Oct. 30, 1951 J. MUROS 2,573,671

BLADE MAGAZINE WITH SIGHT OPENING

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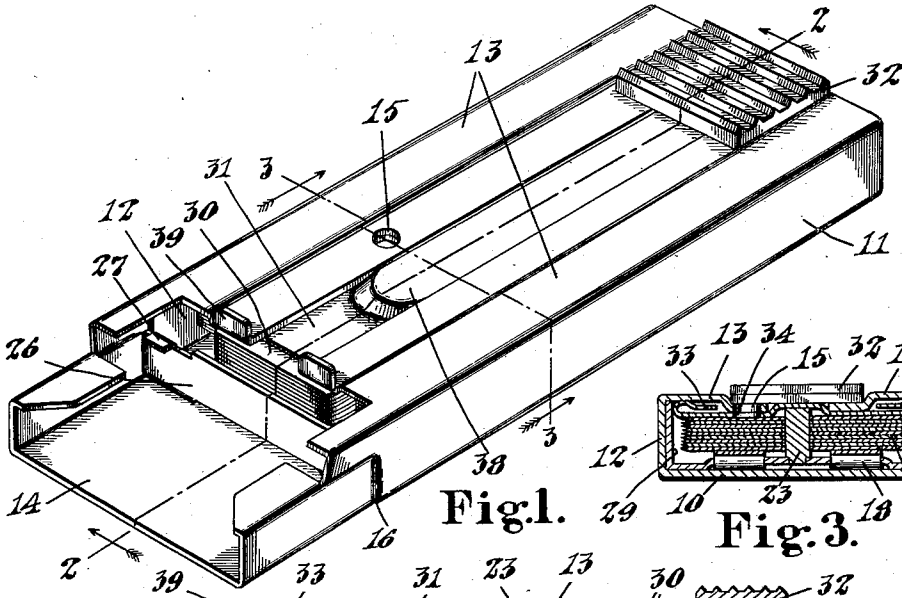

Fig.1.

Fig.3.

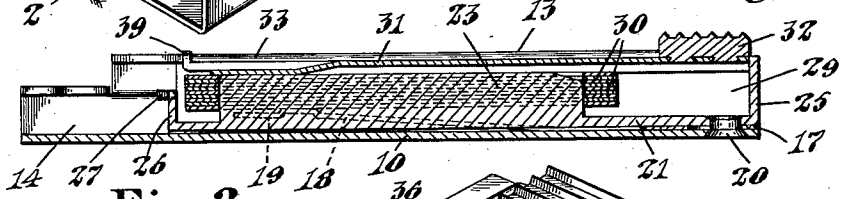

Fig.2.

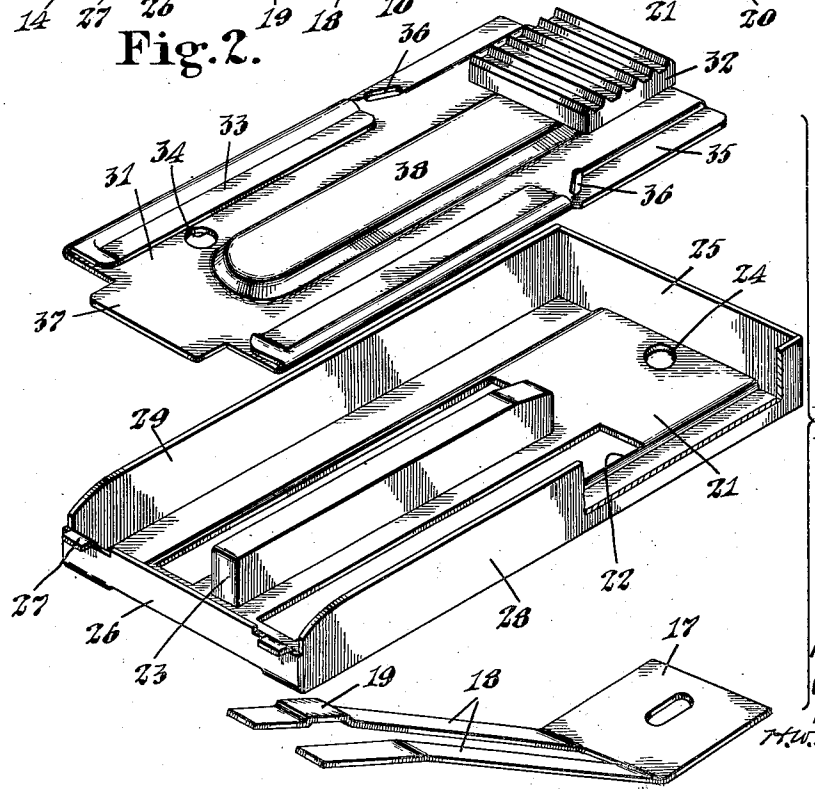

Fig.4

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BLADE MAGAZINE WITH SIGHT OPENING

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2 Claims. (Cl. 206—16)

1

This invention comprises a new and improved magazine for razor blades used in combination with safety razors, and is characterized by a novel provision for indicating to the user that the supply of fresh blades is exhausted when that occurs.

