United States Patent

[11] 3,542,245

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[21] Appl. No. **722,597**
[22] Filed **April 19, 1968**
[45] Patented **Nov. 24, 1970**

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[54] **BLADE DISPENSER AND MOUNTING FOR SAME**
4 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **221/232,** 221/256, 221/269, 221/283
[51] **Int. Cl.** **B65h 1/08**
[50] **Field of Search** ..... 222/174, 181; 221/268, 269, 270, 271, 276, 282, 283, 287, 198, 232, 255—257

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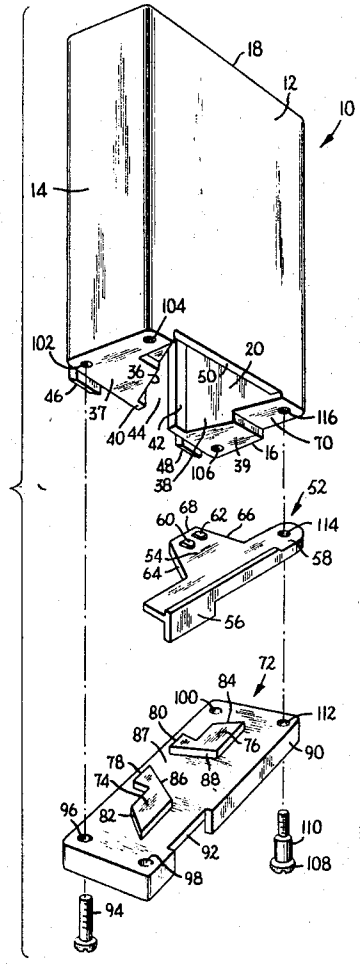
Primary Examiner—Samuel F. Coleman
Attorney—Watson, Leavenworth & Kelton

ABSTRACT: A cutting blade dispenser incorporating a blade withdrawing tray slidably movable into and out of a magazine containing a stack of blades for dispensing an individual blade, the tray being positioned below the stack but free of the weight of the blade stack during the dispensing operation, and the device as a whole including a support for mounting the magazine in a removable vertical position, the support providing means for urging blades into a dispensing position in said magazine.



