

March 28, 1944.

S. H. BENJAMIN

2,344,962

UNITARY BLADE MAGAZINE AND BLADE MAGAZINE HOLDER

Filed July 22, 1941

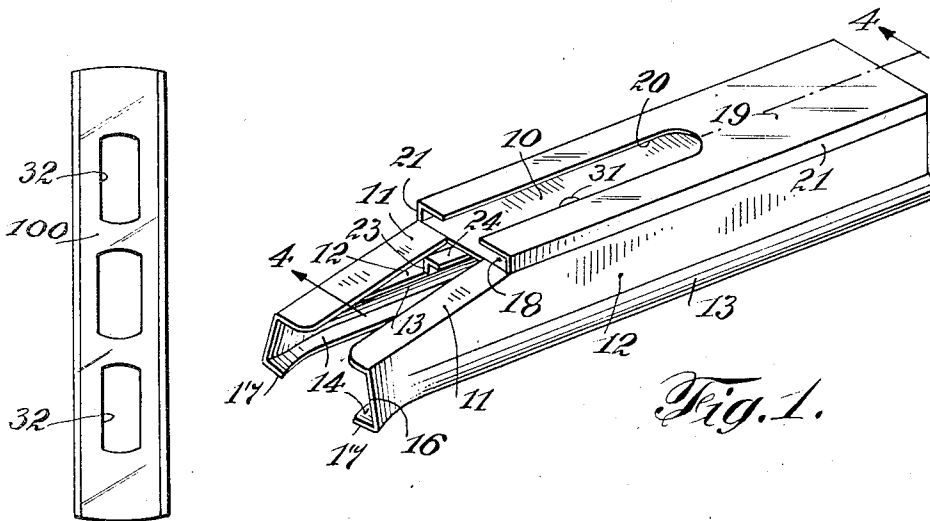


Fig. 1.

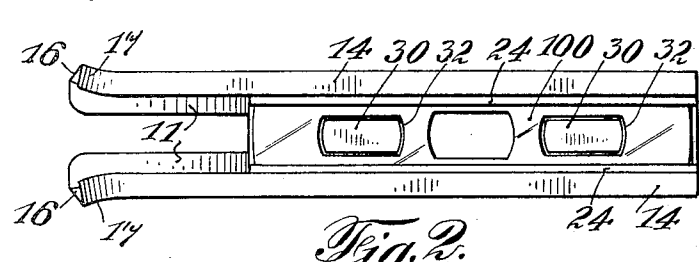


Fig. 2.

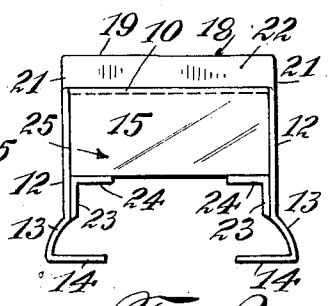


Fig. 3.

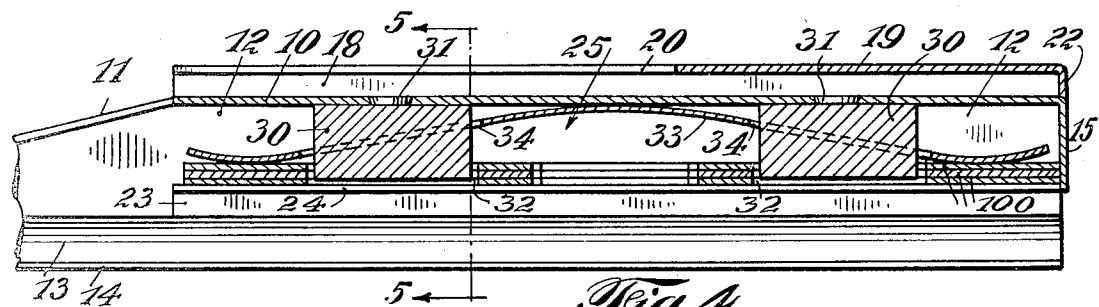


Fig. 4.

