Jan. 5, 1954 L. H. YOUNG 2,664,999

MAGAZINE AND BLADE COMBINATION

Original Filed June 30, 1947 2 Sheets-Sheet 1

Fig. 1

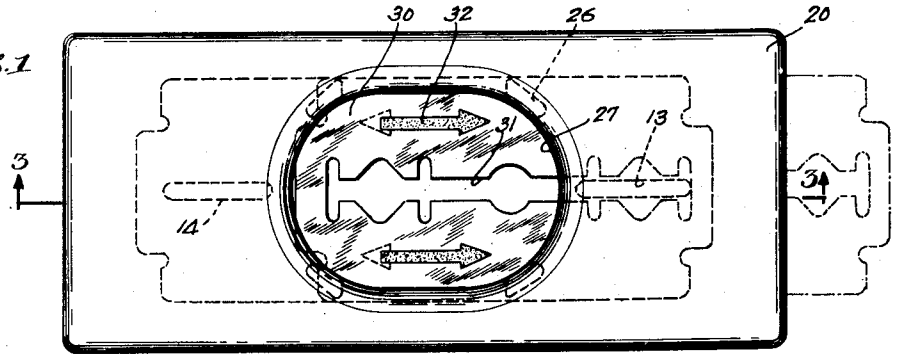


Fig. 2

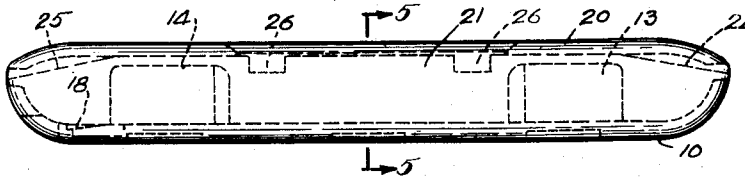


Fig. 3

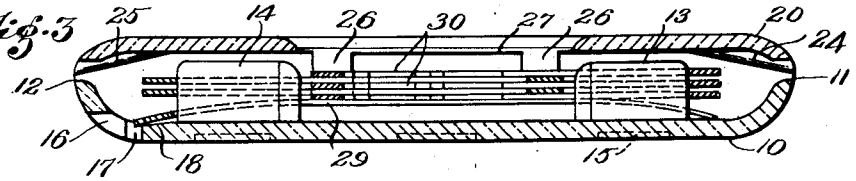


Fig. 4

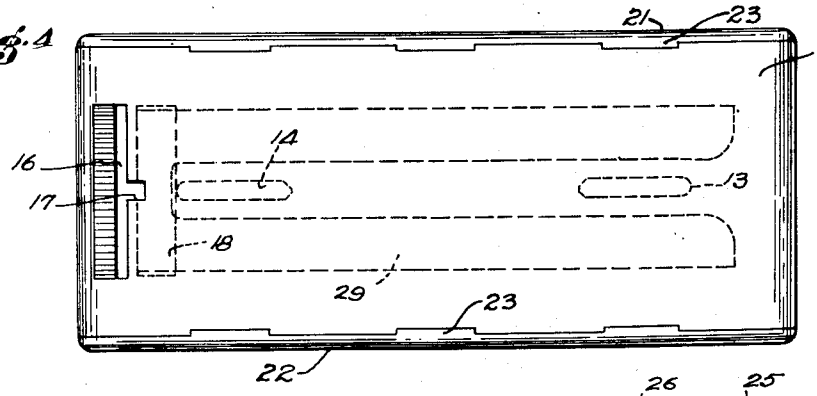


Fig. 5

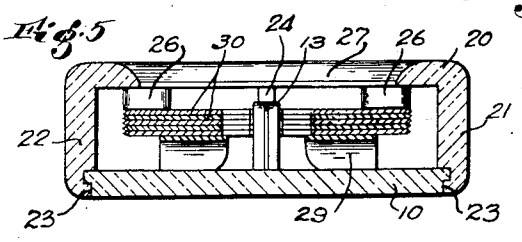
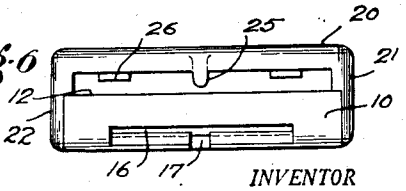


