United States Patent

[11] 3,602,366

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[21] Appl. No. **829,646**
[22] Filed **June 2, 1969**
[45] Patented **Aug. 31, 1971**

[73] Assignee **Warner-Lambert Pharmaceutical Company**
Morris Plains, N.J.

[54] **BLADE DISPENSER**
12 Claims, 11 Drawing Figs.

[52] **U.S. Cl.** ..... **206/16 BC,** 221/102, 221/176
[51] **Int. Cl.** **A45c 11/00,** B65d 83/10, B65d 85/62
[50] **Field of Search** ..... 206/16 B, 16 BC, 16 C, 39, 57; 221/102, 176

[56] **References Cited**

UNITED STATES PATENTS

3,059,761	10/1962	Kuhnl	206/16 B
3,126,091	3/1964	Kuhnl	206/16 B

FOREIGN PATENTS

815,828	10/1951	Germany	206/16 B

Primary Examiner—William T. Dixson, Jr.
Attorney—Greist, Lockwood, Greenawalt & Dewey

ABSTRACT: A two-piece dispenser for dispensing double-edge blades of the centrally apertured type, one piece comprising a body having a pair of generally vertically extending sidewalls, a bottom wall portion extending transversely between the sidewalls and joining them together, a used blade aperture in the bottom wall, an intermediate wall portion extending between the sidewalls and disposed above and spaced apart from the bottom wall portion, and resiliently mounted blade guide means attached to and forming a part of the intermediate wall portion, and the other piece being a cover unit including means for holding a stack of blades between a portion of its inner surface and the top surface of the intermediate wall, an aperture in one end thereof for allowing dispensing of one blade at a time from a stack of blades supported on the top of the intermediate wall, and means on the other end thereof for forming one end wall portion of a used blade compartment defined by the sidewalls, the bottom wall and the intermediate wall. The improved dispenser of the invention is constructed and arranged so that the parts thereof may be formed with maximum economy and simplicity, so that loading and assembling of the dispenser is simplified, and so that once assembled, the dispenser is not easily disassembled.