Attempts have been made heretofore to provide blade magazines in which a stack of safety razor blades is completely enclosed and safeguarded from damage by moisture or by accidental contact with the delicate structure of the shaving edges of the blades. The provision of a sight window in a magazine exposing a portion of the blade stack is in some respects inconsistent with the complete protection of the blades, since a window or opening of that sort impairs the integrity of the wrapping.

An object of the present invention is to provide a sealed magazine so constructed and organized that the user will be able readily to see when it contains a blade ready for delivery and, if no blade is available, then to have a conspicuous warning signal, by color or otherwise displayed, advising him of the fact that the magazine is empty. To this end an important feature of the invention consists in a magazine enclosure containing a blade stack maintained under pressure by spring means and held always in contact with a wall of the enclosure having a sight opening therein, the blade serving at all times to cover and seal the opening and make the enclosure of the magazine complete, and in which the spring means includes a colored or other warning area which replaces at the sight opening the last blade to be ejected. The user of the magazine of my invention therefore may see at a plance whether the magazine contains a blade ready for transfer to his razor or whether the magazine is empty.

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:

Figure 1 is a view in perspective on an enlarged scale of the complete magazine;

Fig. 2 is a corresponding view in longitudinal section on the line 2—2 of Fig. 1;

Fig. 3 is a corresponding view in cross-section on the lines 3—3 of Fig. 1; and

Fig. 4 is a view in perspective of the spring, blade tray and feed slide shown in exploded relation.

The invention is herein shown as embodied in a magazine of the general type disclosed in my co-pending application Ser. No. 628,687, filed November 15, 1945, which has matured into Patent

2

No. 2,446,715, dated August 10, 1948, that is to say, a magazine organized to remove a previously used blade from a safety razor as a part of the operation of supplying it with a fresh sharp blade. My invention, however, is not limited to that or to any specific type of magazine but is of general application and with appropriate modification of design may be adapted for handling blades of different types, all within the scope of the invention.

The illustrated magazine comprises an outer shell of rectangular contour formed of sheet metal or plastic material and comprising a bottom 10, side walls 11 and 12, and inwardly extending top flanges 13 which are separated from each other by a medial slot. These flanges 13 are shouldered so that together they form a channel in the top of the shell for the finger plate of the feed slide to be hereinafter described. The bottom 10 is extended forwardly to form a flanged receptacle 14 to receive one end of a safety razor. At an intermediate point in the top of the shell is provided a circular sight opening 15. To the inner face of the bottom of the shell is secured a leaf spring comprising a flat end portion 17 and forked forwardly and upwardly extending arms 18, the inner of which arms has a flat raised land or area 19 preferably of red or other vivid color.

The shell above described is shaped to receive a tray which may be packed by the manufacturer with blades and which provides front and rear walls for the magazine shell. The tray, as best shown in Fig. 4, comprises a bottom 21 having therein spaced longitudinal slots 22 which afford clearance for the arms 18 of the spring. Between the slots is provided an upstanding blade-locating rib 23 extending upwardly a slight distance above the plane of the inner faces of the top flanges 13. At its rear end the tray is provided with a rivet hole 24 arranged, when the parts are assembled, to register with the corresponding holes in the shell and in the end portion 17 of the spring. The tray has a rear wall 25 which completely fills the rear open end of the external shell of the magazine, and a front wall 26 which partially closes the forward end of the shell wall, leaving a clearance space or exit-slot for the blades contained therein and positioned upon the rib 23. The front wall 26 is provided with forwardly extending ears 27 which assist in locating and holding the end of the safety razor in operative relation to the magazine as a whole when the razor is presented thereto. The tray includes upstanding side walls 28 and 29 which telescope within the exterior shell as shown in Fig. 3.

The magazine as herein shown is adapted to handling safety razor blades of a well-known com-

mercial type, that is to say, double-edged blades having a longitudinal medial slot and shoulders defining elongated unsharpened end portions of reduced width. A stack of ten such blades **30** is shown as contained within the magazine, being positioned by the blade-locating rib **23** with their cutting edges maintained out of contact with the walls **28** and **29** of the tray.

