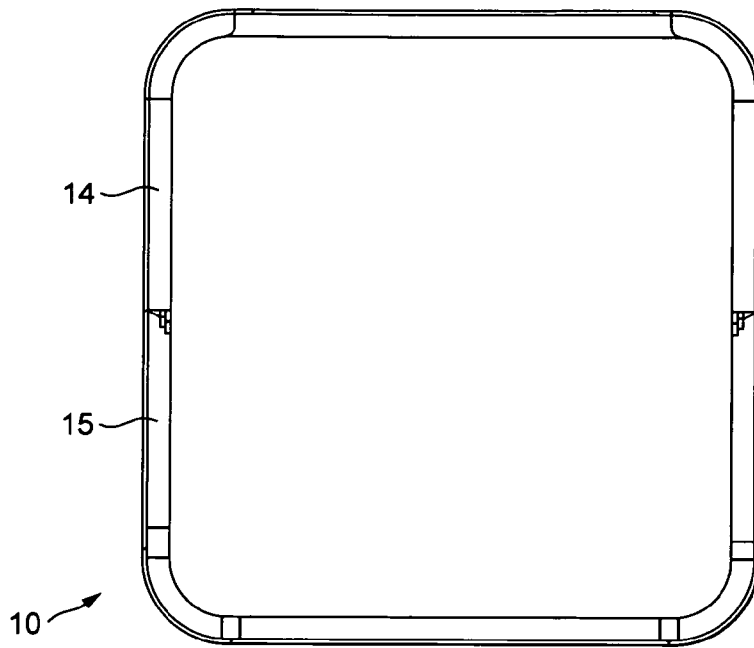


FIG. 3

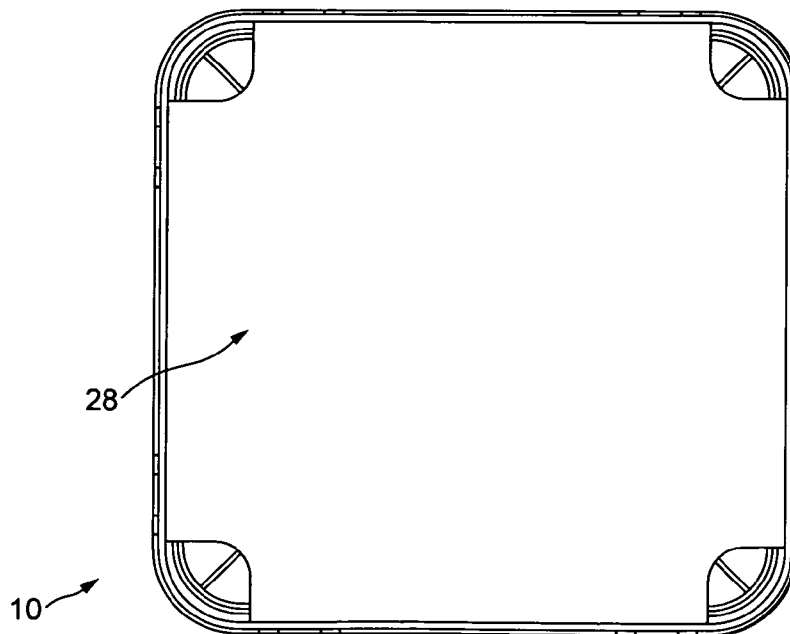


FIG. 4

4 / 18

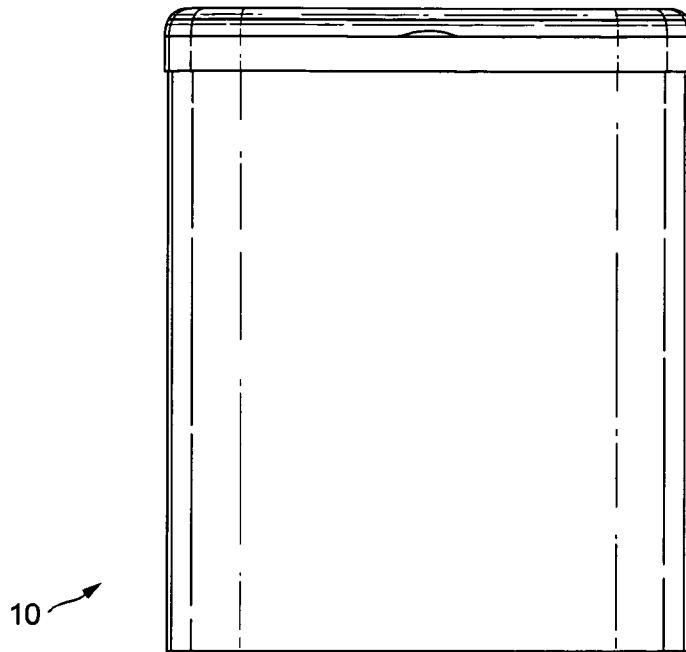


