June 14, 1966 E. J. ELKNER 3,255,874

DISPENSING PACKAGE

Filed Aug. 5, 1963

FIG. 1

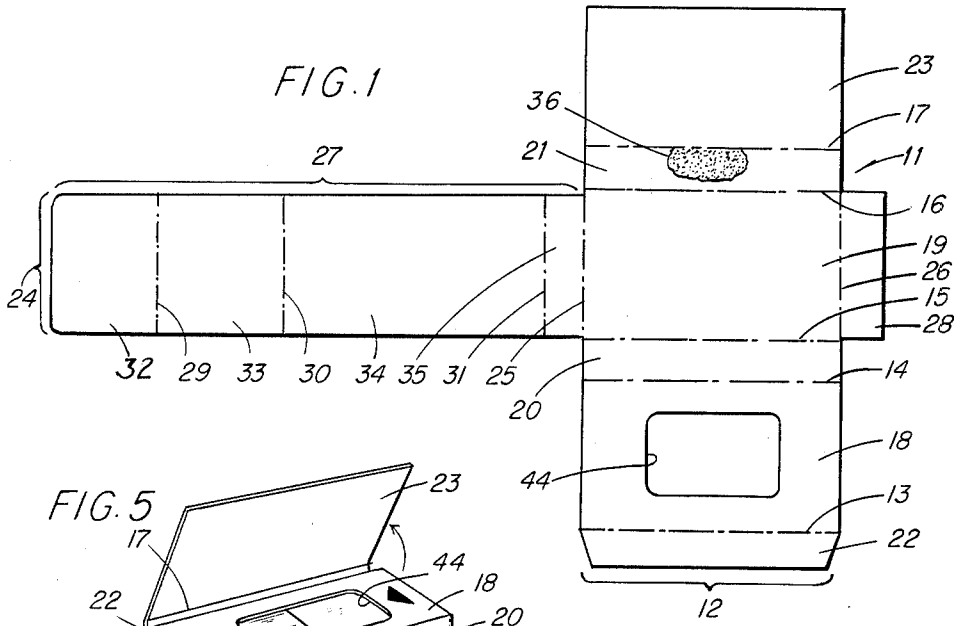


FIG. 5

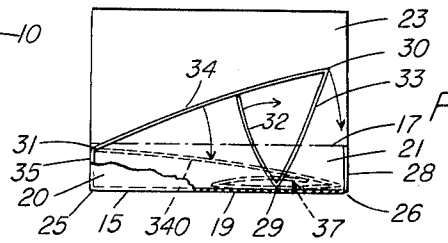


FIG. 2

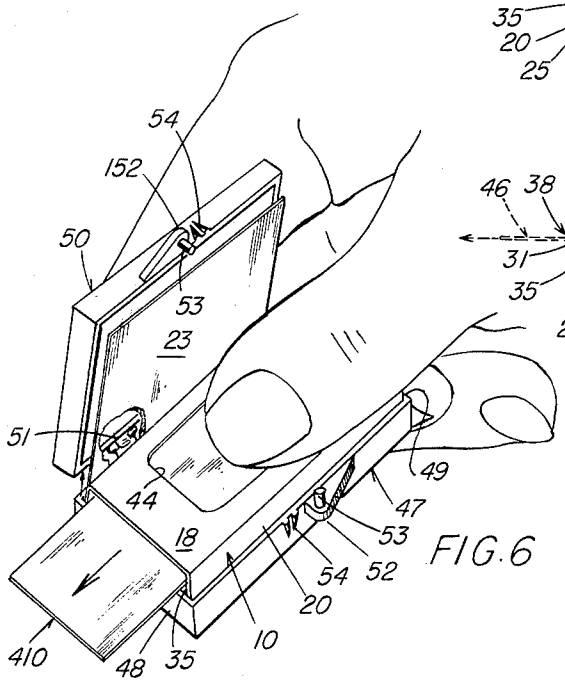


FIG. 6

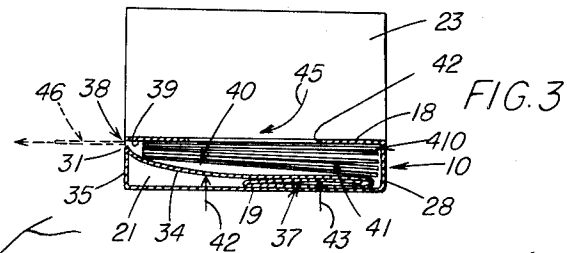


FIG. 3

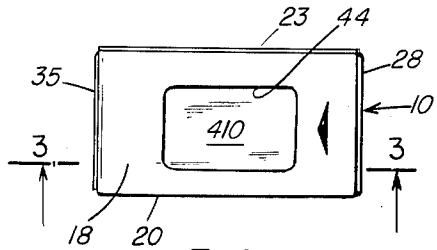


FIG. 4

United States Patent Office 3,255,874 Patented June 14, 1966

3,255,874

DISPENSING PACKAGE

Edward J. Elkner, Jamaica, N.Y., assignor to Philip Morris, Incorporated, New York, N.Y., a corporation of Virginia

Filed Aug. 5, 1963, Ser. No. 299,804
7 Claims. (Cl. 206—56)

The present invention relates to packages for contained stacks of flat rectangular articles, such as individually wrapped or unwrapped safety razor blades, to be dispensed edgewise therefrom, one at a time.

Prior to the present invention packages of this type have been proposed each of which is made up from a plurality of folded blanks of cardboard to be assembled in the construction of the package by manipulative steps, including connection and physical association of separate parts. While such packages are designed ostensibly to effect an economy in the manufacture thereof such required manipulative steps have to a certain extent defeated such purpose. Also, certain of such structures feature a spring-biased sloping ramp on which a stack of the articles stored in the package are rested, this ramp being intended repeatedly to guide the top article to a discharge slot. However, such ramp structure has been disconnected from the adjacent structure which defines the discharge slot and, as a result, there is no assurance that each top article in the stack will be efficiently guided for smooth ejection from the discharge slot. It is an object of the present invention effectively to eliminate these and other problems of such prior art dispensing packages.

The structure of the dispensing package of the present invention includes a rectangular box made up from integral rectangular top, bottom and side panels formed from a blank of springy sheet material, such as relatively stiff cardboard, sheet plastic and the like, bent along intervening fold lines into an elongated rectangular tube. The tubular formation of this box may be maintained either by providing an integral lip adjacent one side edge of one of the panels for lap of and anchorage to an opposed surface of one of the other panels, and such anchorage may be effected by cementing, or by physically maintaining such face contact with employment of holding or enfolding structure, e.g., associated outer casing structure.