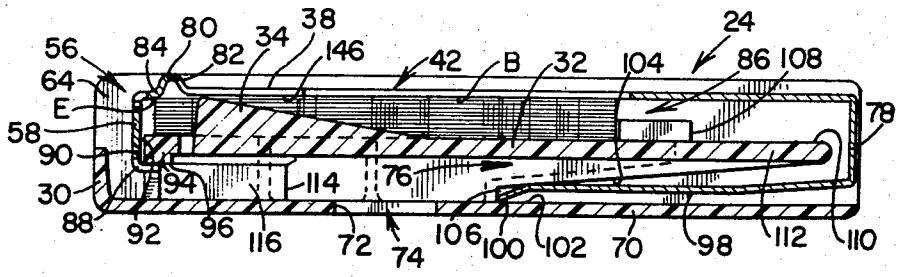


FIG. 1

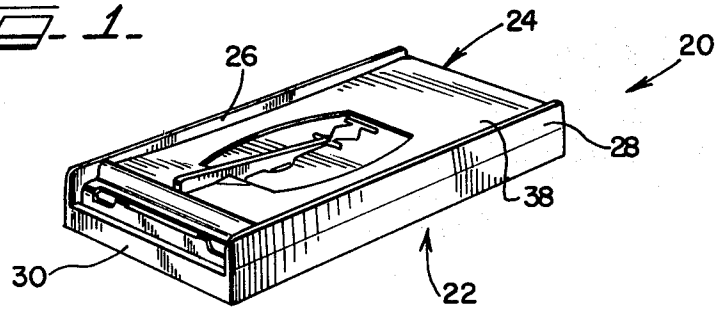


FIG. 2

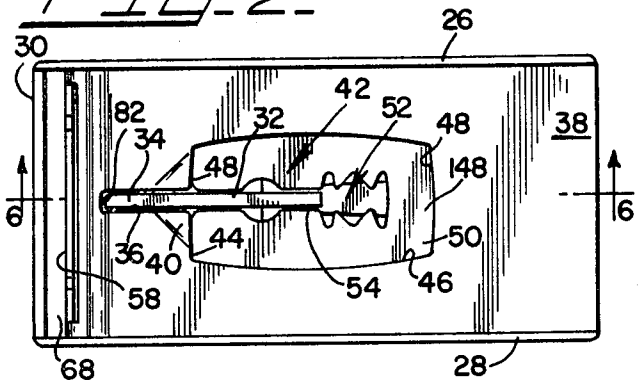


FIG. 4

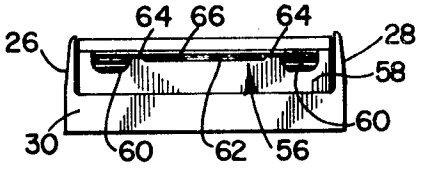


FIG. 3

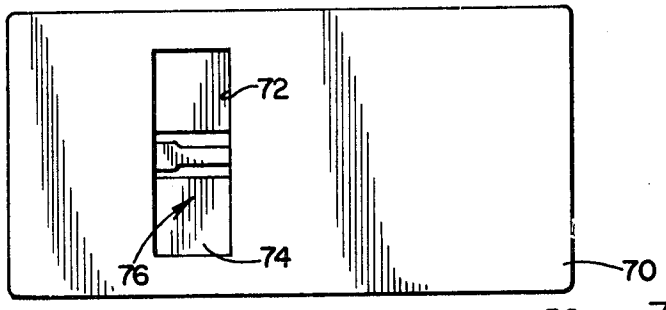


FIG. 5

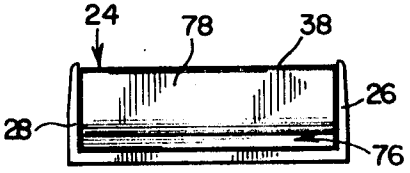


FIG. 6

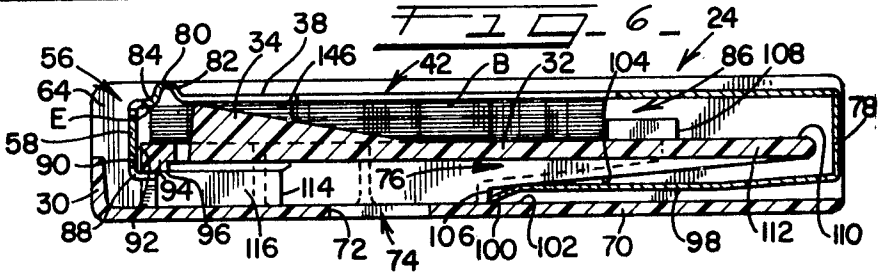


FIG. 7

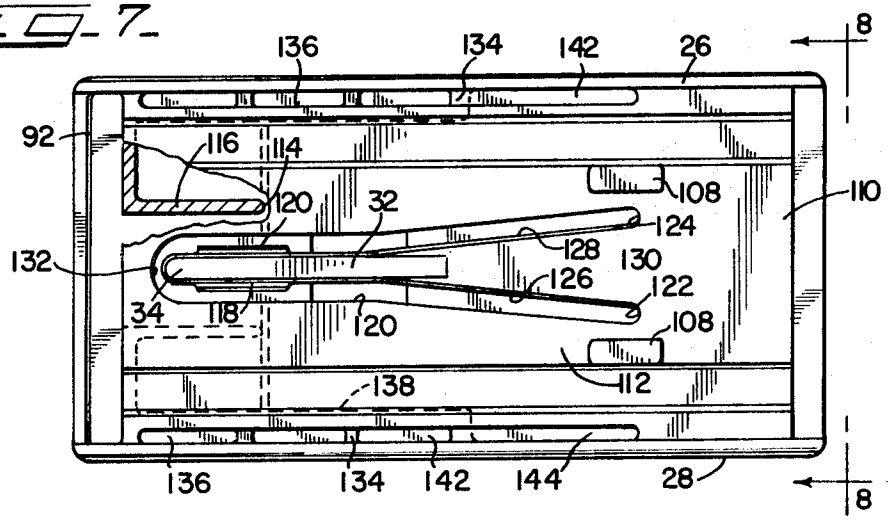


FIG. 9

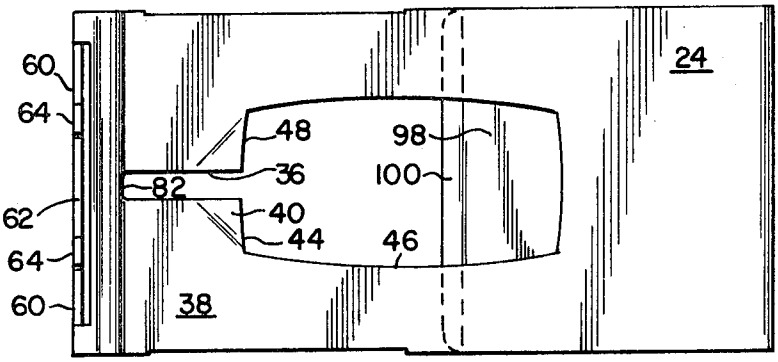


FIG. 10

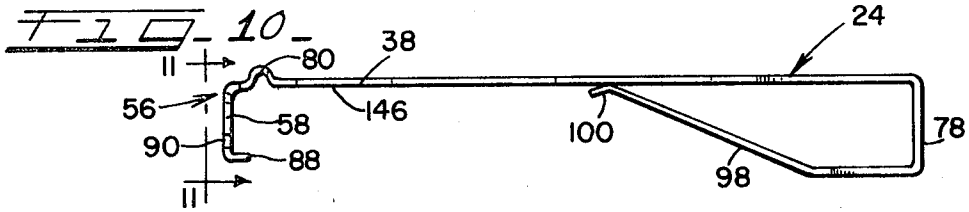


FIG. 8

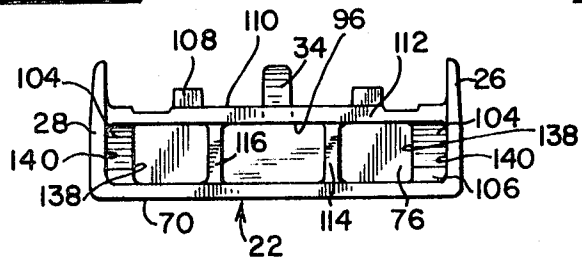
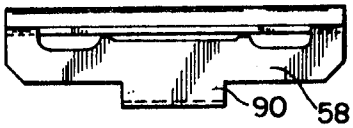


FIG. 11



BLADE DISPENSER

BACKGROUND OF THE INVENTION

The present invention relates generally to blade dispensers and the like, and more particularly to dispensers of the type shown, described and claimed in U.S. Pat. No. 3,126,091. Dispensers made according to the present invention are similar thereto in certain respects but are an improvement thereon, and differ therefrom by possessing a number of operational advantages and characteristics, and as well as constructional features, not present in dispensers of such type.

Dispensers of the type referred to in the above patent have proven very attractive in use, and the advantages of the operational principle thereof has been demonstrated by commercial sales of millions of such dispenser units. However, as is the case with many articles designed for mass production, certain improvements or refinements which will enable the advantages of the object in question to be retained, while gaining other and further advantages, are always desirable.

For example, a dispenser of the type referred to above is a three-piece dispenser, having, in one commercial form, a plastic body portion, and a first metal cover portion, with the used blade compartment being formed by a second metal cover portion affixed to the body below the wall which forms a support means or platform for receiving a supply of blades. Such a dispenser would not be capable of having the used blade compartment integrally formed with the body, if it were to be made by simple and economical molding techniques, for example.

