

Sept. 20, 1960

C. E. ANDERSON

2,953,293

DISPENSING CARTON

Filed March 21, 1957

2 Sheets-Sheet 1

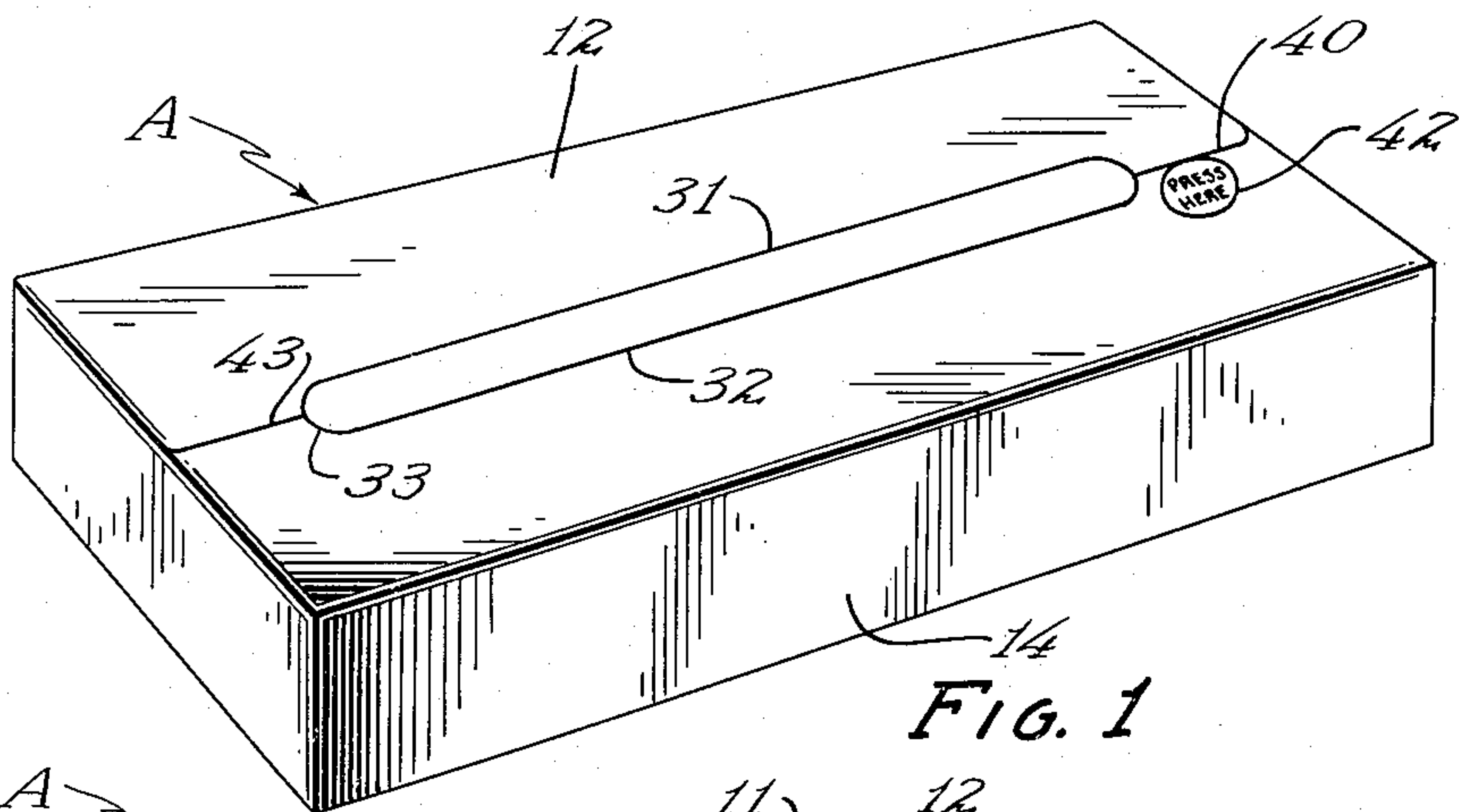