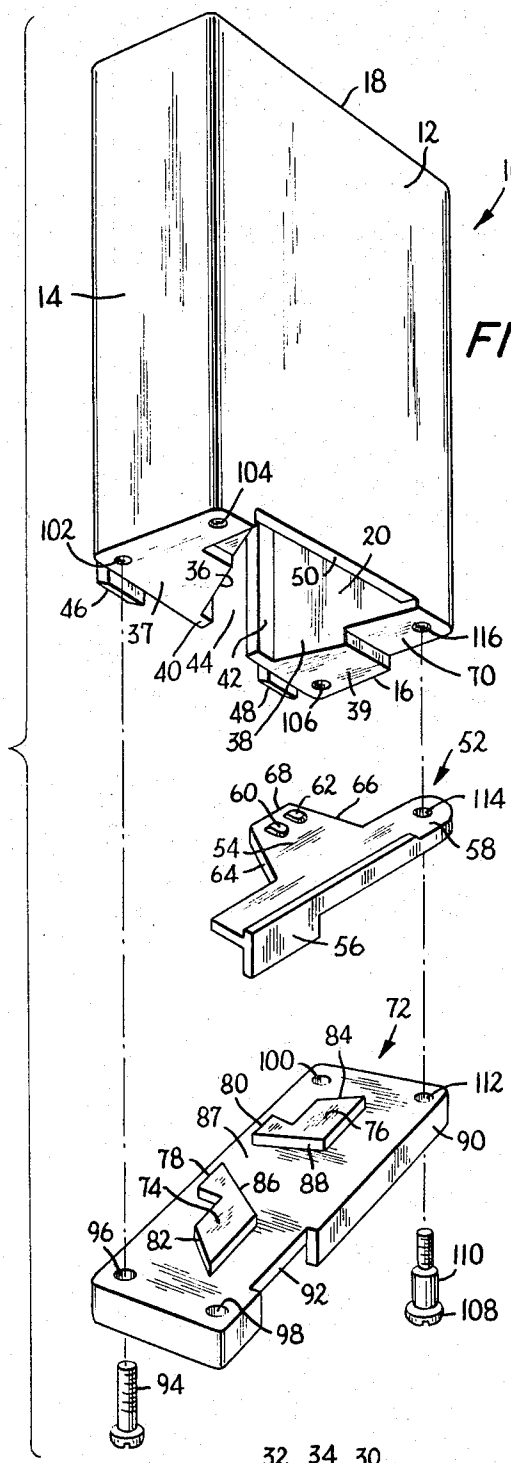


FIG. 1

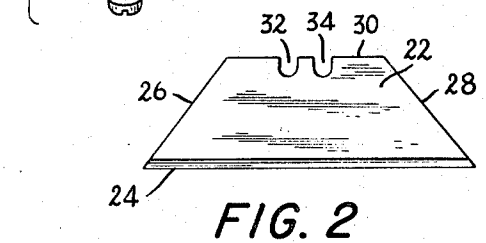
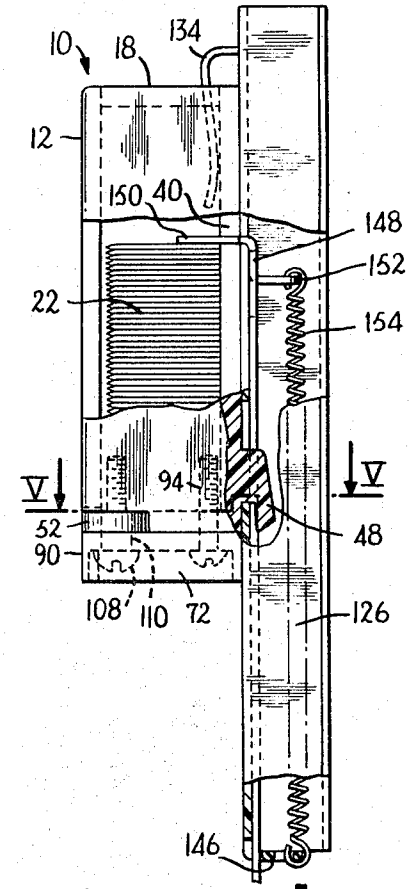


