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(54) **WIPE PACKAGE WITH ENLARGED DISPENSING APERTURE**

(57) The present disclosure provides a package (10) for holding and dispensing a number of individual material sheets (30) held therein. The package includes an aperture (34) that is formed large enough to enable the sheets, such as wet wipes, to be individually dispensed form the package without interference from adjacent or successive sheets.

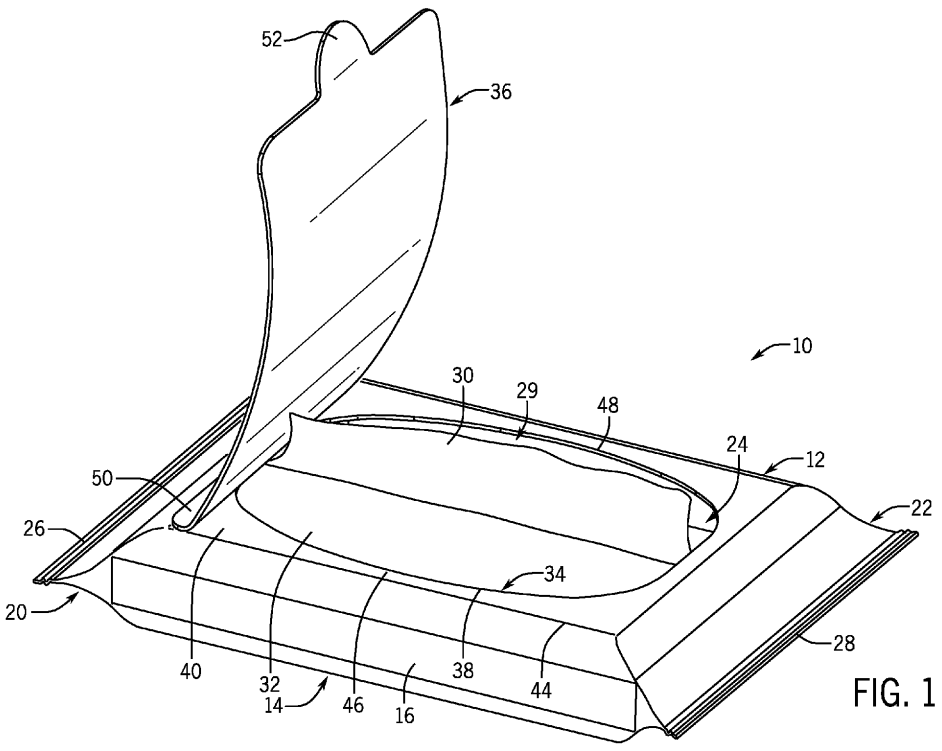

FIG. 1

EP 4 289 763 A1

Description

FIELD OF THE INVENTION

[0001] The present invention relates generally to packages for holding and dispensing interleaved sheets therefrom, and more particularly to a wipe dispensing package.

BACKGROUND OF THE INVENTION

[0002] Many different styles and configurations of packages have been developed to hold interleaved sheet materials in a manner that enables the sheet materials to be readily dispensed from the package. These packages are often formed of suitable flexible materials that can easily conform to the shape of the volume of the sheet material that is held within the package. Further, the flexible material forming the package can be effectively closed around the sheet materials in any of a number of heat sealing processes, where the flexible material is adhered and/or sealed to itself to enclose the sheet materials therein, with or without the use of an adhesive.

[0003] A number of the packages of this type include dispensing apertures and closure devices that are secured directly to the package. The aperture(s) can be cut directly into the flexible material forming the package during the formation of the package in a well-known manner to provide access to the sheet material held within the package for dispensing individual sheets through the aperture without having to tear open the package.

[0004] The closures are formed to operate in conjunction with the aperture for dispensing the individual sheet material. The closures are formed to completely cover the dispensing aperture in order to be operable to selectively expose the aperture and allow the sheet materials to be dispensed from the package.

[0005] The closures can be formed from materials similar to and/or integrally formed with the materials utilized to form the package, or can be formed from rigid materials that enable the closure to provide additional functionality to the closure, such as to provide a separating or tearing edge to enhance the ability to separate and dispense the individual sheets, such as when the sheets are joined by interleaved folds or lines of perforation between adjacent sheets, while placing the successive sheet held in the package in a readily dispensable position.

[0006] While the closures and apertures properly function to enable the sheets to be dispensed from the package, the prior art apertures and closures have been designed to maximize the ability to separate the individual sheets from one another, and the adherence of the closure to the package around the aperture. More specifically, the size of the aperture is designed in prior art packages to make the aperture large enough to allow the sheets to be pulled out of the package through the aperture but with a significant restriction or frictional force exerted on the sheets by the edge of the aperture to assist in separating the sheets from one another as they are dispensed.

[0007] The small size of the aperture also allows the closure to be made of a smaller size, as the closure must extend completely over the perimeter of the aperture in the closed position in order to prevent sheets from exiting the aperture/package around the closure. Further, as most closures are adhered to the package around the aperture, there has to be sufficient space around the aperture for the placement of the adhesive material to securely hold the closure over the aperture. Thus, a smaller aperture facilitates the use of smaller closure that still covers enough of the package around the aperture to allow for a secure engagement of the closure with the package to enable the closure to function as intended.

[0008] However, with the small size of the aperture and closure, the interconnection or engagement of the sheets with one another often cannot be properly disengaged as the sheets pass through the aperture and the closure. For example, on many occasions as a sheet is dispensed from the package, the interleaving or other interconnection of the sheets is drawn upwardly into the aperture and/or closure. In this position, the interconnection is constricted by the narrowed aperture and/or closure, which interferes with the proper disengagement of the interconnection between the sheets and causes multiple sheets to be inadvertently drawn through the aperture and/or closure. This causes more sheets that desired to be dispensed, resulting in increased waste as a result of excess sheets being removed from the package.

[0009] Thus, it is desirable to develop a package for dispensing sheet materials held therein, such as a wet wipes, that enables the interconnections between sheets to be more easily disengaged when dispensing individual sheets from the package.

SUMMARY OF THE INVENTION

[0010] Briefly described, one exemplary aspect of the present disclosure provides a package for holding and dispensing a number of individual material sheet held therein. The package includes an aperture that is formed large enough to enable the wipes to be individually dispensed form the package without interference from successive sheets.

[0011] According to another exemplary aspect of the present disclosure, a package for containing a stack of material sheets including a bottom wall, a pair of opposed side walls joined to the bottom walls, a pair of opposed end walls joined to the bottom wall and between the side walls and a top wall extending between and joined to the pair of side walls and the pair of end walls to define an interior for the package, wherein the top wall includes a flat portion and an aperture therein, and wherein an area of the aperture is between 70% and 81% of an area of the flat portion.