FIG. 1

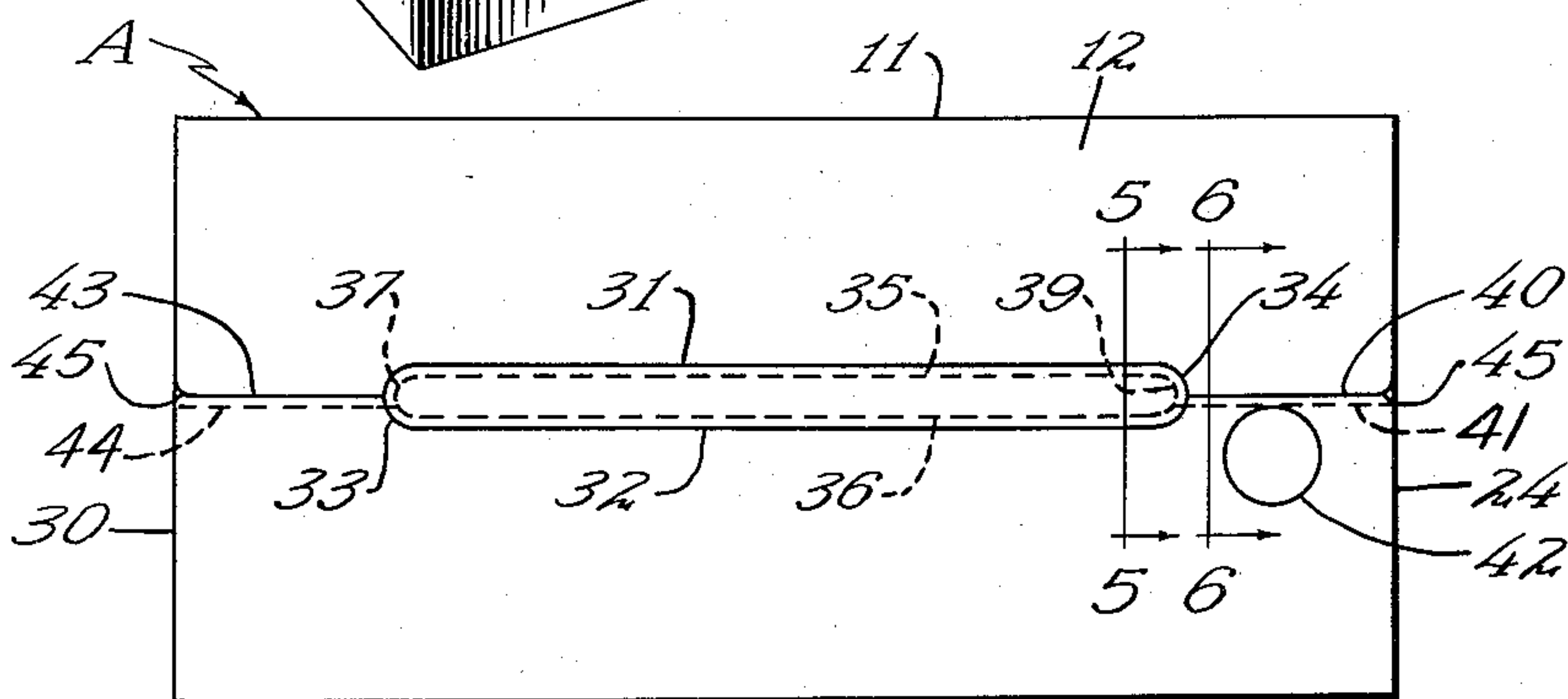


FIG. 2

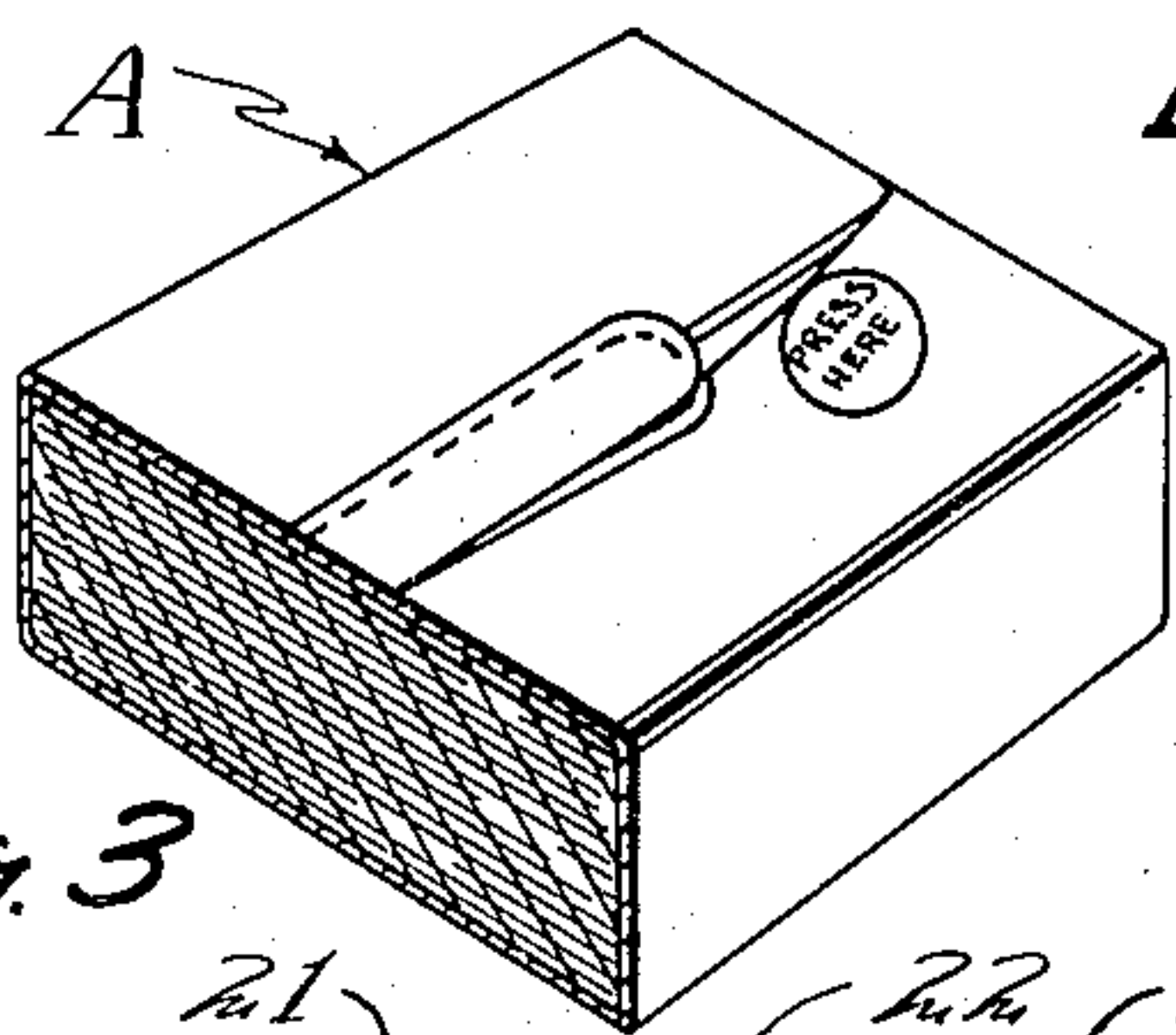


FIG. 3