FIG. 2

FIG. 4



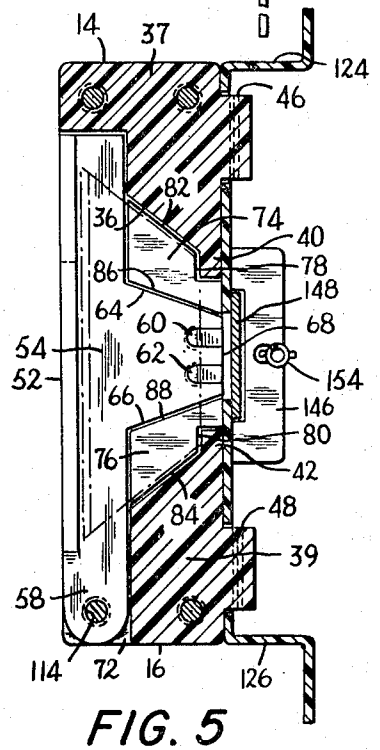


FIG. 5

FIG. 3

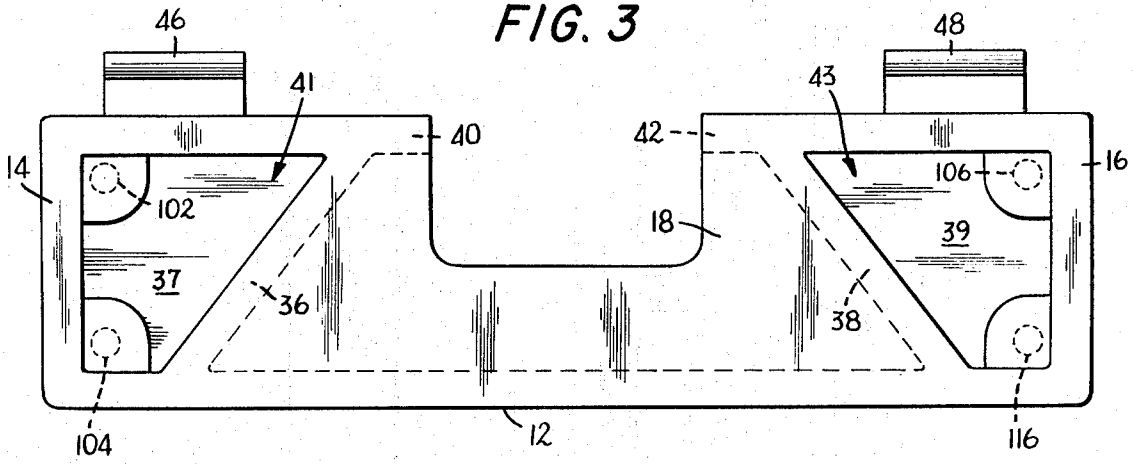
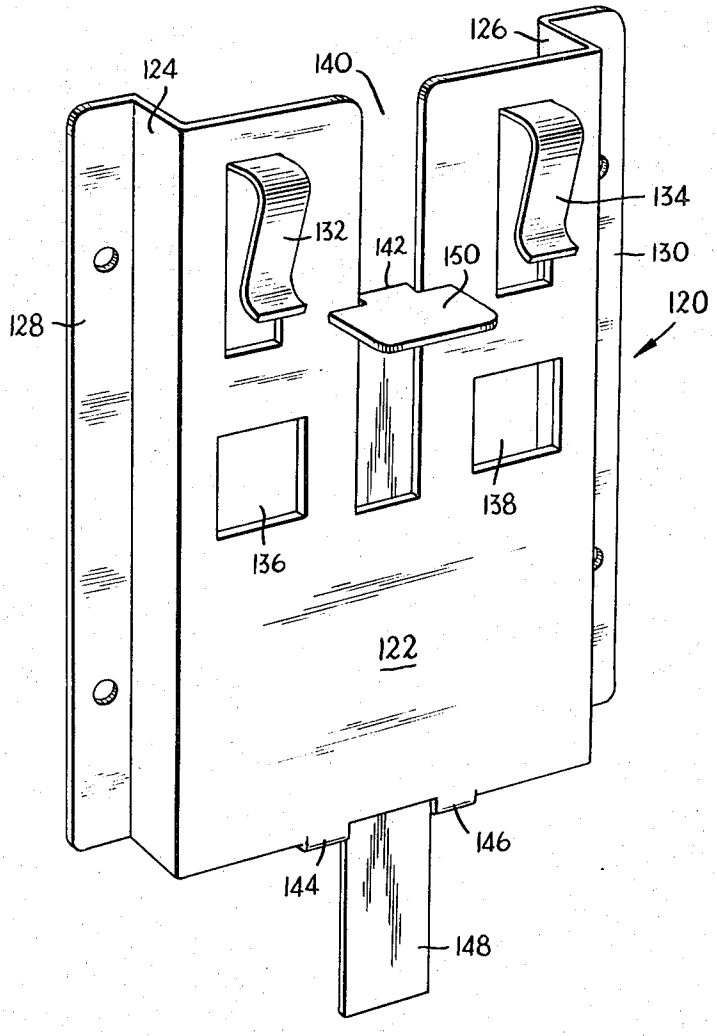

46
41
40
42
43
48
14
102
16
106
18
39
37
36
38
104
12
116

FIG. 6


126
124
140
134
132
142
150
130
120
128
138
136
122
146
144
148

BLADE DISPENSER AND MOUNTING FOR SAME

FIELD OF THE INVENTION

This invention relates to cutting blade dispensing apparatus and in particular to dispensers containing a large number of blades and capable of manual dispensing of the blades individually.

A cutting blade dispenser for use in high volume industrial installations generally involves a magazine which may contain as many as 100 blades for example. In order to avoid the hazards of operator contact with blade cutting edges during the dispensing operation, such magazines preferably include a means for withdrawing a blade into exposed position in which it may be applied directly to a holder or manually grasped for application to a holder in a manner such that the operator's fingers need not engage the cutting edge.

Distribution and dispensing of blades usually of course involves replenishing of the stock of the user and the present invention is concerned both with packaging and delivering blades and the dispensing of the individual blades by the user.

SUMMARY OF THE INVENTION

The present invention embodies two main parts comprising a magazine of blades and a supporting fixture the latter adapted to be permanently mounted at the user's place. The magazine serves as a shipping container and contains mechanism adapted to cooperate with the mechanism in the supporting fixture for the dispensing of individual blades. When the blades in a magazine are exhausted the magazine is removed from the supporting bracket and replaced by a new magazine.