Since it is desired that the present invention provide a dispenser of the above-stated type, having several further improved features and advantages, it is an object of the present invention to provide a dispenser construction which consists of only two pieces, each of which may be readily and economically manufactured, after which the two components may subsequently be assembled into a single dispenser unit.

Another object is to provide a dispenser in which portions of the dispenser used blade compartment may be formed integrally with the dispenser body which accommodates a plurality of new blades for dispensing from the dispenser.

Another object is to provide a dispenser having the operational advantages of known prior art dispensers, but which is able to be manufactured and assembled more simply and economically than such prior art dispensers.

A still further object of the invention is to provide a dispenser having parts which are constructed and arranged so that a maximum number of advantages are present in a single unit, and in which such unit may be made by forming techniques which are simple, straightforward and economical.

A further object of the invention is to provide a body for a dispenser which may be formed by a mold which can be removed from the formed body solely by a straight line motion.

Another object of the invention is to provide a dispenser having a cover unit serving to provide several functions although it is of unitary construction.

A still further object of the invention is to provide a dispenser unit in which a cover element is provided which forms means for engaging the top surface of the uppermost blade in a stack of blades held for dispensing within the unit, which provides an aperture in the front thereof for dispensing a blade therethrough, and which includes means not only for engaging the body portion of the dispenser in locking relation but also for forming a portion of a used blade compartment.

Another object of the invention is to provide a dispenser having the parts thereof so constructed and arranged as to cooperate in a novel manner to provide easy and reliable blade dispensing in use.

The present invention achieves these objects and others which are inherent therein, by providing a double-edge dispenser having a body with a pair of vertically extending sidewalls, a bottom wall and an intermediate wall spaced apart from each other and extending between and joining said sidewall portions to define a used blade compartment, a resiliently depressible blade guide means attached to and extending upwardly from the intermediate wall portion for registry with a blade aperture, and a cover unit for holding a stack of blades between a portion of its inner surface and the top of the intermediate wall, a blade dispensing aperture in the front portion of the cover, and means on the other end for locking the cover unit in fixed position in relation to the body, for forming an end wall of the used blade compartment and for positioning the cover so that it is resiliently urged downwardly against a stack of blades held therebeneath.

The manner in which this invention achieves these and other of its objects will become more apparent when reference is made to the appended claims and to the detailed description of the preferred embodiments of the invention shown in the accompanying drawings, in which like reference numerals indicate corresponding parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the dispenser of the invention, showing a supply of double-edge, centrally apertured blades disposed in the dispenser;

FIG. 2 is a top plan view of the dispenser of the invention;

FIG. 3 is a bottom plan view of the dispenser unit;

FIG. 4 is a front elevational view of the dispenser of the invention;

FIG. 5 is a rear elevational view of the dispenser unit:

FIG. 6 is a vertical sectional view of the dispenser, taken along lines 6—6 of FIG. 2;

FIG. 7 is a top plan view, with portions broken away, of the body portion of the dispenser with the cover removed;

FIG. 8 is a rear elevational view of the body portion shown in FIG. 7;

FIG. 9 is a top plan view of the cover unit of the dispenser shown apart from the body;

FIG. 10 is a side elevational view of the cover unit shown in FIG. 9, showing the cover in an unstressed position;

FIG. 11 is a front elevational view of the cover unit of FIG. 9.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

Referring now to the drawings in greater detail, FIG. 1 shows an illustrative embodiment of the invention in the form of a dispenser unit 20 comprising a body portion 22 and a cover element 24. The body 22 includes a generally vertically extending left-hand sidewall portion 26, a corresponding right-hand sidewall portion 28, and a front end wall portion 30. Referring to FIG. 2, it is shown that a longitudinally extending, resiliently depressible blade guide 32 is provided, which has a forward portion 34 thereof extending upwardly through a narrow aperture 36 in the top portion 38 of the cover element 24. A larger, thumb-receiving aperture 42 is partially defined by a pair of oppositely disposed, slightly raised panels 40, and inwardly facing front edges 44, side edges 46 and a rear edge 48 in the top 38 of the cover 24. A blade 50 having a central aperture 52 therein also has sidewall portions 54 thereof disposed in slightly spaced but guiding alignment with the blade guide 32.