[0012] According to a further exemplary aspect of the

present disclosure, A package for containing a stack of material sheets including a bottom wall, a pair of opposed side walls joined to the bottom walls, a pair of opposed end walls joined to the bottom wall and between the side walls, a top wall extending between and joined to the pair of side walls and the pair of end walls to define an interior for the package, wherein the top wall includes a flat portion and an aperture therein, a space extending round the aperture of at least ¼" between a perimeter of the top surface and a perimeter of the aperture and a stack of individual sheets disposed within the interior of the package, wherein an area of the aperture is between about 70% and about 81% of the total area of the flat portion, wherein the aperture has a length of between about 60% and up to 90% of the length of the flat portion and wherein the aperture has a width of between about 75% and up to 90% of the width of the flat portion

[0013] Numerous other aspects, features, and advantages of the present invention will be made apparent from the following detailed description together with the drawings figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The drawings illustrate the best mode currently contemplated of practicing the present invention.

[0015] In the drawings:

Fig. 1 is an isometric view of one embodiment of a sheet material package in an open configuration constructed according to the present disclosure;
Fig. 2 is a side elevation view of the package of Fig. 1;
Fig. 3 is a top plan view of the package of Fig. 1;
Fig. 4 is a bottom plan view of the package of Fig. 1;
Fig. 5 is an isometric view of the package of Fig. 1 in a closed configuration;
Fig. 6 is a side elevation view of the package of Fig. 2;
Fig. 7 is a top plan view of the package of Fig. 2; and
Fig. 8 is a bottom plan view of the package of Fig. 2.

DETAILED DESCRIPTION OF THE INVENTION

[0016] Referring now in detail to the drawing figures, wherein like reference numerals represent like parts throughout the several views, one exemplary embodiment of a package constructed according to the present disclosure is illustrated generally at 10 in Fig. 1. As best shown in Figs. 1-8, the illustrated exemplary embodiment of the package 10 is formed of a suitable foldable and/or flexible material, such as a coated or uncoated paper material, thermoplastic or thermoset plastic material, such a polypropylene, polycarbonate, or polyester, or a suitable foam material, among others, that is provided to a suitable form, fill and seal packaging process in order to shape and form the web into the package 10. The package 10 is formed of an enclosure 11 that includes a top wall 12 and a bottom wall 14 that are joined at respective adjacent edges by side walls 16,18 and end walls 20,22 to define an interior 24. In the exemplary illustrated embodiment, the side walls 16,18 are formed integrally with the top wall 12 and the bottom wall 14, with the bottom wall 14 including a seam 26 that joins opposed edges of the web to form the tube or sleeve-like interior 24 for the package 10.

[0017] The illustrated exemplary embodiment of the package 10 also includes a pair of end seals 26,28 that seal opposed sides of the end walls 20,22 to one another to enclose the interior 24 at each end of the package 10.

[0018] In the process for forming the package 10, the web of the material forming the package 10 is fed into a suitable machine (not shown) that shapes the web material into a tube-like configuration where the opposed edges of the web are joined to form the seam (not shown), such as by heat sealing, compression sealing, combinations thereof, or in other suitable manners. Alternatively, the web material can initially be formed in a tubular configuration, such that no seam is required to join the opposed edges are no opposed edges are present in the web material.

[0019] A volume of sheet materials 29 can then be positioned within the interior 24 of the tube, either after formation of a seal 26 at one end of the package 10 or prior to either seal 26,28 being formed. The sheet materials 29 can be any conventional type sheet material that is intended to be dispensed from the package 10 in a manner that provides individual sheets 30 to be used for a particular purpose. The individual sheets 30 are engaged with one another in the stack 32 forming the sheet material 29, such as by interleaving folded portions of the sheets 30 with one another, or by having tearaway lines of perforation partially joining the sheets 30 with each other. The stack 32 is inserted within the interior 24 of the package 10, and one or both of the ends are shaped to form the seals 26,28 in a manner similar to that used to form the seam 26 and enclose the stack 32 within the interior 24 of the package 10.

[0020] The form of the individual sheets 30 can be selected as desired, but in one exemplary embodiment the sheets 30 are formed absorbent substrates employed as wet wipes including a cleaning composition loaded onto the absorbent substrate. The absorbent substrate is preferably water-insoluble. By "water insoluble" is meant that the substrate does not dissolve but may readily break apart upon immersion in water. This cleaning composition can be used on flushable wipes in which the nonwoven substrate readily breaks apart after flushing. The water insoluble substrate is the implement or vehicle for delivering the cleaning composition of the present invention to the skin to be cleansed and moisturized. As used herein, the terms "substrate" or "wipe" are intended to include any material on which a cleaning composition may be loaded. In functional applications, a substrate is used to clean an article or a surface, as by wiping. Substrates comprise woven or non-woven materials, typically made from a plurality of fibers. The substrate can be used by itself (typically by hand) or attached to a cleaning

implement, such as a floor mop, handle, or a handheld cleaning tool, such as a toilet cleaning device. A wide variety of materials can be used as the substrate. Non-limiting examples of suitable water insoluble substrates include nonwoven substrates, woven substrates, sponges, cloths, meshes, paper towels, napkins, cleaning pads, and the like.

[0021] Preferred embodiments employ nonwoven substrates since they are economical and readily available in a variety of materials. By nonwoven is meant that the layer is comprised of fibers which are not woven into a fabric but rather are formed into a membrane, sheet, substrate, mat, absorbent core or pad layer or combinations thereof. Nonwoven substrates may be comprised of a variety of materials both natural and synthetic. By natural is meant that the materials are derived from plants, animals, insects or byproducts of plants, animals, and insects. By synthetic is meant that the materials are obtained primarily from various man-made materials or from natural materials which have been further altered. The conventional base starting material is usually a fibrous web comprising any of the common synthetic or natural textile-length fibers, or mixtures thereof. Non-limiting examples of natural materials useful in the present invention are silk fibers, keratin fibers and cellulosic fibers. Non-limiting examples of keratin fibers include those selected from the group consisting of wool fibers, camel hair fibers, and the like. Non-limiting examples of cellulosic fibers include those selected from the group consisting of wood pulp fibers, cotton fibers, hemp fibers, jute fibers, flax fibers, and mixtures thereof. Non-limiting examples of synthetic materials useful in the present invention include those selected from the group consisting of acetate fibers, acrylic fibers, cellulose ester fibers, modacrylic fibers, polyamide fibers, polyester fibers, polyolefin fibers, polyvinyl alcohol fibers, rayon fibers, polyurethane foam, and mixtures thereof. Examples of some of these synthetic materials include acrylics such as acrilan, creslan, and the acrylonitrile-based fiber, orlon; cellulose ester fibers such as cellulose acetate, arnel, and acele; polyamides such as nylons; polyesters such as fortrel, kodel, and the polyethylene terephthalate fiber, dacron; polyolefins such as polypropylene, polyethylene; polyvinyl acetate fibers; polyurethane foams and mixtures thereof.