Fig. 6



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MAGAZINE AND BLADE COMBINATION

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Fig. 7

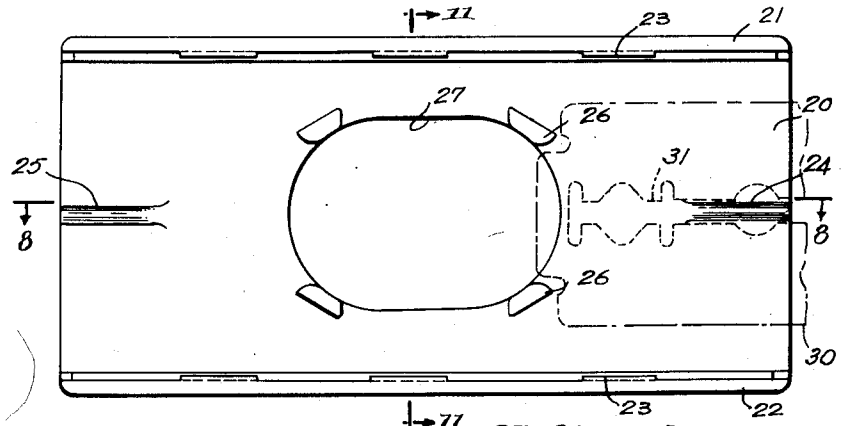


Fig. 8

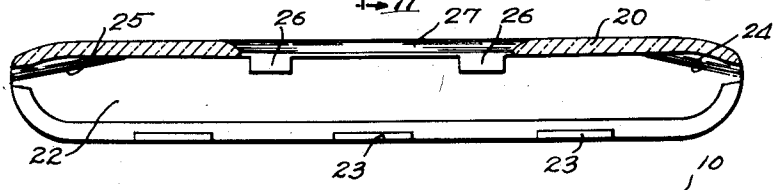


Fig. 9

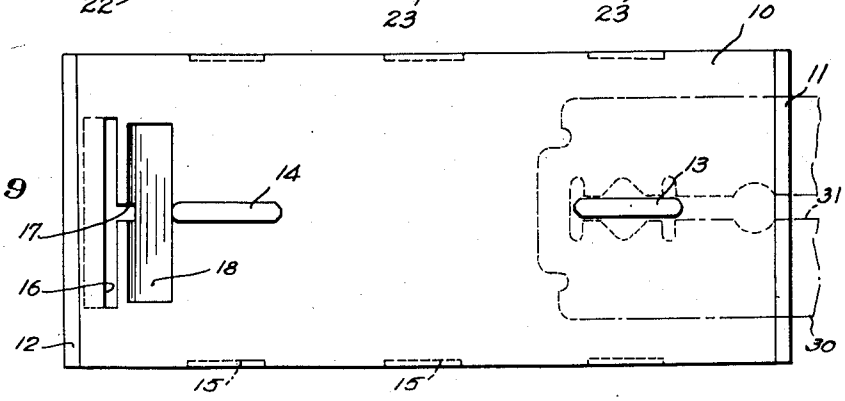
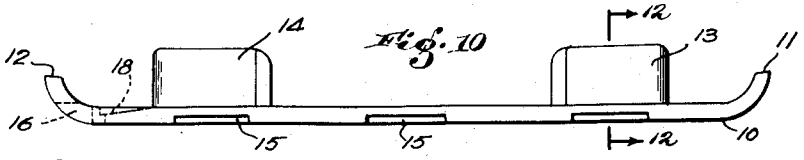


Fig. 10



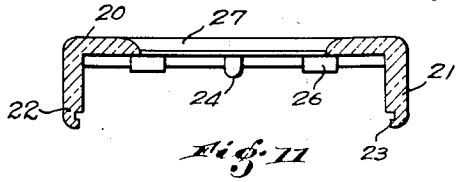


Fig. 11

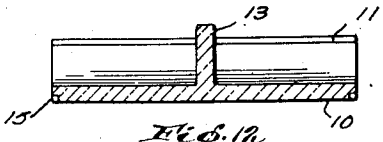


Fig. 12

INVENTOR.

