

[54] RAZOR BLADE DISPENSER

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 330,368, Feb. 7, 1973, abandoned.

[52] U.S. Cl. 221/102; 221/232

[51] Int. Cl.² B65D 83/10

[58] Field of Search 221/102, 232, 279, 276; 220/41; 206/354-359

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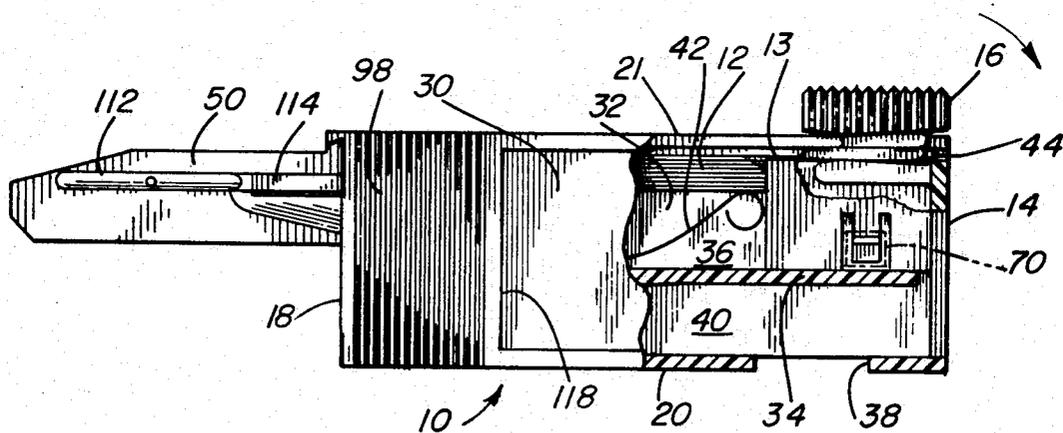
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[57] ABSTRACT

The specific disclosure provides a safety razor blade dispenser of the type in which the uppermost blade in a stack of blades is pushed end-wise into shaving position in a head of an associated razor. The dispenser comprises a molded plastic body having the stack of blades biased upwardly against narrow ribs, and a pusher slidable in a slot formed in the top of the body for engaging the uppermost blade in the stack and pushing it through a blade exit aperture formed in a forward end wall of the body. An end closure member is positioned in an opened rear end of the body. The end closure member includes a pair of slots in an upper rear surface thereof for seating rear portions of the ribs.

