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(54) **Tape rule anti-theft device and package**

(57) A tape rule package includes a tape rule (12), a mount structure (14), and a surveillance tag (15). The tape rule includes a housing (16) and a belt clip (18). The mount structure includes a securement portion (20) constructed and arranged to be secured to the belt clip. The surveillance tag is carried by the mount structure.

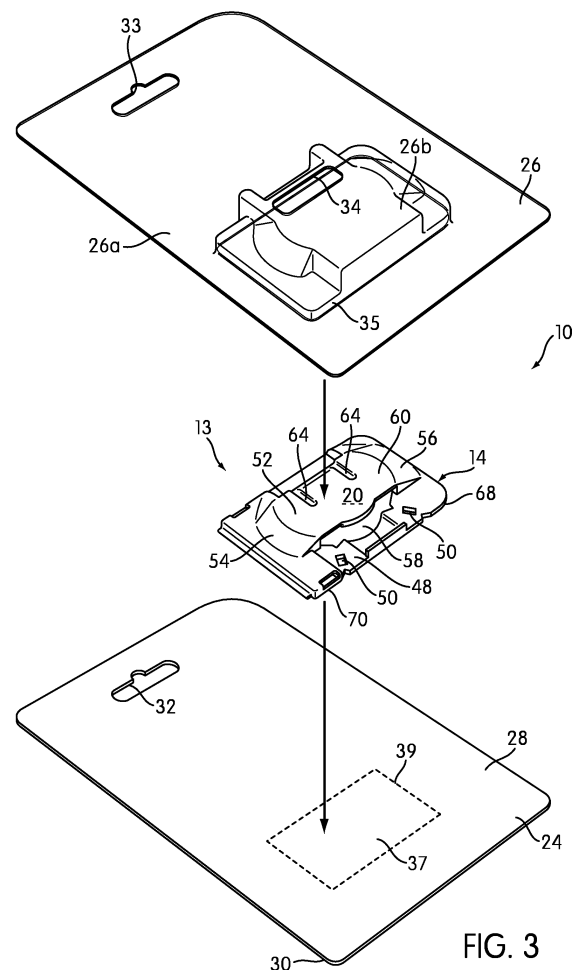


FIG. 3

Description

[0001] The present invention relates to an anti-theft device and also to a tape rule package having an anti-theft device that is attached to a tape rule.

[0002] Tape measures pose a significant theft problem in retail stores. With conventional tape measure packaging, e.g., blister packs using cardboard and/or plastic wrap, shoplifters have been known to tear the package off the tape rule and wear the tape rule out of the store, clipped to the individual's belt.

[0003] Anti-theft devices, such as RFID tags and electronic article surveillance (EAS) tags, for example, have been used in retailing to reduce theft. The surveillance tags, which are attached to the retail article or its packaging, trip an alarm-sounding sensor when an attempt is made to remove the article from the store, unless the tag is first disarmed by store personnel. Of course, if the surveillance tag becomes separated from the article, it is ineffective to prevent theft of the article.

[0004] Tags have been applied to tape measure packages displayed for sale in order to deter theft. Tags are only effective, however, if the tape measure remains with the part of the package carrying the tag. In existing tape measure packages, separation of the tape measure from the tag has been relatively easy to accomplish, thus enabling the tape measure to be removed from the store without tripping the detection system sensor.

[0005] The present invention provides several improvements over the prior art.

[0006] One aspect of the present invention provides a tape rule package that includes a tape rule, a mount structure, and a surveillance tag. The tape rule includes a housing and a belt clip. The mount structure includes a securement portion constructed and arranged to be secured to the belt clip. The surveillance tag is carried by the mount structure.

[0007] Another aspect of the present invention provides an anti-theft attachment for a product having a belt clip, the anti-theft attachment includes a mount structure and a surveillance tag. The mount structure includes a base portion and a bridge portion. The bridge portion is joined to the base portion. The bridge portion includes a projection constructed and arranged to be received in an opening of the belt clip. The surveillance tag is secured to the mount structure.

[0008] Another aspect of the present invention provides an anti-theft attachment for a product, the product having a structural shape, the anti-theft attachment includes an injection molded integrally formed body having a structural configuration constructed and shaped to be forced into a biased engagement with the structural shape of the product such that the structural configuration of the integrally formed body interlocks with the product and cannot be released from the product without cutting or destruction thereof; and a surveillance tag carried by the injection molded integrally formed body.

[0009] Another aspect of the present invention pro-

vides a method for forming a package product, the method includes injection molding a body; securing a surveillance tag to the body; and forcing the body into an interlocking relationship with a product so that the body cannot be removed from the product without cutting or destruction of the body.

[0010] These and other aspects of the present invention, as well as the methods of operation and functions of the related elements of structure and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures. In one embodiment of the invention, the structural components illustrated herein are drawn to scale. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention. It shall also be appreciated that the features of one embodiment disclosed herein can be used in other embodiments disclosed herein. As used in the specification and in the claims, the singular form of "a", "an", and "the" include plural referents unless the context clearly dictates otherwise.

FIG. 1 is a perspective view of a tape rule package, in which a tape rule is secured to a mount structure in accordance with an embodiment of the present invention;

FIG. 2 is a sectional view of the tape rule package, in which the tape rule is shown in phantom lines and a belt clip of the tape rule is secured to the mount structure in accordance with an embodiment of the present invention;

FIG. 3 is a perspective view of the tape rule package (with the tape rule removed for illustrative clarity), in which the mount structure is being disposed between a clear plastic portion and a backing card in accordance with an embodiment of the present invention;

FIG. 4 is a front perspective view of the mount structure in accordance with an embodiment of the present invention;

FIG. 5 is a rear perspective view of the mount structure in accordance with an embodiment of the present invention;

FIG. 6 is a rear perspective view of the mount structure, in which a surveillance tag is shown in phantom lines and the surveillance tag is being secured to the mount structure in accordance with an embodiment of the present invention;

FIG. 7 is a rear perspective view of the mount structure, in which the surveillance tag is secured to the mount structure in accordance with an embodiment of the present invention;

FIG. 8 is a perspective view of the tape rule package (with the tape rule removed for illustrative clarity), in

which the mount structure is disposed between the clear plastic portion and the backing card in accordance with an embodiment of the present invention; FIG. 9 is a front view of the tape rule package (with the tape rule removed for illustrative clarity) with the mount structure disposed between the clear plastic portion and the backing card in accordance with an embodiment of the present invention;

FIG. 10 is a sectional view thereof along the line 10--10 of FIG. 9 in accordance with an embodiment of the present invention;

FIG. 11 is a sectional view of the tape rule package, in which the tape rule is shown in phantom lines and the belt clip of the tape rule is extended through an opening in the clear plastic portion to be received by the mount structure disposed between the clear plastic portion and the backing portion in accordance with an embodiment of the present invention;

FIG. 12 is a sectional view of the tape rule package, in which the tape rule is shown in phantom lines and a curved end portion of the belt clip rides up the increasing slope of a projection on the mount structure in accordance with an embodiment of the present invention;

FIG. 13 is a sectional view of the tape rule package, in which the tape rule is shown in phantom lines and a lower edge of an opening in the belt clip snaps over a bottom edge of the projection on the mount structure in accordance with an embodiment of the present invention;

FIG. 14 is a rear perspective view of the tape rule package, in which a portion of the backing portion is removed to access a removable portion of the mount structure in accordance with an embodiment of the present invention;

FIG. 15 is a rear perspective view of the tape rule package, in which the removable portion of the mount structure is removed along the at least one frangible portion in accordance with an embodiment of the present invention;

FIG. 16 is a sectional view of the tape rule package, in which the curved end portion of the belt clip is biased outwardly to release the lower edge of the opening in the belt clip from the bottom edge of the projection on the mount structure in accordance with an embodiment of the present invention;

FIG. 17 is a sectional view of the tape rule package, in which the belt clip is released from an opening in the mount structure in accordance with an embodiment of the present invention; and

FIG. 18 is a sectional view of the tape rule package, in which the belt clip is released from the opening in the clear plastic portion in accordance with an embodiment of the present invention.

[0011] FIGS. 1 and 2 show a tape rule package 10 in accordance with an embodiment of the present invention. The tape rule package 10 includes a tape rule 12, an

anti-theft device 13 (as shown in FIG. 3), and display portion 24, 26. The anti-theft device or attachment 13 includes a mount structure or body 14 and a surveillance tag 15 (as shown in FIGS. 6 and 7). The tape rule 12 can be of any type, and typically includes a steel measuring blade and a wind-up spring (not shown) that are housed in a housing 16. A belt clip 18 is connected to the housing 16 and used to carry the tape rule 12, for example on a user's belt. The mount structure 14 includes a securement portion 20 constructed and arranged to be secured to the belt clip 18. In another embodiment, the securement portion 20 is constructed and arranged to be secured to any other component (i.e., other than the belt clip 18) of the tape rule 12. For example, the securement portion 20 may be constructed and arranged to be secured to an end hook 22 (as shown in FIG. 2), a slide lock or lock lever 23 (as shown in FIGS. 14 and 15), the housing 16, or a measuring blade (i.e., a measuring tape or a measuring rule) of the tape rule 12.

[0012] The surveillance tag 15 is carried by the mount structure 14. In one embodiment, the surveillance tag 15 is secured to the mount structure 14 as will be explained with reference to FIGS. 6 and 7. In another embodiment, the surveillance tag 15 is integrally formed with the mount structure or body 14. That is, the surveillance tag 15 is integrally molded with or into the mount structure 14 to form, for example, a one-piece, unitary structure.

[0013] As shown in FIG. 3, in one embodiment, the display portion of the tape rule package 10 includes a backing portion 24 and a clear plastic portion 26. The backing portion 24 can be of any configuration, but in the illustrated embodiment is generally planar and is formed from a material such as paperboard, paper, plastic or cardboard. The backing portion 24 includes a forwardly-facing surface 28 that is intended to be viewed by a customer and a rearwardly-facing surface 30. In one embodiment, the forwardly-facing surface 28 and/or the rearwardly-facing surface 30 may have advertising or promotional information such as indicia (not shown) for identifying the product and/or manufacturer to the customers, and may include bar-codes for pricing (or payment). In another embodiment, the rearwardly-facing surface 30 may contain indicia (not shown) such as instructions for using the tape rule 12. In one embodiment, the backing portion 24 is comprised of two cardboard sheets, including a front cardboard sheet and a back cardboard sheet, which are adhered to one another.

[0014] The tape rule package 10 can be positioned on a retail display rack for display and selection by the customers. The backing portion 24 generally includes a hanger hole 32 formed near an upper edge of the backing portion 24. In one embodiment, the clear plastic portion 26 generally includes a hanger hole 33 formed near an upper edge of the clear plastic portion 26. When the backing portion 24 is secured to the clear plastic portion 26, the hanger hole 33 of the clear plastic portion 26 is constructed and arranged to align with the hanger hole 32 of the backing portion 24. The hanger holes 32 and 33

together enable the package 10 to be hung on a hanger (not shown), such as a rack hooks or display rails on a display stand, for display to the consumers in a retail store. The hanger holes 32 and 33 may be formed by cutting (e.g., stamping) away a piece of backing card material from the backing portion 24 and a piece of the clear plastic material from the clear plastic portion 26 respectively in a shape sufficient to receive the hanger. Each hanger holes 32 and 33 as illustrated include a horizontal slot with an enlarged circular region in the center, however, it should be appreciated that the hanger holes 32 and 33 may be configured in various shapes and sizes as would be appreciated by one skilled in the art. For example, in one embodiment, the package 10 may be positioned on the hanger using other hanging structures such as hooks attached to the rearwardly-facing surface 30 of the backing portion 24, just for example.

[0015] In one embodiment, as shown in FIG. 3, the clear plastic portion 26 includes an opening or slot 34 through which the belt clip 18 extends to be received by the mount structure 14 disposed between the clear plastic portion 26 and the backing portion 24. In one embodiment, the clear plastic portion 26 includes a space 35 that is constructed and arranged to receive or accommodate the mount structure 14 therewithin, when the mount structure 14 is disposed between the clear plastic portion 26 and the backing portion 24.

[0016] In one embodiment, the backing portion 24 includes a removable section 37 that is constructed and arranged to be at least partially removable to access the mount structure 14 that is disposed between the clear plastic portion 26 and the backing portion 24. In one embodiment, the removable section 37 may include at least one frangible area 39 that is constructed and arranged to be frangible to enable removal of the removable section 37 as will be explained in detail with reference to FIGS. 14 and 15. In one embodiment, the frangible areas 39 may include, for example, perforations, scores lines, cuts, slits, or any other lines of weakness or weakened material regions that serve as an aid in separation.