BY Louis H. Young

Fulwider Conway & Atty.

Patented Jan. 5, 1954

2,664,999

UNITED STATES PATENT OFFICE

2,664,999

MAGAZINE AND BLADE COMBINATION

Louis H. Young, Auburndale, Mass., assignor to The Gillette Company, a corporation of Delaware

Continuation of application Serial No. 758,025, June 30, 1947. This application July 8, 1948, Serial No. 37,723

14 Claims. (Cl. 206—16)

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This invention relates to magazines for dispensing sharp-edged blades, such as safety-razor blades in bare, unwrapped condition. It has been found that the fine cutting edge of a safety-razor blade is so delicate in its structure that it is likely to be easily damaged by any chance contact occurring before actual use of the blade. It is desirable, therefore, that the manufacturer, who is best qualified to produce the fine cutting edge of the blade, should also package and protect the blades as they are finished in order that they may arrive unimpaired in the user's hands.

One of the most satisfactory ways in which safety razor blades are packaged for distribution by the manufacturer is in a dispensing magazine which requires the blades to be delivered or ejected alternately from its opposite ends and in which the blades are arranged in alternately staggered relation. The blades are thus partially separated when the magazine is loaded and this partial separation facilitates ejection of the blades one by one by the user in that it permits a limited preliminary movement of the outermost blade while the blade is still under full control in the magazine.

The general objects of the present invention are to provide a magazine and blade combination which will insure safety of the blade edge in a simple and effective manner, which may be mechanically assembled and packed at low cost, which may be conveniently manipulated by the user, and which will present an attractive appearance. More specific features of the invention reside in a novel combination whereby the blade stack is held positively out of contact with the walls of the magazine while the uppermost blade of the stack is free for longitudinal movement but only under such controlled conditions as to give assurance that its edge or edges shall be adequately protected. From this standpoint, an important feature of the invention consists in the combination of downwardly-projecting lugs and an upwardly acting spring, together with a stack of longitudinally slotted blades held by the spring up to the level determined by the lugs, and a stud projecting with clearance through the slots of the blades to a height above the level of the uppermost blade of the stack. If now the cover of the magazine is provided with a window through which the user can reach the uppermost blade, that blade may be displaced in the appropriate direction toward an exit slot in the end wall of the magazine. When the

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user has pushed the topmost blade partially through the exit slot, he may grasp or engage the leading end of the blade and draw it entirely out of the magazine. During its movement, the blade is carried out of the field or range of the aforementioned downwardly projecting lugs and is then permitted to move upwardly, and clear itself from engagement by the stud. At the same time, the sudden removal of the frictional resistance provided by the engagement of said blade with the downwardly projecting lugs results in an advantageous snap action whereby the blade is drawn out of the magazine with increased speed and without tendency to twist.

A further specific feature provided by the illustrated embodiment comprises a downwardly inclined rib, preferably depending from the magazine top adjacent an exit slot in an end wall of the magazine, which rib is adapted to engage the closed leading end of the topmost blade during its initial movement and to cam said end downwardly into said exit slot. Said rib is also adapted to enter the blade slot so that the rib may act as a guide for the trailing end of the blade during the final movement of the blade through the exit slot.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawings, in which:

Fig. 1 is a plan view on an enlarged scale of the loaded magazine;

Fig. 2 is a corresponding view in side elevation;

Fig. 3 is a view in longitudinal section on the line 3—3 of Fig. 1;

Fig. 4 is a bottom view of the magazine;

Fig. 5 is a cross-sectional view on the line 5—5 of Fig. 2;

Fig. 6 is an end view;

Fig. 7 is a view of the cover member as seen from beneath or within the magazine, and indicating the position of a blade at the conclusion of its preliminary ejecting movement;

Fig. 8 is a view of the cover shown in longitudinal section on the line 8—8 of Fig. 7 but in reversed position;

Fig. 9 is a view of the base member as seen from above, and again indicating the position of a blade as in Fig. 7;

Fig. 10 is a view of the base member in side elevation;

Fig. 11 is a view of the cover member in cross-section on the line 11—11 of Fig. 7; and

Fig. 12 is a view in cross-section of the base member on the line 12—12 of Fig. 10.