[0022] Referring now to Figs. 1-4, the top wall 12 includes a dispensing aperture 34 formed directly within the material forming the top wall 12. The aperture 34 can be selectively exposed by a cover or lens 36 that can be removably positioned over the aperture 34 to enable sheets 30 the be removed or dispensed from the package 10 through the aperture 34. As in prior art packages, the perimeter 38 of the aperture 34 is sized to enable the sheet 30 being dispensed from the package 10 to exit that package 10 through the aperture 34.

[0023] However, to overcome the issue of the compression of the dispensed sheet 30 with an adjacent and/or successive sheet 30 that prevents the ready separation and dispensing of the single dispensed sheet 30 from the package 10 as found in the prior art, in the illustrated exemplary embodiment the aperture 34 is formed with a perimeter 38 significantly larger than in the prior art. More specifically, the aperture 34 is formed to have a width of from about 75% up to 90% of the width of the top wall 12, which optionally is defined as the flat portion 40 of the top wall 12.

[0024] In an additional exemplary embodiment either alone or in combination with any prior exemplary embodiment, the perimeter 38 of the aperture 34 includes a length of about 60% up to 90% of the length of the flat portion 40 of the top wall 12. With the size of the length and or width of the aperture 34 corresponding to these percentages, the wipes 30 can readily be dispensed from the package 10 through the aperture 34 without undue interference of the aperture 34 with passage of the wipe 30 through the aperture 34 resulting from compression of adjacent and/or successive wipes 30 with each other within the aperture 34.

[0025] In addition to the size of the aperture 34, in an exemplary embodiment of the package 10 either alone or in combination with any prior exemplary embodiment, the top wall 12 additionally includes sufficient space between the perimeter 38 of the aperture 34 and the perimeter 44 of the flat portion 40 of the top wall 12 to provide a secure and optionally moisture-proof engagement of the cover 36 with the top wall 12. In an exemplary embodiment of the package 10, the flat portion 40 of the top wall 12 includes a space 46 between the perimeter 38 of the aperture 34 and the perimeter 44 of the flat portion 40 of the top wall 12 of at least ¼". This space 46 enables sufficient area for the placement and/or formation of a suitable seal or adhesive 48 on the top wall 12 within the space 46 to secure and hold the cover 36 on the top wall 12 over the aperture 34. In other exemplary embodiments where the cover 36 is replaceably adhered to the top wall 12, the space 46 can be ¼" or increased up to ½" at a location(s) of the top wall 12 where the cover 36 is designed to hinge with regard to the top wall 12 without being completely removed therefrom.

[0026] According to still another exemplary embodiment either alone or in combination with any prior exemplary embodiment, the aperture 34 can be formed with a length and/or width to define an area within the perimeter of the aperture 38 of from about 70% up to about 81% of the total area of the flat portion 40 of the top wall 12.

[0027] Further, according to still another exemplary embodiment either alone or in combination with any prior exemplary embodiment, the shape of the perimeter 38 of the aperture 34 can be selected as desired, including but not limited to rectangular, square, oval, round, dogbone, triangular, or any other geometric or non-geometric shapes.

[0028] Further, as shown best in Figs. 5-7, according to still another exemplary embodiment either alone or in combination with any prior exemplary embodiment, the cover 36 can be formed to have an area substantially

corresponding to the area of the flat portion 40 of the top wall 12 in order to completely cover the aperture 34.

[0029] According to still another exemplary embodiment of the package 10 either alone or in combination with any prior exemplary embodiment, the cover 36 can be formed of a material that is the same as or different from the web material utilized to form the package 10. The material used for the cover 36 can be 100% virgin material as well as contain post-consumer resin, regrind, plastic fillers such as calcium carbonate, aerators or other material that is compatible to produce the cover 36 as desired, including covers 36 that are transparent, translucent, opaque, and combinations thereof. The cover 36 can be formed as an integral art of the web material forming the package 10 or can be formed as a separate component that is secured to the package 10. The cover 36 can have a thickness that is the same or different than that of the remainder of the package 10, and in a particular exemplary embodiment the thickness is between about 0.007" to about 0.008" but it can be thicker or thinner depending on material used, or number of layers of material used in forming the cover 36.

[0030] According to still another exemplary embodiment of the package 10 either alone or in combination with any prior exemplary embodiment, the cover 36 has a shape that corresponds to and is slightly larger than the aperture 34 to overlap at least a portion of and optionally the entire perimeter 38 of the aperture 34. The cover 36 can be adhered to the top wall 12 of the package 10 via glue, heat sealing, hot air sealing, hot wedge welding, solvent welding, ultrasonic welding, and/or any other suitable manner ways of attaching the cover 36 to the package 10. The cover 36 can be secured in a permanent manner to the top wall 12 at one end 50 to form a self-closing cover 36 employing a hinge, formed by the end 50 of the cover 36, the elasticity of the material forming the cover 36, shape of the cover 36, a forward weight bias of the cover 36 aided by gravity, or a combination thereof. Further, the remainder of the cover 36 can be releasably adhered or secured to the top wall 12 by an adhesive that retains the cover 36 in a separable manner on the top wall 12 separate from the permanent securing of the cover 36 to the top end 12 at the end 50. To facilitate the removal of the cover from over the aperture 36, the cover 36 can include a tab 52 opposite the end 50 that can extend away from the top surface 12 to be grasped an pulled to disengage the cover 36 from the top surface 12.

[0031] Various other embodiments of the present disclosure are contemplated as being within the scope of the filed claims particularly pointing out and distinctly claiming the subject matter regarded as the invention.

Claims

1. A package for containing a stack of material sheets, the package comprising:

a) a bottom wall;
b) a pair of opposed side walls joined to the bottom walls;
c) a pair of opposed end walls joined to the bottom wall and between the side walls; and
d) a top wall extending between and joined to the pair of side walls and the pair of end walls to define an interior for the package,
wherein the top wall includes a flat portion and an aperture therein, and
wherein an area of the aperture is between about 70% and 81% of an area of the flat portion.