[0017] As noted previously, the tape rule 12 includes the housing 16 and the belt clip 18. The belt clip 18 may be made of flexible metal or plastic material with sufficient resiliency to be moved away from the housing 16 to receive a workman's belt in a conventional fashion and to resiliently snap back and engage the belt with the internal material resiliency of the clip 18. In one embodiment, the housing 16 of the tape rule 12 contains a coiled measuring tape, or measuring rule, therein. The hooked or flanged end 22 of the measuring tape is illustrated in FIG. 2. The coiled measuring tape is biased in a take-up direction in conventional fashion. The tape can also be locked in an extending measuring condition by actuation of the locking lever 23 (see FIGS. 14 and 15), also in conventional fashion. In one embodiment, the tape rule 12 can be of the type, for example, disclosed in U.S. Patent No. 6,643,947.

[0018] As shown in FIG. 2, the belt clip 18 is fastened

to the tape rule housing 16 by an appropriate fastener. The belt clip 18 includes a curved end portion 38 at one end 44 thereof. In one embodiment, the curved end portion 38 is generally bent outwardly from the housing 16. The belt clip 18 has an opening 36 (clearly shown in FIGS. 14 and 15) stamped therethrough. As shown in FIGS. 14 and 15, the opening 36 of the belt clip 18 may be teardrop-shaped to accommodate a projection 46 disposed on the mount structure 14 therein. In one embodiment, the projection 46 may have a corresponding teardrop shape, but dissimilar shapes can also be used. One of ordinary skill in the art can best appreciate that the opening 36 of the belt clip 18 may have a variety of other shapes without departing from the scope of the present invention including but not limited to generally square, generally triangular, generally circular, generally pear shaped, just for example.

[0019] In one embodiment, as shown in FIGS. 4-7, the mount structure 14 is a separately-formed structure that is constructed and arranged to carry the surveillance tag 15. In one embodiment, the mount structure 14 is molded as a single (integral) plastic component. In one embodiment, the mount structure 14 is molded using an injection molding process. In one embodiment, the mount structure 14 and the surveillance tag 15, which is integrally formed with or secured to the mount structure 14, together serve as an anti-theft attachment for the tape rule 12.

[0020] In one embodiment, the mount structure 14 is made of any high strength material that can secure the surveillance tag 15 to the belt clip 18 (see FIG. 1). In one embodiment, the substance forming the mount structure 14 is made of a strong plastic material which cannot be manually ripped or torn. Thus, the mount structure 14 and hence the surveillance tag 15 cannot be removed from the belt clip 18 unless the material of the mount structure 14 is cut or otherwise destroyed, which typically requires a tool, such as a sharp edge blade, scissors, pliers or other tool.

[0021] In one embodiment, the mount structure 14 is made of a plastic material, for example, polyvinylchloride (PVC) film. The PVC film used is, in one embodiment, of the non-recycled variety to ensure strength thereof. The high strength plastic material inhibits separation thereof from the belt clip 18 and inhibits manual access to the surveillance tag 15.

[0022] In one embodiment, the surveillance tag 15 may take the form of an electronic article surveillance (EAS) tag, which utilizes magnetically vibrating elements that transmit a frequency which can be detected by a detection system used in retail stores. Unlimiting examples of such tags are found in U.S. Pat. Nos. 5,357,240; 5,313,192; 5,111,186; 4,510,489; and 4,510,490. In such embodiment, the EAS tag can be disarmed, for example, by being demagnetized at the cash register before the customer walks past the sensor at the store exit. In another embodiment, the surveillance tag 15 may include a radio frequency identification (RFID) transponder, or "tag". Other known surveillance tags may also be used.

[0023] In one embodiment, the mount structure or the injection molded integrally formed body 14 includes a structural configuration (e.g., a bridge portion or securement portion 40 with a projection 46 or an opening (not shown) formed on it) that is constructed and shaped to be forced into biased engagement with a structural shape (e.g., an opening 36 (see FIG. 2) in or a projection (not shown) formed on the belt clip 18) of the tape rule 12 such that the structural configuration of the integrally formed body 14 interlocks with the tape rule 12 and cannot be released from the tape rule 12 without cutting or destruction of the structural configuration of the integrally formed body 14.

[0024] In the embodiment of FIGS. 4 and 5, the mount structure 14 includes a base portion 42 and the bridge portion 40. The bridge portion 40 is joined to the base portion 42.

[0025] The bridge portion or securement portion 40 of the mount structure 14 includes a belt clip securing portion 52, and a pair of adjoining members 54 and 56. The pair of adjoining members 54 and 56 are constructed and arranged to join the belt clip securing portion 52 to the base portion 42. In the illustrated embodiment, as shown in FIGS. 4-7, the adjoining members 54 and 56 are disposed on either side of the belt clip securing portion 52. The two adjoining members 54 and 56 are constructed and arranged to slope upwardly from the base portion 42 to join with the belt clip securing portion 52. As the belt clip securing portion 52 is joined with the base portion 42, a gap, a space or an opening 58 is formed between the belt clip securing portion 52 and the base portion 42, thus, separating the belt clip securing portion 52 from the base portion 42. In one embodiment, the gap or the opening 58 functions as a clip-receiving portion and is constructed and arranged to receive the clip 18 therein.

[0026] The belt clip securing portion 52 includes a forwardly-facing surface 60 (see FIG. 4) and a rearwardly-facing surface 62 (see FIGS. 5-7). The forwardly-facing surface 60 is constructed and arranged to rest against or adjacent to an inner surface of the clear plastic portion 26 (see FIG. 2). The rearwardly-facing surface 62 is constructed and arranged to engage with an inner surface 66 (see FIG. 2) of the belt clip 18.

[0027] The securing portion 52 of the mount structure 14 includes the projection 46. That is, the structural configuration of the injection molded integrally formed body 14 is in the form of the bridge portion or securement portion 40 with the projection 46 thereon. The projection 46 is constructed and arranged to be received in the opening 36 (see FIG. 2) in the belt clip 18. In one embodiment, the projection 46 is constructed and arranged to be disposed on the rearwardly-facing surface 62 of the belt clip securing portion 52. In one embodiment, the projection 46 is in the form of a ramp that is constructed and arranged to extend inwardly into the opening or gap 58 formed between the base portion 42 and the bridge portion 40 as it extends further downwardly towards the bottom of the belt clip securing portion 52. In one embodi-

ment, the projection ramp is constructed in solid, gusseted, corrugate or framed outline. In one embodiment, the projection ramp may contain reliefs to enable integral spring compliancy or engaging response.

[0028] In another embodiment, the projection 46 may have a flat structural configuration in which the thickness of the projection 46 may generally remain constant as it extends from the top to the bottom of the belt clip securing portion 52. In such embodiment, a first and a second adjoining portions 53 and 55 (i.e., located on either side of the projection 46) of the belt clip securing portion 52 may have a tapered configuration in which the thickness of the first and the second adjoining portions 53 and 55 gradually decrease as they extend downwardly from the top to the bottom of the belt clip securing portion 52. This provides the projection 46 with a relatively increasing thickness relative to the side portions 53, 55 as the projection 46 extends downward as described. In yet another embodiment, both the projection 46 and adjoining portions 53, 55 have constant thickness throughout their length.

[0029] In one embodiment, the projection 46 may be generally triangular in shape to be received in the opening 36 (see FIG. 2) of the belt clip 18. One of ordinary skill in the art can best appreciate that the projection 46 may have a variety of other shapes without departing from the scope of the present invention including but not limited to generally teardrop-shaped, generally pear shaped, generally square shaped, generally rounded shaped, for example.

[0030] In another embodiment, the structural configuration of the injection molded integrally formed body 14 is in the form of the bridge portion or securement portion 40 with the opening (not shown) thereon. The opening in the securing portion 52 of the mount structure 14 is constructed and arranged to receive the projection (not shown) formed on the belt clip 18 such that the opening in the securing portion 52 of the mount structure 14 interlocks with the projection on the belt clip 18 of the tape rule 12 and cannot be released from the tape rule 12 without cutting or destruction of the at least a portion of the mount structure 14.

[0031] The base portion 42 includes a first portion 68 and a second portion 70. The first portion 68 of the base portion 42 includes an opening 72 thereof. The edges of the opening 72 are constructed and arranged to adjoin with the pair of adjoining members 54 and 56 so as to join the bridge portion 40 with the base portion 42.

[0032] The mount structure 14 includes a removable portion 48 that is constructed and arranged to be adjacent to the curved end portion 38 (see FIG. 2) of the belt clip 18. When the mount structure 14 is secured to the belt clip 18, such that the removable portion 48 interferes with or prevents manual access to the curved end portion 38. In one embodiment, the removable portion 48 is disposed on the first portion 68 of the base portion 42. In one embodiment, the removable portion 48 is disposed below the opening 72 on the first portion 68 of the base portion

42.

[0033] In one embodiment, the mount structure 14 may include one or more frangible portions 50, which is frangible to facilitate removal of the removable portion 48 from the mount structure 14. In the illustrated embodiment, as shown in FIG. 3, the mount structure 14 includes two frangible portions 50 located on either side of the removable portion 48. In another embodiment, no frangible portions are used and a tool is simply used to cut the removable portion 48 without the aid of a frangible portion.

[0034] In an embodiment where frangible portions are used, the frangible portions 50 may include, for example, perforations, scores lines, cuts, slits, or any other lines of weakness or weakened material regions that serve as an aid in separation with a tool. In the illustrated embodiment, as shown in FIGS. 4-7, each frangible portion 50 includes a pair of grooves and an aperture that is disposed in between the grooves. In one embodiment, the grooves in the frangible portion 50 is generally located on either side of the aperture and are generally V-shaped. The aperture in the frangible portion 50 may be generally rectangular in shape. One of ordinary skill in the art can best appreciate that the grooves and the apertures may have a variety of other shapes without departing from the scope of the claims. In one embodiment, as shown in FIG. 4, a tab or flange portion 76 may be provided to further block, inhibit, or prevent manual access to the curved end 38 of the belt clip 18. When the mount structure 14 is secured to the belt clip 18, the projection 46 is received in the belt clip opening 36, and the projection 46 is of sufficient thickness that it is either not possible or very difficult to lift (or even access) the curved end 38 of the belt clip 18 (against the internal spring bias of the belt clip 18) sufficiently (before the curved end 38 of the belt clip 18 contacts the removable portion 48) to enable the projection 46 to be outside the opening 36. Thus, removal of the mount structure 14 from the belt clip 18 is prevented.

[0035] In one embodiment, the base portion 42 may include indicia 74 indicating that the frangible portions 50 must be cut with a scissors or other similar devices. In illustrated embodiment, the indicia 74 may be located on the removable portion 48 of the base portion 42.

[0036] As shown in FIG. 6, the second portion 70 of the base portion 42 includes a compartment 78 there-within. The compartment 78 is constructed and arranged to receive the surveillance tag 15. In one embodiment, the compartment 78 may define a storage space 79 having an upwardly facing opening 81 into the storage space 79. In one embodiment, the compartment 78 may include a closure member 80. In one embodiment, the closure member 80 may be hingedly engaged at one end with the bridge portion 42 and adapted to move between a closed position (see FIG. 5) wherein the closure member 80 substantially covers the upwardly facing opening 81 and an open position (see FIG. 6) wherein the upwardly facing opening 81 of the compartment 78 is substantially

exposed. In one embodiment, the mount structure 14 may include a living hinge 85 that is constructed and arranged to move the closure member 80 between the open and the closed positions. In one embodiment, the entire mount structure 14, including the base portion 42, the hinge 85 and the closure member 80 are integrally molded from plastic. In another embodiment, the closure member 80 may be separately formed from the mount structure or body 14.

[0037] During construction of the mount structure 14, the closure 18 is initially in an open position such that the closure member 80 enables insertion of the surveillance tag 15 (see FIG. 6) into the storage space 79 within the compartment 78. The surveillance tag 15 may optionally be attached to an inner surface 83 of the closure member 80 using adhesive bonding or other attachment mechanism. As shown in FIG. 7, the closure member 80 along with the surveillance tag 15 (i.e., secured to its inner surface 83 of the closure member 80) is moved from the open position (shown in phantom lines) to the closed position in the direction of an arrow A.

[0038] In one embodiment, as shown in FIG. 6, the closure member 80 includes one or more lock members 89 (in the illustrated embodiment taking the form of a pair of locking tabs) located on one or both ends of the closure member 80. The second portion 70 of the base portion 42 includes one or more lock receiving portions (or recesses) 101 located at one or both ends of the storage space 79. The pair of lock members 89 are constructed and arranged to engage within the lock receiving portions 101 located on the second portion 70 of the base portion 42 to lockingly engage the closure member 80 with the base portion 42. As noted above, in one embodiment, the pair of lock members 89 are in the form of tabs or projections and the pair of lock receiving portions 101 are in the form of apertures that are configured to lockingly receive the projections. It should be appreciated, however, that this embodiment, is but one example of different types of the pair of first and second engaging member shapes, configurations and/or constructions that can be provided.