6 Claims, 12 Drawing Figures



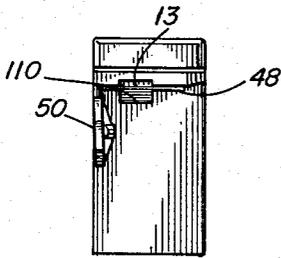
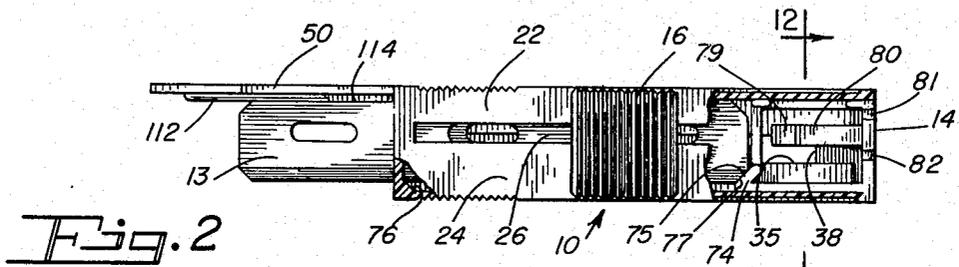
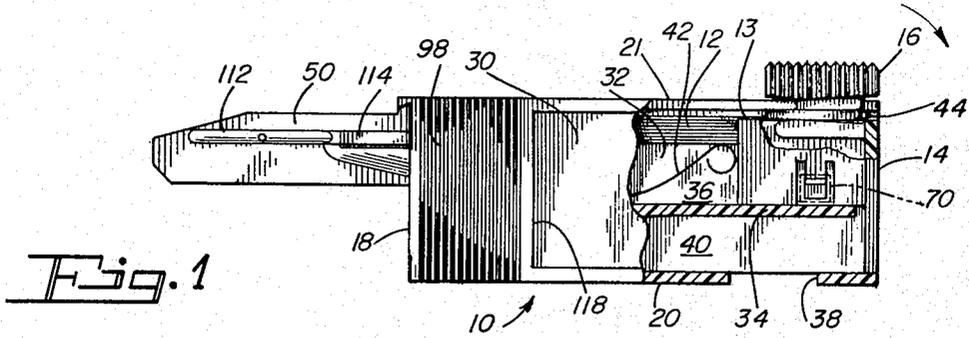
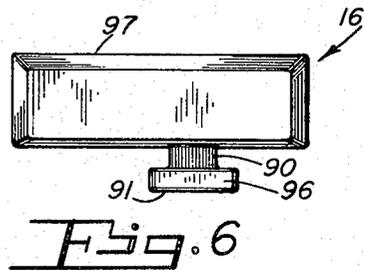
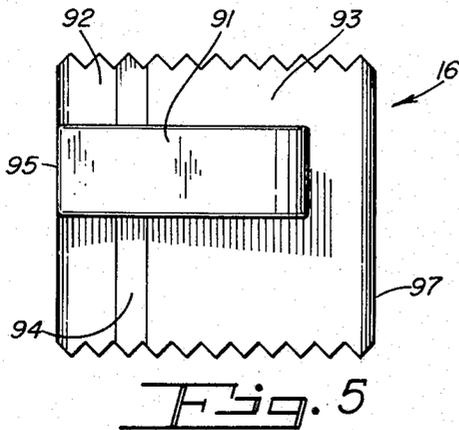
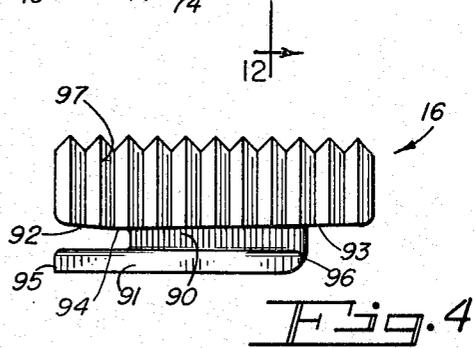
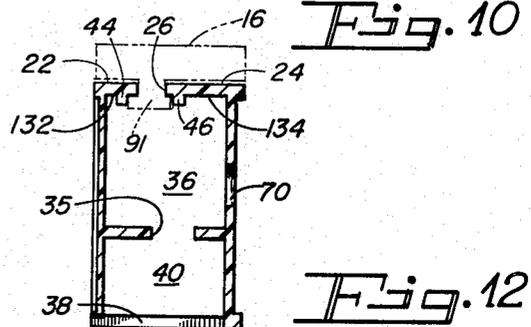
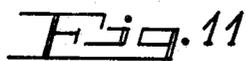
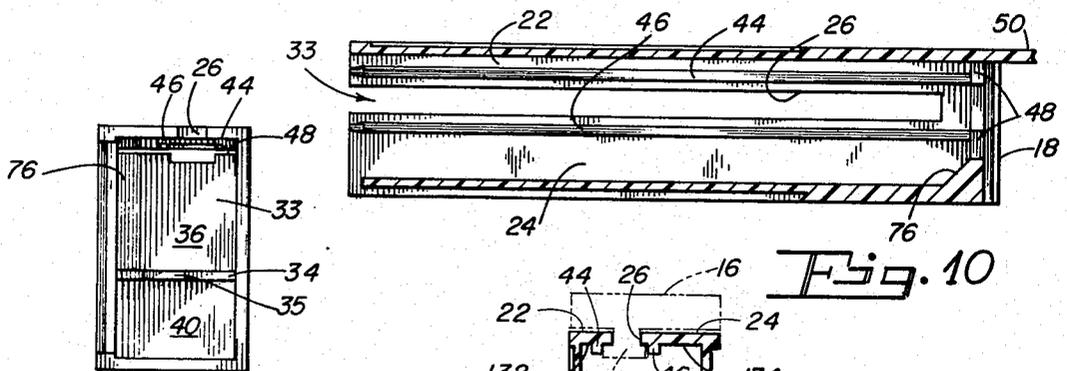
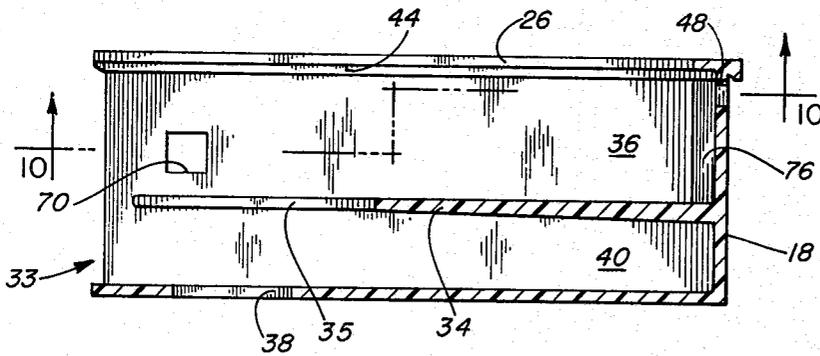
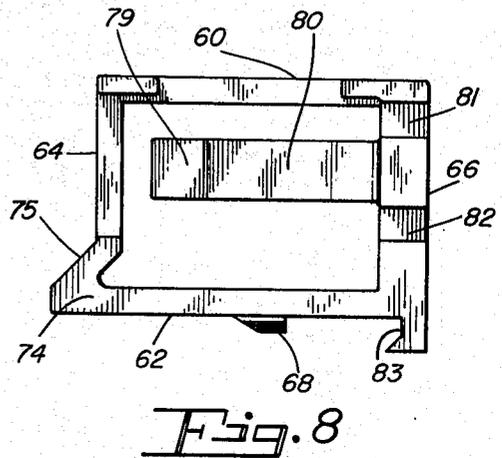
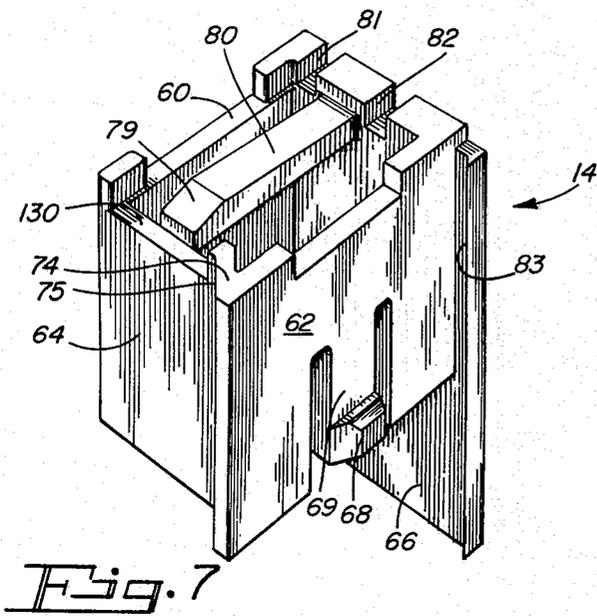