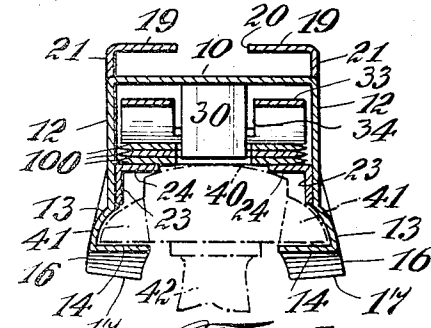


Fig. 5.

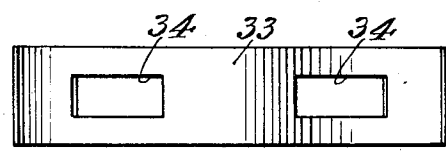


Fig. 6.

INVENTOR.

BY *Sidney H. Benjamin*  
*Morse Benjamin*  
ATTORNEY

# UNITED STATES PATENT OFFICE

2,344,962

## UNITARY BLADE MAGAZINE AND BLADE MAGAZINE HOLDER

Sidney H. Benjamin, Milwaukee, Wis.

Application July 22, 1941, Serial No. 403,483

4 Claims. (Cl. 206—16)

My invention relates to a combined, or unitary, razor blade magazine and razor blade magazine holder and refers particularly to devices of the described character adapted for the removal of razor blades from razor head elements and for depositing razor blades thereon, these results being obtained simultaneously, or independently, of each other.

One object of my invention are devices adapted to remove blades from safety razors and deposit blades thereon without contact between the blades and the hand of the operator.

Another object of my invention is a unitary construction adapted to carry a plurality of razor blades with means for allowing the withdrawal of a single blade therefrom while retaining the remainder of the blades within the device.

Another object of my invention is a unitary device adapted to carry a plurality of razor blades with means for allowing the withdrawal of a single blade therefrom while retaining the remainder of the blades within the device and means adapted to co-operate with razor heads to allow of the removal of a blade therefrom.

Another object of my invention is a unitary device adapted to carry a plurality of razor blades with means for allowing the withdrawal of a single blade therefrom while retaining the remainder of the blades therein and means adapted to co-operate with razor heads to allow of the deposit of a blade thereon.

The above, and other, new and valuable attributes of the devices of my invention, will be evident upon a consideration of my specification and its accompanying drawing.

Safety razors have been suggested from which properly positioned blades are practically impossible of removal without the assistance of special devices, the successful operation of which is dependent upon their special construction in consideration of the construction of the razor with which they are to co-operate.

The devices of my invention are of unitary construction and comprise a blade magazine adapted to contain a plurality of stacked razor blades, allowing the withdrawal of a single blade therefrom while retaining the remainder of the blades within the magazine, in combination with a blade magazine holder adapted to guide my devices in longitudinal movement over the face of a razor head element and to allow blade withdrawal means of said razor head element to withdraw a single blade from said magazine and deposit it upon said razor head element during said longitudinal movements, and further, to al-

low of the withdrawal of a previously deposited blade during said longitudinal movements, if desired.

In the accompanying drawing, illustrating one form of the devices of my invention, similar parts are designated by similar numerals.

Figure 1 is a perspective view of one form of a device of my invention.

Figure 2 is a bottom view of the device of Figure 1.

Figure 3 is an enlarged rear end view of the device of Figure 1.

Figure 4 is an enlarged section through the line 4—4 of Figure 1.

Figure 5 is a section through the line 5—5 of Figure 4, the position of a razor head element in co-operating position with my device being indicated in dot-and-dash lines.

Figure 6 is a top plan view of the spring element of my device.

Figure 7 is a top plan view of a razor blade adapted for use with my described device.