FIG. 5

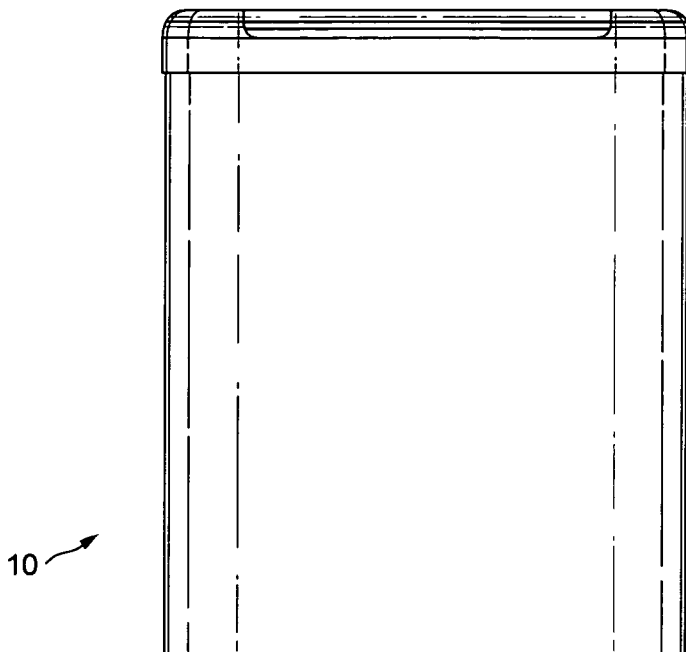


FIG. 6

5 / 18

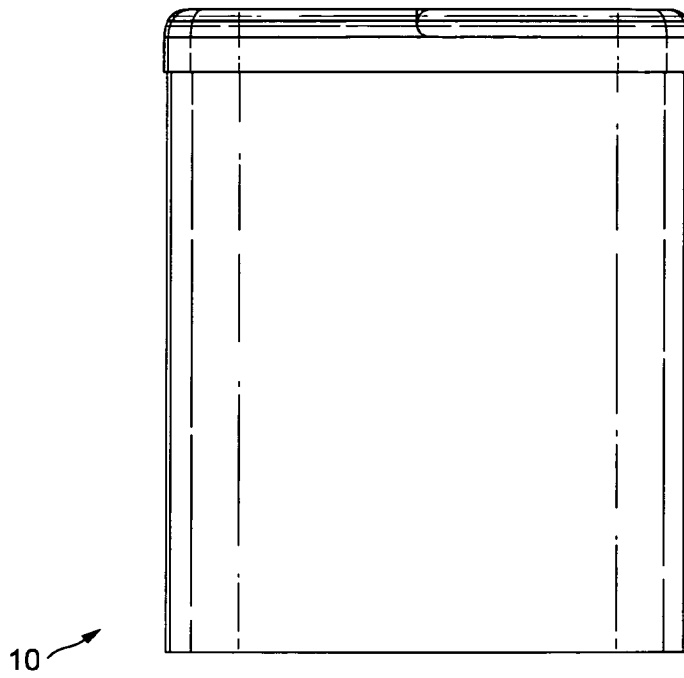


FIG. 7