Fig. 3





RAZOR BLADE DISPENSER

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of U.S. patent application Ser. No. 330,368, filed Feb. 7, 1973, now abandoned.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to safety razor blade dispensers of the type in which the uppermost blade in a stack of blades is adapted to be pushed end-wise into shaving position in a head of an associated razor. More particularly, the present invention relates to molded plastic dispensers of such type.

2. Description of the Prior Art

Molded plastic razor blade dispensers having a finger-operated pusher for dispensing the uppermost blade in a stack are known in the art. A problem in molded plastic dispensers having pushers is that dimensions of inter-engaging parts is critical because molding practices inherently leave slight sinks and warping in the dispenser body surfaces which may result in malfunction of the dispenser, for example, by the pusher binding with the top surface of the dispenser body.

U.S. Pat. No. 3,288,328 provides a molded plastic dispenser wherein a pusher has channels formed on the underside thereof for sliding engagement with laterally extending flanges formed on the top part of the dispenser body. U.S. Pat. No. 3,549,046 is another example of a molded plastic dispenser, and provides narrow, laterally extending shallow lands on the underside of the finger-operated pusher for sliding engagement with the upper surface of the dispenser body.

SUMMARY OF THE INVENTION

The present invention provides an improved blade dispenser having a relatively simple structure to permit ease of manufacture, and to insure structural rigidity.