The dispensing magazine herein shown may be constructed of any suitable sheet material, as by molding from synthetic resin, or die casting from light metal. In one very attractive form the magazine is molded as a shell of transparent "Lucite." The magazine comprises a base member and a cover member which may be made separately and then sprung into interlocking engagement to enclose the blade stack, or they may be united by fusing or other means. The construction and design of both members is such that they have substantially uniform cross-sections of material throughout, thus facilitating molding and obviating any tendency to distort in use.

The lower or base member 10 of the magazine, as best shown in Fig. 10, is rectangular in outline and flat except that it is curved upwardly at both ends so that it terminates in flat horizontally disposed edges 11 and 12 which, in the completed magazine, form the lower sides of blade-exit or delivery slots. The base member 10 is uniform in the cross-section of its material and its inner surface therefore extends in a smooth continuous sweep to the edges of the exit slots at its opposite ends.

The base member is also provided with a pair of narrow blade-locating studs 13 and 14 spaced apart a distance approximately two-thirds the length of the blade slot and having symmetrically tapered inner ends and rounded inner corners. These studs are aligned with each other in the major longitudinal axis of the base and are of such width as to receive the blade slot with clearance and of such height as to approach the inner face of the cover of the magazine and to accommodate a stack of about twenty blades. The parallel side edges of the base member are provided with a series of shallow rectangular recesses 15, for example three in each edge.

The base member is further provided with a transverse spring-receiving slot 16 located adjacent to one of its ends and opening in a position approximately at the level of the inner face of the base. The slot 16 is enlarged at its inner edge by a central notch 17. Directly behind the slot and in the inner face of the base is provided a transverse recess 18 providing an abrupt shoulder constituting an abutment for the spring when the latter has been once fully inserted in the magazine beneath the blade stack, as will presently be described. The notch 17 extends from the inner edge of the slot 16 through the shoulder of the recess 18.

The cover or upper member 20 of the magazine, as best shown in Figs. 7 and 8, is also rectangular in outline and has side walls 21 and 22 spaced so as to receive between them the base member 10 and shouldered in their lower edges so as to provide a series of shallow rectangular lugs 23, three on each edge, designed to fit with clearance and interlock with the recesses 15 of the base member. There is sufficient resiliency in the material of the cover member to permit it to be sprung into interlocking engagement with the base member, and when so interlocked the lugs 23 positively determine the longitudinal relation of the two parts which are thus assembled and together provide a shell enclosure for the blade stack. A clearance of about .007 inch is provided between the

lugs 23 and the recesses 15 for manufacturing purposes and to relieve strain in the finished magazine.

The cover member is provided with a series of downwardly projecting means, such as projections or lugs 26, for example four in number, and these lugs in the illustrated magazine are arranged about the periphery of an oval window 27 which is formed symmetrically and centrally in the cover member and which is of sufficient area to admit the thumb of the user. The lugs of each lateral pair may be arranged if desired so that their respective horizontal axes are angularly related as illustrated, and all lugs terminate at their lower ends in a common plane, thereby to afford an effective bearing for determining the position of the uppermost blade of the stack in the magazine, as will presently appear. The pair of lugs at each end of the window are thus transversely spaced apart. The cover member is also provided centrally with longitudinal guide ribs 24 and 25 which in the assembled magazine extend downwardly into the respective exit slots at opposite ends of the magazine.

When the two parts of the magazine are assembled, the studs 13 and 14 lie in the magazine outside the outline of the pattern of the downwardly extending lugs 26, and the upper edges of the studs 13 and 14 are located substantially in the plane determined by the lower faces of the lugs 26 or slightly above such plane. Thus the studs and lugs pass each other in a vertical direction at their ends.

