

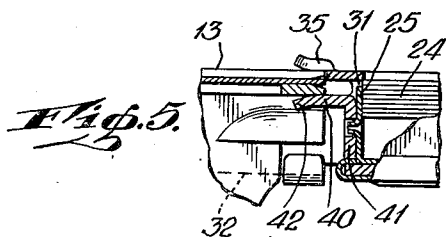
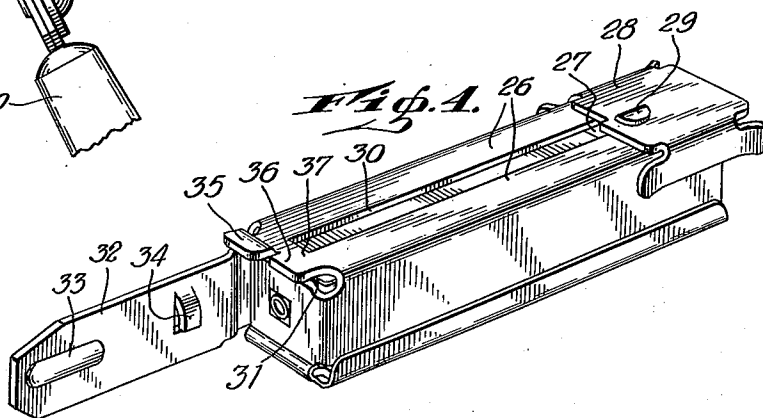
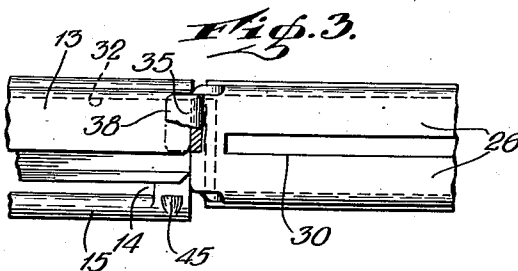
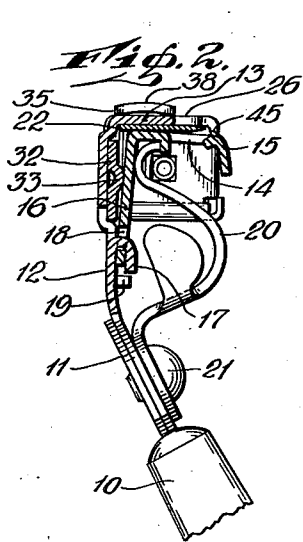
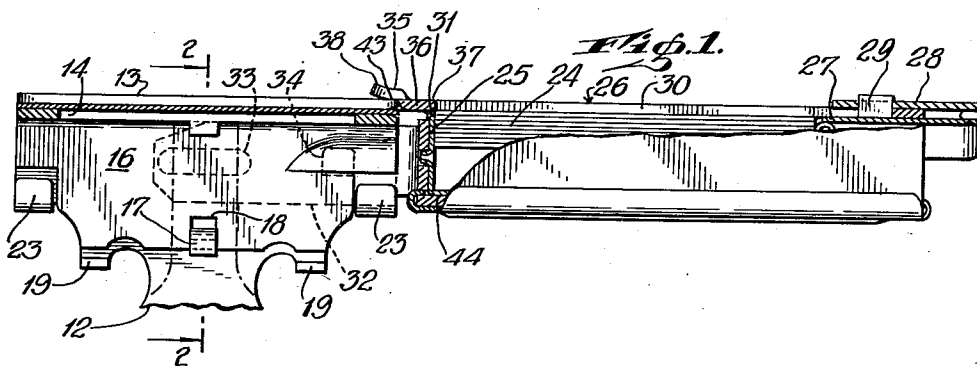
April 13, 1943.

L. KUHNL ET AL

2,316,600

BLADE MAGAZINE

Filed Sept. 11, 1941



INVENTORS
LEOPOLD KUHNL
JOHN R. REYBURN

BY *John H. Hilliard*
ATTORNEY

UNITED STATES PATENT OFFICE

2,316,600

BLADE MAGAZINE

Leopold Kuhn, Bridgeport, and John R. Reburn, Fairfield, Conn., assignors to Magazine Repeating Razor Company, New York, N. Y., a corporation of New Jersey

Application September 11, 1941, Serial No. 410,405

8 Claims. (Cl. 30—40)

The invention relates to razors of the magazine type, more particularly those in which a magazine physically separate from the razor itself is employed but which is engaged with, and properly lined up with, the razor when it is desired to insert a fresh blade in shaving position. Razors of this type are described in numerous patents and are commercially sold and used in large quantities. Among the patents which illustrate the essential characteristics above referred to are Schick No. 1,797,733 issued March 24, 1931, Rodrigues No. 1,877,429 issued September 13, 1932, and Rodrigues No. 2,111,739 issued March 22, 1938. Such a razor will presently be described in sufficient detail to illustrate its relationship to the invention.