[0039] In one embodiment, as in the one illustrated, the closure member 80 for the compartment 78 cannot be unlocked without use of a tool, such as a prying screwdriver. In another embodiment, the closure member 80 for the compartment 78 could be manually opened. In yet another embodiment, the closure member 80 for the compartment 78 is permanently sealed (e.g., welded) and can only be open by being destroyed (e.g., along with the tag 15).

[0040] In one embodiment, the surveillance tag 15 is disposed at a location on the mount structure 14 such that a central axis passing through the surveillance tag 15 is offset from a central axis passing through the securement portion 40 by a predetermined distance. In one embodiment, the surveillance tag 15 is disposed on a plane other than the plane on which the securement portion 40 is disposed.

[0041] Referring back to FIG. 3, in one embodiment, the mount structure 14 is at least partially disposed between the forwardly-facing surface 28 of the backing portion 24 and the clear plastic portion 26. The clear plastic portion 26 extends across the forwardly-facing surface 60 of the mount structure 14 and then downwardly along the edges of the mount structure 14 towards the edge of the backing portion 24.

[0042] FIGS. 8 and 9 illustrate the tape rule package 10 (e.g., with the tape rule 12 removed for illustrative clarity) with the mount structure 14 disposed between the clear plastic portion 26 and the backing card 24 in accordance with an embodiment of the present invention. As seen in FIG. 3, the clear plastic portion 26 has a planar portion 26a and a contoured portion 26b. In the illustrated embodiment, the contoured portion 26b generally takes the shape of the front surface of the mount structure 14. In the illustrated embodiment, as shown in the FIGS. 8 and 9, the backing portion 24 is attached to the peripheral planar portion 26a of the clear plastic portion 26 using adhesive heat bonding or mechanical attachment to effectively secure the clear plastic portion 26 to the front surface of the backing card, peripherally around the mount structure 14.

[0043] In another embodiment, the clear plastic portion 26 has a smaller peripheral planar portion 26a which extends between a front cardboard sheet and a back cardboard sheet of the backing portion 24 and is adhered therebetween, to effectively secure the clear plastic portion 26 over the mount structure 14. In yet another embodiment, the clear plastic portion 26 may include a front clear plastic portion and a rear clear plastic portion. In such embodiment, the front clear plastic portion and a rear clear plastic portion are joined together to enclose the backing portion 24 and the mount structure 14 there-within and to effectively secure the front clear plastic portion over the mount structure 14. In one embodiment, the front clear plastic portion and the rear clear plastic portions may be separately formed, or hinged an folded-over to be sealed with one another. In one embodiment, the front clear plastic portion and the rear clear plastic portion each may include peripheral flanges that are joined together by using heat sealing, sonic sealing, ultrasonic welds or any other attachments that would be appreciated by one skilled in the art.

[0044] As noted above, and as shown in FIGS. 8 and 9, the mount structure 14 can be at least partially disposed between the backing portion 24 and the clear plastic portion 26. Therefore, the mount structure 14, backing portion 24 and the clear plastic portion 26 together form a completed unit prior to being secured to the clip 18. In one embodiment, when the mount structure 14 is disposed between the backing portion 24 and the clear plastic portion 26, the mount structure 14 is positioned such that the opening 34 in the clear plastic portion 26 may provide the clip 18 access to the gap or the opening 58 in the mount structure 14. FIG. 10 is a cross-sectional view of the tape rule package 10 (e.g., with the tape rule

12 removed for illustrative clarity), wherein the mount structure 14 is at least partially disposed between the backing portion 24 and the clear plastic portion 26.

[0045] In one embodiment, a method for forming a package product is provided. The method includes injection molding the body 14; securing the surveillance tag 15 to the body 14; and forcing the body 14 into an interlocking relationship with a product (such as tape rule 12) so that the body 14 cannot be removed from the product 12 without cutting or destruction of the body 14.

[0046] In one embodiment, the surveillance tag 15 is secured within the compartment 78 formed in the injection molded body 14. As noted above, the compartment 78 has the cover or closure member 80. The closure member 80 can either be integrally molded or separately formed with the body 14. In one embodiment, the closure member 80 cannot be removed without cutting or destroying the cover or body.

[0047] In one embodiment, the forcing of the body into interlocking relationship with the product 12 includes moving the belt clip 18 on the product 12 against an internal spring force of the belt clip 18. For example, as shown and explained in detail below with respect to FIGS. 11-13, the belt clip 18 on the product 12 rides up the structural configuration (e.g., an increasing slope or, along the flat structural configuration) of the projection 46 on the body 14. During this sliding motion, the belt clip 18 on the product 12 is biased slightly outwardly away from the housing 16 of the product 12, until the interlocking relationship between the body 14 and the product 12 is achieved.

[0048] In another embodiment, the spring force may be provided by the resiliency of the material of the injection molded body 14 itself, which can flex to engage a rigid, partially rigid, or flexible portion of the product 12. For example, at least a portion of the body 14 may be made of flexible material with sufficient resiliency to be moved away from the body 14 to receive or engage with a rigid, partially rigid, or flexible portion of the product 12 and to resiliently snap back, thus, engaging the portion of the product 12 with the internal material resiliency of the portion of the body 14.

[0049] FIGS. 11-13 show the method of securing the clip 18 to the mount structure 14, which begins by extending the leading edge or the curved end portion 38 of the clip 18 through the opening 34 in the clear plastic portion 26 as shown in FIG. 11. The leading edge or the curved end portion 38 of the clip 18 is extended through the opening 34 in the clear plastic portion 26 so as to be received by mount structure 14 disposed between the backing portion 24 and the clear plastic portion 26. The leading edge or the curved end portion 38 of the clip 18 is moved in the direction of an arrow B to be received by the opening 58 in the mount structure 14. In one embodiment, the mount structure 14 and/or the leading edge or the curved end portion 38 of the clip are manipulated so that the opening 58 in the mount structure 14 receives the leading edge or the curved end portion 38 of the clip

18.

[0050] FIG. 12 shows the next procedure in the method of securing the clip 18 to the mount structure 14, in which the clip 18 is moved in the opening 58 in the mount structure 14 in the direction of an arrow C, so that the leading edge or the curved end portion 38, which is bent slightly outwardly, rides up the increasing slope of the ramp or projection 46 of the mount structure 14 or, in another embodiment along the flat structural configuration of the projection 46. During this sliding motion, the clip 18 is biased slightly outwardly away from the housing 16, until a lower edge 91 of the opening 36 in the clip 18 snaps over the bottom edge 82 of the ramp or projection 46.

[0051] FIG. 13 shows the next procedure in the method of securing the clip 18 to the mount structure 14, in which the lower edge 91 of the opening 36 in the clip 18 snaps over the bottom edge 82 of the ramp or projection 46. It can be appreciated by one of ordinary skill in the art that the projection 46 permits the clip 18 to be easily inserted into the gap or the opening 58 in the mount structure 14 without the necessity of tools of any sort. The bottom edge 82 of the projection or ramp 46 prevents the clip 18 from backing out (in the direction of an arrow D as shown in FIG. 2) through opening 34 of the clear plastic portion 26. As a result, the mount structure 14 is securely fastened to the tape rule 12. When the mount structure 14 is securely fastened to the tape rule 12, the curved end portion 38 of the clip 18 is adjacent to the removable portion 48 of the mount structure 14.

[0052] In the event a thief or a shoplifter tries to separate the tape rule 12 from the tape rule package 10 (e.g., by ripping clear plastic material 26 and/or backing portion 24) the mount structure 14 (and the contained surveillance tag 15) remains securely fastened to the belt clip 18 of the tape rule 12. The removable portion 48 of the mount structure 14 that is adjacent to the curved end portion 38 of the clip 18 prevents the thief or the shoplifter from accessing the curved end portion 38 of the clip 18, therefore, the thief or the shoplifter cannot simply remove or separate the mount structure 14 from the tape rule 12 without use of a tool.

[0053] FIGS. 14-18 show one method of separating the mount structure 14 from the tape rule 12 by a customer. This optionally begins by removing the removable section 37 of the backing portion 24. This is done by tearing the removable section 37 (e.g., along the frangible areas 39) as shown in FIG. 14. Once the removable section 37 is separated along at least three sides (but optionally retained at the top edge t), the user can pull the removable section 37 in the direction of an arrow E to separate or bend the removable section 37 away from the rest of the backing portion 24. The removal of the removable section 37 of the backing portion 24 from the rest of the backing portion 24 facilitates the user to access the mount structure 14.

[0054] FIG. 15 shows the next procedure in the method of method of separating the mount structure 14 from the tape rule 12, in which the removable portion 48 of the

mount structure 14 may be removed (e.g., by cutting along the at least one frangible portion 50). In one embodiment, a tool, scissors or other tool may be required for removal of removable portion 48. FIG. 15 shows the removable portion 48 that is removed from the mount structure 14. The removal of the removable portion 48 of the mount structure 14 provides the user access to the curved end portion 38 of the clip 18.

[0055] FIG. 16 shows the next procedure in the method of method of separating the mount structure 14 from the tape rule 12, in which the user may access the curved end portion 38 of the clip 18 to bias the curved end portion 38 of the clip 18 outwardly, in the direction of an arrow F, to release the lower edge 91 of the opening 36 in the clip 18 from the bottom edge 82 of the projection 46. This action allows the clip 18 to be released from the gap or the opening 58 in the mount structure 14.

[0056] FIG. 17 shows the next procedure in the method of method of separating the mount structure 14 from the tape rule 12, in which, the tape rule 12 along with the clip 18 may moved in an upwardly direction, as shown by an arrow G, in the gap or the opening 58 (see FIGS. 4-7) in the mount structure 14.

[0057] In another embodiment, the frangible portions 39 can be omitted, and the user may simply cut the clear plastic portion 26 and/or the backing portion 24 to separate the tape rule 12 and the mount structure 14 therefrom. The mount structure 14 can then be separated from the tape measure 12 by cutting or breaking the removable portion thereof.

[0058] FIG. 18 shows the final procedure in the method of method of separating the mount structure 14 from the tape rule 12, in which, the tape rule 12 along with the clip 18 may moved in an outwardly direction, as shown by an arrow H, away from the mount structure 14 and through the opening 34 on the clear plastic portion 26, thus, separating the mount structure 14 from the tape rule 12.

[0059] In yet another embodiment, the backing portion 24 and the clear plastic portion 26 can be omitted. In such embodiment, the indicia otherwise provided on the backing portion 24 would instead be provided directly onto the mount structure 14. In such embodiment, the mount structure 14 may be of an increased size to provide a print space for the indicia and a mounting hole or hook for facilitating display. In such embodiment, the anti-theft device 13 also serves as the previously mentioned display portion.

[0060] The embodiments of the present disclosure describe the anti-theft attachment for a tape rule, however, it is contemplated that the anti-theft attachment described herein may be used for different products and/or hand tools. For example, the anti-theft attachment described herein may be used for a chalk reel having a belt clip, a distance measuring tool having a belt clip, a stud sensor having a belt clip, a utility knife having a belt clip, a flashlight having a belt clip, etc.

[0061] Although the invention has been described in detail for the purpose of illustration, it is to be understood

that such detail is solely for that purpose and that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover modifications and equivalent arrangements that are within the scope of the appended claims. In addition, it is to be understood that the present invention contemplates that, to the extent possible, one or more features of any embodiment can be combined with one or more features of any other embodiment.

Claims

1. A tape rule package (10), comprising:

a tape rule (12) including a housing (16) and a belt clip (18); and
an anti-theft device (13);
wherein the anti-theft device comprises:

a mount structure (14) including a securement portion (20) constructed and arranged to be secured to the belt clip; and
a surveillance tag (15) carried by the mount structure (14).

2. The tape rule package of claim 1, wherein the belt clip (18) has an opening (36), and the securement portion (20) comprises a projection (48) received in the opening.

3. The tape rule package of claim 1 or claim 2, wherein the belt clip (18) comprises a curved end portion (38), and the mount structure (14) comprises a removable portion (48) adjacent the curved end portion.

4. The tape rule package of claim 3, wherein the mount structure (14) comprises at least one frangible portion (50), which is frangible to enable removal of the removable portion (48).

5. The tape rule package of any one of the preceding claims, wherein the package (10) comprises a backing portion (24) and a clear plastic portion (26), wherein the mount structure (14) is at least partially disposed between the clear plastic portion and the backing portion.