2. The package of claim 1, wherein the aperture has a length of between about 60% and up to 90% of the length of the flat portion.

3. The package of claim 1 or claim 2, wherein the aperture has a width of between about 75% and up to 90% of the width of the flat portion.

4. The package of claim 1 or claim 2 or claim 3, further comprising a space extending round the aperture of at least ¼" between a perimeter of the top surface and a perimeter of the aperture.

5. The package of claim 4, wherein the space is up to ½" between the perimeter of the top surface and the perimeter of the aperture.

6. The package of any preceding claim, further comprising a cover secured to the top wall over the aperture.

7. The package of claim 6, wherein the cover is permanently secured to the top wall at one end.

8. The package of any preceding claim, further comprising a tab on the cover opposite the permanently secured end.

9. The package of claim 8, further comprising a releasable adhesive disposed between the top surface and the cover.

10. The package of any preceding claim, further comprising a stack of individual sheets disposed within the interior of the package.

11. A package for containing a stack of material sheets, the package comprising:

a) a bottom wall;
b) a pair of opposed side walls joined to the bottom walls;
c) a pair of opposed end walls joined to the bottom wall and between the side walls; and
d) a top wall extending between and joined to

the pair of side walls and the pair of end walls to define an interior for the package,
wherein the top wall includes a flat portion and an aperture therein,
wherein an area of the aperture is between about 70% and 81% of an area of the flat portion,
wherein the aperture has a length of between about 60% and up to 90% of the length of the flat portion; and
wherein the aperture has a width of between about 75% and up to 90% of the width of the flat portion.

12. The package of claim 11, further comprising a space extending round the aperture of at least ¼" between a perimeter of the top surface and a perimeter of the aperture.

13. The package of claim 11 or claim 12, further comprising a stack of individual sheets disposed within the interior of the package.

14. A package for containing a stack of material sheets, the package comprising:

a) a bottom wall;
b) a pair of opposed side walls joined to the bottom walls;
c) a pair of opposed end walls joined to the bottom wall and between the side walls;
d) a top wall extending between and joined to the pair of side walls and the pair of end walls to define an interior for the package, wherein the top wall includes a flat portion and an aperture therein;
e) a space extending round the aperture of at least ¼" between a perimeter of the top surface and a perimeter of the aperture; and
f) stack of individual sheets disposed within the interior of the package,
wherein an area of the aperture is between about 70% and about 81% of an area of the flat portion,
wherein the aperture has a length of between about 60% and up to 90% of the length of the flat portion; and
wherein the aperture has a width of between about 75% and up to 90% of the width of the flat portion.