In accordance with the present invention, there is provided a safety razor blade dispenser of the type in which the uppermost blade in a stack of blades is adapted to be pushed end-wise into shaving position in a head of an associated razor. The dispenser comprises a horizontally elongated body of molded plastic having top and bottom walls, a pair of side walls extending between the top and bottom walls, and a forward end wall extending between the side walls at one end of the body. The other end of the plastic body is opened between the side walls. A blade pusher is slidable in a longitudinal slot formed in the top wall of the body, and includes a blade-engaging portion below the top wall for engaging the uppermost blade in a stack of blades in the body when the pusher is moved from a rearmost position in the slot forwardly to push the uppermost blade through a blade exit aperture in the forward end wall. The blades are biased upwardly against downwardly directed ribs formed on each side of the slot. An end closure member is positioned in the opened end of the body, and includes a pair of slots in an upper rear surface for seating a rear portion of each one of the downwardly directed ribs. By seating the ribs in the closure member slots, outward and inward movement of the dispenser side walls is limited.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a dispenser em-

bodiment constructed in accordance with the present invention with a portion of the dispenser body cut away;

FIG. 2 is a top plan view of the dispenser with a pusher moved forwardly to partially eject the uppermost blade, and with a portion of the top wall of the dispenser body cut away;

FIG. 3 is an elevational view of the front end of the dispenser;

FIG. 4 is a side elevational view of a pusher component;

FIG. 5 is a bottom plan view of the pusher component of FIG. 4;

FIG. 6 is an elevational view of the rear end of the pusher of FIGS. 4 and 5;

FIG. 7 is a perspective view of an end closure member used in the embodiment of FIG. 1;

FIG. 8 is a top plan view of the end closure member of FIG. 7;

FIG. 9 is a longitudinal cross-section view of the body of the dispenser of FIG. 1;

FIG. 10 is a cross-sectional view of the body of the dispenser taken along Lines 10—10 of FIG. 9;

FIG. 11 is an elevational view of the rear end of the dispenser embodiment with the end closure member removed; and

FIG. 12 is a cross-sectional view of the body of the dispenser taken along Lines 12—12 of FIG. 2.

DESCRIPTION OF SPECIFIC EMBODIMENTS

As illustrated in FIGS. 1 and 2, the embodiment of the present invention comprises three main components formed of molded plastic. Specifically, the embodiment comprises a dispenser body 10 which provides a storage enclosure for a stack of unused blades 12, an end closure 14 for closing off the rear end of the body 10 after the unused stack of blades 12 is loaded therein, and a blade pusher 16 which is manipulated by a user to slide the uppermost blade from the stack of unused blades 12 into a head of well-known single edge razors such as shown in U.S. Pat. Nos. 2,911,713, 2,911,714 and 3,203,093. With reference to the figures, the dispenser body 10 is an elongated molded plastic structure having a forward end wall 18 which is joined at its lower end with a bottom wall 20. The dispenser body 10 also has a top wall 21 formed by a pair of horizontal panels 22, 24 which are spaced apart so that the inner edges of the respective panels 22, 24 define a slot 26 extending the length of the body 10 rearwardly from the forward end wall 18. The portion of the forward end wall 18 which bridges the slot 26 acts as a stop abutment to limit forward travel of the blade pusher 16.

The body 10 also has a front side wall 30 and a coextensive back side wall 32, each of the side walls 30, 32 being formed integrally with the respective panels 22, 24, and with the bottom wall 20. The panels 22, 24 and the walls 20, 30, 32 all terminate at the rear of the body 10 in a common vertical plane to define an open rear end 33 (FIG. 9).

The interior of the body 10 is also provided with an integrally formed horizontal partition wall 34 formed with the forward end wall 18 and side walls 30, 32. The rear end of the partition wall 34 terminates a short distance from the open rear end 33 of the body 10 as shown at least in FIG. 1 to permit the reception of the end closure 14 within the rear end 33. The partition

wall 34 divides the interior of the body 10 into an upper compartment 36 which supportingly receives the stack of unused blades 12, and a lower compartment 40 which serves as a used blade chamber for receiving used blades removed from the razor when a blade change has been made. The bottom wall 20 is provided with a slot 38 for providing access to the lower compartment 40 for inserting a used blade therein. The stack of unused blades 12 is supported in the upper compartment 36 on a bowed spring member 42 which, when the pusher 16 is in its rearmost position, biases the stack upwardly (FIG. 1) to urge the uppermost blade against a pair of longitudinal ribs 44, 46 formed on the underside of the panels 22, 24, respectively. When thus biased upwardly against the ribs 44, 46, the uppermost blade 13 registers with a blade exit slot 48 formed in the forward end wall 18 (FIG. 3). It will be noted from at least FIG. 10 that the ribs 44, 46 extend from the forward end wall 18 to the open rear end 33.