6. The tape rule package of claim 5, wherein the clear plastic portion (26) comprises an opening (34) through which the belt clip (18) extends to be received by the mount structure (14) between the plastic portion (26) and the backing portion (24).

7. The tape rule package of claim 5, wherein the backing portion (24) comprises a removable section (37), which is removable to facilitate access to the mount structure (14) disposed between the clear plastic

portion (26) and the backing portion (24).

8. An anti-theft attachment (13) for a product (12) having a belt clip (18), comprising:

a mount structure (14) including a base portion (42) and a bridge portion (40), the bridge portion being joined to the base portion, the bridge portion (40) comprising a projection (46) constructed and arranged to be received in an opening (36) of the belt clip (18); and
a surveillance tag (15) secured to the mount structure (14).

9. The anti-theft attachment of claim 8, wherein the mount structure (14) comprises a removable portion (48) and at least one frangible portion (50), which is frangible to enable removal of the removable portion.

10. The anti-theft attachment of claim 8 or claim 9, wherein the base portion (42) comprises a compartment (78), in which the surveillance tag (15) is secured.

11. The anti-theft attachment according to any one of claims 8 to 10, wherein the mount structure (14) comprises an opening (58) disposed between the base portion (42) and the bridge portion (40), wherein the opening (58) is constructed and arranged to receive the belt clip (18).

12. An anti-theft attachment according to any one of claims 8 to 11, the anti-theft attachment comprising:

an injection molded integrally formed body constructed and shaped to be forced into biased engagement with the shape of the product (12), such that the integrally formed body interlocks with the product and cannot be released from the product without cutting or destruction thereof.

13. The anti-theft attachment according to any one of claims 10 to 12, wherein the compartment (78) has a closure member (80).

14. The anti-theft attachment of claim 13, wherein the closure member (80) cannot be removed without cutting or destroying the closure member or the body.

15. The anti-theft attachment according to any one of claims 12 to 14, wherein the surveillance tag (15) is integrally formed with the injection molded integrally formed body.

16. A method of forming a packaged product (10), comprising:

injection molding a body (14);
securing a surveillance tag (15) to the body; and
forcing the body (14) into an interlocking relationship with a product (12) so that the body (14) cannot be removed from the product (12) without cutting or destruction of the body. 5

17. A method according to claim 16, wherein the forcing step comprises moving a belt clip (18) on the product (12) against an internal spring force thereof. 10

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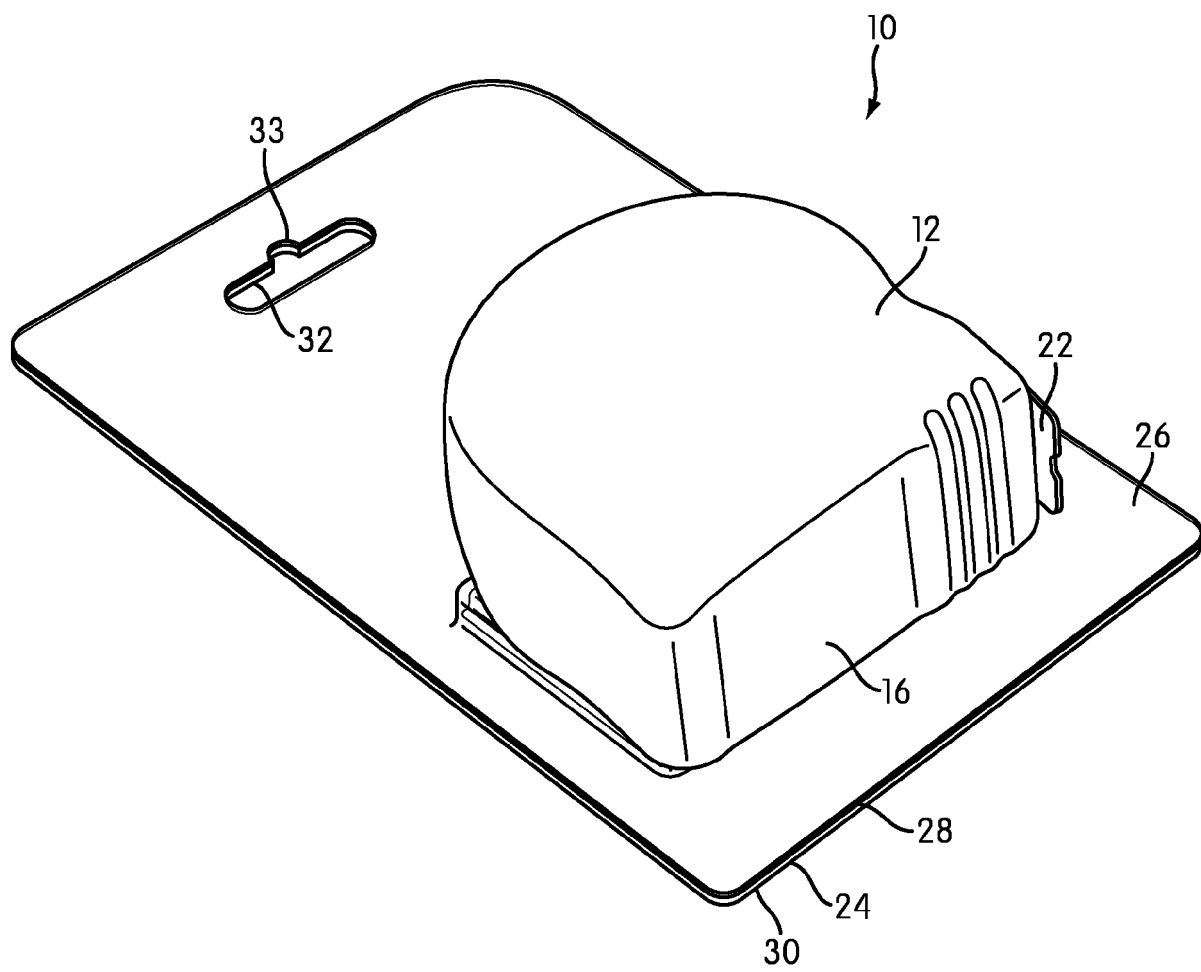