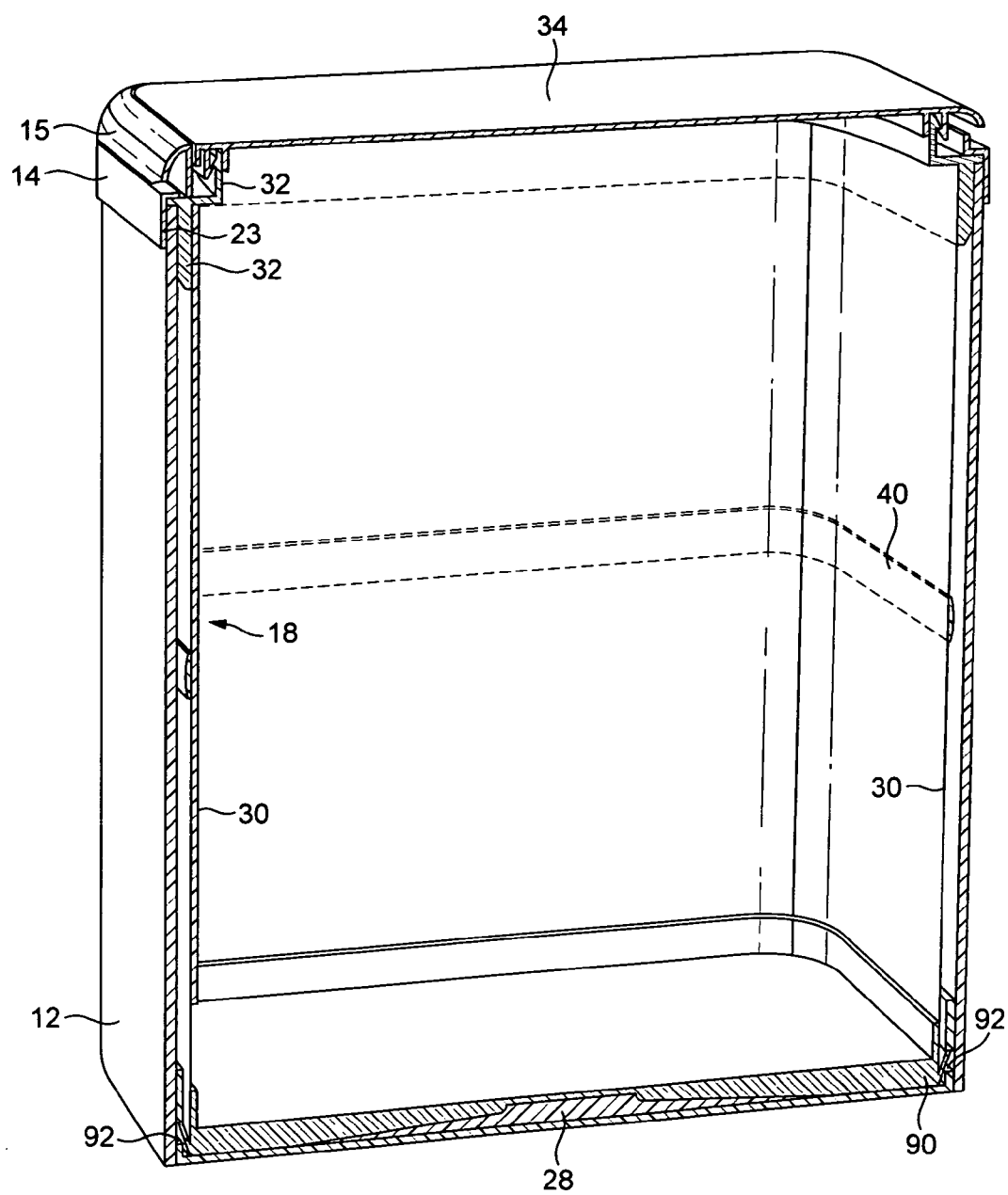


FIG. 8

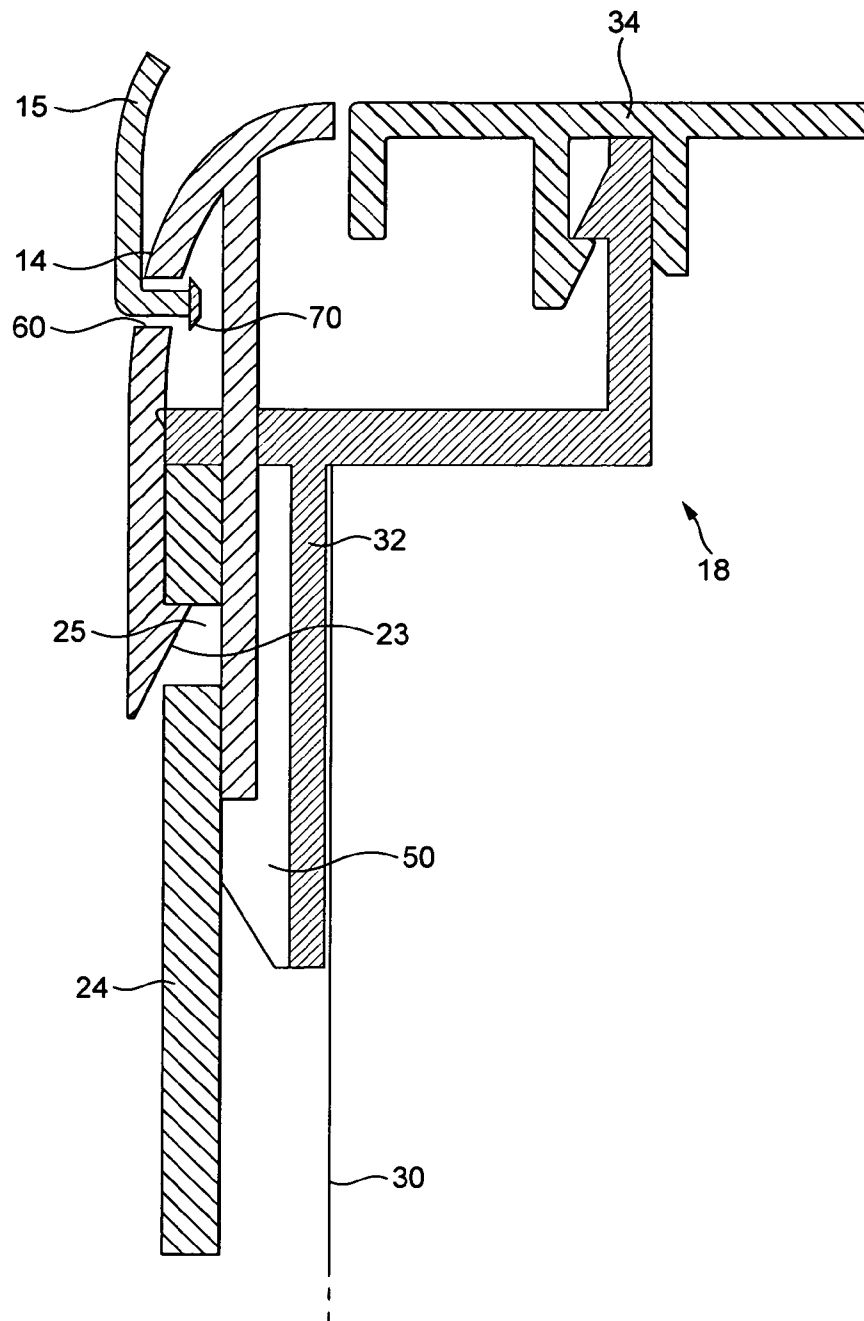
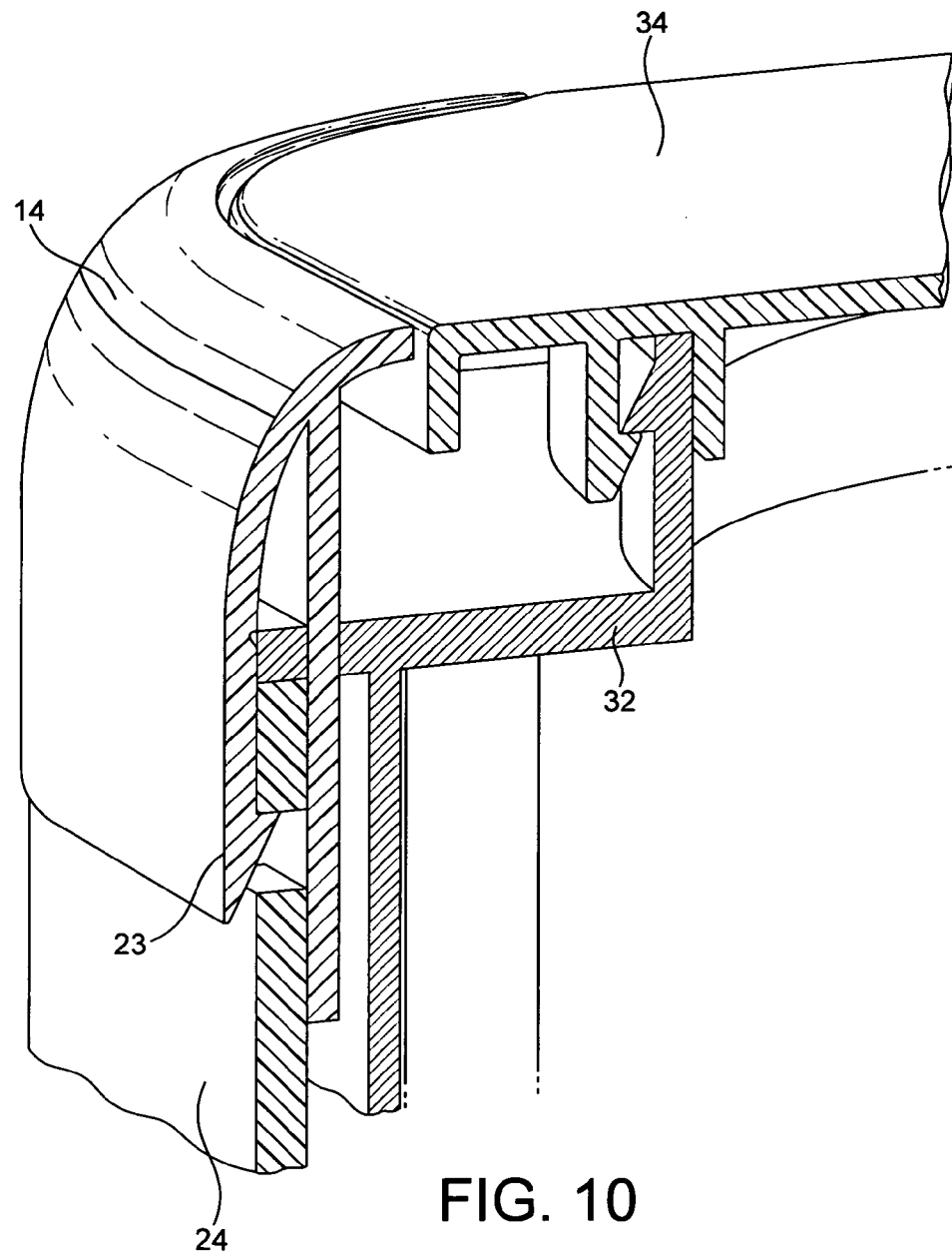


