May 14, 1940. S. H. BENJAMIN 2,200,530

SAFETY RAZOR HEAD ELEMENT

Filed May 4, 1939 2 Sheets-Sheet 1

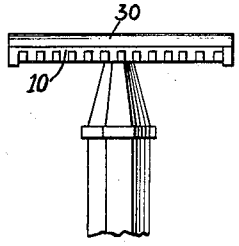

FIG.1.

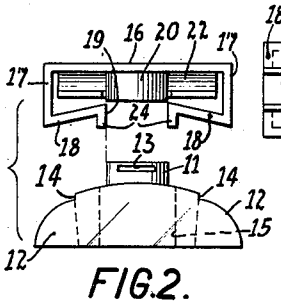

FIG.2.

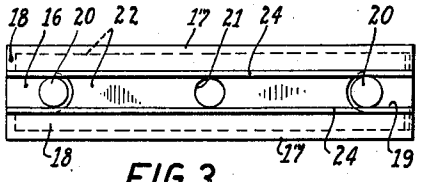

FIG.3.

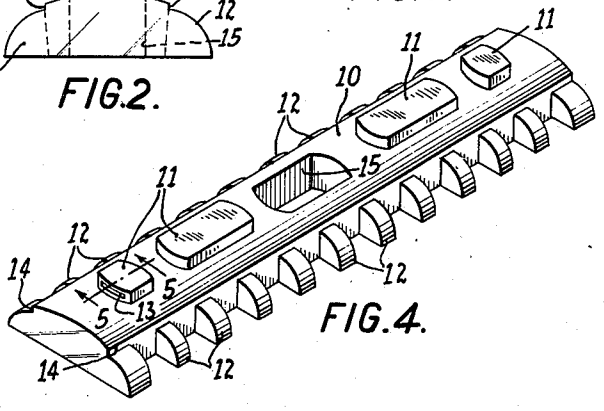

FIG.4.

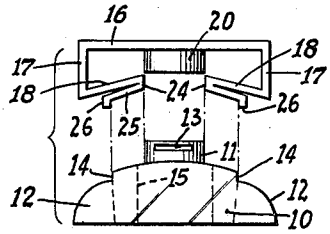

FIG.6.

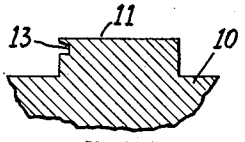

FIG.5.

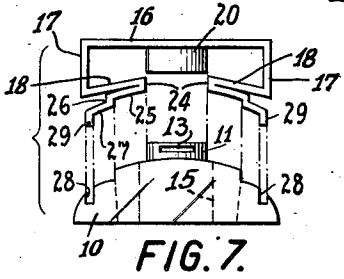

FIG.7.

FIG.8.

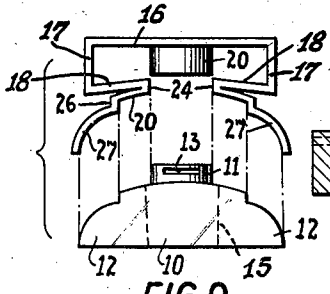

FIG.9.

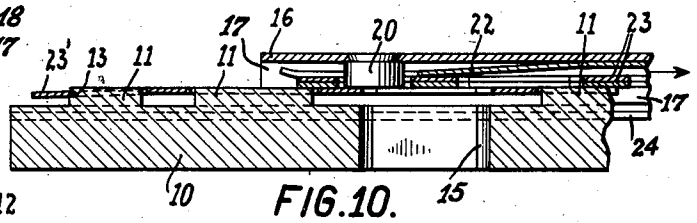

FIG.10.