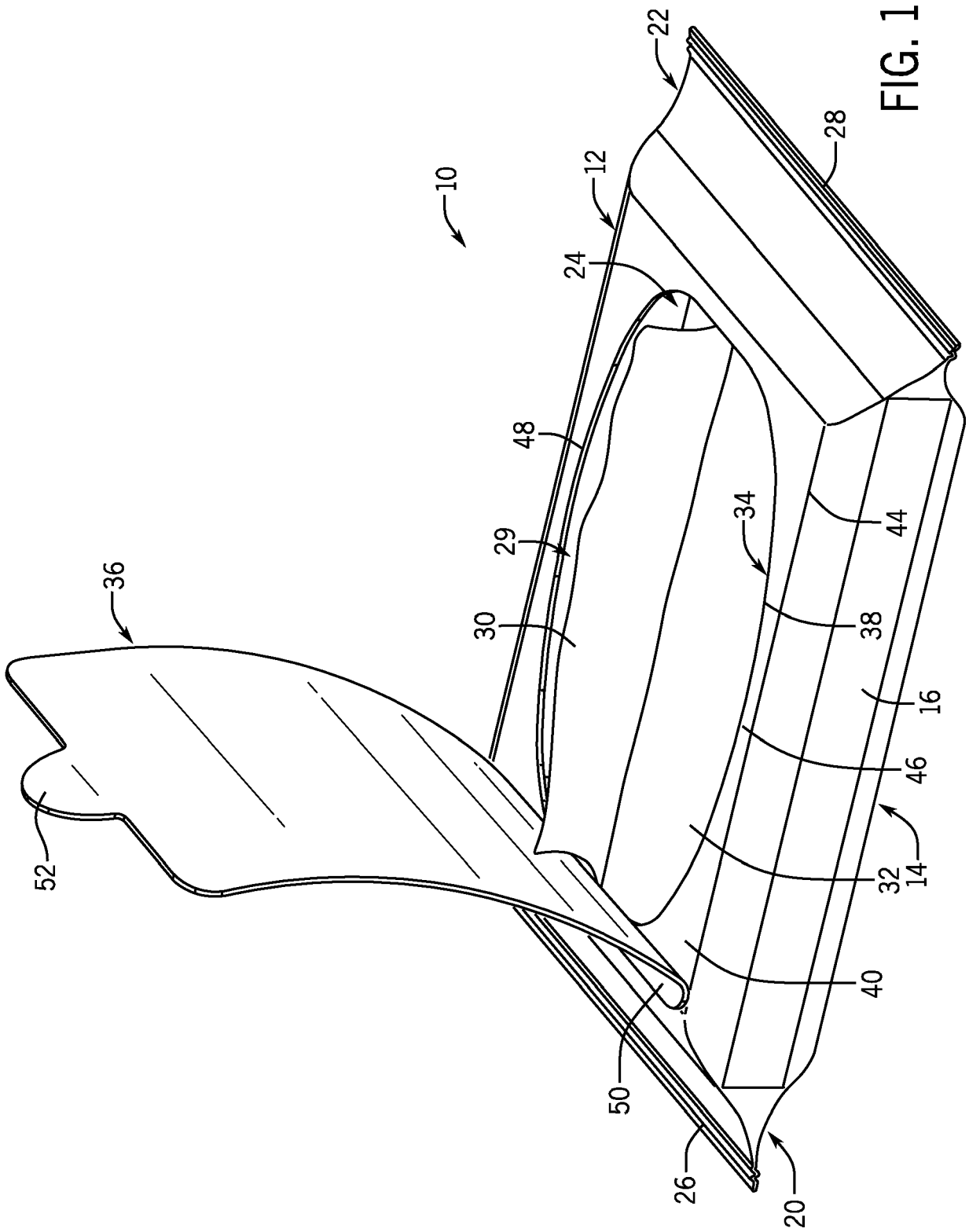

FIG. 1

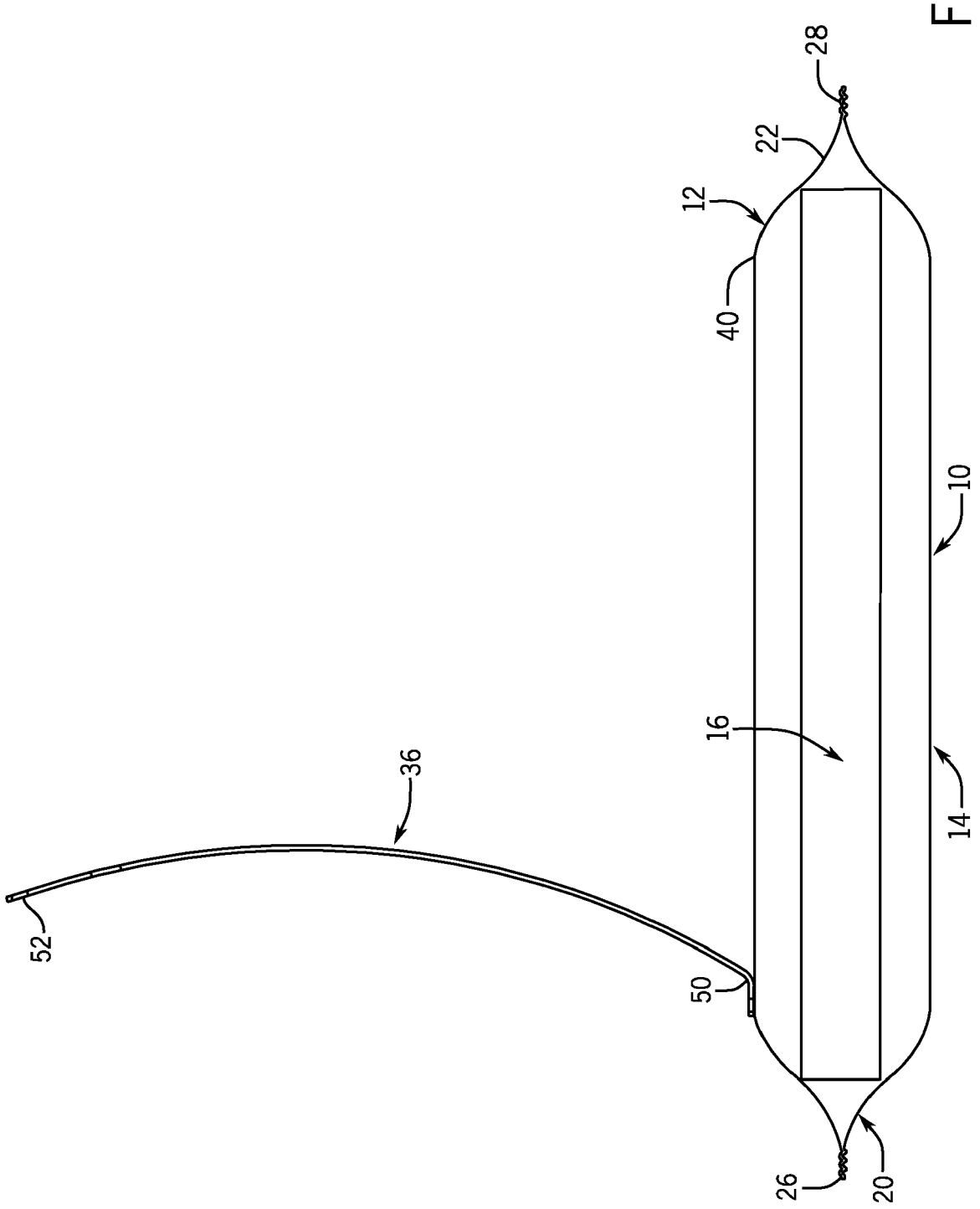

FIG. 2

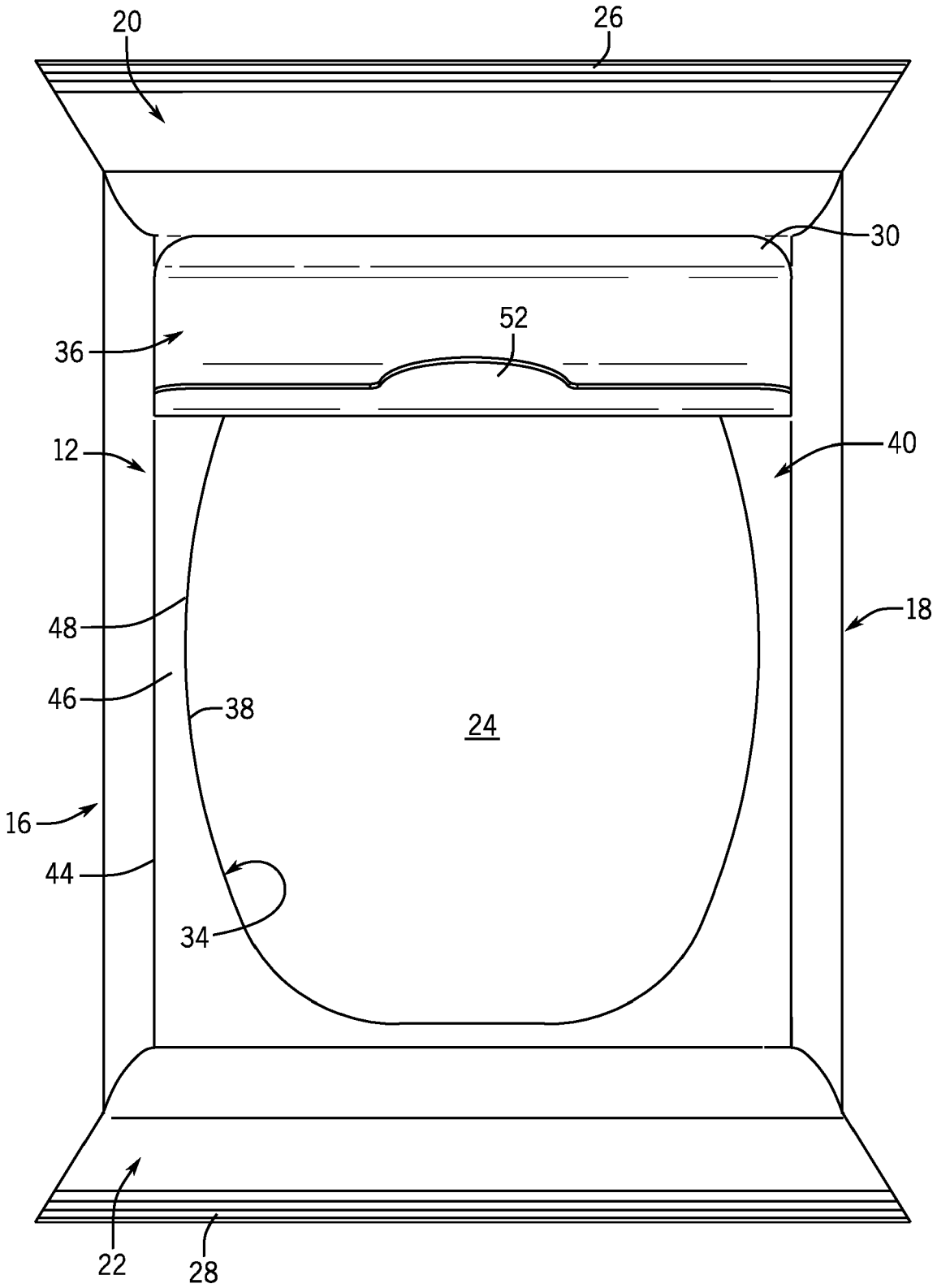

FIG. 3

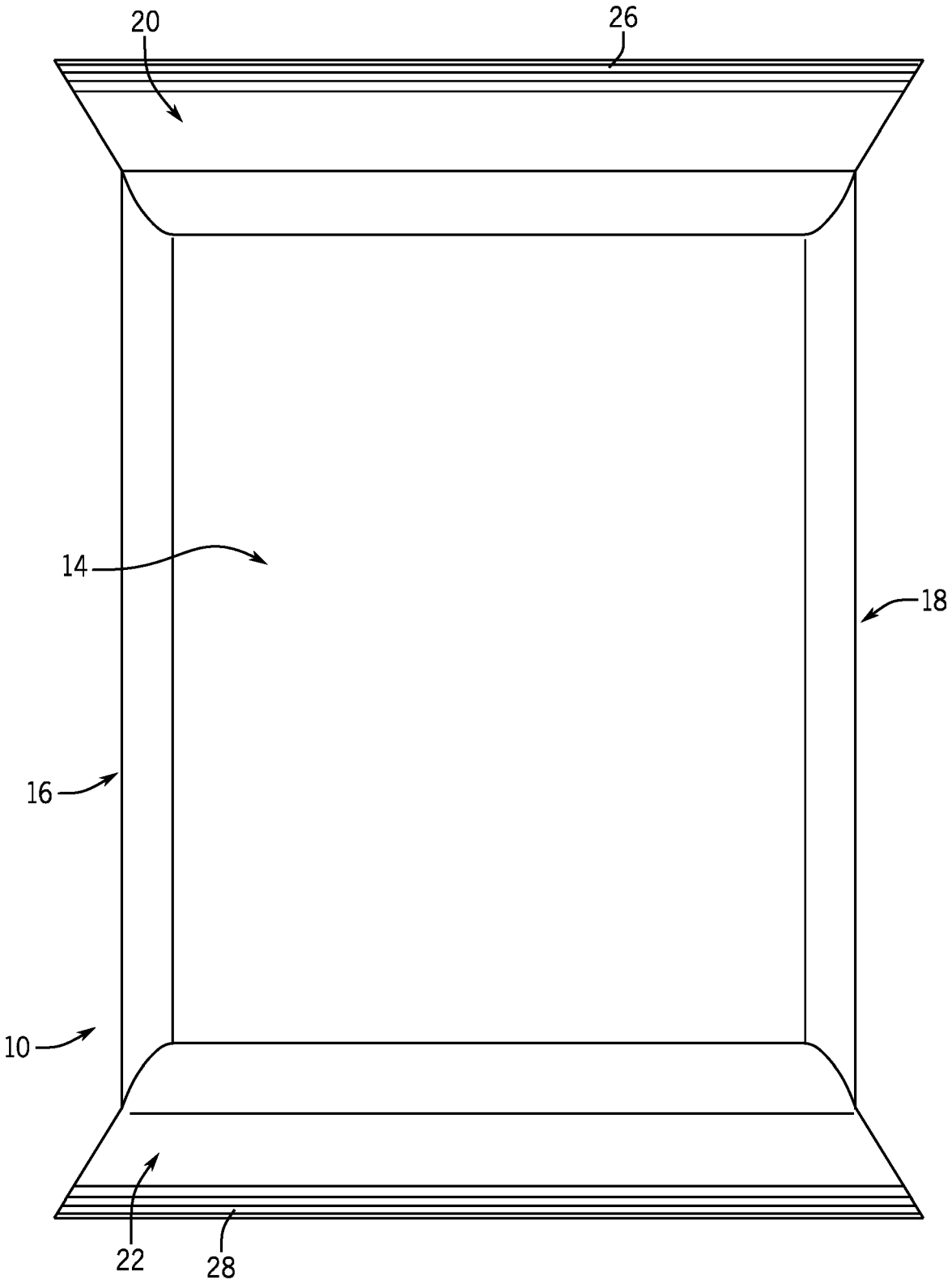

FIG. 4

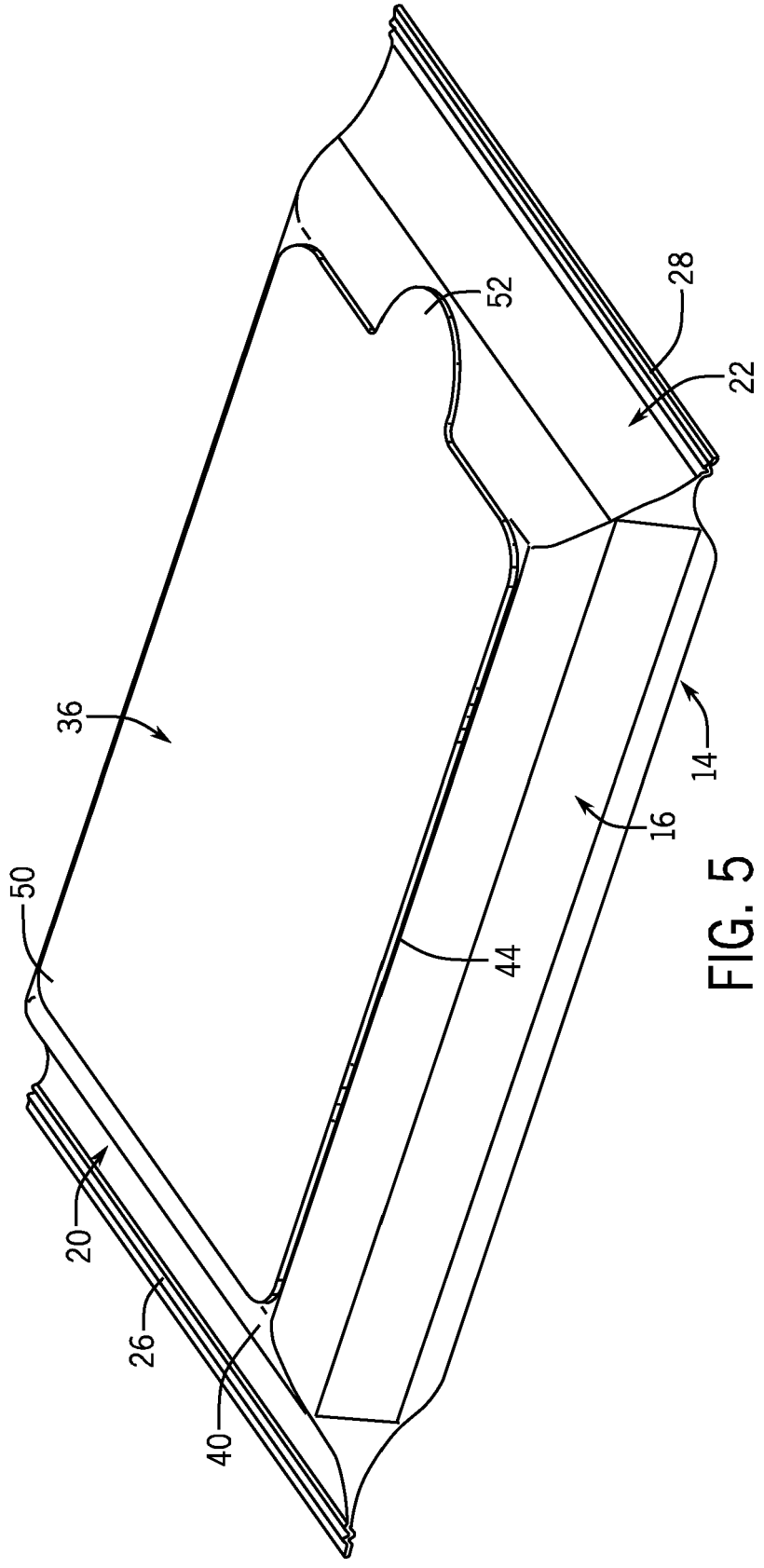

FIG. 5

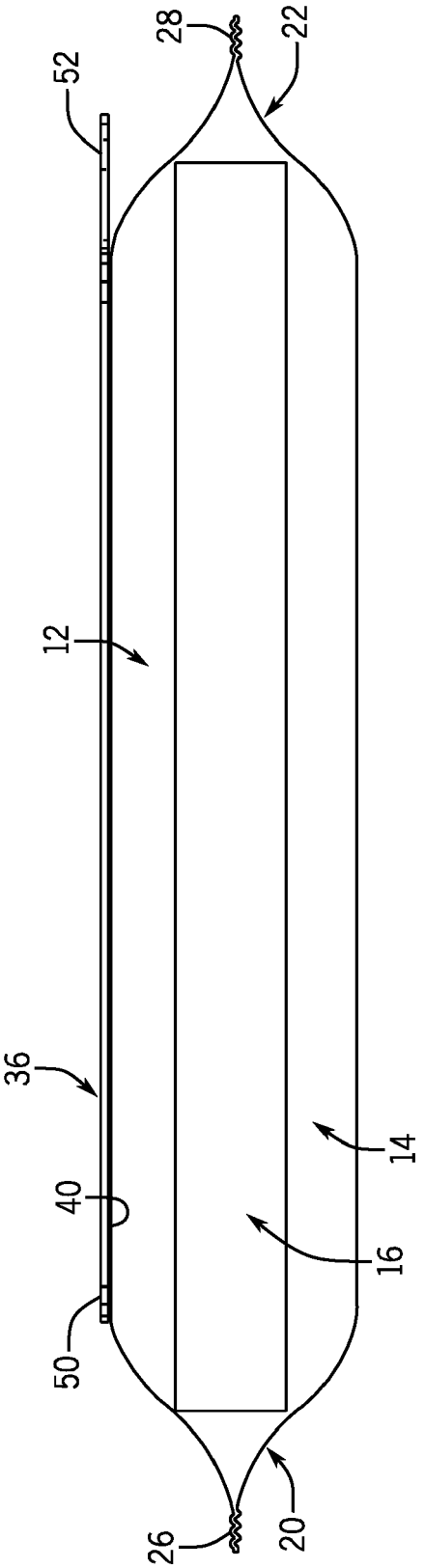

FIG. 6