The feed slide **31**, best shown in Fig. 4, has a corrugated finger plate **32** secured to its rear end and is formed with opposite inturned marginal flanges **33** on its upper surface which extend rearwardly for more than half of the length of the feed slide. A hole **34** is formed in the body of the feed slide in position to register with the hole **15** in the left-hand flange of the exterior shell. The rear portion of the feed slide is provided with downwardly shouldered longitudinal flanges **35** and forming oblique edges in each flange is a slot **36**. The feed slide, as more fully explained in my prior patent above identified, is adapted to engage upon its end surface the uppermost blade of the blade stack, the rear corners of the blade passing into the oblique slots **36**. The flanges **33** are adapted to engage a used blade within the safety razor when the feed slide passes into the latter in delivering the fresh blade and to withdraw the used blade when the feed slide is retracted. The feed slide is provided at its forward end with a pilot projection **37** of reduced width designed to pass beneath the used blade when the safety razor is presented to the receptacle **14** of the magazine. The feed slide is also provided in its upper surface with a raised medial rib **38** over which the used blade is transversely flexed when it is engaged by the marginal flanges **33**. The forward ends of the top flanges **13** are bent upwardly to form upstanding stops **39** which limit the forward movement of the feed slide by engaging the finger plate **32**.

In using the magazine above described the manufacturer fills the tray with fresh blades, locating them upon the upstanding rib **23** of the tray. The loaded tray is then inserted into the exterior shell through the open rear end of the latter and the spring, tray and shell united by a rivet **20**. The forks **18** of the spring pass freely through the slots **22** in the bottom of the tray and press the blade stack yieldingly upwardly maintaining the uppermost blade **30** therein in contact with the top flanges **13** of the shell. Consequently the uppermost blade **30** in the stack is at all times pressed against the sight opening formed by the registering holes **15** and **34**.

When the feed slide occupies its extreme right-hand position, as shown in Figs. 1 and 2, the slots **36** are brought into registration with the rear corners of the uppermost blade in the stack. Accordingly, when the feed slide is advanced toward the left the blade, which is at that time uppermost in the stack, is engaged in the slots **36** and ejected from the left-hand end of the magazine. If a safety razor has been presented to the magazine the blade will be carried to the blade seat of the razor while the pilot **37** and the body of the blade pass under the previously used blade in the razor directing it into the flanges **33**. In passing out of the magazine the rear or trailing end of the blade is flexed or bowed upwardly by the action thereon of the flanges **13** and the forward end of the rib **23**. A frictional drag is thus imparted to the advancing blade and the blade itself is stiffened by reason of its bowed contour. When the feed slide is retracted, the fresh blade is stripped from the under side of the feed slide and left in shaving position in the safety razor. At the same time the used blade is held in position on the upper face of the feed slide, being slightly bowed because its margins are held by the flanges **33** while its central section is bowed upwardly by the rib **38**. Accordingly when the feed slide is moved to the right toward its initial position the butt end of the used blade is engaged by the stops **39** and the used blade is stripped from the upper face of the feed slide. This operation may be repeated until the blade stack is completely exhausted.

When there is no longer any blade in the magazine the colored area **19** of the spring is pressed against the sight opening formed by the registering holes **15** and **34** and a warning is conspicuously displayed to the user that the magazine has been exhausted. Thus it will be seen that the hole **15** in the shell of the magazine is sealed at all times either by a blade yieldingly pressed into position beneath it or by the flat land **19** of the spring itself.

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

1. A blade magazine rectangular in contour, having a sight opening at an intermediate point in its top and containing a stack of blades, a feed slide coextensive in area with the blades, movable upon the top of the magazine from an initial position at one end to blade-delivering position adjacent to the other end thereof and having an opening which registers with the sight opening of the magazine only when the feed slide is in its initial position, and a spring pressing the blade stack upwardly into sealing relation with the said registering openings, said spring being attached at one end to the bottom of the magazine and being of sufficient length to reach the top of the magazine, said spring having a flat portion for sealing the registering openings when the magazine is empty.

2. A blade magazine of rectangular contour having a sight opening in its top, a stack of elongated blades in the magazine, a feed slide substantially coextensive in area with the blades, being mounted to slide in the cover of the magazine and having an opening registering with the sight opening of the magazine when the feed slide is in its initial position, and a spring acting to lift the blade stack and having a flat portion located in position to close the registering openings from inside the magazine when the magazine is empty.

JOSEPH MUROS.

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