FIG. 9



9 / 18

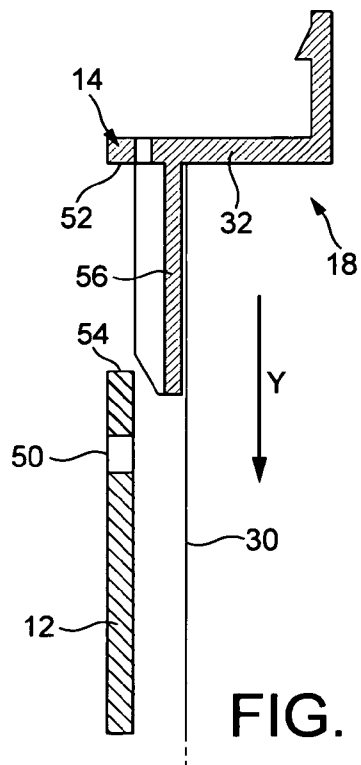


FIG. 11

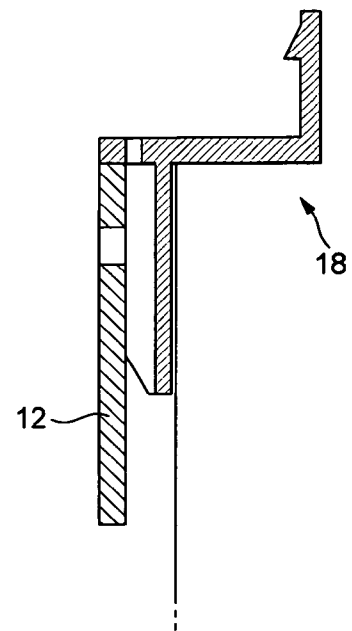


FIG. 12

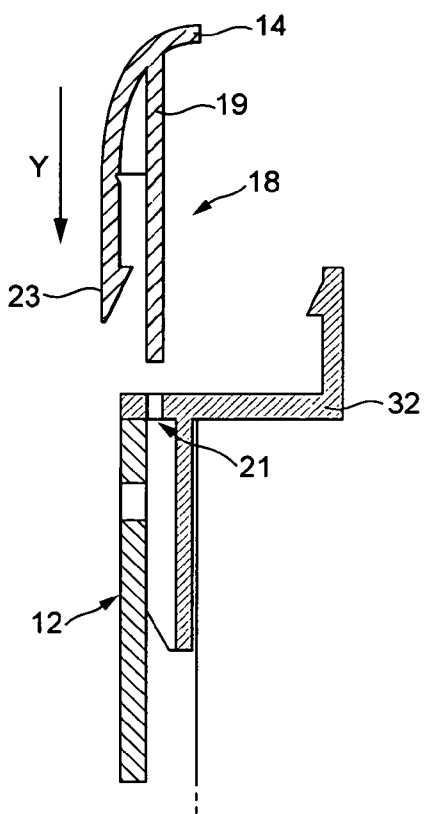


FIG. 13

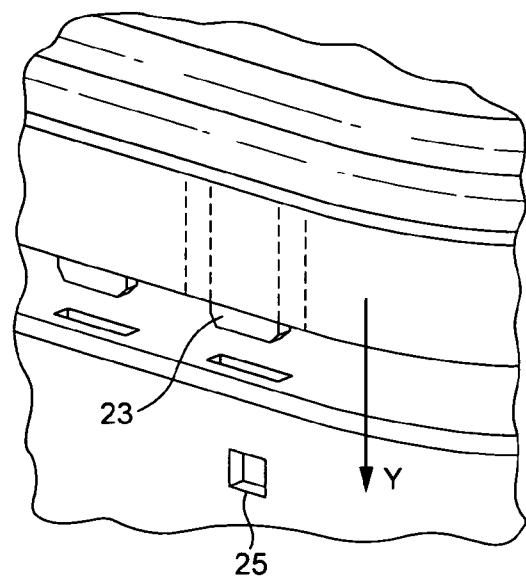


FIG. 13A

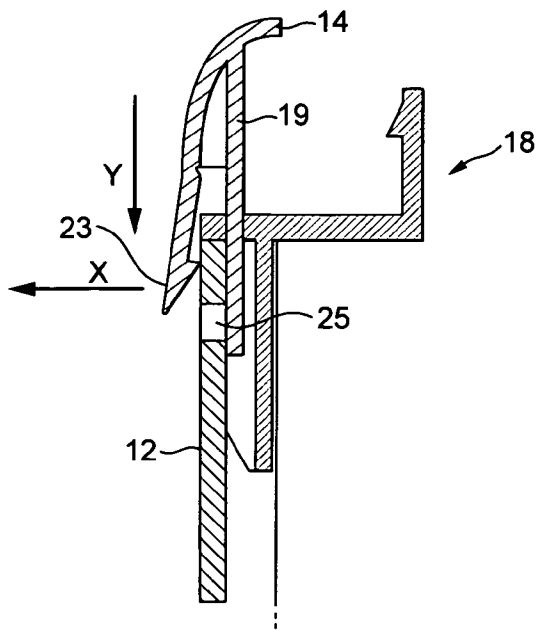


FIG. 14

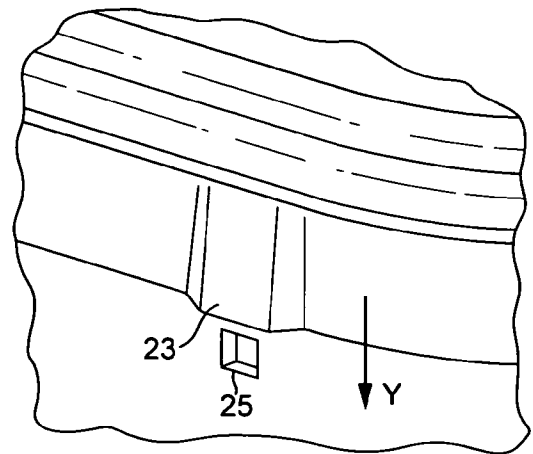