INVENTOR
SIDNEY H. BENJAMIN
BY
HIS ATTORNEY

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SAFETY RAZOR HEAD ELEMENT

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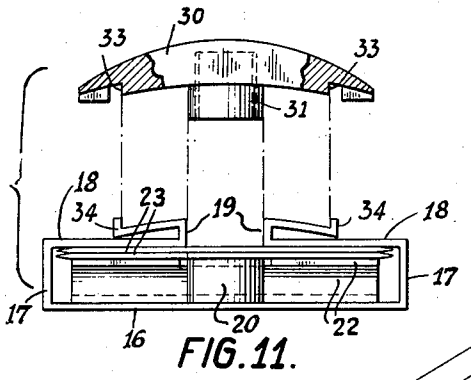

FIG. 11.

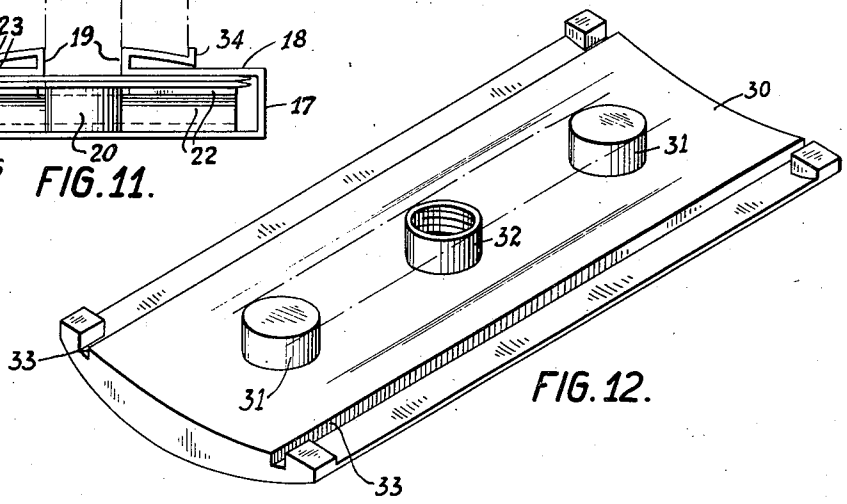

FIG. 12.

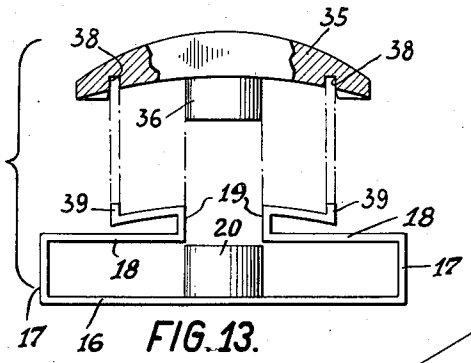

FIG. 13.

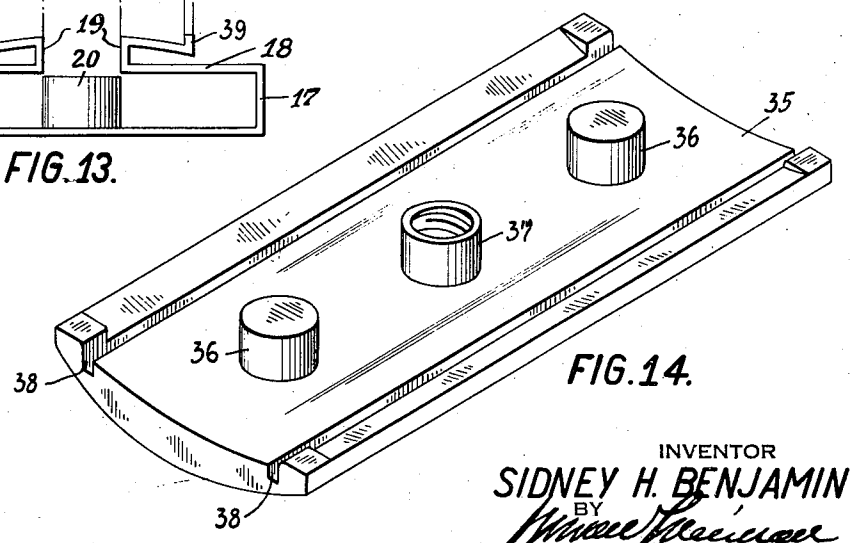

FIG. 14.