As embodied in a representative form of the invention disclosed herein the magazine is provided with a compartment adapted to contain a stack of 100 or so individual blades. A dispenser tray is mounted for slidable translation into and out of the magazine, the tray exerting a force on the rearward side of the lowermost blade in the stack in its withdrawal from the magazine to thereby dispense an individual blade. A bottom wall is provided for the magazine, the tray being interposed between the magazine and the bottom wall. The magazine bottom wall is equipped with means for providing complete support for the blade stack and the tray, maintaining the lowermost blade in the stack slightly above the tray. The tray and bottom wall are designed in an interfitting manner, the tray entering into the bottom wall and seating therein. The tray is equipped with upwardly extending projections which are adapted to exert the requisite removal force. The magazine further includes a partially open rear wall, and features cooperating with elements of a supporting bracket, enabling the magazine to be removably mounted thereon, the bracket including resilient means entering the back wall of the magazine and urging the blade stack downwardly ensuring the advance thereof and the successive appropriate positioning of the blades for dispensing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view in perspective showing the constituents of the cutting blade dispenser magazine of the invention;

FIG. 2 is a top plan view of one of the cutting blades adapted to be contained in and dispensed from the dispenser of FIG. 1;

FIG. 3 is an enlarged top plan view of the dispenser magazine of FIG. 1;

FIG. 4 is a side elevation of the dispenser magazine of FIG. 1 mounted on a fixed bracket, partly cut away to show detail;

FIG. 5 is a sectional view of the dispenser taken along the line V–V of FIG. 4; and

FIG. 6 is a perspective view of the bracket of FIG. 4.

Like numerals are used in the drawings to identify like parts throughout the following description of a preferred embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the exploded view of the parts constituting the blade dispenser of the invention in FIG. 1, magazine **10**, which is preferably a molded plastic, such as high impact styrene, includes a front wall **12**, side walls **14** and **16** and a top wall **18**. The walls enclose within magazine **10** a compartment **20** which is adapted to contain a stack of cutting blades designed for mounting in a suitable holder. The configuration of compartment **20** in FIG. 1 is adapted to contain the blades **22** of the type shown in FIG. 2. The blades may vary in character and shape, the particular blades illustrated comprising a cutting edge **24**, tapering sides **26** and **28** and a rear edge **30** which has a pair of notches or recesses **32** and **34**.

As is evident in FIGS. 1 and 3, compartment **20** is shaped for containment of such blades by magazine inner walls **36** and **38** which extend from top wall **18** to the base of the dispenser at which point they join horizontal plate sections **37** and **39**. Flanges **40** and **42** adjoin inner walls **36** and **38** and side walls **14** and **16** to define a pair of open columns **41** and **43**, which as will be described hereinafter, permit insertion of the magazine in a mounting bracket. Flanges **40** and **42** define therebetween a slot **44** which extends vertically throughout the length of magazine **10**. Magazine **10** is further equipped with support lugs **46** and **48**. Front wall **12** is cut away at the bottom portion thereof to define a slot **50** for dispensing blades from the magazine.

Tray **52** which is slidably movable into and out of compartment **20** through slot **50** to effect the dispensing of individual blades, comprises a panel **54** and a flange finger piece or handle **56**. Where it is desired, as in the present form, to have the sliding tray secured to the magazine for pivotal movement, tray **52** further includes a support arm **58**, the latter being an extension of panel **54**. Tray **52** also includes on the upper surface of panel **54** one or more wedge-shaped projections or lugs depending upon the circumstances including the character of the blade **22**. In the present case there are a pair of lugs **60**, **62** which, as will be explained hereinafter, cooperate with recesses **32** and **34** of blades **22** to remove same. The sides **64** and **66** of panel **54** taper inwardly and rearwardly to the panel back **68**. Support arm **58** or tray **52** is adapted to be pivotally connected to land **70** formed in horizontal plate section **39**.

A bottom wall **72** is removably secured to magazine **10** to facilitate loading of the magazine. To load the magazine, the base plate **72** and tray **52** are removed from the magazine and the magazine is positioned to rest on its top wall **18**. A stack of blades may then be conveniently inserted into compartment **20**. Tray **52** and bottom wall **72** are then added to the magazine, the completed assembly being illustrated in combination with the accessory mounting bracket in FIG. 4. Alternatively, the entire assembly may be a unitarily molded plastic assembly in which case top wall **18** is omitted and a stack of blades is entered into the magazine in its upright position through the open top wall.