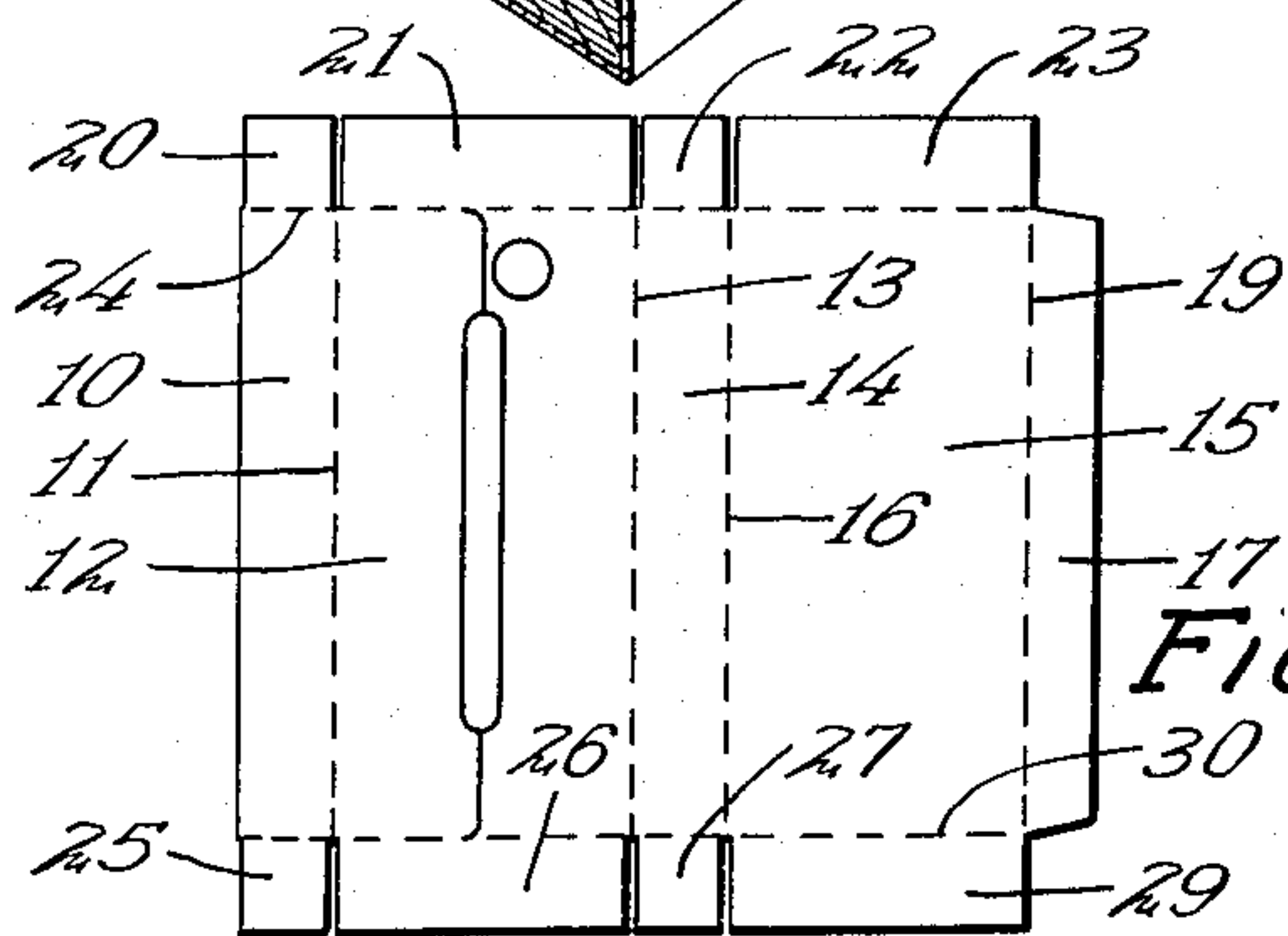


FIG. 7

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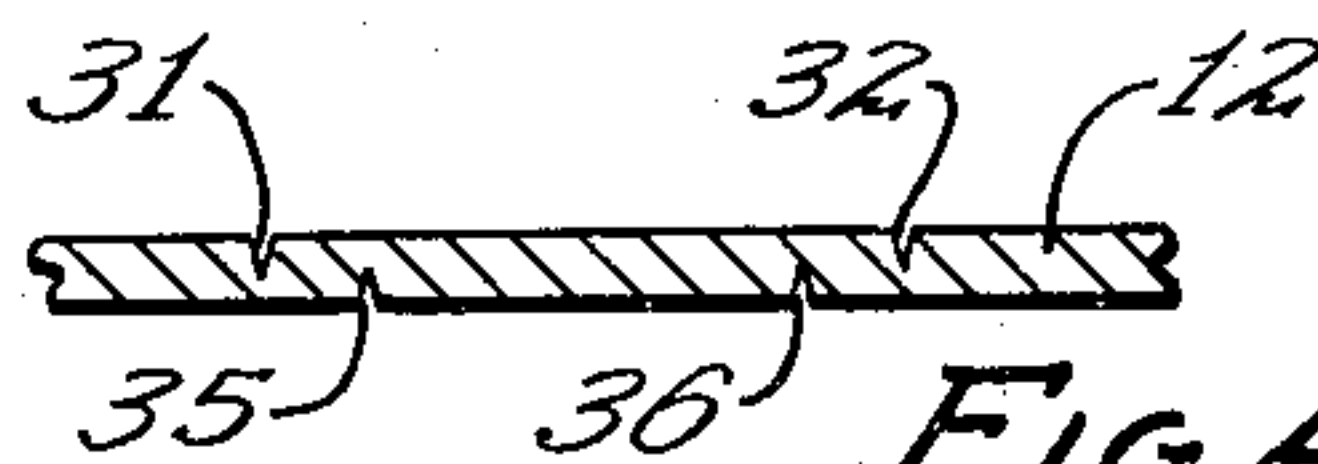