The rectangular box also includes on elongated tongue, which forms a part of the blank, being integrally connected to one end of the bottom panel and initially extending in alignment with the latter. This elongated tongue is sub-divided by transverse fold lines successively into an upright end panel, a sloping ramp extending back into the tube from the top edge of this end panel, and a plurality of stacked folds on its free terminal end to define a compression spring structure which rests upon the top face of the bottom panel in the vicinity of the other end of the latter.

The box structure provides a discharge slot between the underface of the top panel and the fold line connection of the end panel with the sloping ramp section so as to permit free and smooth guided ejection therethrough of the top article in the stack. For this purpose, the end panel, which is defined as a section of the elongated tongue, may be of sufficiently less depth than the side panels as to locate below the underface of the top panel the fold line connection between the top edge of this end panel and the sloping ramp at a distance which provides a slot depth that readily permits ejection therethrough of the top article in the stack.

The top panel is provided with an elongated finger access slot, which may be medially located therein and in the form of a rectangular hole, so as to permit frictional

finger engagement therethrough of the top article in the stack housed in the box. Consequently, this top article is longitudinally ejective through the discharge slot by forward slide effected by the frictional engagement through the access slot as guidance of the article by the sloping ramp is maintained throughout its ejective travel. The frictional engagement of the underface of the topmost article, whether this be an unwrapped safety razor blade or the bottom face of a wrapper enclosing it, with the top face of the next lower article in the stack, and any portion of the top surface of the sloping ramp and the fold line connection between the latter and the top edge of the adjacent upright end panel, will be appreciably less than the permitted frictional finger engagement of the top surface of the article through the access slot to assure the effective ejection. This relationship of frictional engagements may be assured by providing relatively smooth surfaces for the underface of each article and the top face of the engaged portion of the sloping ramp and its fold line connection to the top edge of the end panel. For example, the blank may be formed of foldable sheet material which has a relatively slick surface and if the blades are individually wrapped the wrappers thereof may also have relatively slick surfaces for this purpose.