INVENTOR
SIDNEY H. BENJAMIN
BY
HIS ATTORNEY

Patented May 14, 1940 2,200,530

UNITED STATES PATENT OFFICE

2,200,530

SAFETY RAZOR HEAD ELEMENT

Sidney H. Benjamin, Milwaukee, Wis.

Application May 4, 1939, Serial No. 271,699

8 Claims. (Cl. 30—40)

My invention relates to new and improved head elements for safety razors and refers particularly to devices of this character adapted for the effective placement of razor blades thereon.

In the present generally employed method for placing blades upon the head elements of a safety razor it is necessary to manually handle the blade, thus frequently resulting in cutting the fingers, especially where two edged blades are necessary.

It is evident, therefore, that it would be of very considerable value, if this danger could be eliminated, and the blade deposited upon the required head elements without the danger of subjecting the fingers to contact with the blade edge.

One of the objects of my invention is means whereby safety razor blades may be deposited upon either head element of a safety razor without actual contact between the fingers of the user and the blade, or with such contact that there is no danger of cutting the fingers.

In my specification, description of the accompanying drawings and claims, in referring to the head elements of a safety razor, I mean both the cap and the guard between which the blade is maintained, as the devices of my invention can be employed upon either of these elements which carries the extended studs or other extended portions for positioning the blades thereon.

In the accomplishment of my result, I employ a magazine adapted to contain a plurality of stacked razor blades having a plurality of openings therethrough, the magazine being so constructed that it will allow of the withdrawal of a single blade while the remainder of the blades will be maintained within the magazine.

In the operation of my magazine it is preferable that a portion of a blade be ejected therefrom, the openings in the ejected portion of the blade be positioned upon the extended blade positioning projection, or projections, of the razor head element and the remainder of the blade be withdrawn from the magazine by moving the latter in a direction away from the thus anchored portion, and it will be noted by this method of depositing the blade upon the head element the danger of cutting the fingers is obviated.

It will be noted, however, that unless this movement of the magazine is in exact alignment with the longitudinal axis of the head element there is a possibility of the edge of the blade contacting the side of the magazine, thus dulling or injuring it.

In order to overcome this possible objectional action upon the blade edge, my magazine carries a plurality of longitudinally positioned extended guide elements adapted to co-act with guide elements carried by the head element, whereby this direct alignment movement of the magazine with respect to the longitudinal axis of the head element is assured.

It is evident that in order to obtain this desired movement the head element must have guiding members to so co-act with the magazine and this present application is directed to razor head elements of such construction.

It will be further noted upon a consideration of my specification that such guide members may be of various constructions, including projections, shoulders, or recesses, dependent upon the particular character of the guide members of the magazine, and by the words "guide member" used in my specification, description of the accompanying drawings and claims, I mean a member adapted to co-act with a blade magazine to direct the movement of the latter, when applied to the razor head element and moved thereon, in the direction of the longitudinal axes of the razor head element.

In the accompanying drawings illustrating modified forms of the devices of my invention similar parts are designated by similar numerals.

Figure 1 is a fragmentary side view of a safety razor showing the head elements, a cap and a guard, and a handle.

Figure 2 is an exploded end view of the blade magazine of Figure 3 superimposed over the guard of my invention shown in Figure 4.

Figure 3 is a top plan view of a blade magazine adapted for application to safety razor head elements of my invention.

Figure 4 is a perspective view of one form of a safety razor head element of my invention.

Figure 5 is a section through the line 5—5 of Figure 4.

Figure 6 is an exploded end view of the blade magazine of Figure 10 superimposed over the guard of my invention shown in Figure 4.

Figure 7 is an exploded end view of a modified form of the blade magazine superimposed over the head element of my invention shown in Figure 8.

Figure 8 is a perspective view of a modified form of a safety razor head element of my invention.

Figure 9 is an exploded end view of a modified

form of blade magazine superimposed over the head element of Figure 4.