The dispenser body 10 is also provided with an integrally formed key 50 which, in a conventional manner and as described in at least U.S. Pat. Nos. 2,911,713 and 2,911,714, is inserted in a razor head during the course of a blade change to align the exit slot 48 with the razor head and to condition the razor head for receipt of the uppermost blade 13.

As noted above, the open rear end 33 of the body 10 receives and is closed off by an end closure 14. With reference to FIGS. 1, 2, 7 and 8, the end closure 14 is an essentially hollow structure having an upper part consisting of side walls 60, 62, a front wall 64, and a rear wall 66. The rear wall 66 extends the full depth of the body 10 to close off the open rear end 33 of the body 10. The end closure 14 is closely received within the dispenser body 10 and is provided with an elongated downwardly depending portion 69 having a wedge-like projection 68 which extends outwardly from the side wall 62 to engage in an aperture 70 formed in the front side wall 30 to act as a locking means for retaining the end closure 14 in the body 10.

With reference to FIG. 7, the rear end wall 66 of the end closure 14 extends laterally from the side wall 62 and has an angled instep 83. An opposing angled instep 118 (FIG. 1) is formed on the front side wall 30 of the body 10, and the insteps 83, 118 can be used to maintain a decorative insert (not shown) on the front side wall 30.

In addition to closing off the rear end of the body 10, the end closure 14 provides means with which the stack of blades 12 is positioned within the dispenser body 10 in such a manner as to maintain the cutting edges thereof out of contact with the front side wall 30. With particular reference to FIGS. 2, 7 and 8, the stack of blades 12 is positioned within the dispenser body 10 by an angled lug 74 formed at the corner of the end closure 14 defined by the juncture of front wall 64 and side wall 62. The lug 74 has a vertical edge surface 75 disposed at an angle of substantially 45° with the longitudinal axis of the dispenser body 10, and the lug surface 75 is adapted to engage with similarly angled corners 77 of the blades in the stack 12. In positioning the stack of blades 12, the lug 74 functions in conjunction with a similarly shaped but oppositely facing lug 76 (FIGS. 2 and 10) formed integrally with the forward end wall 18 and with the front side wall 30.

The end closure 14 also serves to strengthen the overall rigidity of the dispenser body 10 and limits in-

ward and outward movement of the front and back side walls 30, 32 by the upper four corners of the end closure 14 being nested in undercut slots or grooves 132, 134 (FIG. 12) of the top panels 22, 24, respectively, with the rear ends of the longitudinal ribs 44, 46 being positioned in recesses 81, 82 formed at the upper end of the rear wall 66 of the end closure 14.

With reference to FIGS. 4-6, the blade pusher 16 has a relatively wide finger-engageable portion 97 and a blade-engaging portion 91. The finger-engageable portion 97 and the blade-engaging portion 91 are interconnected by a longitudinally elongated member 90 which extends through the slot 26. The finger-engageable portion 97 has a narrow transverse undersurface support portion 94 for sliding engagement with the upper surfaces of the top wall 21 as defined by the horizontal panels 22, 24. The undersurface support portion 94 can be so narrow such that it provides a line contact with the upper surfaces of the top wall 21. The underside of the finger-engageable portion 97 also has beveled undersurface portions 92, 93 extending forwardly and rearwardly, respectively, from the transverse undersurface support portion 94. The transverse support and beveled undersurface portions 94, 92, 93 limit the contact surface of the pusher 16 with the top wall 21 to minimize the possibility of the pusher binding with the top wall 21 due to irregularities therein.

As shown in FIG. 12, the sides of the blade-engaging portion 91 are in close contact with the inner surfaces of the ribs 44, 46. Such close contact also serves to strengthen the overall rigidity of the dispenser body 10 by further limiting inward movement of the front and back side walls 30, 32. The blade-engaging portion 91 is dimensioned to extend downwardly beneath the ribs 44, 46 a distance such that the front edge 95 abuttingly engages only the uppermost blade 13 in the stack 12 as the pusher 16 is moved forwardly in the slot 26. To insure that the blade-engaging portion 91 engages only the uppermost blade 13, the end closure 14 has an elongated member 80 extending forwardly from the rear wall 66 which biases the pusher 16 upwardly when the pusher 16 is in the rearmost portion of the slot 26 as shown in FIG. 1. The rear end 96 of the blade-engaging portion 91 is beveled or curved, and the forward top corner of the elongated member 80 is beveled or curved to ease the bottom surface of the blade-engaging portion 91 into a biased position on the member 80.