FIG. 4

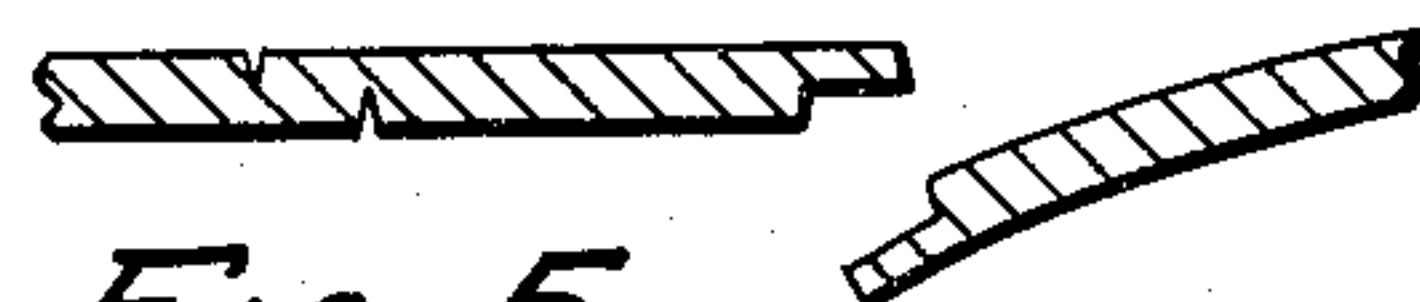


FIG. 5



FIG. 6

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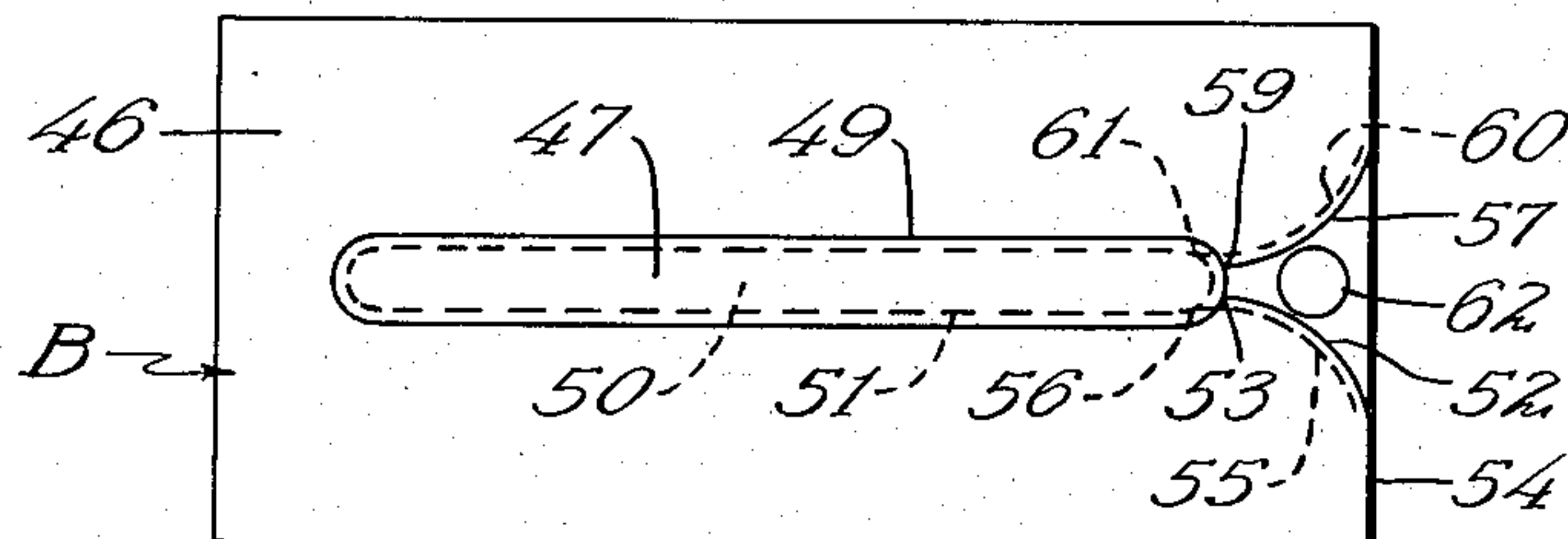