It is an object of the present invention to assure that the spring-biasing of the back end of the sloping guide ramp automatically holds the top article in the stack snugly up against the underface of the top panel, and when this top article is ejected the ramp will lift to move the immediately underlying article in the stack up to this top position. Thus, as the articles are successively ejected through the discharge slot the spring-biased back end of the ramp automatically rises step-by-step.

While the described dispensing box structure may be employed alone as the dispensing package it may desirably include outer casing structure which partially or wholly houses the dispensing box structure. For this purpose, the casing structure may comprise or include a tray in which the rectangular tube of the dispensing box is nested. An upright end wall of the tray may serve effectively to close the end of the tube opposite that closed off by the end panel to which is integrally connected the sloping ramp section, although the folded blank may be provided with a flap integral with either the top or bottom panel for this purpose. The tray may be fitted with a suitable cover, which may be hinged to the former, together to serve as a completely enclosing casing structure. If it is desired to observe the contents of such enclosing casing or to read therethrough any messages or informative material printed upon the dispensing unit housed therein or the articles carried thereby, such casing structure may be formed or molded from suitable transparent material, such as clear or tinted plastic, e.g., transparent polystyrene and the like.

A further object of the present invention is to provide structural embodiments which may be readily constructed and which will permit efficient use and operation thereof.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the constructions hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

FIG. 1 is a plan view of a one-piece blank of springy sheet material, such as cardboard, to be folded into an

embodiment of the dispensing package of the present invention;

FIG. 2 is a side elevational view, with parts broken away, of panel sections of the blank of FIG. 1, illustrating folding manipulation of parts thereof during assembly into the dispensing box unit;

FIG. 3 is a side elevational view of the completed dispensing box after the manipulative assembly illustrated in FIG. 2, with parts sectioned along line 3—3 of FIG. 4, and showing the device loaded with a stack of flat rectangular articles to be dispensed therefrom;

FIG. 4 is a top plan view of the structure shown in FIG. 3;

FIG. 5 is a perspective view, with parts broken away and in section of the completed package of FIGS. 3 and 4, illustrating dispensing therefrom of the top article in the stack housed therein; and

FIG. 6 is a perspective view of the FIG. 5 package, with parts broken away, illustrating the nesting of the latter within an enclosing casing and the dispensing of one of the articles from the composite assembly.

Referring to the drawings, in which like numerals identify similar parts throughout, it will be seen that the embodiments illustrated in FIGS. 1 to 5 incl. and FIG. 6 comprise a dispensing package **10** formed from a one-piece blank **11** shown in plan in FIG. 1. The cardboard blank **11** is in the shape of a Latin cross having its transverse bar **12** provided with crease or fold lines **13, 14, 15, 16** and **17** to subdivide it into rectangular panels including top panel **18**, bottom panel **19**, front and back side panels **20** and **21**, an anchoring flap **22** and a cover panel **23**.

The blank **11** also includes cross upright **24**, the shaft portion of which is defined from the bottom panel section **19** of the transverse bar by crease or fold lines **25** and **26** to provide an elongated tongue **27** and an end flap **28**. The elongated tongue **27** is provided with transverse crease or fold lines **29, 30** and **31** to subdivide it into successive sections **32, 33, 34** and **35**, the latter constituting the other end panel.

The parts of the blank **11** of FIG. 1, cooperatively defined by the various fold lines, are manipulated in the following manner to form the dispensing box. The tongue **27** has its terminal section **32** folded back along fold line **29** and along fold line **30** to provide the biasing spring sections **32** and **33** which will be arranged relative to each other substantially as is illustrated in FIG. 2. This tongue **27** is also folded upwardly along fold line **25** and then back along fold line **31** to dispose the parts of this subassembly substantially in the relative positions shown in FIG. 2, with the resulting end panel **35** extending up substantially normal to the plane of the bottom panel **19**. End panel **28** is also folded up along fold line **26** substantially to an upright position. Side panel **21** and the cover flap **23** are turned up together along fold line **16** to extend upwardly substantially normal to bottom panel **19**, and the remaining portion is manipulated in a like manner along fold line **15**. Flap **22** is turned inward along fold line **13** to extend substantially normal to the top panel **18** and the latter is then folded back over the bottom panel **19** along fold line **14**, so that the side panels **20** and **21** extend upwardly substantially parallel to each other.