The particular form of a combined razor blade magazine and razor blade magazine holder of my invention illustrated in the accompanying drawing comprises a casing having a top member 10, which is extended forwardly into the two spaced inclined blade guide members 11, 11, two side members each having a vertical member 12, which is extended outwardly and downwardly forming a curved guide member 13, and thence inwardly forming a bottom member 14, the two bottom members, thus formed, being spaced longitudinally of each other, and an end member 15. The forward end portions 16, 16 of the side members 13, 13 are flared slightly outwardly from each other, and the forward end portions 17, 17 of the bottom members 14, 14 are flared slightly downwardly. A used blade-receiving chamber 18 is formed by the top member 19, having a longitudinal recess 20, the side member 21, 21 and the end member 22, the recess 20, however, not being an essential element of the device.

Fixedly attached to the inner face of each side wall 12, and at the lower part thereof, is an elongated angular member having the sides 23 and 24, the latter of which are spaced from each other and form a blade magazine compartment 25 with the sides 12, 12 and the top 10.

While I have shown the guide members 11, 11 as spaced from each other, they may be a single piece, if desired.

The construction of the blade magazine portion of the above described blade magazine holder

comprises two downwardly extended blade positioning studs 30, 30 attached to the top member 10 by means of rivets 31, 31. These studs 30, 30 are adapted to pass through openings 32, 32 in a stack of razor blades 100, 100, in order to maintain them in exact superimposed positions, and are spaced from the bottom members 24, 24 by the thickness of one of such blades.

The blades 100, 100 are forced downwardly toward the bottom members 24, 24 with the outermost blade abutting thereon, by means of a flat spring 33, the studs 30, 30 passing through the openings 34, 34 of the spring 33.

It will thus be seen that means may be employed whereby the outermost blade 100 may be withdrawn forwardly from the magazine and the magazine holder, while the studs 30, 30 will retain the remainder of the stacked blades 100, 100 within the magazine, and that, upon such withdrawal, the spring 33 will abut the then outermost blade 100 for a repetition of the withdrawal performance.

The operating mechanism for the withdrawal of a blade from the blade magazine and the magazine holder is not an element of the devices set forth in this application, but is an element of a razor head with which the described devices are adapted to operate.

The mechanism covered by a razor head adapted to remove a previously deposited blade, deposit a new blade, or both, is of various constructions, and, as it is not a part of this invention, it is described only in a general way in order to indicate the operations of the elements of the combined blade magazines and magazine holders of my invention.

The devices of my invention are adapted to co-operate with razors in which the mechanism adapted for the purposes described operates upon a longitudinal movement of the razor head and of my devices with respect to each other. In order to accomplish this, the razor head carries at least one extended stud capable of being inserted within an opening in the outermost blade carried by the blade magazine, the construction being such that the stud is withdrawn from its extended position during one directional longitudinal movement of the device, thus allowing the free passage of the blade magazine to deposit the outermost blade above the said stud, and that, when so deposited, the stud will be extended into the opening of said blade. It is evident, therefore, that upon a reverse longitudinal movement, during which my device is withdrawn from contact with the razor, the outermost blade will be retained on the razor head, while the remainder of the blades in the magazine will be retained therein for a repetition of such blade withdrawal performance.

The mechanism may also be so constructed, if desired, that the withdrawal of the blade magazine will carry with it a previously deposited blade.

It is evident that, as a blade must be in a precise position upon the razor head in order that an opening in the blade will allow of the introduction of a razor head stud, guiding means must be supplied to insure an exact longitudinal movement of the razor head element and the magazine during the co-operation of these two devices and such means are a particular feature of my devices of this application.

The co-operating guiding elements of my described devices and a guard element of a razor

head are shown in Figure 5, in which a vertical cross-section of a guard element of a razor head is shown in dot-and-dash lines.

The illustrated guard element is a part of a generally known safety razor and comprises the slightly convex body member 40, having a plurality of downwardly extended teeth 41, 41 upon each side thereof, and a handle 42.

It will be noted that when the razor guard and my devices are in position for longitudinal movements with respect to each other, the guide elements 24, 24 abut upon opposite sides of the top 40 of the guard, and the guide members 13, 13 of my device abut upon the teeth 41, 41 upon opposite sides of the guard, thus preventing any side movements between the guard and my device.