The magazine includes a forked leaf spring 29 which is slightly narrower than the width of the spring slot 16 and is forked so that when introduced through the said slot its advancing end and sides will pass freely past the studs 14 and 13. The insertion of the spring is facilitated by the notch 17, which permits the rear edge of the spring to be advanced and followed by a blade or other pointed instrument until its trailing end is fully settled in the recess 18 and positively prevented from being thereafter displaced toward the slot 16. The spring is upwardly bowed and serves to press the blade stack yieldingly upwardly to a position determined by engagement of the uppermost blade in the stack with the inner faces of the lugs 26. The spring 29 may be inserted as the last step of the packaging operation, after the blade stack has been assembled and the magazine closed. While its rear end is anchored against the shoulder of the recess 18, its forward end is unconfined and is free to shift on the surface of the base member 10 as the effective thickness of the blade stack is progressively reduced in use.

The magazine is herein shown as loaded with a stack of about twenty blades of a well-known commercial type, that is to say, double-edged blades 30 each provided with a longitudinal median slot 31 and each carrying direction indicia in the shape of arrows 32 which inform the user which way the uppermost blade must be moved to eject it properly. The indicia feature, in combination with a dispensing magazine of this general type, is the subject matter of copending application Serial No. 752,908, filed June 6, 1947, in the name of Louis H. Young, now Letters Patent No. 2,544,410, dated March 6, 1951. Each blade is notched at its corners and those notches define elongated unsharpened end portions, centrally and symmetrically located in the blade and of such width as to be received with clearance

between either pair of lugs 26 at the ends of the window 27.

In preparing the dispensing magazine above described, the manufacturer will preferably deliver automatically a stack of twenty slotted blades to the base member, empaling alternate blades upon their respective studs 13 and 14 so that each blade is free to be moved longitudinally for the length of its slot minus the length of one of the studs and in one direction only. In supplying the blades in this manner, they are reversed end for end so that the direction indicating arrows 32 also alternate in direction and indicate to which end of the magazine the blade at that moment uppermost in the stack should be moved in being ejected. The spring 29 is then inserted through the slot 16 in the manner already explained and the blade stack pressed upwardly by the spring to a level determined by the inner faces of the lugs 26. At the same time the studs 13 and 14 project with clearance through the blade slots to a height slightly above the level of the uppermost blade as determined by its engagement with the lugs 26, that is, the inner ends of the studs 13 and 14, on the one hand, and the lugs 26, on the other hand, overlap vertically by a slight amount.

It will be seen therefore that the concealed outer end of the uppermost blade is held in positive engagement with the outer edge of the right-hand stud 13 and that the said blade can be moved only outwardly toward the right, in the direction indicated by the arrows 32 thereon. When the user wishes to eject this blade, he may insert his thumb through the window 27 and displace the blade toward the right. At the outset of this movement of said blade, its closed leading end is cammed downwardly by the inclined lower surface of the rib 24, so that said leading edge enters the exit slot 11. When the aforementioned topmost blade has been pushed to the right by the user sufficiently for its leading end to project a slight distance beyond said exit slot 11, the user may grasp or engage said leading end of the blade and pull it quickly out of the magazine.

At the start of its movement toward the right hand exit slot 11, the topmost blade remains firmly pressed, by the spring 29, against the pair of depending lugs 26 at the right of the finger opening until the trailing end of the blade slot comes adjacent the upstanding lug 13. Then, as said blade moves further to the right, its trailing end moves out from under the last mentioned pair of depending lugs, and is immediately kicked upwardly by the spring 29, so that said trailing end rises above the adjacent upstanding guide lug 13, and the blade is freed from that lug. This position of the blade is shown in Figs. 7 and 9. From Fig. 7 it will be noted that the pair of depending lugs 26 at the right of the opening 27 are now located in the corner notches at opposite sides of the trailing end of said blade.

While the upstanding guide lug 13 is now no longer engaged with the slot in said topmost blade, it will be noted that the rib 24 entered the blade slot 31 when the leading end of said blade passed beyond said rib, and that the rib 24 remains engaged with said slot when the blade reaches the posiiton shown in Fig. 7. Thus said rib 24 is available to guide the blade, through its engagement in the blade slot, during the remainder of the withdrawal of the blade.