Referring now to FIG. 4, it will be seen that a dispensing aperture 56 is provided in the front wall portion 58 of the cover 24, and that this aperture 56 is defined by a pair of relatively deep cutouts 60 separated from a shallower central cutout 62 by a pair of upwardly extending tabs 64 which are spaced apart from the top wall 66 by a distance equal to less than the thickness of two blades to be dispensed, but at least equal to the thickness of one such blade.

FIG. 2 shows that an opening 68 is provided between the front wall 58 of the cover 24 and the front wall 30 of the body portion 22.

Referring now to FIGS. 3, 5 and 6, it will be seen that the dispenser 20 also includes a bottom wall portion 70, having inwardly directed wall portions 72 defining a used blade opening 74 communicating with the used blade compartment 76 in the dispenser 20. The cover 24 includes a rear end cover portion 78 which extends downwardly from the top surface 38 of the cover 24 and serves to form an end wall to close off the end portion of the used blade compartment 76.

Referring now to FIG. 6, additional elements of the dispenser are shown, and it may be seen that the cover element 24 includes, in addition to the aperture 42, an upwardly extending ridge 80 in which the front wall 82 of the aperture 36 is formed, and a lower flange 84 which extends generally horizontally in position of use and is adapted to rest on the front edge portion E of the uppermost blade 50 of the stack of blades 86. The relation of the dispensing aperture 56 to the blade 50 which passes over the tabs 64 is also shown in FIG. 6, which further shows an inwardly extending tab 88 formed at the bottom of a reduced width extension 90 which depends from the front wall portion 58 of the cover 24. The front wall 58 and the extension 90 are adapted to engage a forwardly facing surface 92 of a body crossmember 94, thereby providing means for preventing rearward movement of the cover 24 relative to the body 22. The tab 88, in one position of the cover top 38, engages a lower surface 96 of the crossmember 94 to prevent removal of the cover element 24 from the dispenser unit 20. In use, the tab 88 moves successively between a position somewhat beneath the surface 96 and a lower position, as more blades are dispensed and the cover element 24 moves downwardly.

FIG. 6 also shows that the cover 24, in addition to the rear wall 78, includes means for engaging a portion of the body 22 to bias the cover top 38 resiliently downwardly, such means being in the form of a forwardly extending bottom wall 98 terminating in a flange 100, which is urged into engagement with an upwardly facing surface 102 of the bottom wall 70 by a downwardly and forwardly tapering ramp 104. The ramp 104 terminates in a vertically extending wall portion 106 which abuts the flange 100, to prevent undue forward movement of the cover element 24 in relation to the body 22.

A pair of lugs 108 are disposed on the top surface 110 of the intermediate wall 112, for engaging a rear edge of the blade stack 86, to prevent undesired rearward movement of the blades. The intermediate wall 112 is disposed above the bottom wall 70. A pair of supports 116 including rear surfaces 114 thereof extend between the walls 112, 70 and form a part of the front wall of the used blade compartment.

Referring now to FIG. 7, it is shown that the forward portion 34 of the guide 32 includes, at the lower portion thereof, left- and right-hand feet 118 which are dimensioned so as to be somewhat wider, at their outer edges, than the narrowest portions of the central aperture 52 in a blade 50, for reasons which will be discussed in further detail herein. FIG. 7 also shows that an inwardly facing sidewall 120 of the intermediate wall 112 merges, at two small-radius portions 122, 124 into the outwardly facing sidewalls 126, 128 which partially define the blade guide 32, thereby resiliently supporting the guide 34 for depressible vertical movement about the hinge portion 130 of the intermediate wall 112 which extends between the two radii 122, 124. In a preferred embodiment, the spacing between the sidewalls 126, 128 and the sidewall 120 is uniform, and the radius 132 in the wall 120 is spaced apart from the front portion 34 of the rib 32 a distance equal to the distance between the walls 120 and 126, for example.