Fig. 8

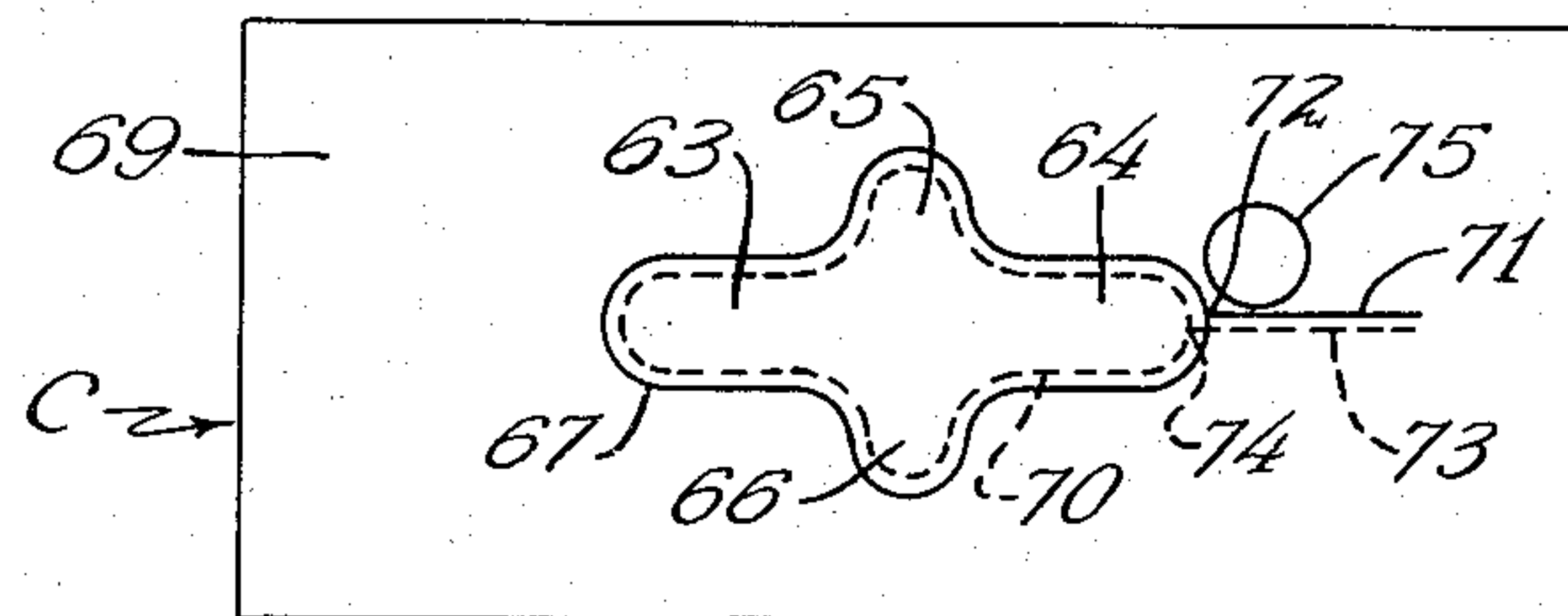


Fig. 9

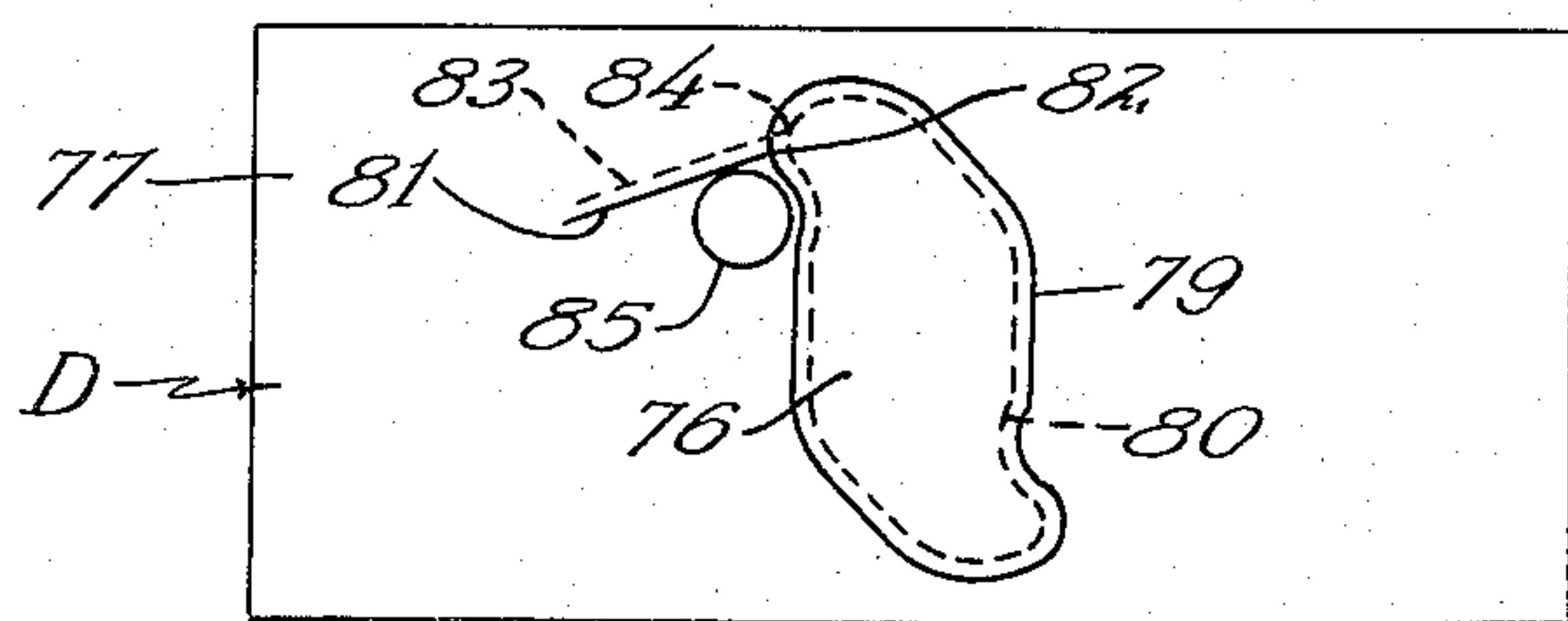


Fig. 10

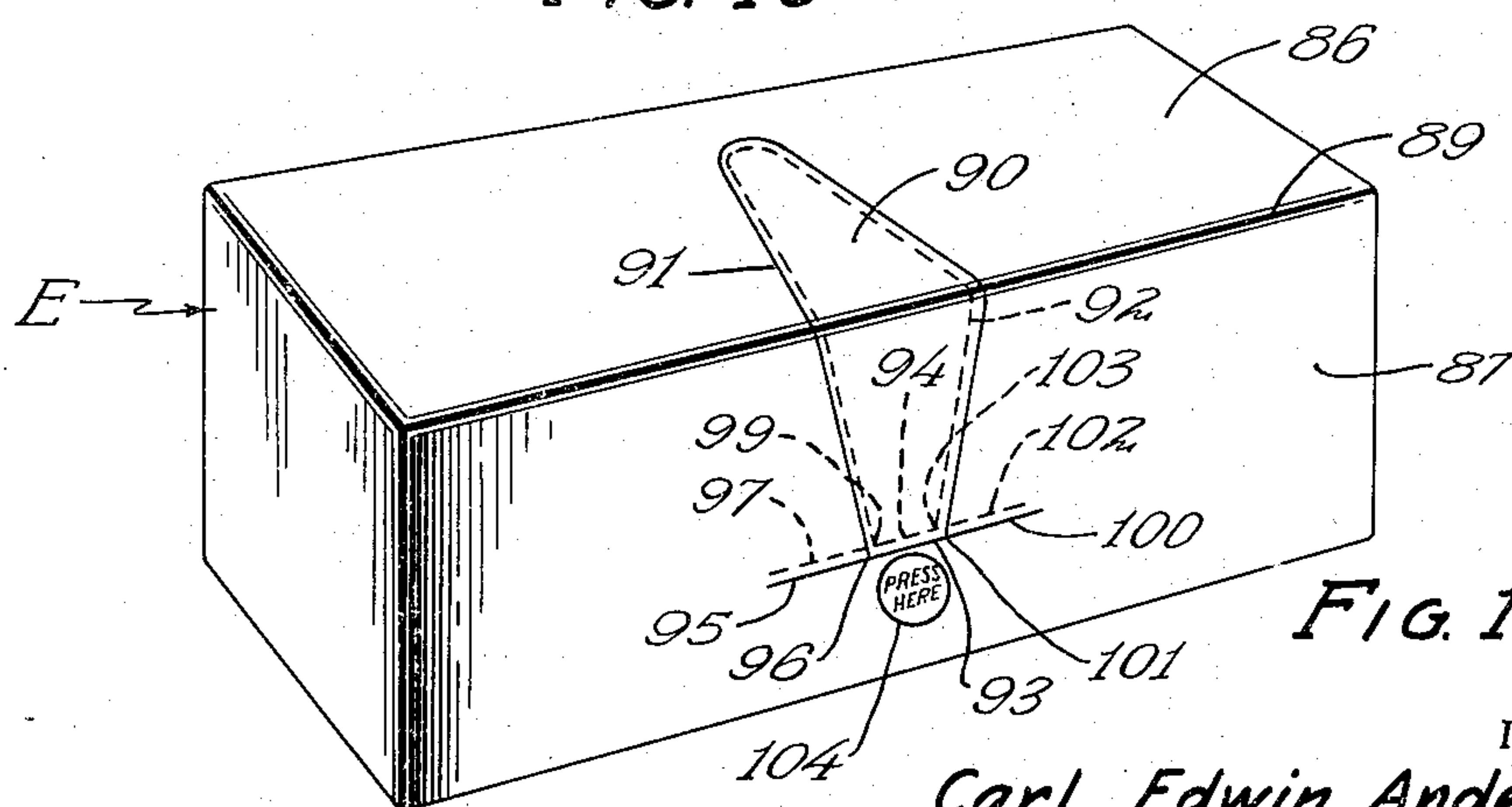


Fig. 11

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DISPENSING CARTON

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6 Claims. (Cl. 229—51)

This invention relates to an improvement in dispensing carton and deals particularly with a carton for containing napkins, disposable tissues, or the like.