It will also be noted that the bottom members 14, 14 of my device are parallel with the lower faces of the teeth 14, 14 of the guard, and are separated therefrom by a distance just sufficient to allow the two elements to move easily with respect to each other, and hence, a vertical movement between the guard and my device is practically impossible.

It will thus be seen that the guide elements of my devices will maintain it in a longitudinal position upon the guard of a razor during their longitudinal movement with respect to each other.

As in some razors the guard member consists of a bar spaced from the body of the razor instead of a plurality of teeth, as described, by the words "guards" or "guard elements," I mean both such bar guards and such teeth guards.

While I have described the application of my devices to the form of razor illustrated, I wish to be understood that I do not limit the application of my devices to that particular form of razor, which is shown and described simply for the purpose of explaining the operation of my devices with safety razors.

It will thus be seen that my invention presents devices comprised of a blade magazine adapted to contain a plurality of stacked blades from which one blade may be withdrawn while the remainder are retained within the magazine, said magazine being a unitary part of a blade magazine holder adapted to co-operate with a razor head element to allow and insure a longitudinal movement of my devices and the razor head element, and to position a blade within said magazine upon a razor head element, and allow blade withdrawal mechanism of the razor head element to withdraw a single blade from said magazine.

I do not limit myself to the size, shape, number, arrangement or material of parts as shown and described, as these are given simply for the purpose of clearly describing my invention.

What I claim is:

1. A device of the character described comprising a casing having a bifurcated top member the forward portion of which is extended downwardly forming two spaced blade guiding members; two side members, the lower portions of which are flared outwardly; a bottom member comprising two longitudinally spaced members extending inwardly from its forward end; a horizontal partition comprising two spaced members extending inwardly from its forward end and positioned between said top member and said bottom member forming a blade compartment; at least one blade positioning stud carried by said top member and extending downwardly into said blade compartment to within the thickness of a blade from said compartment bottom member.

and a resilient member adapted to be normally in resilient abutment upon said compartment bottom member.

2. A device of the character described comprising a casing having a bifurcated top member the forward portion of which is extended downwardly forming two spaced blade guiding members; two side members the lower portions of which are flared outwardly; a bottom member comprising two longitudinally spaced members extending inwardly from its forward end; a horizontal partition comprising two spaced members extending inwardly from its forward end and positioned between said top member and said bottom member forming a blade compartment; at least one blade positioning stud carried by said top member and extending downwardly into said blade compartment to within the thickness of a blade from said compartment bottom member, and a resilient member adapted to be normally in resilient abutment upon said compartment bottom member, said blade positioning studs passing through openings in said resilient member.

3. A device of the character described comprising a casing having a bifurcated top member the forward portion of which is extended downwardly forming two spaced blade guiding members; two side members, the lower portions of which are flared outwardly; a bottom member comprising two longitudinally spaced members extending inwardly from its forward end, the forward ends of said spaced members being inclined downwardly; a horizontal partition comprising two spaced members extending inwardly from its

forward end and positioned between said top member and said bottom member forming a blade compartment; at least one blade positioning stud carried by said top member and extending downwardly into said blade compartment to within the thickness of a blade from said compartment bottom member, and a resilient member adapted to be normally in resilient abutment upon said compartment bottom member.

4. A device of the character described comprising a casing having a bifurcated top member the forward portion of which is extended downwardly forming two spaced blade guiding members; two side members, the lower portions of which are flared outwardly; a bottom member comprising two longitudinally spaced members extending inwardly from its forward end; the forward ends of said spaced members being inclined downwardly; a horizontal partition comprising two spaced members inwardly from its forward end and positioned between said top member and said bottom member forming a blade compartment; at least one blade positioning stud carried by said top member and extending downwardly into said blade compartment to within the thickness of a blade from said compartment bottom member, a resilient member said blade positioning studs passing through openings in said resilient member adapted to be normally in resilient abutment upon said compartment bottom member and a blade receiving compartment above said top member having an open forward end.

SIDNEY H. BENJAMIN.