FIG. 7 also shows that the sidewalls 26, 28 of the body 22 are joined by ribs 134 to the intermediate wall 112, and to a pair of outwardly facing, vertically disposed walls 136. The walls 136 form the outside walls of the forward portion of the used blade compartment 76, which is defined on the inside portion thereof by a pair of sidewalls 138 at the forward portion thereof and at the rear portion thereof by a pair of sidewalls 140, the walls 138 being more closely spaced apart than the sidewalls 140. By providing the openings 142 between the walls 26, 28 and the forward blade compartment wall defined by the surfaces 136, 138, relatively uniform cross-sectional thickness is maintained in most portions of the dispenser body. Tapered openings 144 (FIG. 7) disposed above the ramps 104 (FIGS. 6 and 8) serve to provide this effect in these areas.

FIG. 8 shows a rear end view of the dispenser body 22, and illustrates that the pair of sidewalls 138 are more closely spaced apart than the pair of sidewalls 140, as well as showing the relation of the end surfaces 114 and the supports 116 to the intermediate wall 112, and other features of the interior of the dispenser body.

By reference to FIGS. 7 and 8, it can also be seen that there are no undercut portions to prevent straight line withdrawal of a body-forming mold part toward the top of the upper portion of the dispenser as shown in FIG. 7, and to the rear thereof, as shown in FIG. 8.

FIGS. 9, 10 and 11 show the cover unit 24 apart from the dispenser, and show that the wall 98, in an unstressed condition thereof, extends upwardly so that the flange 100 on the forward end thereof is disposed closely adjacent the inner surface 146 of the top 38. Accordingly, when the cover 24 shown in FIGS. 9, 10 and 11 is in its installed position of use, such as that shown in FIG. 6, the cover top 38 is urged downwardly and into a closely overlying relation to the top surface 110 of the intermediate wall 112, or to the upper surface of any blades or the like supported thereon.

Referring now to the loading and dispensing of blades from the dispenser 20, when it is desired to load and assemble a blade dispenser of the type shown herein, a stack of blades is inserted on the top surface 110 of the intermediate wall 112, the lugs 108 preventing undue rearward movement of the rear edges of any of the blades in the stack 86. The feet 118 on the guide 32 prevent the guide from moving to far upwardly in relation to the bottom blade of the stack.

The guide 32, by its inherent resiliency, is biased to the position shown in FIG. 6, that is, with the forward portion 34 thereof engaging the central apertures 54 in the blades 50 comprising the blade stack 86, and with the top edge portion thereof preferably projecting upwardly somewhat from the upper surface of the topmost blade 50 in the stack 86. Thereupon, the flange 100 and the bottom wall 98 of the cover 24 are resiliently biased to a downward position so that the flange 100 engages the ramp 104, and the cover is moved forwardly over the stack of blades until the flange 100 abuts the wall 106. Then, the front wall portion 58 of the cover 24 is deflected slightly forwardly, so that the tab 88 clears the crossmember 94, and the cover 24 is allowed to move to the position shown in FIG. 6, that is, with the front wall 58 thereof between the front wall 30 of the body and the front surface 92 of the crossmember 94, and the tab 88 beneath the lower surface 96 of the crossmember 94. The inherent resiliency of the bottom wall 98 urges the top portion 38 of the cover downwardly, so that the inner surface portion 146 thereof snugly engages the uppermost blade 50 on the stack 86. Thus, the dispenser is assembled merely by placing the blades in a stack, positioning the stack in registry with the guide 32, and snapping the cover 24 into the position of use shown in FIG. 6.

In use, blades are dispensed by a user in a known manner, that is, by extending a portion of the thumb through the opening 42 and onto the top surface of the topmost blade in the stack and pushing the blade 50 through the aperture 56.