The object of the invention is a magazine from which blades may be injected one by one into the razor head and in which provision is made for positive and accurate alignment of the blade ejection orifice with the blade retaining members of the razor. The blades in such razors are comparatively thin, usually being not more than .010" or .011" in thickness and the blade receiving passage between the blade retaining members usually being no greater in height than is sufficient to accommodate the blade. Accuracy in manufacture is therefore necessary if the blade is to properly enter the blade retaining slot in the process of ejection from the magazine. Sufficient accuracy is not however always possible and seldom practical in volume production, with the result that the blade ejection orifice of the magazine may be slightly above or slightly below the blade receiving slot in the razor. If this condition exists, the outgoing blade will abut against one or the other of the blade retaining members and its further movement will be prevented, and the outgoing blade may even override a blade already in the razor. The parts of the razor however usually have enough resiliency or slackness in them to permit slight vertical play of the aligning finger in its aligning position in the razor, which fact is taken advantage of to provide means for accurately locating the blade ejection orifice vertically so that the outgoing blade will properly enter the slot.

Referring to the drawing,

Fig. 1 is a view in elevation partly in section showing a magazine on the characteristics referred to, associated with a razor of the type described and ready for the injection of a blade;

Fig. 2 is a view on the line 2—2 of Fig. 1;

Fig. 3 is a detail plan view;

Fig. 4 is an isometric view of a magazine detached from the razor;

Fig. 5 is a view of a modification of the aligning means.

Referring to the drawing:

Figs. 1 and 2 show a razor having the structural and other characteristics that call for the use of the invention.

On the usual handle 10 is mounted a shank 11 to which is rigidly attached a back plate 12 which terminates in an upper blade clamping member 13 which is merely a right-angled extension of it. The lower blade clamping plate or platform 14 terminating in the usual guard 15 is merely a right-angled extension of the supporting plate 16. The supporting plate 16 and the back plate 12 are articulated together by the hook 17 struck in from the back plate 12 and engaging the aperture 18 in the supporting plate 16. Also a lug 19 is struck out from the back plate 12 which maintains the articulated joint.

A main spring 20 fastened to the back plate and shank by the rivet 21 bears rearwardly against the supporting plate 16 and upwardly against the blade platform 14 and normally causes the blade platform 14 to press upwardly against the top plate 13 and rearwardly toward the back plate 12, whereby a blade may be firmly clamped and forced back against the abutment 22 which is struck in from the back plate 12. Obviously as the main spring is flexed (to the right as shown in Fig. 2), the blade platform will recede from the top clamping plate and also from the abutment 22 enlarging the space sufficiently to permit a blade already therein to be ejected and a substitute blade injected. Guides 23, 23 are formed from the back plate and thus provide a measure of alignment for the magazine aligning finger as will presently appear.

The magazine (shown in Fig. 4) comprises an elongated housing of a boxlike construction in which the stack of blades 24, contained in a tray 25 is located, being pressed upwardly against the flanges 26, 26 of the housing by a spring not shown. The plunger 27 attached to the thumb piece 28 by the post 29 which operates in the slot 30 serves for ejecting the top blade (see Fig. 1) of the stack through the blade ejection orifice 31 and into shaving position in the razor head. This is done by merely grasping the thumb piece when the plunger is in fully retracted position and in abutment with the end of the top blade and driving the plunger with the blade in advance of it through the orifice.

The magazine is provided with an aligning

finger 32 which, when it is desired to inject a blade into the razor head is inserted in the space between the back plate 12 and the supporting plate 16. It is provided with a cam 33 which forces these two plates apart, as shown in Fig. 2, against the pressure of the main spring 20, thus widening the blade receiving slot and increasing its height and giving room for the incoming blade to freely enter and the blade already in the head to be easily ejected. Another cam 34 may be provided to maintain the clearance between the top clamping plate and the supporting plate.

Mention has before been made of the accuracy necessary in the alignment of the blade ejection orifice and the blade receiving slot in the razor head. The construction thus far described if sufficient precision be exercised may be made to align with sufficient accuracy. However, in manufacturing processes, the required accuracy is not feasible to attain, and so therefore the magazine is provided with an extending lug 35 which may be soldered or welded on the upper wall 36 of the magazine or may be merely an extension of it produced in blanking out and forming.

The lug is positioned with relation to the ejection orifice 37 so that, if the tendency of the aligning finger or the parts with which it co-operates is to bring the ejection orifice 37 below the blade receiving slot, the condition is corrected and the blade ejection orifice is precisely aligned with the blade receiving space in the razor head. The lug may be slightly turned upwardly as shown at 38 in order that it may exert an upwardly camming action until the ultimate precise alignment is attained. This lug functions to take care of any downward vertical misalignment of the blade ejection orifice due to inaccuracy of engagement between the aligning finger and its aligning channel in the razor head. This alignment may be due to a variety of causes, such as inaccuracy of blanking or forming of the aligning finger or of the guides 23 or of the abutment 22, or, in fact, to departure from many of the dimensions and shapes specified for correct alignment. This lug functions to take care of any downward vertical misalignment due to inaccuracy of engagement between the aligning finger and its aligning channel in the razor head. This misalignment may be due to inaccuracy of blanking or forming of the aligning finger or of the guides 23.