Bottom wall **72** includes on the upper surface thereof a pair of raised platforms **74** and **76**, back sections **78** and **80** of which are adapted to seat against flanges **40** and **42** of magazine **10**. The platforms further include side sections **82** and **84** which taper inwardly and rearwardly in the same fashion as magazine inner walls **36** and **38** to seat therein. The elevation of platforms **74** and **76** above the top surface of bottom wall **72** is such that the platforms extend into the compartment **20** a distance of approximately one blade width. Platform side walls **86** and **88** define a passage **87** therebetween, the passage being shaped to receive panel **54** through aperture **50** of magazine front wall **12** (FIG. 5). Front section **90** of bottom wall **72** is cut away to form a slot **92** which provides a residence for the handle **56** of tray **52** when the parts are assembled.

To assemble the magazine parts, bottom wall **72** is secured to magazine **10** by passing bolts **95** through apertures **96**, **98** and **100** of bottom wall **72** and into the threaded apertures **102**, **104** and **106** of magazine **10**. Then slidable tray **52** is inserted through slot **50** into passage **87**. To provide the pivotal

connection between the tray **52** and the magazine, a bolt **108** having an enlarged portion **110** adapted to serve as a pivot bearing for tray **52**, inserted into aperture **112** of bottom wall **72**, through aperture **114** of support arm **58** of tray **52** and into threaded aperture **116** of magazine **10**.

In FIG. **4** the blade dispensing magazine is shown in its normal or vertical mounting, being supported by a bracket **120**. The type of installation is especially directed to industrial use, wherein bracket **120** is fixedly mounted on a wall and is adapted to receive a replacement magazine as the blade supply in a magazine is depleted. While the bracket includes means urging the blade stack downwardly against the magazine bottom wall to overcome any bind between the blade stack the magazine may be hand held and operated without a supporting bracket.

Referring to FIG. **6**, bracket **120** comprises a front support plate **122**, side wall **124** and **126** and rear mounting flange **128** and **130**. Extending outwardly from plate **122** are a pair of clip **132** and **134** for receiving a magazine and urging same against the plate. Aperture **136** and **138** are formed in plate **122** below clip **132** and **134** to receive the magazine lugs and thereby support the magazine. A lot **140**, which guide the movement of a blade follower **142**, extend from the top of plate **122**, additional guide members **144** and **146** for maintaining follower **142** vertical, being formed at the base of plate **122**.

Follower **142** include a stem **148**, extending downwardly within bracket **120**, and a pressure pad **150**. As is shown in FIG. **4**, a tab **152** extend from the rear side of stem **148**. A pring **154** secured to tab **152** and to guide member **146** urge follower **142** downwardly. The assembly of FIG. **4**, wherein the blade dispensing magazine **10** is shown mounted on wall bracket **122**, illustrates the action of follower **142** exerting pressure on the blade tack to constantly maintain the lowermost blade against magazine bottom wall **72**.

In mounting magazine **10** on bracket **120**, the magazine is positioned such that bracket pressure pad **150** enters magazine slot **44** and rests on the uppermost blade, clips **132** and **134** being alined above open columns **41** and **43**. As the magazine is pushed upwardly, the clips enter into the columns to a depth sufficient to permit magazine support lugs **46** and **48** to rise above the bracket apertures **136** and **138**. The magazine is then pressed against the plate, whereupon the lugs enter the bracket apertures and, as the magazine is pushed downwardly, seat therein. During this movement the bracket clips **132** and **134** exit slightly from columns **41** and **43**. In the completed assembly of FIG. **4**, it may be seen that clip **134** enters the hollow column **43** and bears against the back wall flange **42** resiliently pressing the magazine against the bracket. Magazine lug **48** is shown in its seated position in aperture **138** of the bracket.

When the blade supply in a mounted magazine is depleted, the magazine may be removed from the bracket by simply urging the magazine upwardly and then outwardly, thus removing lugs **46** and **48** from bracket apertures **136** and **138**. The magazine is then removed from clips **132** and **134**.

Operation of the magazine of the invention, whether it is hand held (FIG. **1**) or mounted on a fixed support (FIG. **4**) is similar. Assume tray **52** is in the withdrawn position, having previously dispensed a blade **22** from the loaded magazine **10**. At this time and throughout operation of the device, the blade stack rests on bottom wall **72**, the platforms **74** and **76** thereof supporting the stack above the passage **87** lying between platform sections **86** and **88**. As tray **52** is returned into the magazine, panel **54** enters passage **87** and is deflected downwardly as projections **60** and **62** contact the undersurface of the lowermost blade in the stack. When the tray is fully returned to its seated position within the magazine, projections **60** and **62**, which are equipped with vertical square front faces, snap into the blade recesses **32** and **34**, panel **54** returning to its undeflected or horizontal position. Upon operation of handle **56**, tray **52** may be withdrawn from the magazine, the lowermost blade in the stack being thereby pushed out of the stack as the vertical square front faces of projections **60** and **62** exert a dispensing force against the rear surface of the blade.