As the uppermost blade is moved forwardly, the nose portion thereof moves through the single blade width aperture 56, the tab 64 preventing additional blades from being dispensed therethrough. Since the top portion 34 of the guide 32 is depressed as the end portion 148 of the blade 50 rides thereover, the blade may be removed from the dispenser, but additional resistance to accidental discharge of a blade is provided. As more blades are dispensed in this manner, the inner surface 146 of the cover 38 remains in snug engagement with the top surface of each succeeding blade, holding the blades in the stack against accidental movement thereof by the pinching

action brought about by the spring action of the bottom wall **98**, acting through the end wall portion **78**.

Used blades are inserted in the used blade compartment **76** by passage through the aperture **74** in a known manner. The rear surfaces **114** of the supports **116** prevent blades from moving forward to the extent that used blades in the compartment **76** would interfere with the degree of downward movement of the rib **32** necessary to permit discharge of the blades from the top surface **110** of the intermediate wall **112**. The rear wall **78** of the cover **24** prevents the blades from being lost out the rear end of the compartment **76**, and the flange **100** is forced by the ramp **104** into a position on or closely adjacent the upper surface **102** of the bottom wall **70**, to prevent passage of used blades beneath the flange **100**.

As pointed out above, the dispenser unit of the invention is designed with a view toward being able to be manufactured by simple methods, such as, by stamping and bending the metal cover **24** to the desired shape, and injection molding the body **22** from plastic material. Since the sidewalls **138**, **140** of the used blade compartment **76** are spaced as shown, since the ramp **104** tapers downwardly toward the front, and since the supports **116** are of uniform cross section from front to rear, there is no restriction to withdrawing a mold part to the rear of the rigid body **22** after molding it. Likewise, the upwardly facing open portions of the dispenser are all of equal or enlarged dimensions from bottom to top, and upwardly projecting portions are of equal or smaller dimensions from bottom to top. This construction makes possible the molding of the body **22** in a single piece with simplified mold parts which may be directly removed by straight line motions. The openings necessarily left by retractions of such mold parts do not act as a drawback to the operation of the dispenser, however, since they serve as means for equalizing cross-sectional dimensions for uniform part cooling, and leave openings which are adapted to be otherwise suitably closed, where desired, such as by the rear wall portion **78** of the compartment **76** and the front wall portion **58** of the cover **24**. The opening **68** allows entry of the tab **88** during assembly of the dispenser, and the opening **74** serves as an inlet for used blades. By reason of the relatively remote location of the top portion **38** of the cover **24** from the bottom wall **98** thereof in use, sufficient flexibility is provided so that the dispenser of the invention may be loaded with as few as one or two blades, or as many as 15 blades for example, and still function satisfactorily in every respect. The materials described herein are preferred for use with the invention, but other suitable but different materials may also be used to advantage.

It will thus be seen that the present invention provides a novel blade or like dispenser having a number of advantages and characteristics, including those expressly pointed out herein, and others which are inherent in the invention.

I claim:

1. A dispenser for dispensing double-edge blades of the centrally apertured type, said dispenser comprising, in combination, a plastic body of integral construction having a pair of generally vertically extending sidewall portions, a bottom wall portion extending transversely between said sidewall portions and joining said portions together, an intermediate wall portion extending between and joining said side wall portions, said intermediate wall portion being disposed above and spaced apart from said bottom wall portion, said bottom wall portion, sidewall portions, and intermediate wall portions defining, in part, a used blade compartment, a resiliently depressible, longitudinally extending blade guide means integrally attached to said intermediate wall portion and adapted to be received in the central aperture of a blade resting on said intermediate wall portion and adapted to be received in the central aperture of a blade resting on said intermediate wall portion, and a cover unit including spring means for holding at least one blade between a portion of its inner surface and the top surface of said intermediate wall portion, one end of said cover unit having a slot orifice for allowing dispensing of only one blade at a time therethrough from a stack of blades received on said top surface of said intermediate wall, and means for holding a portion of said cover unit in fixed relation to said body, said body further including means for engaging said one end of said cover for allowing upward movement of said cover unit until said means engages said one end and restricts further movement, said one end of said cover being urged in a downward direction by said spring means for providing blade alignment with said slot orifice.