FIG. 14A

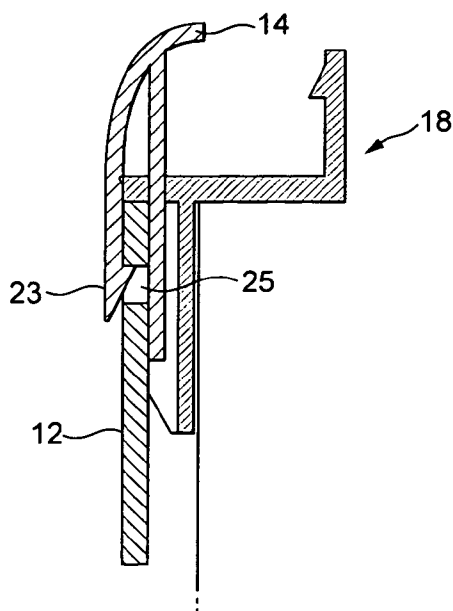


FIG. 15

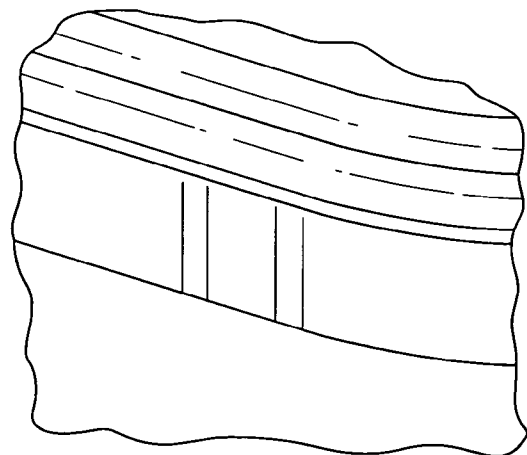


FIG. 15A

11 / 18

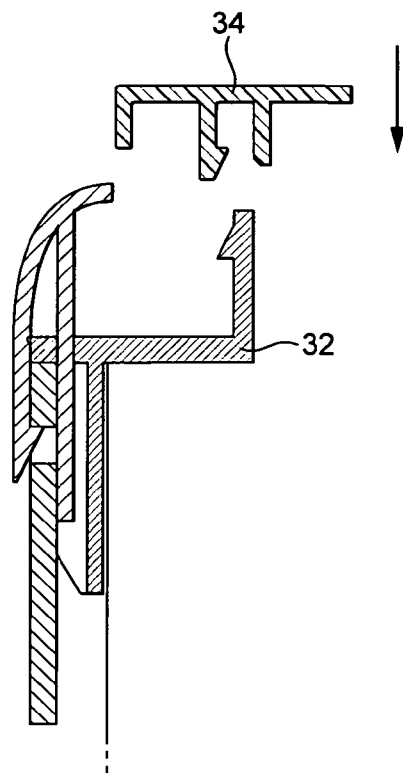


FIG. 16

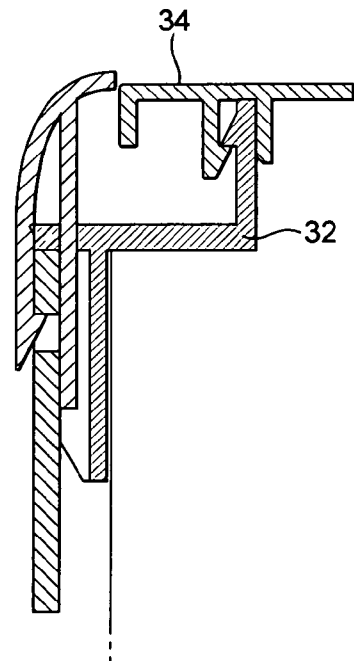


FIG. 17

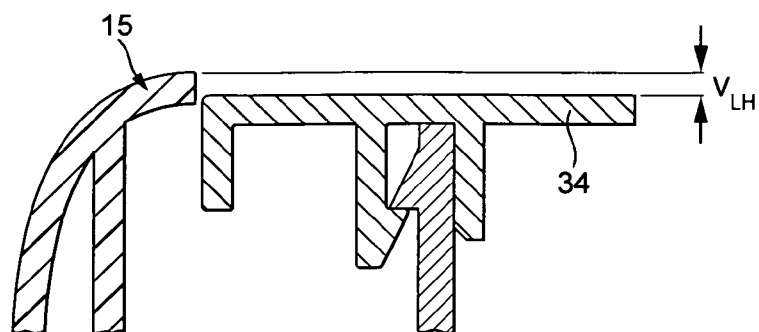


FIG. 18

12 / 18

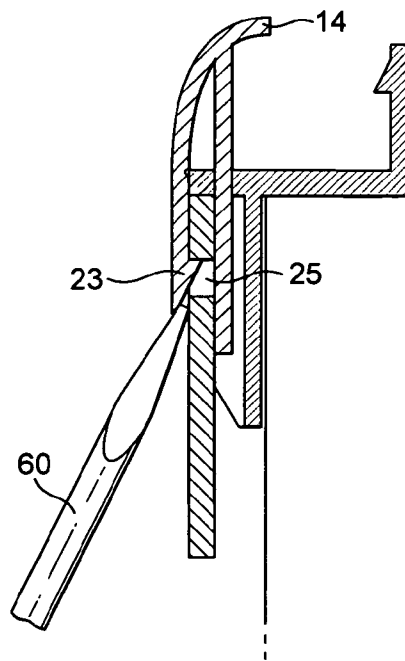