To further aid in insuring that the blade-engaging portion 91 engages only the uppermost blade 13, the undersurface support portion 94 is located forward of the transverse center line of the pusher such that the pusher 16 tends to rock backwardly as indicated by the arrow in FIG. 1 to bias the front edge 95 upwardly against the top wall 21. As shown in the figures, the undersurface support portion 94 can suitably be located at about one-sixth the length of the pusher 16 from the front end thereof.

Dispensement of the uppermost blade 13 from the stack 12 involves positioning the pusher 16 as shown in FIG. 1 and moving the pusher forwardly through a recess 130 in the front wall 64 of the end closure 14. The front edge 95 of the blade-engaging portion 91 engages an end of the uppermost blade 13 and moves it through the blade exit slot 48 as shown in FIG. 2 to position the uppermost blade 13 in a razor head which has been

conditioned in a known manner by the cam surfaces 112, 114 formed on the key 50.

As used herein with reference to the undersurfaces 92, 93, "beveled" contemplates both flat and curved surfaces which are out of engagement with the top surfaces of the top wall 21. The dispenser body 10, the end closure 14, and the pusher 16 can be suitably formed of molded acrylonitrile butadiene styrene (ABS). Further, the dispenser body 10 and/or the pusher 16 can be formed of a plastic substance having a relatively low coefficient of friction such as Teflon, e.g., polytetrafluoroethylene (PTFE).

What is claimed is:

1. In a safety razor blade dispenser of the type in which the uppermost blade in a stack of blades is adapted to be pushed edgewise into shaving position in a head of an associated razor, the combination comprising:

a horizontally elongated body of molded plastic having top and bottom walls, a pair of side walls extending between said top and bottom walls, and a forward end wall extending between said side walls at one end of said body, the other end of said body being opened between said side walls, said stack of blades being located within and extending longitudinally of said body, said forward end wall having a blade exit aperture formed therein, said top wall including a longitudinal slot formed therein, and a downwardly directed longitudinal extending rib on each side of said slot,

a blade pusher of molded plastic slidable in said slot and including (1) a blade-engaging portion below said top wall for engaging the uppermost blade in said stack of blades when said pusher is moved from a rearmost position in said slot forwardly to push the uppermost blade through said blade exit aperture, and (2) a finger-engageable portion above said top wall,

an end closure member of molded plastic positioned in said opened end of said body, said end closure member comprising a pair of grooves in an upper rear surface of said end closure member respectively having seated therein a rear portion of each

one of the downwardly directed ribs, upper portions of said closure member nested between the outer sides of the downwardly directed ribs and said side walls of said body, and a forwardly extending elongated member for biasing said blade-engaging portion upwardly when said pusher is in said rearmost position in said slot, said elongated member being spaced downwardly from said top wall, and

means in said body for biasing said stack of blades upwardly against the downwardly directed ribs to position the uppermost blade in a horizontal plane defined by said exit aperture when said pusher is in said rearmost position in said slot.

2. The dispenser of claim 1 wherein said elongated member is resiliently yieldable when said blade pusher is moved to said rearmost position in said slot.

3. The dispenser of claim 1 wherein said blade-engaging portion has outer side surfaces in continuous abutting sliding engagement with the inner surfaces of the downwardly directed ribs.

4. The dispenser of claim 1 wherein said end closure member comprises a first vertically elongated lug at one forward side thereof, and wherein said body comprises a second vertically elongated lug at a forward inner side thereof opposing said first lug, said first and second lugs maintaining cutting edges of said stack of blades spaced from one of said side walls of said body.

5. The dispenser of claim 1 wherein said body has (1) a horizontal partition integrally formed therein to divide said body into an upper compartment and a lower compartment, and (2) a port in said bottom wall thereof to provide used razor blade access to said lower compartment; said stack of blades being positioned in said upper compartment, and said biasing means being positioned between said partition and said stack of blades.

6. The dispenser of claim 1 wherein said elongated member and said blade-engaging portion have upper forward and lower rear surfaces, respectively, shaped to guide said blade-engaging portion between said top wall and said elongated member.

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