Disposable tissues are often contained within a generally rectangular carton having an opening in the upper surface thereof. In certain instances, a sufficient part of the upper panel is removable so that the tissues within the carton may be grasped between the fingers and removed. In other instances, the tissues are dispensed through a slot in the top of the carton and the various tissues are interleaved together so that as one tissue is withdrawn, a part of the next tissue is drawn through the slot to overlie a portion of the top panel.

One of the difficulties involved with cartons of either type lies in the manner in which the removable portion of the carton is removed. The removable part of the top panel is usually connected to the remainder of the panel along perforated lines or other similar lines of weakness. Unfortunately these lines of weakness are somewhat likely to vary in different cartons and the amount of variance depends to some degree upon the nature of the paper stock used in the formation of the carton board. If the perforated part is easily removable, there is some chance that this portion of the carton will be accidentally removed during transportation or storage of the cartons. If this occurs, the package is not readily saleable as the prospective customer does not know whether or not a portion of the contents has been removed and as the partial opening of the package can permit dirt and dust to enter the package to soil at least the uppermost tissues of the series.

An object of the present invention lies in the provision of a carton useful in the dispensing of tissues, napkins and the like and which includes a potential opening of a novel type. This opening terminates short of the ends of the carton and the ends of the opening are rounded in form. The removable strip, when removed, provides a round end opening through which the tissues may be easily drawn.

A feature of the present invention lies in the particular manner in which the removable tear strip is formed. This tear strip is formed by cutting two parallel lines into each surface of the carton stock, these cut lines extending only partially through the carton stock. The ends of the parallel lines are connected by a semi-circular cut line. Similarly shaped cut lines are formed in the under surface of the top carton panel, the cut lines in the under surface of the panel being closer together than the parallel lines on the outer surface of the panel, the rounded ends of the top panel are of shorter radius than the rounded ends of the cut lines in the outer surface of this panel. In the removal of the tear strip, the carton stock splits between the upper and lower surfaces of the board so as to be readily removable.

It is a well known fact that paper board, and particularly that made on a cylinder machine, builds up in layers or piles. For this reason it is possible to split the carton stock with comparative ease along lines parallel to its

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surfaces. By forming the offset cut lines in opposite sides of the panel and by pulling the strip defined by the cut line out of the plane of the remainder of these panels, the strip may be readily split away from the panel providing an opening through which the tissues may be dispensed.

A most important feature of the present invention lies in the specific manner in which the tear strip may be removed from the top panel. As was previously stated, the ends of the tear strip are usually spaced from the ends of the panel in which the tear strip is formed. A cut line is formed, preferably between an end of the tear strip which has been described and a corresponding end of the carton panel, this cut extending partially through the paper board from the top surface thereof. A second cut line is formed in the under surface of the paper board along a line parallel to, and offset from, the first described cut line. By exerting an inward pressure on the carton stock at the juncture between these last named cut lines and the periphery of the tear strip, a portion of the end of the tear strip will become immediately disengaged from the remainder of the panel and the tear strip may be readily grasped for removal.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

Figure 1 is a perspective view of a dispensing carton showing the construction thereof.

Figure 2, is a top plan view of the carton shown in Figure 1.

Figure 3 is a perspective view of an end of the carton showing the initial step of removing the tear strip.

Figure 4 is a cross-sectional view through a portion of the top panel of the carton before the tear strip has been partially opened.

Figure 5 is a sectional view, also on the line 5—5 of Figure 2, showing the top panel after the initial step of opening the package.

Figure 6 is a sectional view through the carton panel after the initial step of opening the carton, the position of the section being indicated by the line 6—6 of Figure 2.

Figure 7 is a diagrammatic view of the blank from which the carton is formed.

Figure 8 is a top plan view of a modified form of construction.

Figure 9 is a top plan view of a second modified form of construction.

Figure 10 is a top plan view of a third modified form of construction.

Figure 11 is a perspective view of a fourth modified form of construction.

While the particular manner in which the carton is formed is somewhat of a matter of choice, a typical form of blank is illustrated in Figure 7 of the drawings. This figure illustrates a sidewall panel 10 foldably connected along a fold line 11 to a top carton panel 12. The panel 12 is hingedly connected along a fold line 13 to the side wall 14. The side wall 14 is in turn connected to the bottom panel 15 along a fold line 16. A glue flap 17 which is hingedly connected to the bottom panel 15 along a fold line 19 is glued in overlapping relation with the side wall panel 10 in order to provide a tubular carton structure.

Closure flaps 20, 21, 22 and 23 are connected to one end of the wall panels along a common line of fold 24. Similar closure flaps 25, 26, 27 and 29 are foldably connected to the opposite ends of the wall panel along a fold line 30.

Normally, after the carton has been filled, either both ends, or the remaining unsealed end, is sealed to provide end closures for the carton.

With reference now to Figure 2 of the drawings it will be noted that a pair of parallel cut lines 31 and 32 ex-

tend into the upper surface of the top carton panel 12 in parallel relationship. The ends of the parallel cut lines 31 and 32 are connected by semi-circular cuts 33 and 34. While the specific form of the cut lines is somewhat of a matter of choice, the particular arrangement illustrated has been found to be desirable and advantageous.

The various cut lines 31, 32, 33, and 34 extend only partially through the paper board, these cuts preferably extending approximately one-half of the thickness of the paper board although they might be slightly deeper. The depth of the cut lines is not completely critical as the interior of the paper board sheet is usually weaker than the surface layers of material and splitting will usually take place even though the cut lines do not extend half way through the sheet as illustrated and described.

A similar pair of parallel cut lines 35 and 36 are provided in the under surface of the panel 12. The cut lines 35 and 36 are somewhat closer together than the previously described parallel cut lines 31 and 32 and are between the cut lines 31 and 32. In other words each of the cut lines 35 and 36 is inwardly offset from the corresponding cut line 31 or 32.

The ends of the parallel cut lines 35 and 36 are connected by semi-circular cuts 37 and 39. These cuts 37 and 39 have substantially the same center point as the semi-circular cuts 33 and 34 but are of shorter radius. In other words, the cut lines formed in the under surface of the panel 12 are inwardly offset from the cut lines extending into the upper surface of this panel throughout the entire periphery of the removable strip. The cut lines 35 and 36, similarly to the previously described cut lines, extend only partially through the carton stock forming the panel, these cut lines as well as the semi-circular end cuts, preferably extending approximately half the thickness of the paper stock or perhaps slightly more than one-half the thickness.