2. A dispenser as defined in claim **1** in which said used blade compartment includes an opening in the bottom wall portion thereof for receiving used blades, said opening being substantially longitudinally shorter than the length of a blade to be received in said compartment.

3. A dispenser as defined in claim **1** in which said means for holding said portion of said cover comprise said spring means extending inwardly from the other end of said cover unit for forming an end wall portion of said used blade compartment, said spring means being received within a portion of said used blade compartment for holding said cover unit in place and for biasing portions thereof downwardly against the uppermost blade of a stack of blades received on said top surface of said intermediate wall portion.

4. A dispenser as defined in claim **1** in which said body includes means for receiving in an abutting relationship said portion of the other end of said cover unit to prevent forward movement thereof, and said engaging means abuts a portion of said one end of said cover unit for preventing rearward movement thereof; and in which said other end of said cover unit forms one end wall of said used blade compartment.

5. A dispenser as defined in claim **4** in which said cover unit includes a tab member on said one end for engaging said body means for limiting upward movement of said cover, and a front wall member downwardly depending from said slot orifice from which said tab member rearwardly extends, said wall member engaging a front surface of said body member for preventing rearward movement of said cover unit.

6. A dispenser as defined in claim **5** in which means are provided on the upper surface of said intermediate wall for preventing rearward movement of blades supported on said wall during loading of said dispenser and for spacing a portion of said cover unit apart from said intermediate wall.

7. A dispenser as defined in claim **5** in which means are provided for preventing the lower portion of said blade guide means from engaging blades disposed in said used blade compartment when said blade guide means is in a depressed position of use to allow blade dispensing.

8. A dispenser as defined in claim **5** in which the forward end of said used blade compartment is further defined, at least in part, by means extending vertically between said intermediate wall and said bottom wall, said means being adapted to engage the front portion of used blades held in said compartment, thereby preventing said front portion of said blade guide means from engaging blades in said used blade compartment.

9. A dispenser as defined in claim **8** in which said vertically extending means are of substantially uniform cross section from front to rear thereof to facilitate removal from said blade compartment of a unitary mold part forming said vertically extending means.

10. A dispenser as defined in claim **5** in which said spring means includes a forwardly longitudinally extended member depending form said other end of said cover unit and inclined upwardly toward said inner surface of said cover and in which means are provided in said body for urging the longitudinal inner edges of said spring means on said cover unit downwardly as said cover unit is moved forwardly in relation to said body during assembly, so as to resiliently bias a portion of said cover unit toward the top surface of said intermediate wall portion thereby engaging said one end of said cover with said blade resting on said intermediate wall and preventing forward movement of said cover.

11. A dispenser as defined in claim **10** in which said used blade compartment is defined at least in part, by a front pair

and a rear pair of generally parallel, spaced-apart vertical sidewalls, the rear pair being spaced farther apart than the front pair and one wall in each pair being joined to the other wall of each pair by a transversely extending abutment surface which is adapted to engage a portion of said longitudinally extended member to prevent forward movement thereof.

12. A dispenser as defined in claim 1 in which a lower member on said blade guide means engages said blade when said blade guide means passes through said blade aperture thereby preventing complete passage of said blade guide means through said blade aperture.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,602,366 Dated August 31, 1971

Inventor(s) Jan Dawidowicz

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 5, lines 69 to 71, cancel "and adapted to be received in the central aperture of a blade resting on said intermediate wall portion". Column 6, line 64, "form" should read --from--.

Signed and sealed this 25th day of January 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

)RM PO-1050 (10-69)

USCOMM-DC 60376-P69
* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334