As above noted, when the user grasps or engages the forward end of the blade after it has been pushed partially through the exit slot, he may readily and quickly withdraw the blade completely from the magazine by simply pulling outwardly thereon. When the user pulls on the leading end of the blade before the trailing end of the blade has cleared the pair of depending lugs 26 nearest the exit slot, the sudden release of spring pressure on the blade as its trailing end is kicked upwardly past said depending lugs, produces a snap effect whereby the blade is drawn out of the magazine with increased speed and without tendency to twist, thus additionally insuring that its cutting edges are safeguarded during the final emerging stage. In other words, as long as the spring 29 presses the topmost blade against the depending lugs referred to, the user must exert sufficient pulling force to draw the blade outwardly against the frictional resistance provided by the pressure of the blade against those lugs. However, as the user continues to draw the blade outwardly, its trailing end passes beyond the depending lugs and is kicked upwardly by the spring to clear the adjacent upstanding lug so that the above-mentioned resistance to its outward movement is instantly dispelled, and under the withdrawal force exerted by the user the blade is snapped outwardly with increased velocity. This snap effect is advantageous in propelling the blade rapidly outwardly in a straight line during its final emergence from the magazine slot. If the downward pressure exerted by the user in ejecting a blade is sufficient to depress the whole stack against the action of the spring 29, the uppermost blade may be advanced at a level slightly below the edges 11 or 12 of the exit slot, and in this case the smooth inner curved surface of the base will tend to direct or elevate the advancing end of the blade into the exit slot. On the other hand, if there is no substantial depression of the blade stack, the blade in process of ejection will be advanced at a level above the edge 11 or 12.

After the topmost blade previously referred to has been removed through the exit slot 11, the next blade of the stack becomes the topmost blade. Its arrows indicate to the user that it should be ejected through the exit slot 12 in the left-hand end of the magazine. In its movement towards and through said slot the same sequence of operations is involved as above described with respect to the preceding blade.

This application is a continuation of my copending application, Serial No. 758,025, filed June 30, 1947.

Having thus disclosed my invention and described in detail an illustrative embodiment thereof, I claim as new and desire to secure by Letters Patent:

1. A blade-dispensing magazine comprising base and cover members coextensive in outline and together forming a blade enclosure, said members converging and being separated at both ends by narrow exit slots, the base member having spaced upstanding studs in its longitudinal axis and the cover member having spaced downwardly-projecting lugs offset both transversely and longitudinally with respect to said studs and located further from the blade exit slots than said studs and terminating approximately in a common plane below the upper ends of said studs, a leaf spring resting on the base, and a longitudinal guide rib leading to each exit slot, and the cover being provided with a win-

dow of finger width which opens into the enclosure between the said studs.

2. A blade-dispensing magazine comprising a substantially rectangular shell with exit slots at both ends and a window of finger width in the top face, lugs disposed internally about the periphery of said window, and flat-sided studs projecting upwardly from the bottom of the shell being disposed in its longitudinal axis and located between said lugs and said exit slots, in combination with a stack of slotted blades threaded in alternately staggered relation on said studs, and a spring holding the stack pressed against said lugs and substantially in alignment with the exit slots of the magazine while threaded on said studs.

3. A blade-dispensing magazine comprising an elongated shell-like enclosure having spaced flat-sided studs projecting upwardly in longitudinal alignment with each other from its bottom and into proximity to its top, a stack of slotted blades threaded alternately upon the respective studs, a plurality of longitudinally spaced blade-engaging lugs projecting downwardly from the top of the enclosure to points below the top of said studs, the top having an opening through which the blades may be engaged, and a spring below the stack holding the uppermost blade of the stack yieldingly against said lugs, the lugs being offset transversely and also longitudinally inwardly with respect to the studs thus permitting said uppermost blade to be lifted and to pass over a stud when the blade is moved lengthwise to the end of its slot, the enclosure having blade exit slots at its ends and said lugs being located further from said slots than the studs.

4. A blade-dispensing magazine comprising a substantially rectangular shell having blade-exit slots at its opposite ends and an intermediate window in its upper face, internal projections spaced about the window, longitudinally aligned studs rising from the bottom of the magazine in locations between said projections and the respective ends of the magazine and to a level above the blade-engaging ends of the spaced projections, and a stack of slotted blades spring pressed against said projections and threaded alternately upon said studs, the uppermost blade being movable on one of the studs to a position in which its trailing end passes beyond the said internal projections so that the blade is thus free to rise above the said stud.