FIG. 19

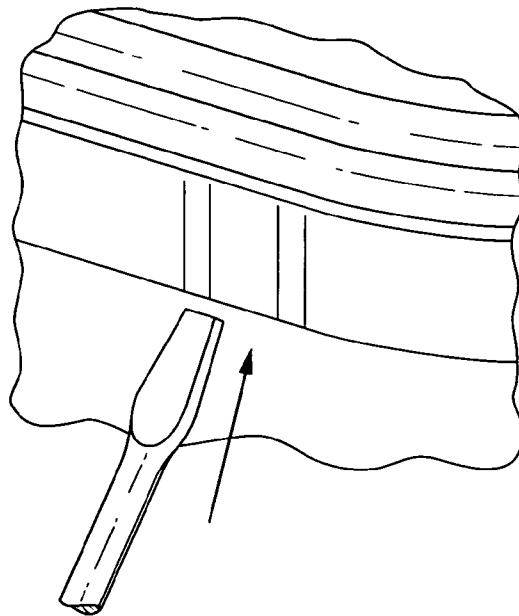


FIG. 19A

13 / 18

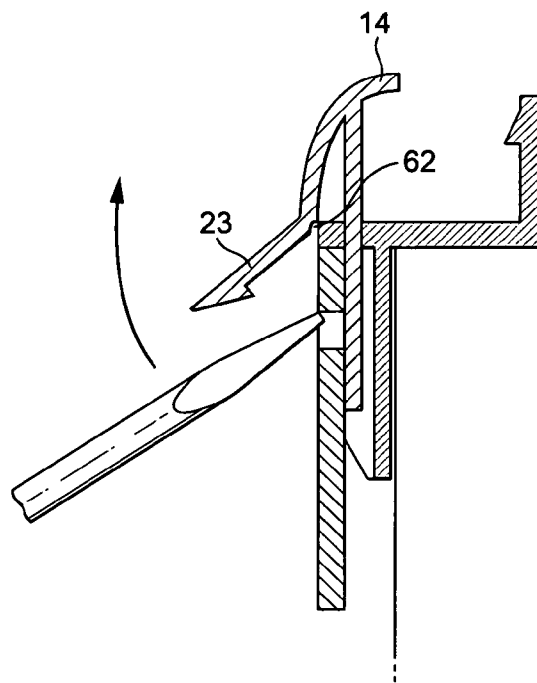


FIG. 20

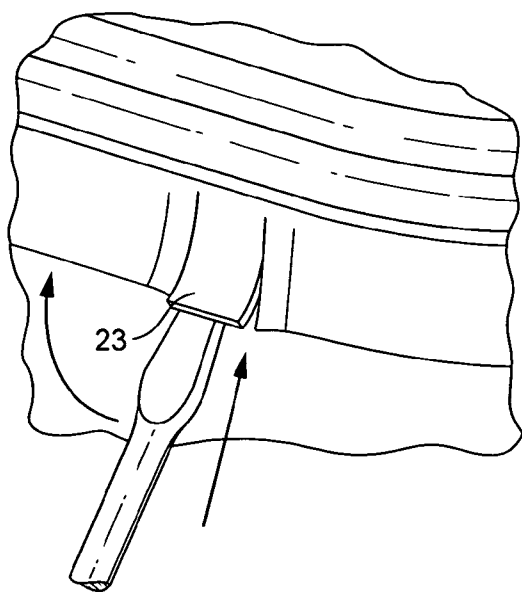


FIG. 20A

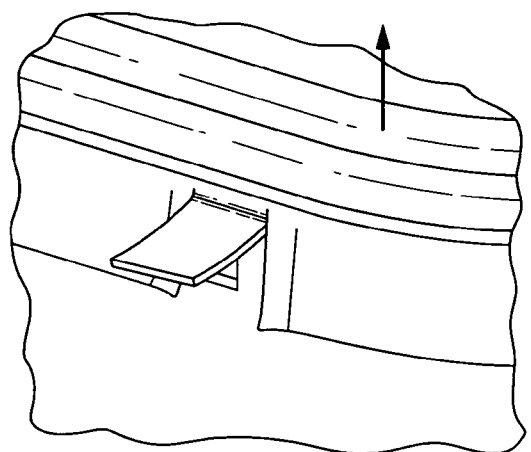
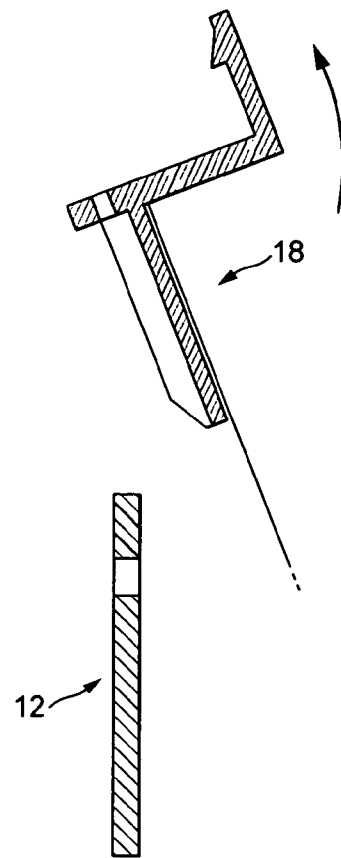
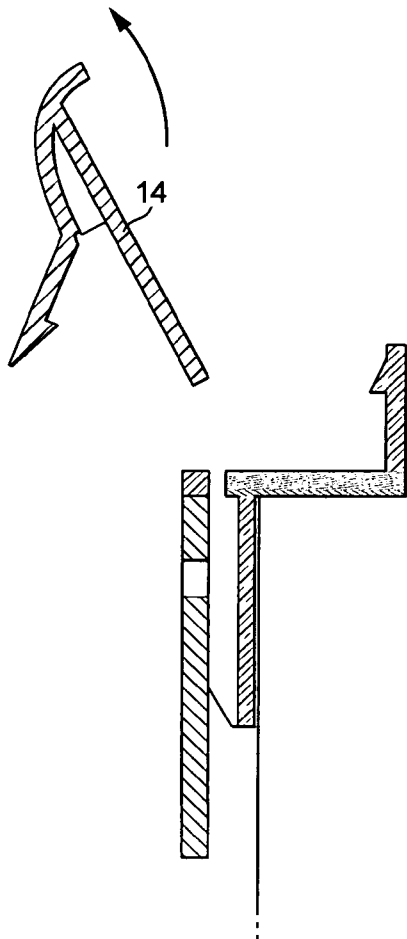