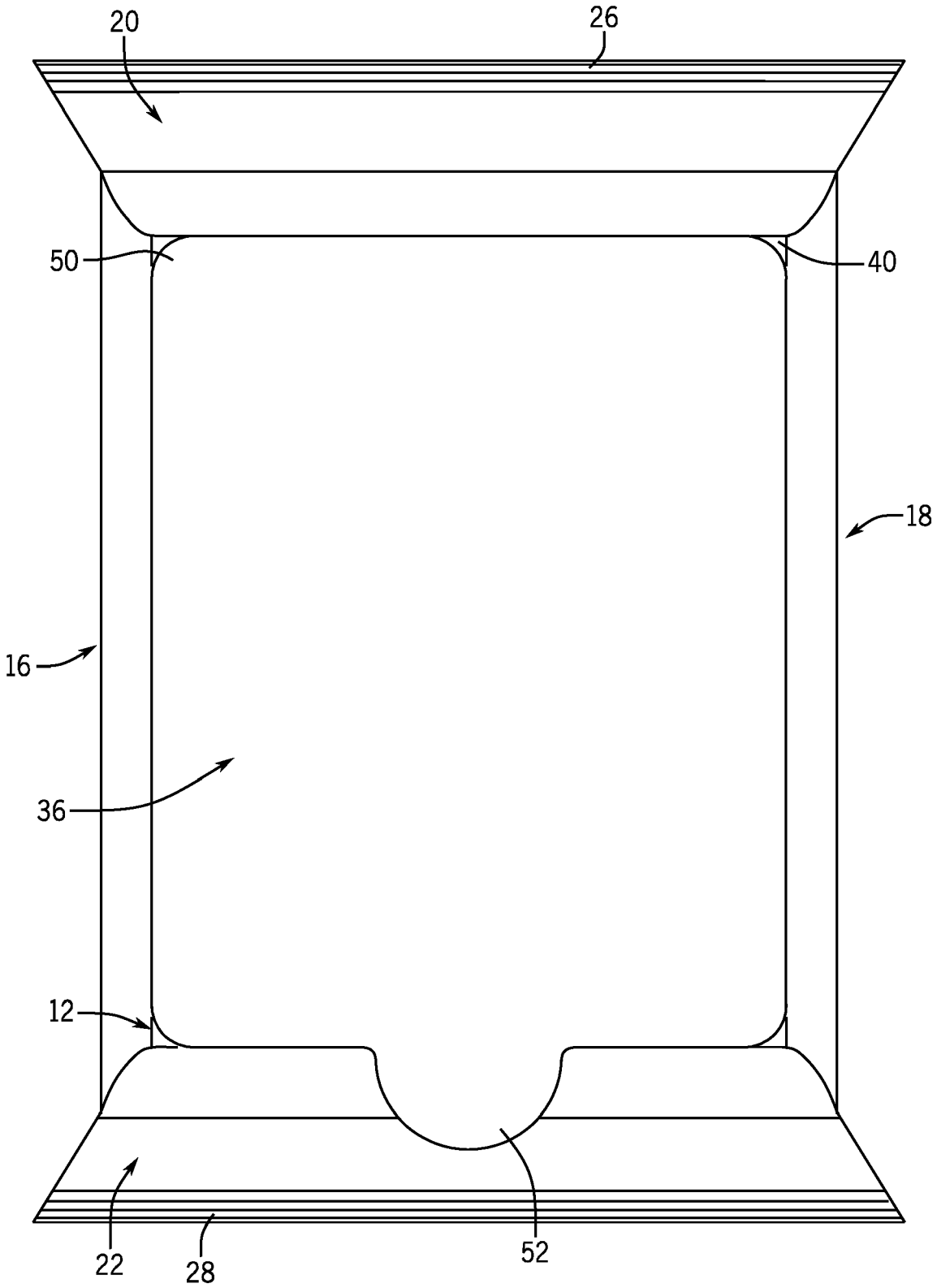

FIG. 7

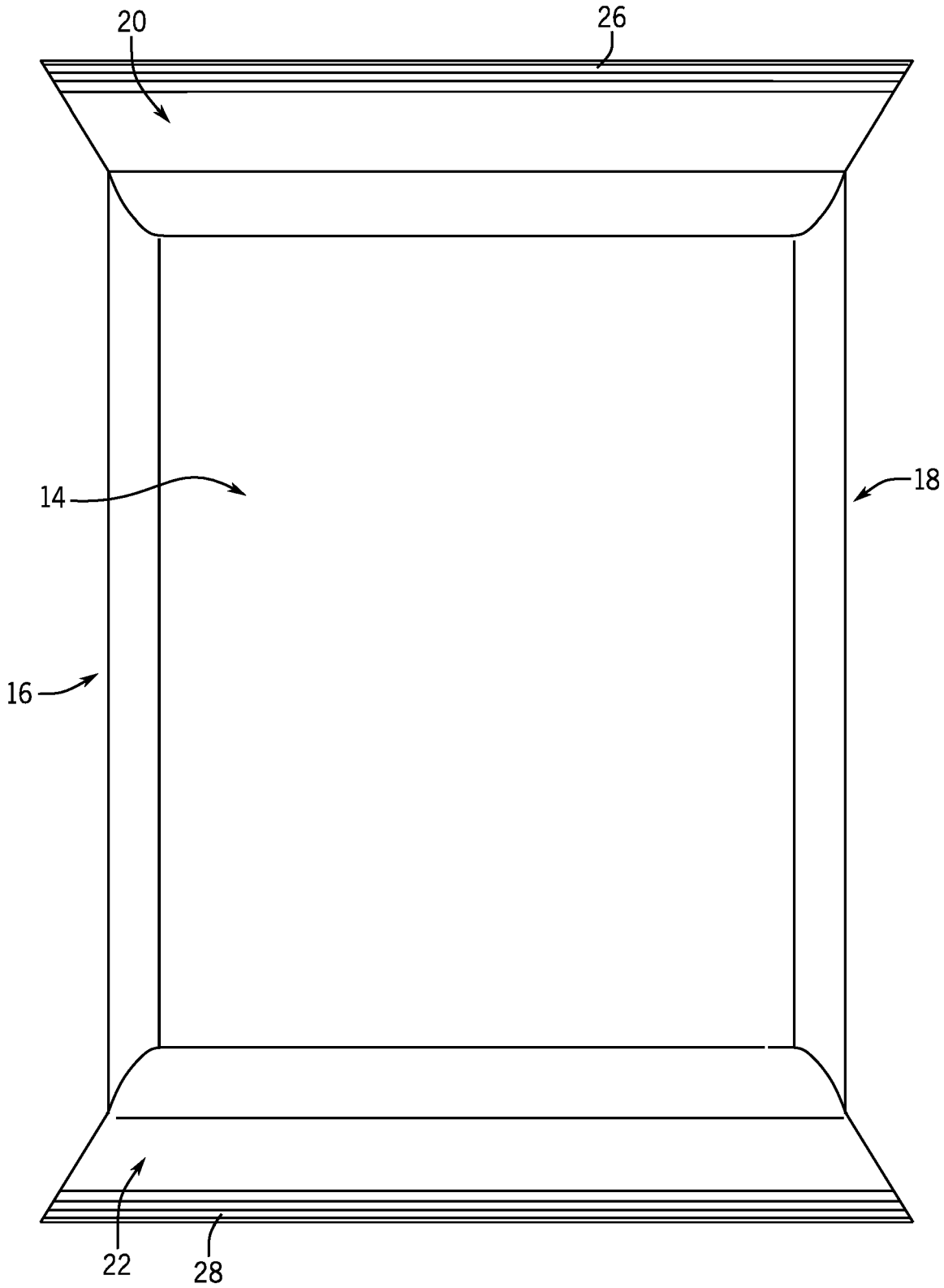

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 23 16 6096

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	DE 10 2016 125797 A1 (MONDI AG [AT]) 28 June 2018 (2018-06-28) * paragraph [0033] - paragraph [0046]; figures 1-3 *	1-14	INV. B65D75/12 B65D75/58 B65D83/08
X	US 2012/223092 A1 (HALLAM JAMES ALEXANDER [GB] ET AL) 6 September 2012 (2012-09-06) * paragraph [0018] - paragraph [0043]; figures 1-5 *	1-14	
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X	US 4 840 270 A (CAPUTO GARRY L [US] ET AL) 20 June 1989 (1989-06-20) * column 2, line 26 - column 4, line 41; figures 1-4 *	1-14	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 September 2023	Lämmel, Gunnar

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 16 6096

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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