If desired, the anchoring flap **22** may be provided with adhering cement on its underface or the top face which constitutes the inside wall of side panel **21** may be provided with a film of such cement, a portion of which is indicated at **36**, to adhere this flap to the inside face of this side panel (that shown in FIG. 1), so that top panel **18**, bottom panel **19** and side panels **20** and **21** together define a rectangular tube closed at opposite ends by upright end panels **28** and **35**. The folding of the top panel **18** down over the ramp section **34** to anchorage of the flap **22** against the side panel **21** causes the tongue end section **32** to swing to the right and the section **33** to swing to the left, thereby permitting the ramp **34** to be lowered beneath the top panel to the position indicated in dotted lines at **340** in FIG. 2 and to provide the free back end thereof with compression spring structure indicated by dotted lines at **37** therein.

The resulting dispensing structure thus is provided with a discharge slot **38** defined between the underface **39** of the top panel **18** and the fold line connection at **31** of end panel **35** with the sloping ramp **34**, as is indicated in FIG. 3. The chamber **40** defined between the sloping ramp **34** and the underface **39** of top panel **18** is supplied or loaded with stack **41** of the flat rectangular articles or blades, the top article **410** thereof being snugged up against the top panel underface **39** by biasing indicated by the arrows **42** and **43** in FIG. 3, imposed upon the bottom of the stack **41** by the resiliency of the sloping ramp **34** and the compression spring structure **37**. Preferably, this loading is accomplished by placing the stack **41** upon the ramp **34** before the top panel **18** is folded down thereover and the flap **22** is adhered to the inner face of the upstanding sidewall **21**, so as to complete the dispensing package structure illustrated in FIGS. 3, 4 and 5.

When such sheet material is folded along the crease lines there is a tendency for the panel parts to swing back along these lines of fold which provides the desired resilient or spring biasing. When the forepart of the sloping ramp **34** is bowed downwardly to the position indicated in FIG. 3 by the entrapment of the stack **41** beneath the top panel **18** during the loading there is an inherent tendency for this portion of sloping ramp to rise toward the flat plane of its original disposition, and this action provides the upward biasing force indicated by the arrow **42** in FIG. 3. Consequently, the top article **410** in the stack **41** is always raised to alignment with the discharge slot **38** adjacent the underface **39** of the top panel **18**.

Top panel **18** is provided with an elongated finger access slot or hole **44** in which is exposed an appreciable area of the top surface of the topmost article **410**, as will be seen from FIGS. 4 and 5.

Each topmost article **410** of the stack **41** may be readily dispensed from the package **10** by one's finger inserted through the slot **44** to frictional contact with the top face of the topmost article, and then applying forward finger thrust thereto in the direction of the arrow **45** indicated in FIG. 3 and in the manner illustrated in FIG. 6. Thus, this topmost article **410** is ejected forward through the discharge slot **38**, this action being indicated in dotted lines at **46** in FIG. 3 and in full lines in FIGS. 5 and 6. Upon completion of the ejection of the topmost article **410** out through discharge slot **38**, the biased sloping ramp **34** lifts the remainder of the stack **41** upwardly to snug the next and now topmost article in the stack up against the underface **39** of the top panel **18** for its alignment with the discharge slot **38**, so as to permit the ejection action to be repeated.

The upwardly extending flap **23** when bent downwardly along the fold line **17** may serve as a cover for the top panel **18** to conceal the access slot **44** therein. If this cover flap **23** is omitted the side panel **21** may be provided between the anchorage flap **22** and the outside edge at **13** of the top panel **18**, so that the anchorage flap may then be tucked down beneath the far edge along line **16** of the bottom panel **19** for suitable anchorage to the latter. Such anchorage may be effected by cementing of the type previously indicated, or if an outer enclosing casing is employed such casing will hold the parts in their relatively folded positions to form the tubular structure of the dispensing box.