FIG. 20B



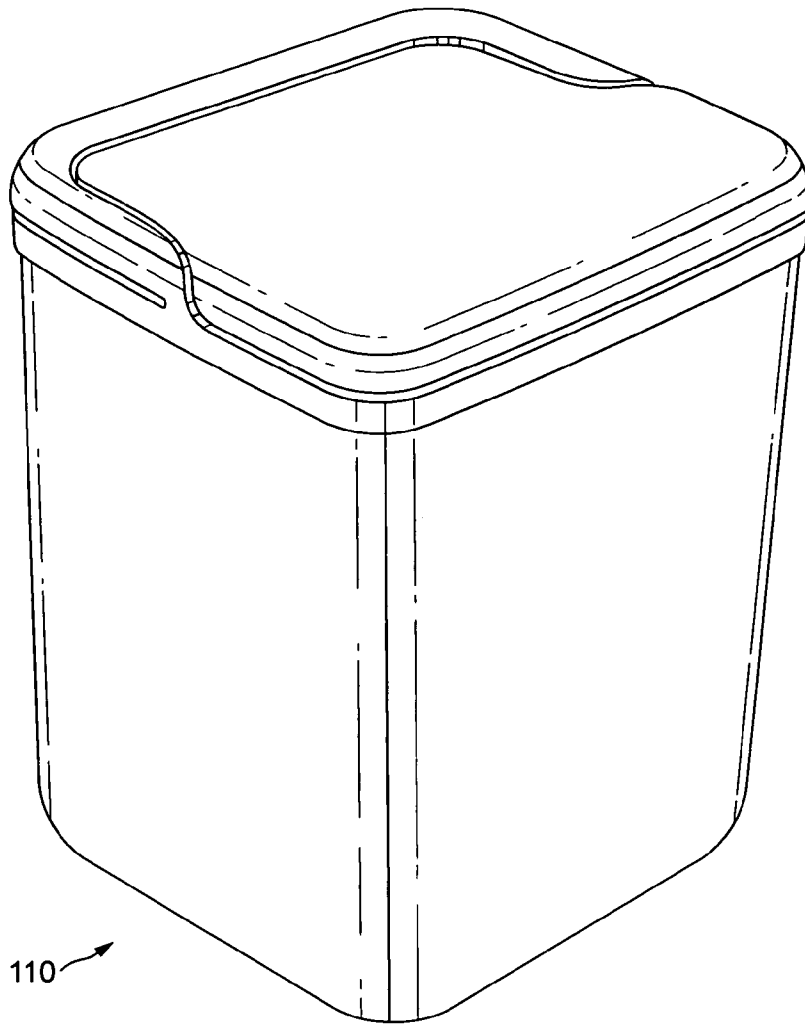


FIG. 23

16 / 18

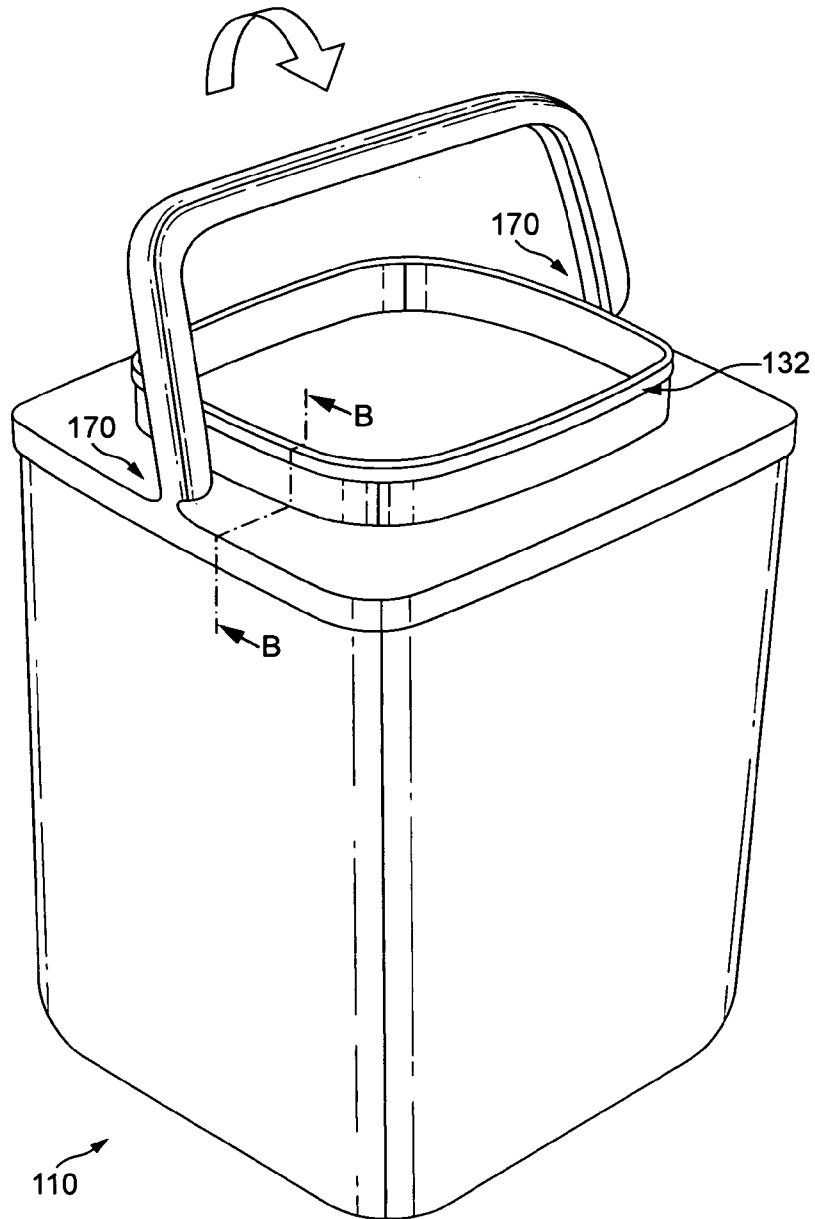


FIG. 24

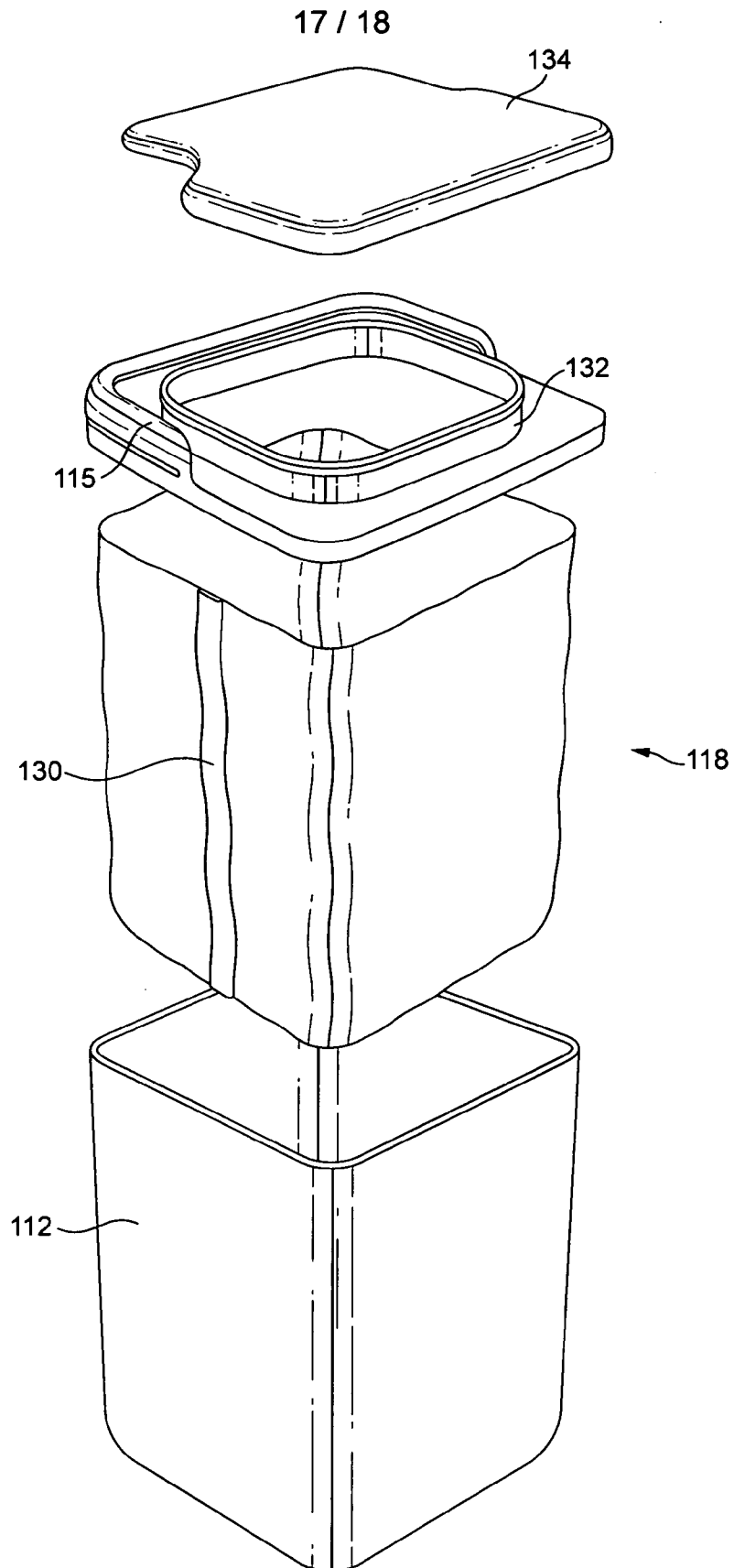


FIG. 25

18 / 18

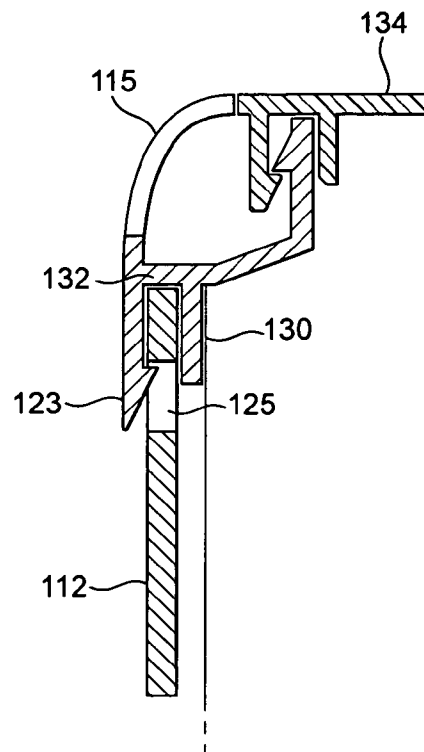


FIG. 26

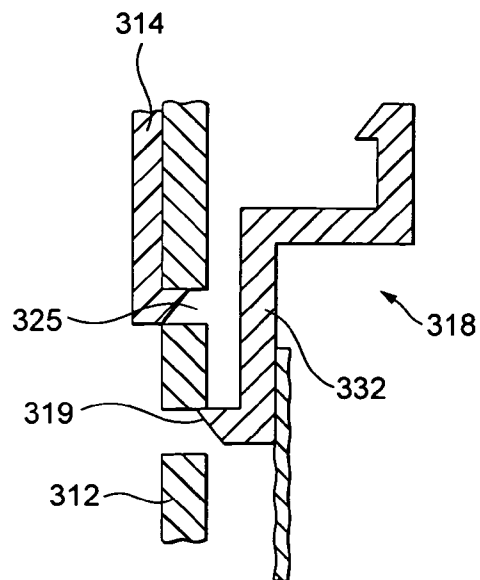


FIG. 27

INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2012/000549

A. CLASSIFICATION OF SUBJECT MATTER
INV. B44D3/12
ADD.

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)
B44D B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/067502 A1 (BOUIC PHILLIP J [GB] ET AL) 31 March 2005 (2005-03-31) paragraph [0056] - paragraph [0061] figure 3	1-11, 15-17
X	FR 2 852 887 A1 (DUCROT PATRICK [FR]) 1 October 2004 (2004-10-01) the whole document	1-7
X	US 2 771 220 A (LOUIS CLAPS) 20 November 1956 (1956-11-20) column 1, line 15 - column 2, line 5 figure 2	1-3,5,6, 16
X	GB 2 419 870 A (STEPHENSON JOHN [GB]) 10 May 2006 (2006-05-10) page 4, line 3 - page 7, line 33 figures 21A-E	1-10,14, 16,17
	-/--	



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

19 June 2012

Date of mailing of the international search report

26/06/2012

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/000549

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 2011/143754 A1 (ABZAC CANADA INC [CA]; GUERTIN RICHARD [CA]; D ANGLADE PIERRE-MICHEL []) 24 November 2011 (2011-11-24) page 12, line 11 - page 14, line 4 figures 16-23 -----	1-7,14, 16
A	US 2006/096989 A1 (LUCEY JOHN P [US]) 11 May 2006 (2006-05-11) paragraph [0031] - paragraph [0046] figures 9,15 -----	1-17
X	DE 195 07 452 A1 (WEIDENHAMMER PACKUNGEN [DE]) 5 September 1996 (1996-09-05) -----	12,14,16
A	column 1, line 3 - line 20 column 2, line 33 - column 3, line 19 -----	13,17
X	EP 0 691 278 A1 (WEIDENHAMMER PACKUNGEN [DE]) 10 January 1996 (1996-01-10) -----	12,14,16
A	column 6, line 30 - column 7, line 52 -----	13,17