The foregoing described construction effects vertical alignment when the tendency of the blade ejection orifice is to drop below the blade receiving channel of the razor. The modification shown in Fig. 5 takes care of any tendency to misalignment vertically and upwardly or downwardly. The modification consists in introducing an additional lug 40 which may be formed as a right-angled extension of the end wall 41 of the housing. Like the lug 38 this lug may also be curved as shown at 42 in order to effect by a camming action easy engagement without obstruction. In order to further insure entrance of a blade into the blade receiving slot, the end edges of the top clamping plate and of the blade platform may be slightly flared outwardly as indicated at 43 and 44, respectively. The same is true of the modification of Fig. 5 as shown in that figure. In cases where the tendency is to bring the blade ejection orifice above the blade receiving slot, the lug 35 may be omitted, the lug 42 in these cases serving entirely the required purpose. In practice dimensions may be specified that will consistently have

a tendency to bring the blade ejection orifice above or below, as may be selected, the blade receiving space in the razor head so that a single lug used will correct the selected tendency in accordance with the principles above explained.

After the fresh blade has been injected into the razor, the aligning finger 32 is withdrawn, whereupon the top blade clamping member 13 and the blade platform 14 close together until the blade is securely clamped between them and the stops 45 (of which only one is shown) bear against the cutting edge of the blade and the heel of the blade bears against the abutment 22.

While I have described a certain particular construction in which my invention is incorporated, I do not desire to be limited to this particular embodiment since many changes and modifications may easily be made without departing from the spirit and scope of the invention as set forth in the following claims.

We claim:

1. The combination of a razor comprising two blade clamping members, with a blade magazine having a blade ejection orifice and means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, means on the magazine for attaching it to the razor, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the said space, said means comprising a lug positioned and adapted to engage one of the clamping members when the attaching means is in attaching relation to the razor and to locate the said orifice in alignment with said space.

2. The combination of a razor comprising two blade clamping members with a blade magazine having a blade ejection orifice and means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, means on the magazine for insertion between the clamping members to separate them, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the said space, said means comprising a lug positioned and adapted to engage one of the clamping members when the aligning finger is in attaching relation to the razor and to locate the said orifice in alignment with said space.

3. The combination of a razor comprising two blade clamping members with a blade magazine having a blade ejection orifice and means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, means on the magazine for separating the blade clamping members, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the said space, said means comprising a lug positioned and adapted to co-act with one of the clamping members to cam the magazine into a position where the blade ejection orifice is in alignment with the said space.

4. The combination of a razor comprising two blade clamping members yieldingly separable, with a blade magazine having a blade ejection orifice, means on the magazine for insertion between the clamping members to separate them for the reception of a blade, means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the space between the

clamping members, said means comprising a lug positioned and adapted to overlie one of the clamping members when the separating means is inserted in said space and to locate the magazine in a position at which the blade ejection orifice is in alignment with the said space.

5. The combination of a razor comprising two blade clamping members yieldingly separable, with a blade magazine having a blade ejection orifice, an aligning finger on the magazine for insertion between the clamping members to separate them for the reception of a blade, means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, and also additional aligning means on the magazine for insuring accurate alignment of the blade ejection orifice with the space between the clamping members, said means comprising a lug positioned and adapted to overlie one of the clamping members when the aligning finger is inserted between the clamping members to separate them, and to accurately locate the magazine in a position at which the blade ejection orifice is in alignment with the said space.

6. The combination of a razor comprising two blade clamping members with a blade magazine having a blade ejection orifice, and means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, means on the magazine for insertion between the clamping members to separate them, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the space between the blade clamping members, said means comprising two lugs positioned and adapted to engage the clamping members when the insertion means is in attaching relation to the razor

and to locate the said orifice in accurate alignment with said space.

7. The combination of a razor comprising two blade clamping members yieldingly separable, with a blade magazine having a blade ejection orifice, means on the magazine for insertion between the clamping members to separate them for the reception of a blade, and means for injecting blades from the magazine one by one through the blade ejection orifice into the space between the clamping members, and also means on the magazine for insuring accurate alignment of the blade ejection orifice with the space between the clamping members, said means comprising two lugs positioned and adapted to engage the clamping members when the separating means is inserted in said space, and to locate the magazine in a position at which the blade ejection orifice is in alignment with the said space.

8. A razor blade magazine provided with a blade ejection orifice and means for ejecting blades one by one through said orifice, an aligning finger projecting from the magazine and adapted to be inserted between the blade clamping members of a razor to separate them for the insertion of a blade, and means for insuring accurate alignment of the blade ejection orifice with the space between the clamping members when separated, said means comprising a lug also projecting from the magazine and positioned and adapted to engage one of the clamping members when the aligning finger is inserted between them and to locate the magazine in a position at which the blade ejection orifice is in alignment with the space between them.

LEOPOLD KUHN.
JOHN R. REYBURN.