5. A razor blade package comprising, in combination, a plurality of stacked double-edged blades each having a longitudinal slot which terminates short of the extreme ends of the blade, a case containing said stack and having an exit opening in an end thereof, means projecting upwardly from the bottom of said case through the slots in said blades for maintaining said blades in substantial alignment in said case, the top of said case having a finger opening through which the topmost blade may be engaged frictionally to urge it longitudinally toward said exit opening, means projecting downwardly from the top of said case and offset transversely and also longitudinally inwardly with respect to the upwardly projecting means, for engagement by said topmost blade to maintain the latter below the top of said upwardly-projecting means and so located as to be disengaged from said blade when the latter is moved a sufficient distance longitudinally, and spring means for freeing the topmost blade for movement past said upwardly-projecting means when said blade is moved out of engagement with said downwardly-projecting means, the upwardly projecting means being spaced beyond the contour of said finger opening and located between said finger and exit openings.

6. A razor blade package comprising in combination a plurality of stacked double-edged blades each having a longitudinal slot which terminates short of the extreme ends of the blade, and each having an end of reduced width projecting beyond corner notches in the blade, a case containing said blades and having an exit opening in an end thereof, means projecting upwardly from the bottom of said case through the slots in said blades for maintaining said blades in substantial alignment in said case, the top of said case having a finger opening through which the topmost blade may be engaged frictionally to urge it longitudinally toward said exit opening, a pair of projections extending downwardly from the top of said case adjacent the forward end of said finger opening and offset longitudinally with respect to the upwardly-projecting means, said pair of projections being engaged by the topmost blade when the latter is in normal position and being disengaged therefrom when said blade is moved a sufficient distance longitudinally, said projections being spaced apart a distance less than the total width of the blade but not less than the width of said blade end portion projecting beyond said corner notches, and a spring for applying pressure to the topmost blade to maintain the latter pressed against said pair of downwardly extending projections until said blade is moved longitudinally out of engagement therewith and for then freeing said blade from said upwardly-projecting means, the latter means being spaced beyond the contour of said finger opening and located between said downwardly extending projections and said exit opening.

7. A razor blade package comprising in combination a plurality of stacked double-edged blades each having a longitudinal slot which terminates short of the extreme ends of the blade, a case containing said stack and having an exit opening in an end thereof, means projecting upwardly from the bottom of said case through the slots in said blades for maintaining said blades in substantial aligment in said case, the top of said case having a finger opening through which the topmost blade may be engaged frictionally to urge it longitudinally toward said exit opening, separate elements projecting downwardly from the top of said case forwardly of the finger opening and engaging the said topmost blade when the latter is in normal position to maintain said blade below the top of said upwardly-projecting means, said downwardly-projecting elements being so positioned in longitudinally offset relation to said upwardly-projecting means as to be disengaged from said topmost blade when the latter is moved longitudinally a sufficient distance to bring the trailing end of its slot adjacent said upwardly projecting means, and spring means acting upwardly against the stacked blades for maintaining the top most blade in engagement with said downwardly-projecting elements until said blade is moved longitudinally out of engagement therewith and for then tilting said blade to free it from said upwardly projecting means, the latter means being spaced beyond the contour of said finger opening and located

between said downwardly projecting elements and said exit opening.

8. A casing for razor blades having blade exit openings in opposite ends, studs extending upwardly from the bottom of said casing for projecting through slots in said blades, the top of said casing being generally coextensive with the bottom and having a finger opening through which the topmost blade may be engaged frictionally to move it longitudinally toward one or the other of said openings, lugs projecting downwardly from the top of said casing and offset transversely and also longitudinally inwardly with respect to the studs and engageable with said topmost blade when the latter is in its normal position and adapted to be disengaged from said topmost blade when the latter is moved a sufficient distance longitudinally, the lugs being spaced beyond the contour of the finger opening, and projections extending downwardly from said casing top at opposite end portions of said casing for insuring the guiding of the blades during the latter portions of their travel through the respective exit openings subsequent to the freeing of said blades from the studs.