FIG. 1

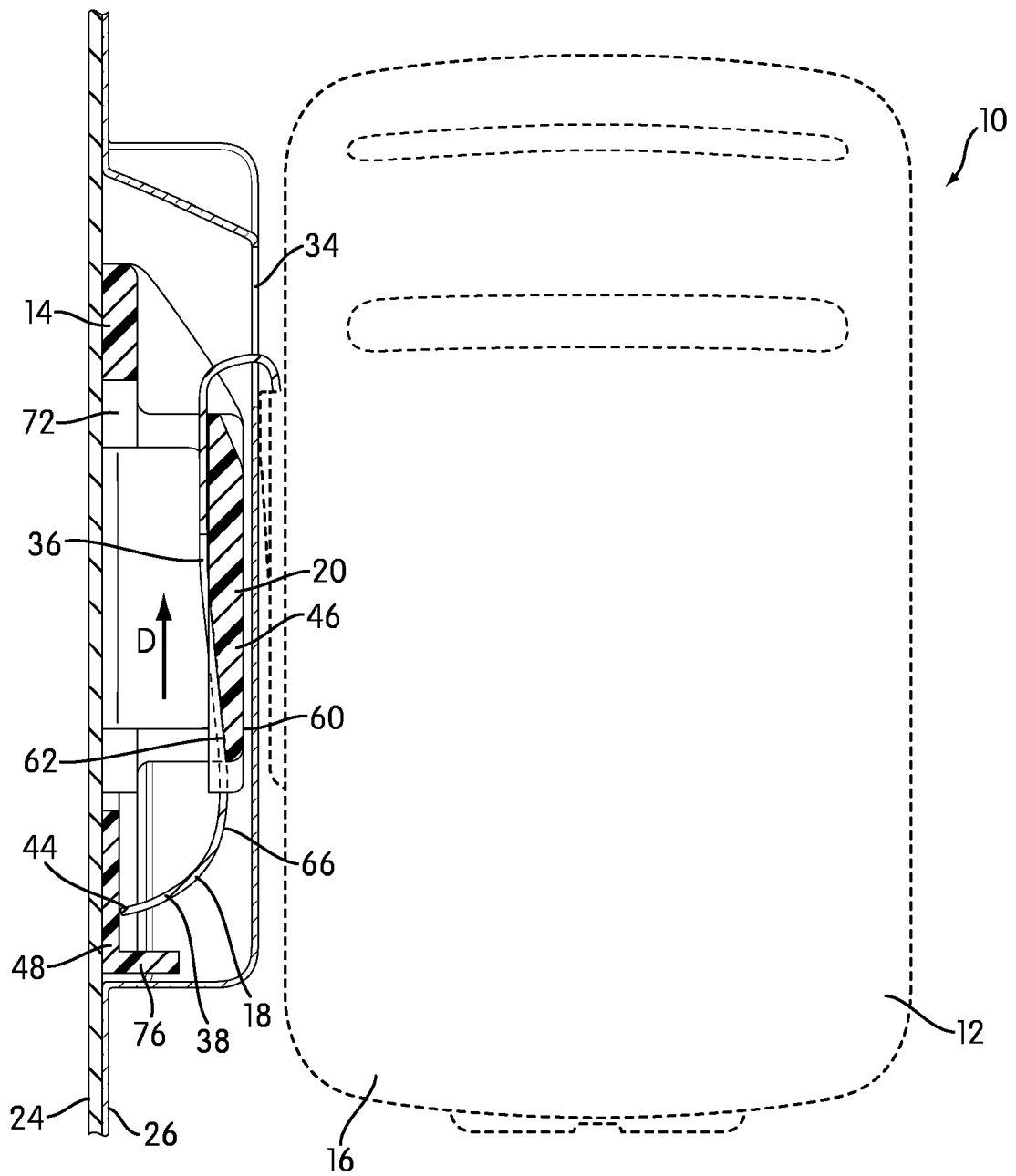


FIG. 2

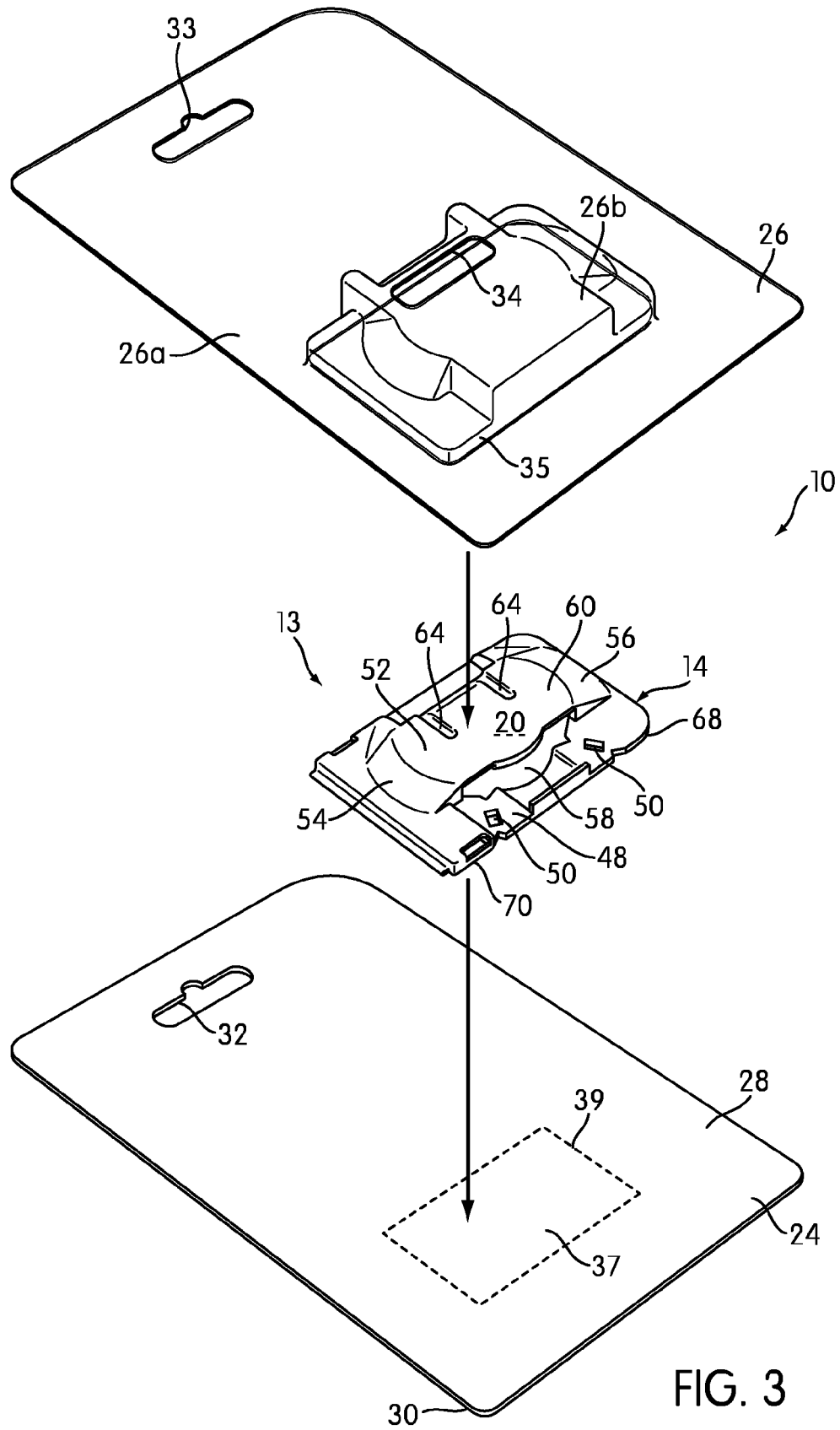
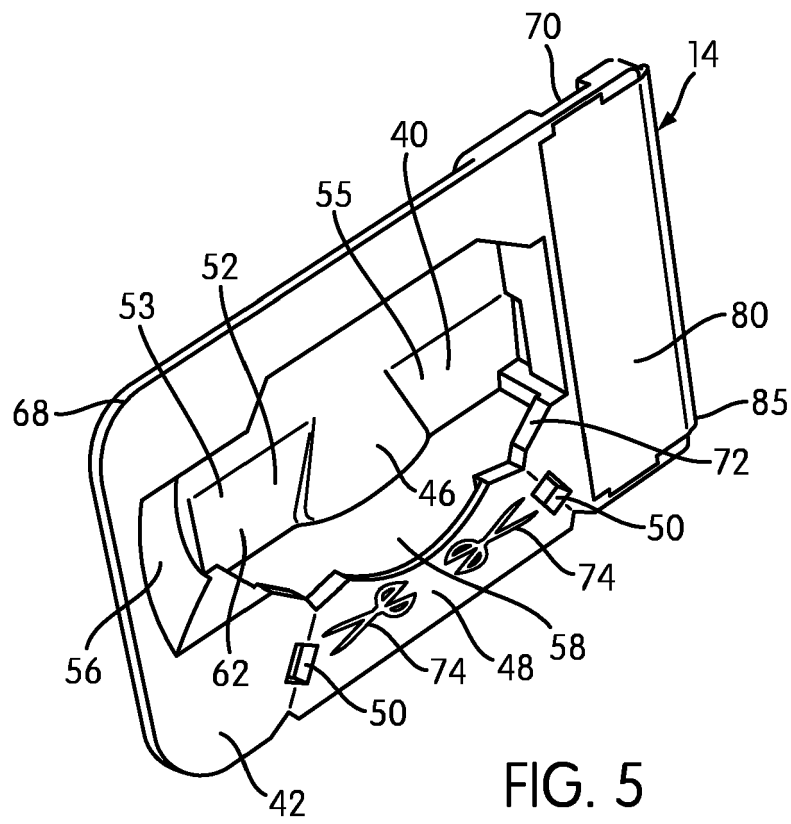
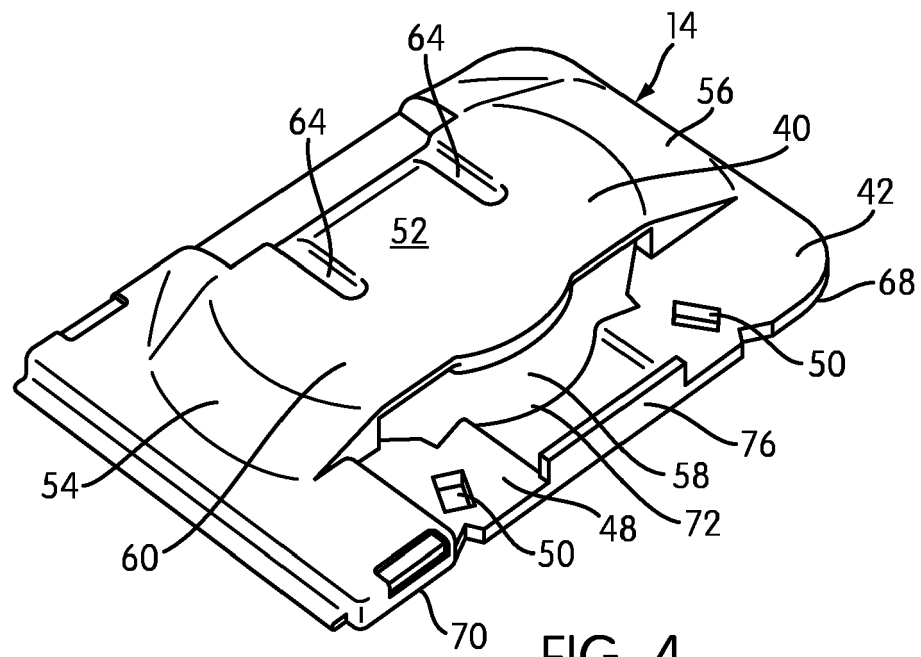
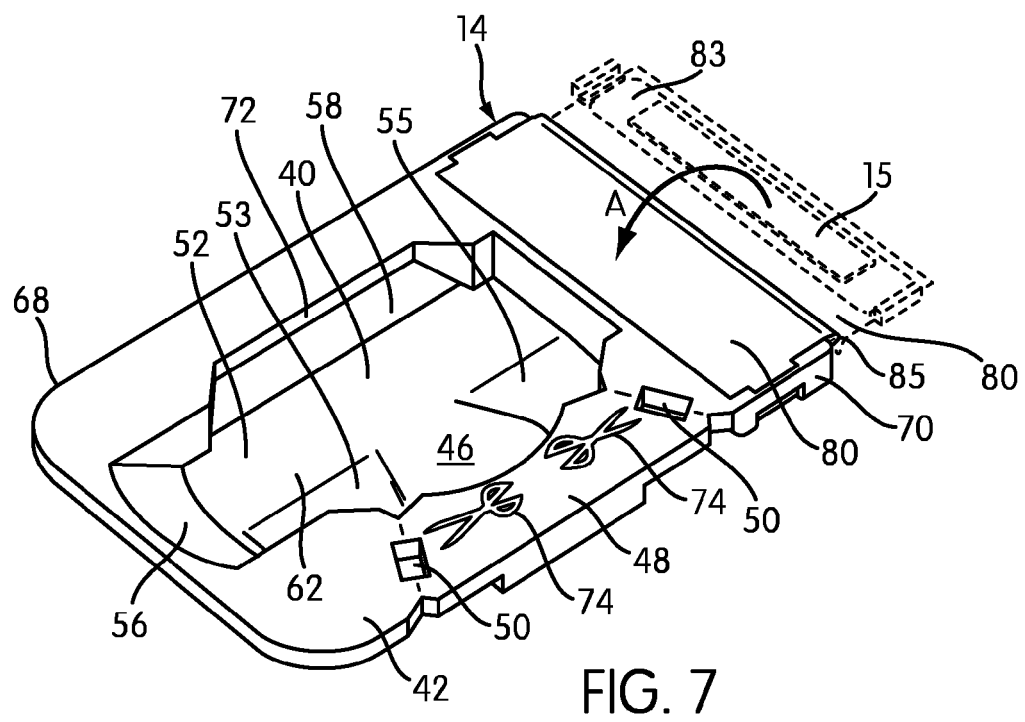
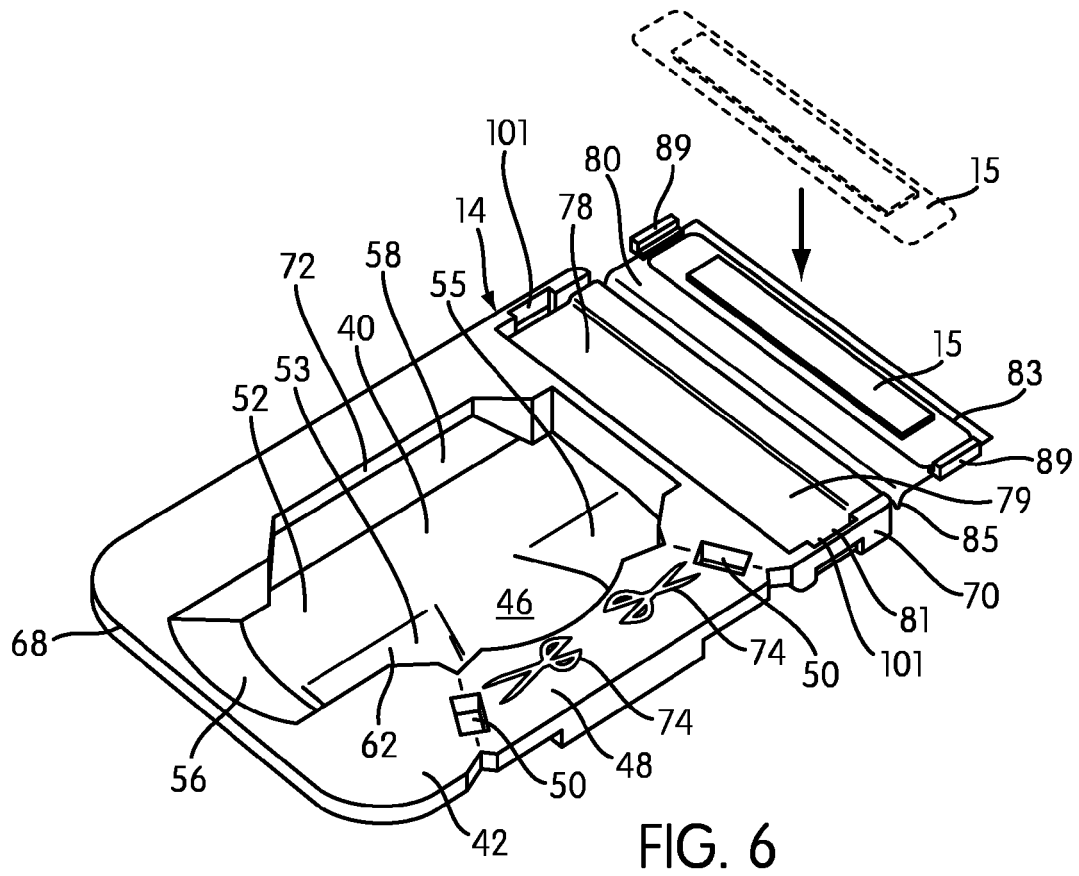