X	US 2009/277913 A1 (BERGMAN MARK W [US] BERGMAN MARK W [US] ET AL) 12 November 2009 (2009-11-12) paragraph [0037] - paragraph [0038] -----	12,13
X	US 2010/187234 A1 (SARANGA JOHN [US]) 29 July 2010 (2010-07-29) paragraph [0003] paragraph [0015] - paragraph [0027] -----	12
X	US 4 122 973 A (AHERN PAUL B) 31 October 1978 (1978-10-31) -----	12
A	column 3, line 6 - column 4, line 44 -----	13
X	US 6 260 730 B1 (FELLMAN MARVIN N [US]) 17 July 2001 (2001-07-17) column 2, line 48 - column 3, line 23 -----	12

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/000549

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.: 18
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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:

see additional sheet

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 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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11, 15, 17(completely); 14, 16(partially)

The paint container further comprises a shroud for cooperating with the main body and the liner assembly. This has the technical effect of enabling easier plastic moulding when compared to a one-piece construction.

2. claims: 12, 13(completely); 14, 16(partially)

The liner assembly includes a snap-fit feature for engaging with a corresponding feature on the main body. This has the technical effect of reducing the number of components of the paint container since no separate shroud is required.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 18

In conflict with Rule 6.2 PCT, claim 18 defines "a paint container as substantially described herein with reference to the accompanying drawings". The scope of the claim is not clear from said definition, such that the claim can not be meaningfully searched.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/000549

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