9. A razor blade package comprising in combination a stack of longitudinally slotted blades, a case containing said stack and having an exit opening in an end thereof, the top of said case having a finger opening through which the topmost blade may be engaged frictionally to push the blade through said exit opening sufficiently for the operator to engage the leading end of the blade and pull the latter completely out of said exit opening, means comprising lugs projecting downwardly from the top of said case for engagement by said topmost blade, spring means acting through said stack and urging said topmost blade against said lugs to provide therewith a frictional resistance to movement of said blade as the latter is drawn outwardly by the operator and to provide a snap action upon disengagement of said blade from said lugs under the outward force applied to said blade, and a stud between said exit opening and the first mentioned lugs for cooperating with the slot in said topmost blade to guide the latter during its outward movement to the exit opening said stud extending above the lower level of said lugs.

10. A razor blade package comprising in combination a magazine having exit openings at its opposite ends, a pair of studs projecting upwardly from the bottom of said magazine, a stack of slotted blades impaled alternately upon said studs and having end portions of reduced width, the top of said magazine having a finger opening through which successive topmost blades may be engaged frictionally to push said blades alternately through said exit openings sufficiently for the operator to engage the leading ends of the blades and pull the latter completely out of said exit openings, transversely spaced lugs projecting downwardly from the top of said magazine between the ends of said finger opening and the respective studs, and spring means cooperating with said blades and lugs to provide frictional resistance between each topmost blade and an associated lug during part of the movement of said blade under the pull of the operator with subsequent snap action and increased rapidity of withdrawal upon disengagement of said blade at its trailing reduced end portion from said lug under said pull.

11. In a blade-dispensing magazine for longitudinally slotted blades, the combination of a shell having a top opening through which the blades may be engaged, and a blade exit slot at its end, downwardly projecting internal lugs and an upwardly acting spring, a stack of longitudinally slotted blades held by the spring at a level determined by said lugs and a stud having a portion projecting upwardly in the magazine with clearance through the slots of the blades to a height above the level of the uppermost blade of the stack, said stud being offset longitudinally with respect to the lugs and located nearer the exit slot than the lugs.

12. A blade-dispensing magazine in combination with a stack of longitudinally slotted sharp edged blades, the magazine comprising a shell with blade exit openings at its opposite ends and an intermediate window of finger width, a pair of upstanding studs within the magazine on which the blades are alternately impaled in staggered relation, and downwardly extending lugs spaced about the periphery of the window with their lower ends in a common plane below the tops of said studs and being spaced both transversely with respect to the studs and located longitudinally closer together than the studs.

13. A blade dispensing magazine comprising an external shell having opposed walls, and exit openings at its opposite ends, a set of internal projections comprising a pair of longitudinally-spaced studs extending from one of said walls in one direction into said shell, a second set of internal projections extending from the other of said walls in the opposite direction into said shell, and offset longitudinally inwardly of said studs, the shell having an opening in the other of said walls and located between said second set of internal projections, a spring in said shell, a stack of slotted blades empaled alternately on said studs in longitudinally staggered relation and pressed by said spring against the ends of the other set of projections, each blade being movable by reason of its slot in the direction of the exit opening nearest to it to clear the first-mentioned set of projections while still empaled on its respective stud.

14. A blade-dispensing magazine molded of thermoplastic material and comprising a base member, a cover member generally coextensive with and secured to said base member and jointly forming therewith a generally rectangular walled enclosure adapted to house a stack of centrally-slotted double-edged razor blades, said base and cover members having juxtaposed end portions spaced from each other to provide a blade exit opening through which a blade may move during ejection from said magazine, the end portion of said base member having a smooth sloping inner surface leading upwardly to said blade exit opening adapted to guide the forward end of the exiting blade into said opening, the cover member having a thumb-receiving opening and two pairs of integral downwardly-extending blade-restraining projections located around the periphery of said opening and spaced longitudinally from each other, and the base member having a pair of integral upstanding longitudinally - aligned flat-sided spaced studs adapted to extend with clearance through the central slots of the housed blades, the thumb-receiving opening overlying the space between said studs and each stud extending upwardly to a level well above the lowermost tips of the nearest pair of downwardly-extending

cover projections whereby said projections will maintain the blades empaled on said studs thereby protecting the blade edges against accidental contact with the walls of said enclosure.

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