FIG. 3





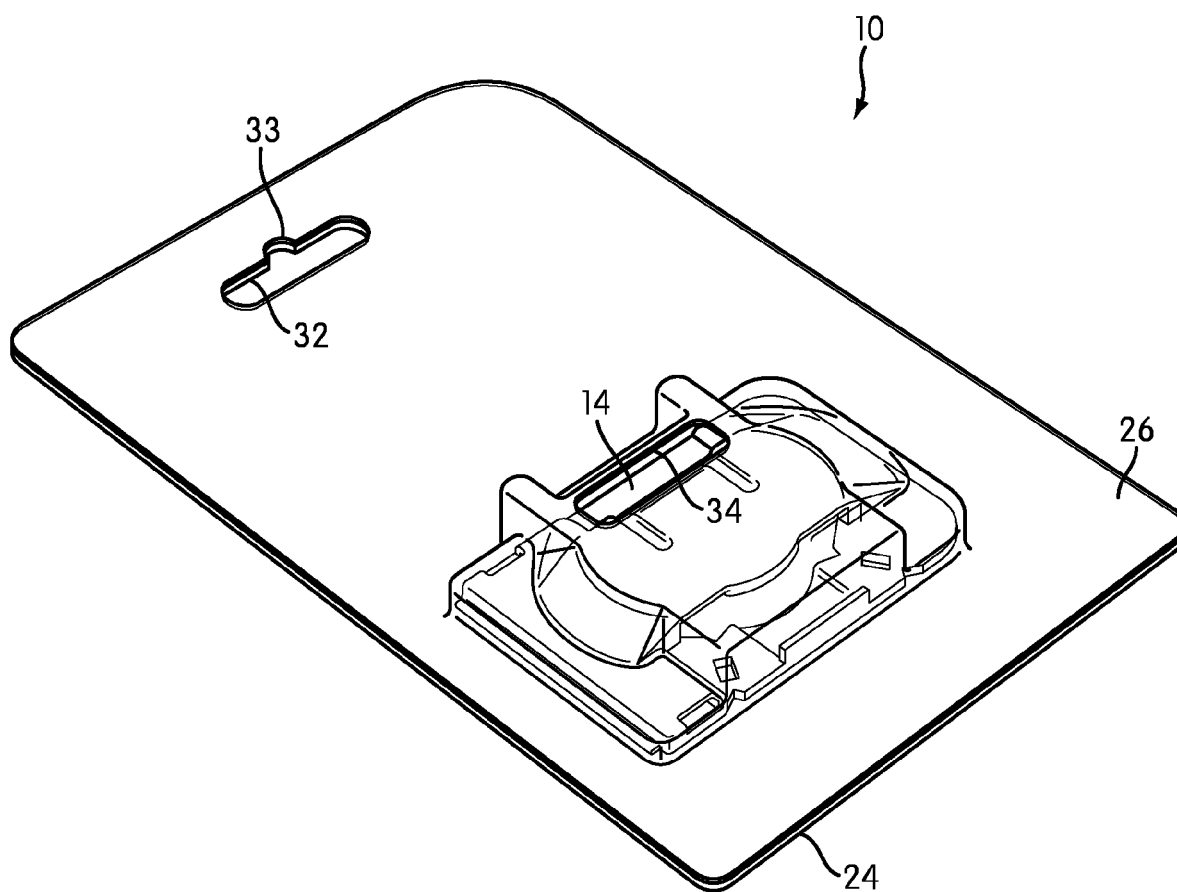


FIG. 8

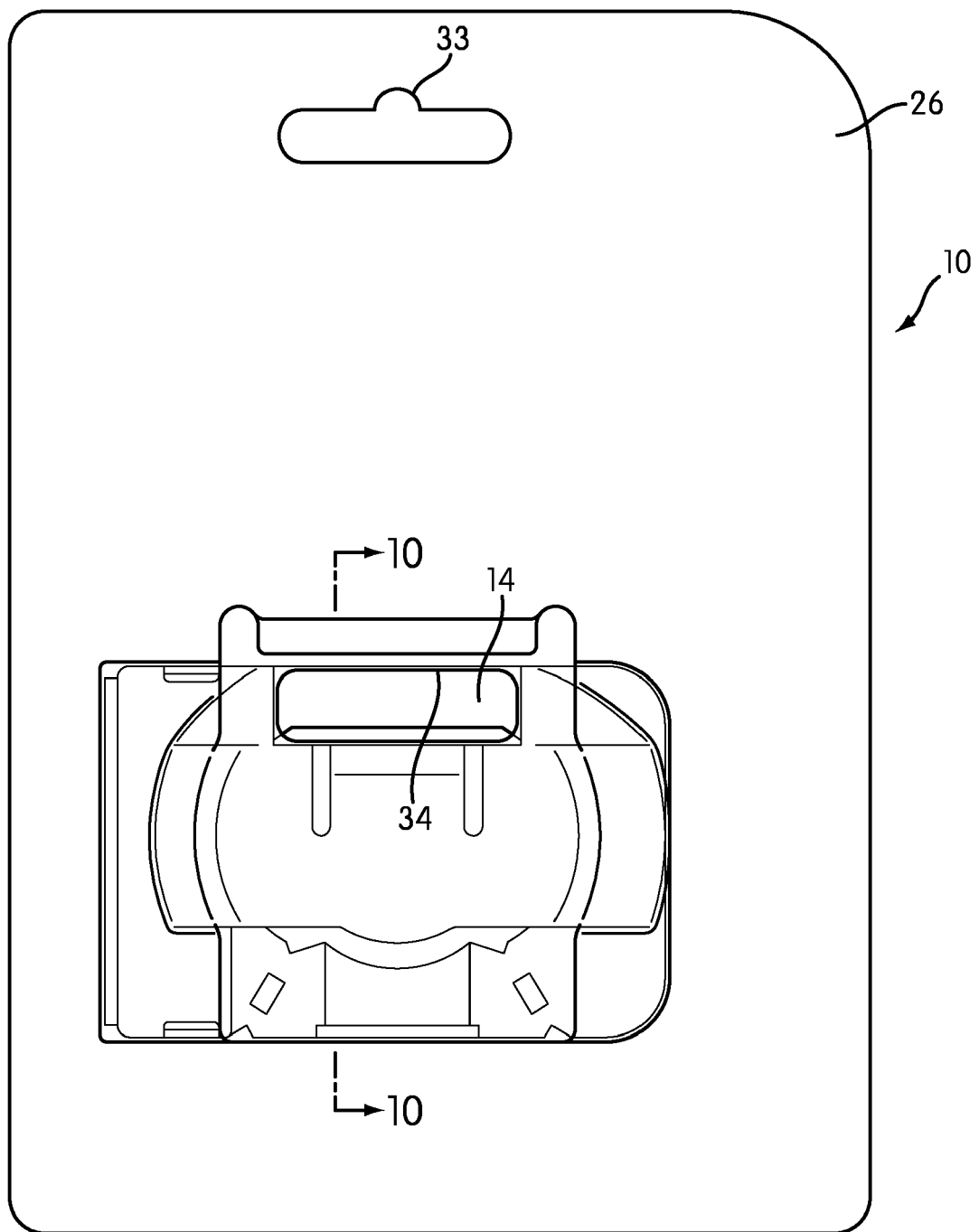


FIG. 9

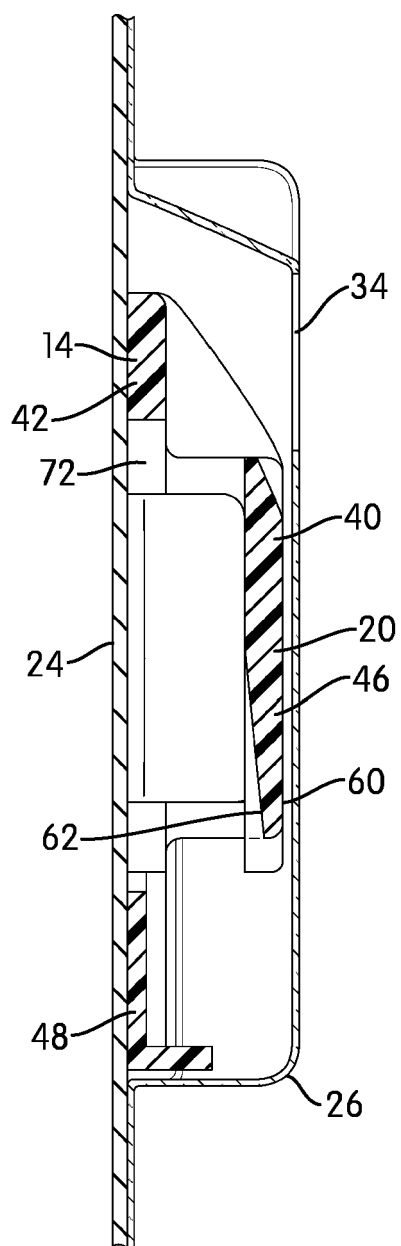
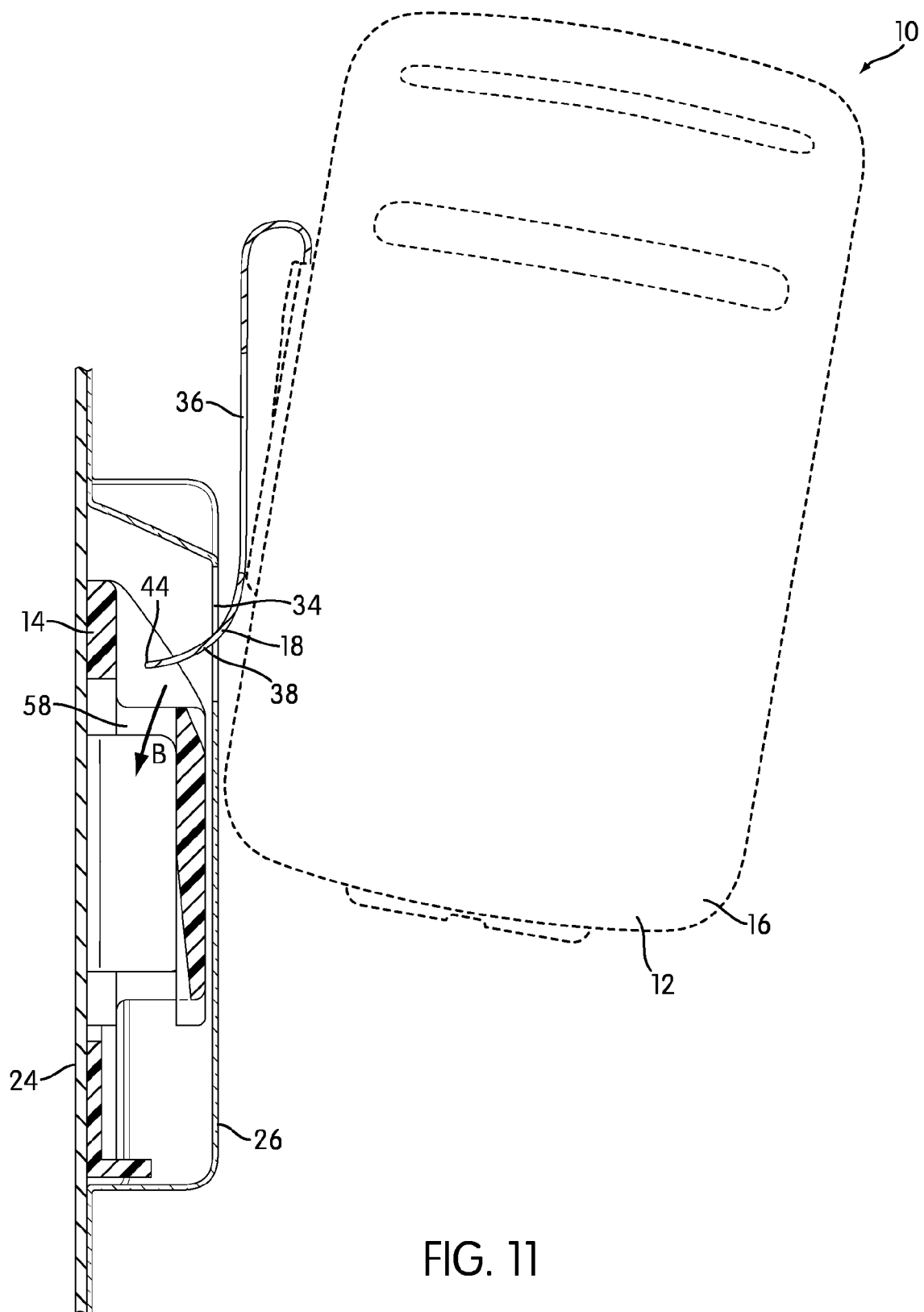