Such an enclosing casing structure is illustrated in FIG. 6. As is therein shown, such casing may include a bottom rectangular tray **47** in which the dispensing box **10** of FIGS. 3, 4 and 5 may be nested. End wall **48** of the tray **47** will be disposed adjacent the outer face of

end panel **35** to hold it in an upright position, and the opposite end **49** of the tray may either close off the back end of the box tube, in substitution for the end panel **28**, or the latter may also be held in upright position by the adjacent abutment thereto of this end wall of the tray. The enclosing casing may also include a hinged cover **50**, suitably connected to tray **47** by a pair of hinges, one of which is illustrated at **51** in FIG. 6. Suitable latch means may also be provided upon the casing tray **47** and cover **50**, which may be in the form of a pair of brackets **52** and **152** respectively mounted on the tray and cover members, each carrying a pin **53** capable of being flexed and adapted frictionally to engage catch lug structure **54** on the other member when these two casing members are swung together to relative closed positions. As has been previously indicated, the parts of the enclosing casing, i.e., tray **47** and cover **50**, may be molded from relatively rigid transparent plastic, so that the dispensing box **10** and exposed portions of its load may be viewed therethrough.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A dispensing package for a contained stack of flat rectangular articles to be dispensed edgewise therefrom, one at a time, comprising a rectangular box having integral rectangular top, bottom and side panels formed from a blank of springy sheet material and bent along intervening fold lines into a tube; and an elongated tongue formed integral with one end of said bottom panel and initially extending in alignment with the latter, subdivided by transverse fold lines successively into an upright end panel, a sloping ramp extending back into said tube from the top edge of said end panel and a plurality of stacked folds on its free terminal end defining a compression spring structure resting upon the top face of said bottom panel in the vicinity of the other end of the latter, the contained stack of flat rectangular articles being supported upon said sloping ramp and disconnected from each other for separate successive delivery with this stack being biased upwardly as a result of the upward biasing of the free end of said ramp by said compression spring structure, said box structure providing a discharge slot between the underface of said top panel and the fold line connection of said end panel with said sloping ramp to permit ejection therethrough of the top article in said stack; said top panel being provided with an elongated finger access slot to permit frictional finger engagement therethrough of the top article in said stack and longitudinal ejective slide thereby of this article out through said discharge slot with guidance by said sloping ramp.

2. The dispensing package as defined in claim **1** characterized by said end panel being of a depth sufficiently less than that of said side panels to locate the fold line connection of said end panel with said sloping ramp below the underface of said top panel as to define said discharge slot therebetween.

3. The dispensing package as defined in claim **2** characterized by means closing off the end of said tube opposite that closed by said end panel.

4. The dispensing package as defined in claim **3** characterized by said tube end closing means comprising an end wall of a tray in which said tube is nested.

5. The dispensing package as defined in claim **4** characterized by said closing means including another upright end panel integral with the other end of said bottom panel and lapping the inner face of said tray end wall.

6. The dispensing package as defined in claim **4** characterized by said tray having a cover hinged thereto for complete enclosure of said box.

7. A dispensing package for a contained stack of flat rectangular articles to be dispensed edgewise therefrom, one at a time, comprising a rectangular box having integral rectangular top, bottom and side panels formed from a one-piece blank of springy sheet material in the shape of a Latin cross with its transverse bar bent along intervening fold lines into a tube; the shaft portion of the upright of said cross constituting an elongated tongue formed integral with one end of said bottom panel and initially extending in alignment with the latter, subdivided by transverse fold lines into an upright end panel, a sloping ramp extending back into said tube from the top edge of said end panel and a plurality of stacked folds on its free terminal end defining a compression spring structure resting upon the top face of said bottom panel in the vicinity of the other end of the latter, the contained stack of flat rectangular articles being supported upon said sloping ramp and disconnected from each other for separate successive delivery with this stack being biased upwardly as a result of the upward biasing of the free end of said ramp by said compression spring structure, said end panel being of sufficiently less depth than said side panels as to provide a discharge slot between the underface of said top panel and the fold line connection of said end panel with said sloping ramp of a depth readily to permit ejection therethrough of the top article in said stack, the tip portion of the cross upright constituting an upright end panel integral with the opposite end of said bottom panel and closing the opposite end of said tube; said top panel being provided with an elongated finger access slot to permit frictional finger engagement therethrough of the top article in said stack and longitudinal ejectives slide thereby of this article out through said discharge slot with guidance by said sloping ramp; and an enclosing transparent casing including a rectangular tray in which said box is nested and a cover hinged to said tray.

References Cited by the Examiner

UNITED STATES PATENTS

1,851,043	3/1932	Gaisman	206—16
2,016,256	10/1935	O'Keefe	206—16
2,298,594	10/1942	Rueger	206—16

LOUIS G. MANCENE, *Primary Examiner*