A cut line 40 extends from the end of the semi-circular cut 34 to the fold line 24 connecting the panel 12 to its end flap 21. The cut line 40 extends only partially through the thickness of the paper board and preferably extends about half way through. A similar cut line 41 is formed in the under surface of the panel 12 leading from an end of the semi-circular cut 39 to the fold line 24 connecting the top panel to the closing flap 21. The cut line 41 also extends only partially through the paper stock. These two cut lines are slightly offset so that the paper board between the cut lines may split when sufficient pressure is applied to the sheet.

The package thus described may be quickly and easily removed by applying a downward or inward force in the circular area 42 which is on one side of the cut line 40 and between the end of the tear strip and the corresponding end of the carton. When downward pressure is applied at this particular point, the paper board splits between its upper and lower surfaces between the cut line 40 and the adjoining cut line 41. As the paper board splits, the downward pressure at this point tends to pull the portion of the paper board which is between the cut lines and above the area of split over the portion of the sheet between the cut line which is beneath the area of the split. The portion of the tear strip which is connected to the panel portion between the cut line 31 and the fold line 11 tends to remain in the plane of the panel and is not depressed as is the portion of the panel between the cut line 32 and the fold line 13. As a result a portion of the carton stock between the rounded cut lines 34 and 39 separates and permits the adjoining end of the tear strip to be easily grasped for removal. As soon as the downward pressure against the top panel is relieved, the panel returns to approximately its normal position. The tissues may be readily dispensed through the opening formed by the removal of the tear strip.

The use of an opening means at each end of the carton

is entirely optional as only one point of opening is necessary. However, if preferred, parallel cut lines 43 and 44 may be inserted in offset relation into the upper and lower surfaces respectively of the top panel 12 and the tear strip may be removed from the opposite end by applying pressure to the area between the cut line 43 and the fold line 13. In actual practice, it has been found that the top panel of the carton is strengthened somewhat to employ only a single point of opening.

Where the cut lines 40 and 41 and the cut lines 43 and 44 extend from the endless cut lines described to an edge of the panel 12, the ends of the cut lines 40 and 43 which are in the outer surface of the paper board are preferably connected to the fold lines 24 and 30 defining an edge of the panel 12, a very short arcuate cut such as 45 is provided which extends entirely through the paper board adjoining the juncture of the outer cut lines 40 and 43 and the respective fold lines 24 and 30.

The form of construction disclosed in Figures 1 to 7 of the drawings may be defined in general by the letter A. In Figure 8 of the drawings a slightly modified form of construction is illustrated. In the carton B, one panel such as 46 includes an area 47 in the outer surface of the paper board which is defined by a cut line 49 which extends partially through the thickness of the paper board as in the previous construction. A second area 50 is provided in the inner surface of the panel 46 which is defined by a cut line 51 which is spaced inwardly from the cut line 49 throughout its entire periphery. Thus, the area 50 is similar in shape to the area 47 but is slightly smaller and the endless cut lines 49 and 51 extend in side by side relation about their entire periphery.

A third cut line 52 is provided in the outer surface of the panel 46 but not extending entirely through the paper board. The cut line 52 extends from a point on the outer cut line 49 indicated at 53 to a point remote therefrom, and in the particular arrangement illustrated extends to a full line defining an edge of the panel 46 and indicated at 54.

A fourth cut line 55 is provided in the inner surface of the panel 46 but not extending entirely through the thickness of the paper board. The cut line 55 extends from a point 56 on the periphery of the inner cut line 51 to a point remote therefrom and the two cut lines 52 and 55 are in spaced side by side relation.

A fifth cut line 57 extends from a point on the periphery of the outer endless cut line 49 to a point remote therefrom and the point of juncture 59 between the outer cut line 57 and the endless outer cut line 49 is preferably spaced from the juncture point 53. A sixth inner cut line 60 extends from a point 61 on the inner endless cut line 51 to a point remote therefrom and is preferably in spaced side by side relation to the cut line 57. In the particular arrangement illustrated, the cut lines 52 and 57 diverge apart, both ending at the edge 54 although it is not necessary that they terminate at a fold line.

It will be noted that the inner cut lines 55 and 60 are more widely spaced apart than the outer cut lines 52 and 57. Accordingly, if an inward pressure is applied between the diverging cut lines as for example at the point 62, the portion of the carton board between the diverging cut lines 52, 55 and 57, 60 will be forced out of the plane of the panel 46, the paperboard splitting between the side by side cut lines. When this has been done, the end of the portions defined by the endless cut lines 49 and 51 may be grasped by the fingers and pulled upwardly to remove these areas from the panel 46.

The carton C indicated in Figure 9 discloses removable areas which are of irregular outline and which define an elongated area through which the carton contents may be removed and central transverse widened areas through which the fingers may extend to grasp the contents. The elongated area portions 63 and 64 permit the removal of the contents while the transversely widened portions 65 and 66 permit insertion of the fingers.

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The various areas described are defined by an endless outer cut line 67 extending into the outer surface of the carton panel 69 which extends partially, but not entirely through the thickness of the paperboard. An inner cut line is provided in the inner surface of the paperboard extending partially through the thickness of the stock and the inner endless cut line 70 follows the contour of the outer cut line 67 but is in spaced side by side relation thereto. A third outer cut line 71 is provided to extend from the outer cut line 67 from a point 72 thereupon. A fourth inner cut line 73 communicates with the inner cut line 70 at the point 74 and extends in spaced side by side relation to the cut line 71.

When pressure is applied at the point 75, the portion of the panel 69 on either side of the juncture points 72 and 74 may be pressed out of the plane of the remainder of the paperboard, whereupon the area defined by the endless cut lines 67 and 70 may be grasped between the fingers and removed.

The carton D illustrated in Figure 10 of the drawings is quite similar to the structure shown in Figure 9 but is somewhat different in shape, the shape being such as to permit easy insertion of the fingers to remove the carton contents. The removable area 76 in the carton panel 77 is defined by an outer cut line 79 of irregular outline, the cut line 79 being endless. A similar endless cut line 80 extends partially through the paperboard from the under-surface thereof while the outer cut line 79 extends partially through the paperboard from the outer surface. The inner cut line 80 follows the contour of the outer cut line 79 and is spaced inwardly slightly therefrom to define a slightly smaller area.