FIG. 10



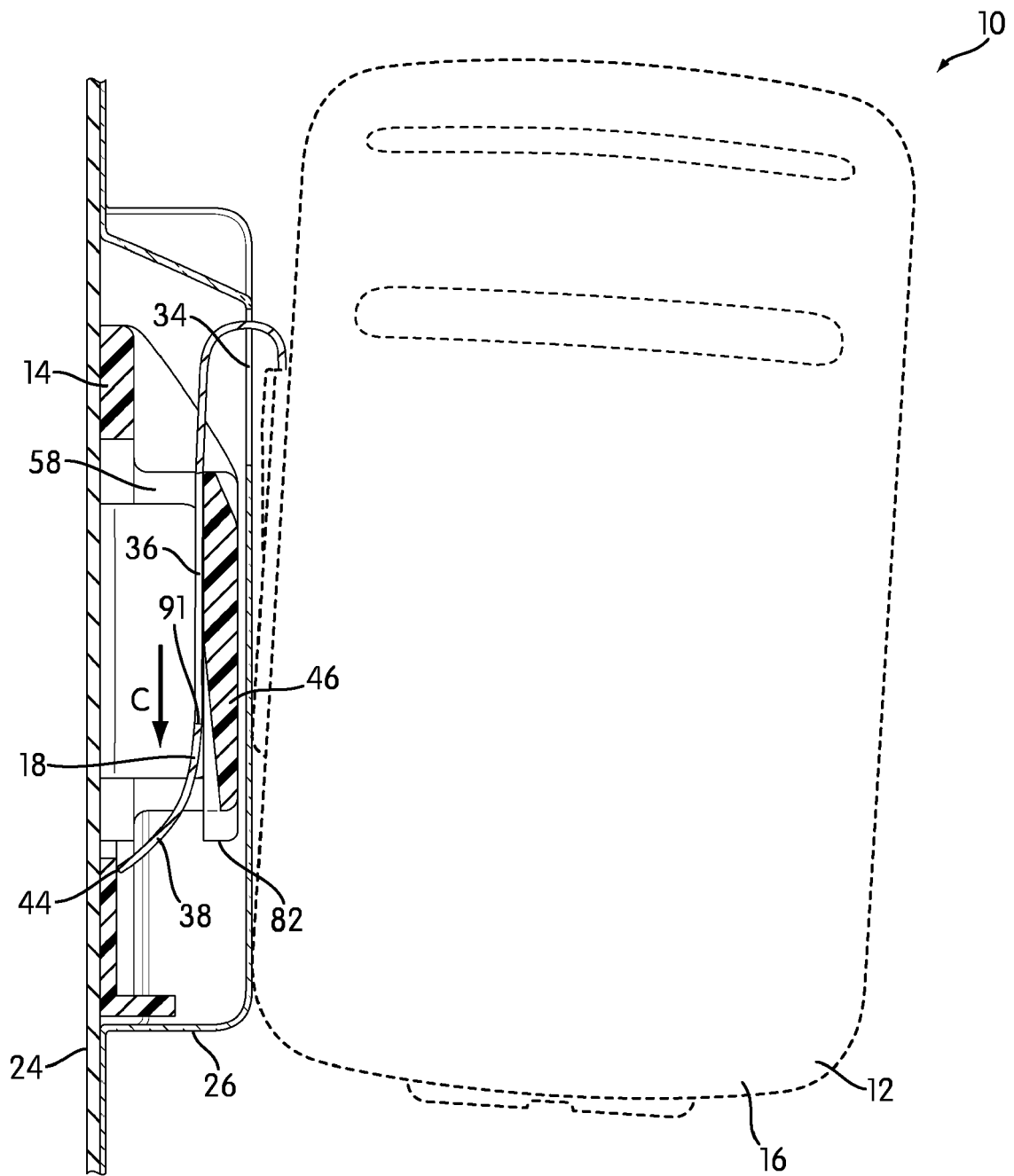


FIG. 12

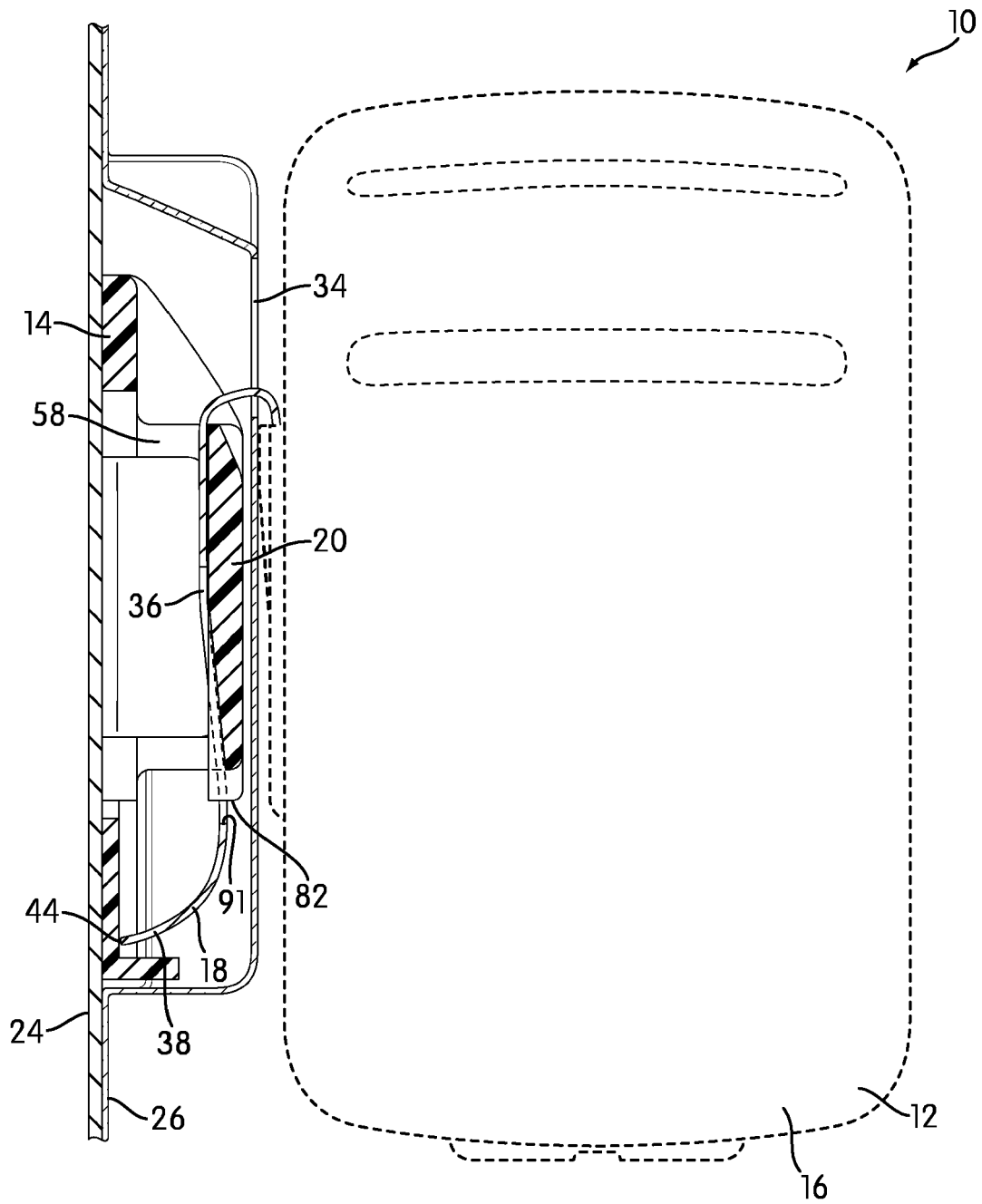


FIG. 13

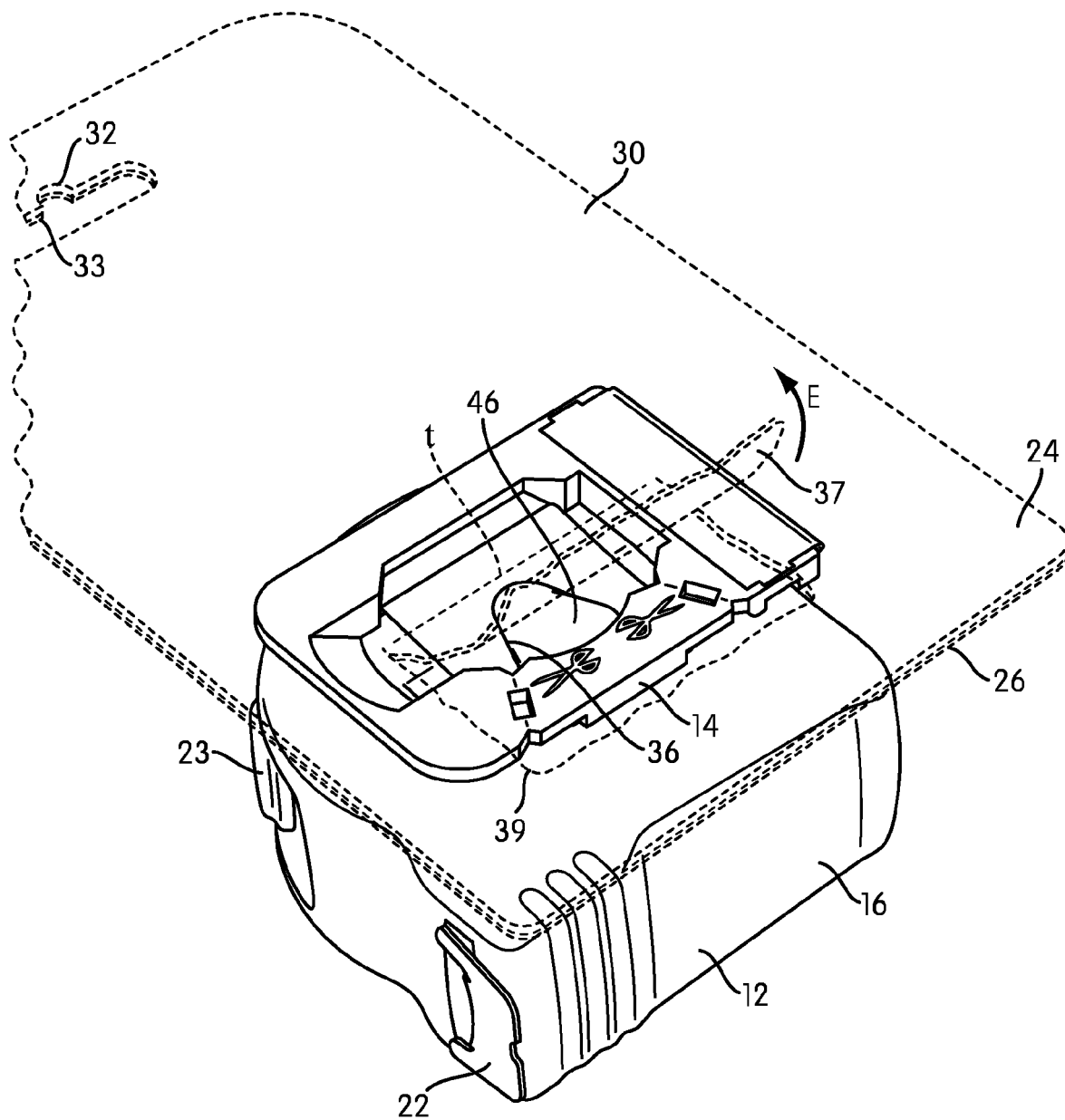


FIG. 14

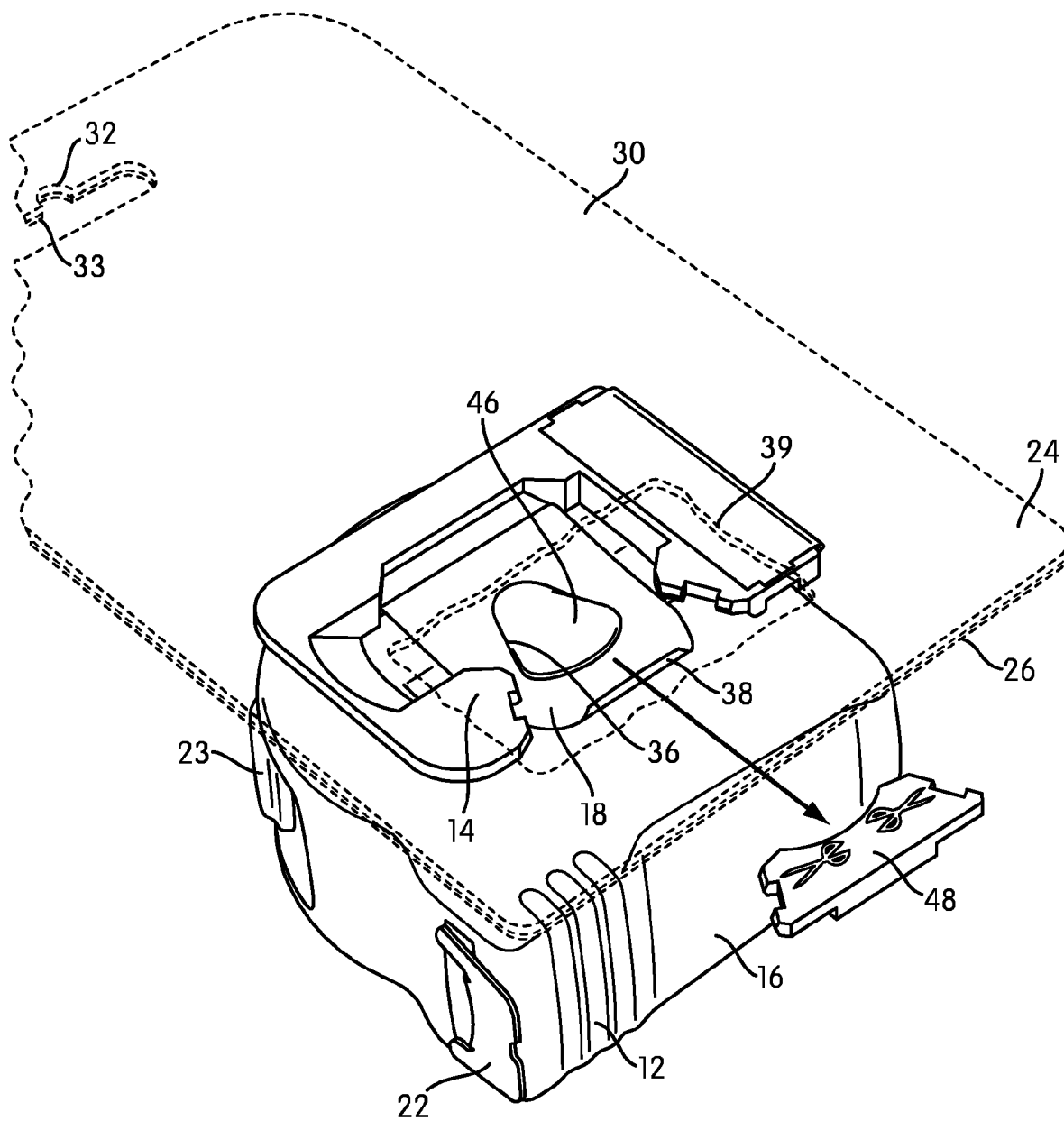


FIG. 15

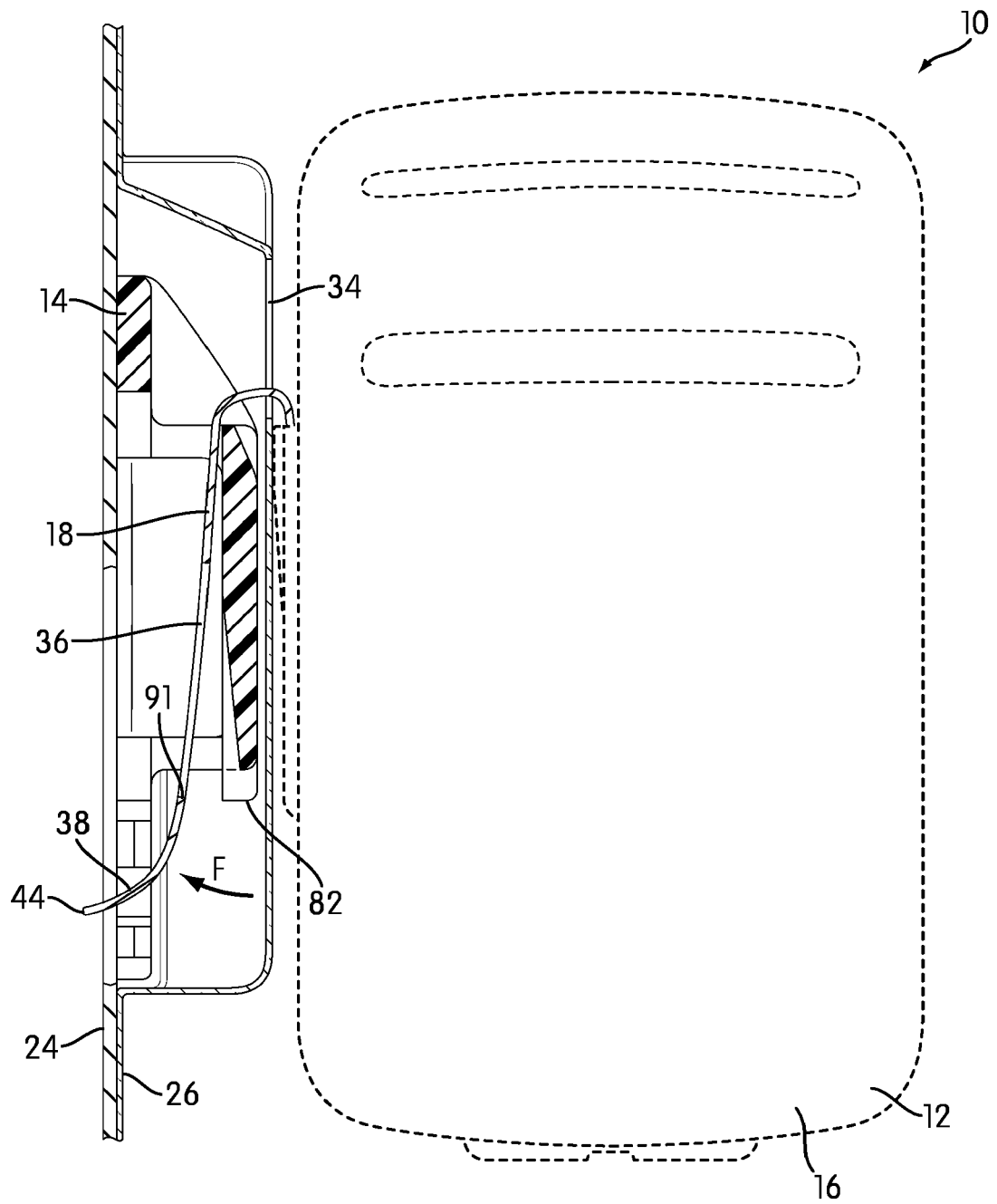


FIG. 16

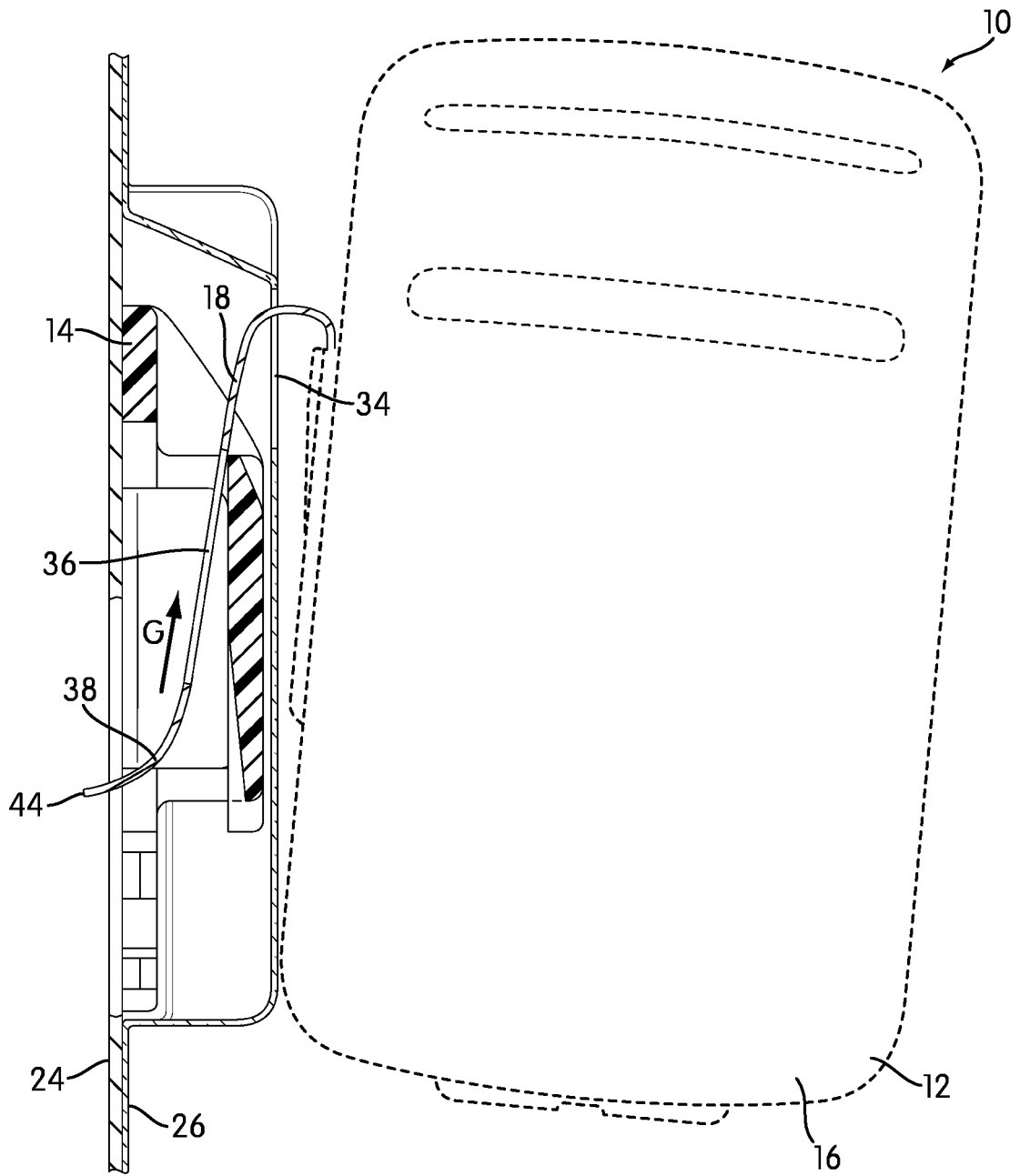
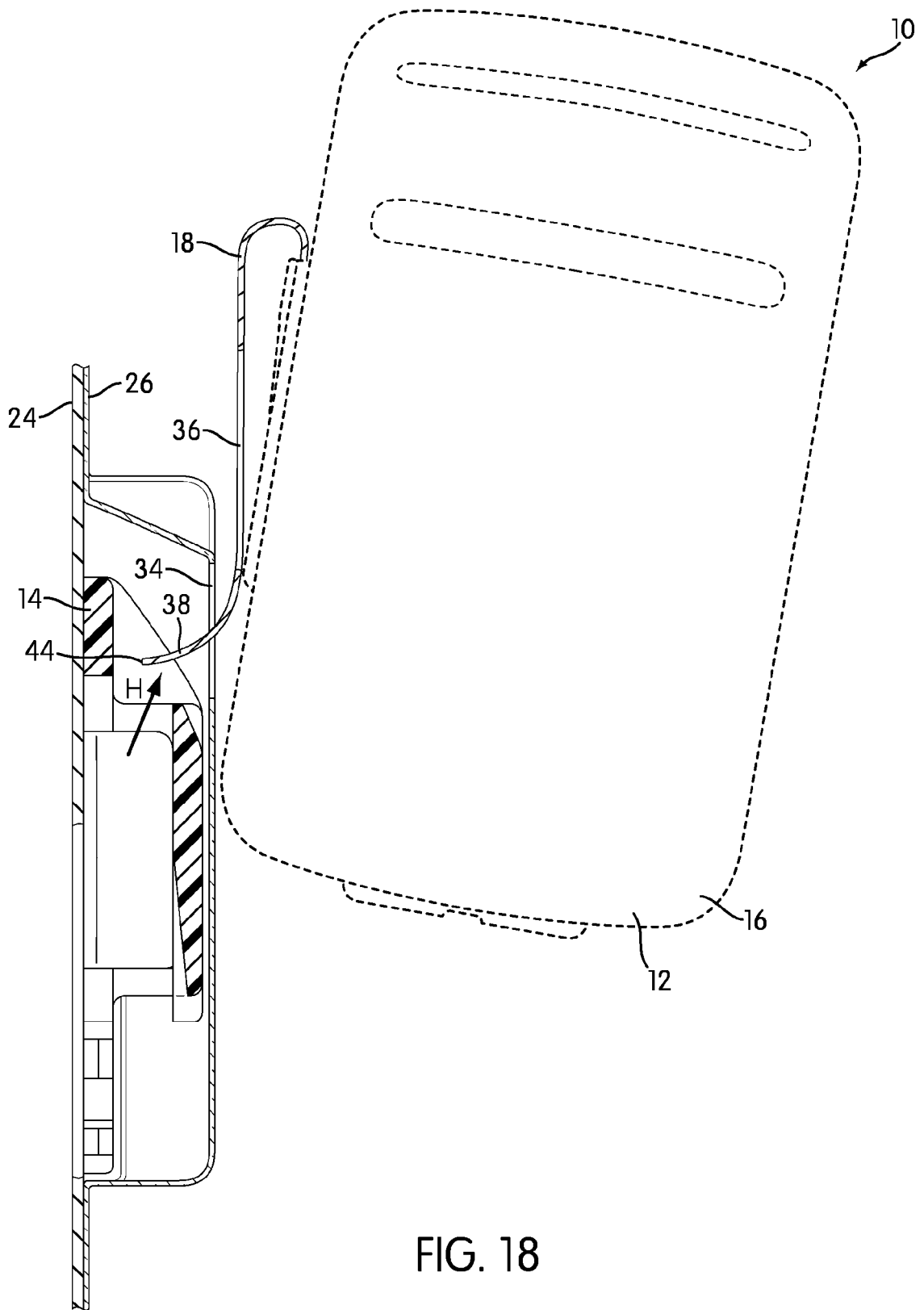


FIG. 17





EUROPEAN SEARCH REPORT

Application Number
EP 10 16 5413

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	GB 2 334 947 A (STANLEY WORKS [US]) 8 September 1999 (1999-09-08)	1-3,5,8, 10-14, 16,17	INV. B65D73/00
Y	* page 6, line 12 - page 8, line 12; claim 1; figures 3, 4 *	4,9,15	
Y	----- US 6 401 921 B1 (USAMI TSUTOMU [JP]) 11 June 2002 (2002-06-11) * column 5, line 11 - line 15 * * column 5, line 32 - line 35; figures 1a-2d *	4,9	
Y	----- FR 2 787 768 A1 (CABANES THIERRY [FR]) 30 June 2000 (2000-06-30) * page 1, line 15 - line 16 *	15	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 September 2010	Examiner Bridault, Alain
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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21-09-2010

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