Since various changes may be made in the magazine and fixed mounting arrangement shown and described herein and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained herein shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A blade dispenser comprising:

a. a magazine having front and side walls and a bottom wall, defining a compartment for containing a stack of blades, said front wall having a blade dispensing aperture formed therein, and said bottom wall having a pair of spaced platforms for supporting the blade stack; and

b. a blade dispensing tray mounted for sliding movement through said aperture into said magazine, said tray having a part movable into position between said platforms and carrying an element adapted to contact a rearward portion of the lowermost blade in said stack, and exert a dispensing force thereon upon outward withdrawal of said tray from said magazine, said tray being movable to an outer position where the withdrawn blade is completely free of the compartment and the blade stack therein and fully exposed on the tray for manual removal, and the blade stack is supported solely on said platforms.

2. A blade dispenser in accordance with claim **1** in which said tray has a pivotal connection to said compartment and is adapted to swing thereon in a horizontal arc, and said platforms have opposed edges converging rearwardly to define a passage for said tray part and said part has corresponding converging edges.

3. A blade dispenser in accordance with claim **1** in which said tray element comprises a wedge having a top surface tapering rearwardly and downwardly on said tray part, said element adapted to engage in a notch in the rearward portion of the lowermost blade as said tray part is moved into said passage between said platforms.

4. A blade dispenser comprising, a fixed supporting bracket and a blade magazine removably mounted thereon:

a. said magazine having front, back, side and bottom walls defining a compartment for containing a stack of blades;

b. said magazine back wall having a pair of horizontally spaced hook shaped mounting lugs, and said front wall having a blade dispensing aperture therein, a blade dispensing tray mounted for sliding movement through said aperture into said magazine, said tray having an element contacting a rearward portion of the lowermost blade in said stack and adapted to exert a dispensing force thereon upon withdrawal of said tray from said magazine, said magazine bottom wall supporting the blade stack above the dispensing tray and further supporting said tray for sliding movement;

c. a fixed bracket for removably supporting said magazine in a vertical position thereon said bracket including resilient clip member adapted to receive and retain the upper part of said magazine and sockets for receiving said mounting hook lugs of the magazine;

d. said bracket having a vertical guide slot therein and a blade follower mounted in the bracket for vertical movement in said slot and having a pressure pad adapted to engage the top of said blade stack, a spring mounted in said bracket connected to urge said pressure pad downwardly on said blade stack;

e. said magazine having a slot in the rear wall thereof coinciding with the slot in said bracket when the magazine is mounted thereon; and

f. said follower being arranged to extend through the slots in said bracket with said pressure pad within said magazine for exerting pressure on the blade stack when the magazine is mounted on the bracket but permitting ready removal of the magazine from the bracket free of said follower.

PO-1050
(5/69)

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,542,245 Dated November 24, 1970

Inventor(s) PAUL A. BRAGINETZ

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

Col. 2, line 42 before "tray", "or" should be -- of -- .
Col. 3, line 3 after "52," insert -- is -- .
Col. 3, line 8 "The" should be -- This -- .
Col. 3, line 14 after "stack" insert -- and the magazine thereby facilitate blade dispensing, --
Col. 3, line 17 "wall" should be -- walls -- .
Col. 3, line 18 "clip" should be -- clips -- .
Col. 3, line 20 "aperture" should be -- apertures -- .
Col. 3, line 21 "clip" should be -- clips -- .
Col. 3, line 22 "lot" should be -- slot -- ; same line "guide"should be -- guides -- .
Col. 3, line 23 "extend" after "142" should be -- extend
Col. 3, line 27 "include" should be -- includes -- .
Col. 3, line 29 "extend" after "152" should be -- extend
Col. 3, line 30 "pring" before "154" should be -- spring same line "urge" should be -- urges --
Col. 3, line 34 "tack" after "blade" should be -- stack
Col. 4, line 3 of Claim 4(c) "member" before "adapted" should be -- members -- .

SIGNED AND
SEALED
MAR 2 1971

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Attesting Officer

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Commissioner of Pat