A third cut line 81 is provided in the outer surface of the paperboard communicating with the endless cut line 79 at the juncture point 82. A fourth cut line 83 is provided in the inner surface of the paperboard communicating with the inner cut line 80 at the juncture point 84. The cut lines 81 and 83 are in spaced side by side relation.

By applying inward pressure at the point 85, the portion of the panel 77 on either side of the juncture points 82 and 84 may be pressed down out of the plane of the remainder of the panel so that the area defined by the endless cut lines 79 and 80 may be readily grasped and removed.

The carton E in Figure 11 of the drawings includes a pair of panels 86 and 87 which are connected along a fold line 89. A removable area 90 is provided extending in portions of the two panels 86 and 87, the area 90 being defined by an outer cut line 91, which extends partially through the carton stock from the outer surface thereof. An endless cut line 92 is provided in the inner surface of the paperboard in spaced parallel relation to the endless cut line 91. The cut line 92 extends partially through the carton board from the inner surface and is in spaced side by side relation to the outer cut line 91, defining a slightly smaller area than the area defined by the outer cut line 91.

In the particular arrangement illustrated, one end of the area 90 is defined by a straight cut line 93 forming a part of the endless cut line 91 and a parallel straight cut line 94 is provided on the inner surface which forms a part of the endless cut line 92. A fifth cut line 95 connects with the outer cut line 91 at the juncture point 96 at one end of the straight portion 93 of the outer cut line 91 and a parallel fourth cut line 97 is provided on the inner surface of the carton which communicates with the straight cut line portion 94 at the juncture point 99. A fifth cut line 100 communicates with the straight cut line portion 93 at the juncture point 101 and a parallel inner cut line 102 adjoins the straight portion 94 of the inner cut line at the juncture point 103. Thus, in effect, the cut line portions 95, 93 and 100 are substantially aligned, as are the inner cut line portions 97, 94 and 102.

By applying an inward pressure at the point 104, the

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portion of the panel 87 beneath the various cut lines may be pressed inwardly out of the plane of the remainder of the panel 87, so that the lower end of the removable area 90 may be grasped and this area may be pulled outwardly and removed so that the contents of the carton may be dispensed.

From the foregoing description it will be seen that a dispensing carton is formed which includes a removable strip portion which can be more readily removed than other types of tear strips with which I am familiar. No tools or instruments are required for the opening of the carton and the entire operation may be accomplished by merely pressing upon the carton at the proper point, grasping the exposed edge of the tear strip and removing the same.

While the present construction is somewhat more resistant to accidental opening than are cartons having removable panels of the usual type therein, even the accidental partial opening of the carton is not particularly serious as the tear strip has a tendency to return to its original position at all times until it is completely removed. As pressure on the top panel of the carton at points other than the general areas mentioned do not generally tear the tear strip from the remainder of the panel, a force of a particular type and at a particular point is necessary to accidentally open the carton to expose the contents.

In accordance with the patent statutes I have described the principles of construction and operation of my dispensing carton and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A dispensing carton including a hollow enclosure of paperboard including a series of connected panels, one of said panels having a tear strip incorporated therein, said tear strip including a pair of elongated cut lines having the ends thereof connected by substantially semi-circular cuts, said cuts and cut lines extending partially through the paperboard forming said one panel from the outside surface thereof, a pair of similar elongated cut lines having the ends thereof connected by substantially semi-cylindrical cuts extending into said paperboard, said last named cut lines and connecting cuts being offset inwardly of the tear strip and from said first mentioned cuts and cut lines and extending partially through the paperboard forming said one panel from the inner surface thereof, and a pair of slightly offset cut lines extending into the opposite surfaces of said paperboard and communicating with the respective cut lines and cuts in the corresponding surfaces thereof and extending in a direction away from said tear strip, and at substantially right angles thereto, whereby when a downward pressure is exerted upon said one panel near the juncture between said last mentioned slightly offset cut lines and said cut lines defining said tear strip on the side of the last mentioned cut lines farthest from the cut line in the outer surface, a lateral pull will be exerted between said last mentioned cut lines.

2. The structure of claim 1 and in which said slightly offset cut lines last mentioned are substantially parallel.

3. The structure of claim 1 and in which the last mentioned slightly offset cut lines communicate with the substantially semi-circular cuts.

4. A dispensing carton including a hollow receptacle of paperboard including a series of connected panels one of said panels having a removable elongated tear strip forming a part thereof, said tear strip including an endless cut line including elongated sides extending into the outer surface of the paperboard to a depth partially, but not completely, through the same, a similarly shaped endless cut line offset inwardly of the first mentioned endless cut line toward the center of the elongated tear strip, said similarly shaped cut lines extending partially, but not

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completely, through the paperboard from the inner surface thereof, said tear strip terminating short of the edges of said one panel, a cut line in said outer surface extending outwardly from said first mentioned endless cut line at substantially right angles thereto toward an edge of said one panel and a second cut line in said inner surface in slightly offset relation to said last mentioned cut line extending from said second endless cut line toward said edge of said panel, whereby when inward pressure is exerted against said one panel adjoining the juncture between said last mentioned cut line in said outer surface and said endless cut line in said outer surface on the side of said last mentioned cut line in said outer surface overlying said last mentioned cut line in said inner surface, a lateral pull is exerted between said last mentioned cut lines.

5. A dispensing carton including a body formed of panels of paperboard, an area in said paperboard defined by an endless cut line extending partially but not entirely, through the thickness of the paperboard from the outer surface thereof, a second slightly smaller area in the inner surface thereof defined by a second endless cut line extending partially, but not entirely through the paperboard from the inner surface thereof, said second endless cut line being spaced from the first cut line a substantially equal distance throughout its periphery, a third cut line in said outer surface communicating with said first endless

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cut line and directed away from said first cut line outwardly of said first named area, and a fourth cut line in the inner surface of said paperboard communicating with said second endless cut line and in spaced side by side relation to said third cut line, whereby, when an inward force is exerted upon said paperboard adjoining the junction between said first named cut line and said third cut line on the side of the third cut line overlying said fourth cut line, a lateral pull is exerted between said third and fourth cut lines.

6. The structure of claim 5 and in which said third and fourth cut lines extend substantially to an edge of one of said panels.

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