Figure 10 is a fragmentary vertical section of the safety razor head element shown in Figure 4, with the magazine shown in Figure 6 partly withdrawn from contact therewith, and showing a blade partly withdrawn from the magazine.

Figure 11 is an exploded end view of the razor head element of Figure 12 superimposed over a blade magazine adapted to operate therewith.

Figure 12 is a perspective view of the head element of Figure 11.

Figure 13 is an exploded end view of the razor head element of Figure 14 superimposed over a blade magazine adapted to operate therewith.

Figure 14 is a perspective view of the head element of Figure 13.

One form of a safety razor head element is shown in Figures 4 and 5 in which the head element is a guard 10 of a safety razor having the extended blade positioning members 11, 11, 11 and the teeth 12, 12, 12. Each end positioning member 11 has a recess 13 in its outwardly exposed side for purposes to be described later. The guard 10 has also a shoulder 14 upon each side thereof and a centrally positioned opening 15.

The razor blade magazines suitable for adaptation to the several modifications of the razor head elements shown in the accompanying drawings are of the same construction except as to their particular extended guide members adapted to co-operate with guide members of the head elements to withdraw a blade from the magazine.

The general construction of a safety blade magazine adapted for my described and claimed device is shown in Figures 3 and 6. This magazine has the bottom member 16, the two side members 17, 17 and the two parallel spaced top members 18, 18 thus producing a longitudinally shaped opening 19. The bottom carries two extended studs 20, 20 and has a central opening 21. A leaf-spring 22 presses all of the stacked razor blades 23, 23 upwardly against the inner face of the top members 18, 18. The retaining studs 20, 20 are of such length as to pass through openings in all of the stacked blades 23, 23 except the upper most one, thus allowing the latter to be withdrawn from the magazine while the studs retain the remainder within the magazine.

From a consideration of the above, it will be seen that when the magazine is reversed and placed upon the guard of Figure 4, the positioning studs of the guard 10, will extend through the longitudinal opening 19 of the magazine and through the openings of the top razor blade and that therefore a longitudinal movement of the guard and the magazine will remove the top blade from the magazine while at the same time it is properly positioned upon the guard without contact with the fingers of the operator.

This operation is clearly shown in Figure 10, in which the magazine has been partly withdrawn from contact with the guard. It will be seen that as the magazine was moved toward the right, the top blade 23' became anchored within the recess 13 of the guard stud 11, the continuation of the moving causing the entire blade to be withdrawn from the magazine while being positioned upon the guard.

It is evident that during this withdrawn operation of a blade, the continued movement of the head element and the magazine must be retained in the direction of the longitudinal axis of these two members, as otherwise a deviation of movement from this axis will cause the cutting edge of the blade to contact the inner face of the magazine.

One of the objects of my invention, therefore, is safety razor head elements, both the cap and the guard, of such construction that they possess guide means adapted to co-act with guide means carried by a blade magazine to maintain a longitudinal movement between the head element and the magazine during the entire withdrawal operation of a blade from the magazine and its deposition upon the head element.

Figure 2 is an end view of the magazine shown in Figure 3 to co-act with the head element shown in Figure 4. In this form of a magazine the top members 18, 18 are extended outwardly forming the guide members 24, 24, which will abut upon the studs 11, 11 of the head element 10, thus insuring longitudinal movement of the two during the blade withdrawal operation.

In the form of magazine shown in Figure 6, the guide members 24, 24 will abut upon the studs 11, 11, and the guide members 26, 26 will abut upon the shoulders 14, 14 of the head element 10 during the blade withdrawal motion.

In the form of magazine shown in Figure 9, the guide members 24, 24 will abut upon the studs 11, 11, the guide members 26, 26 will abut upon the shoulders 14, 14 and the guide members 27, 27 will abut upon the teeth 12, 12 of the guard 10.

The guard of my invention shown in Figure 8 is similar to that shown in Figure 4 except that there is a plurality of aligned recesses 28, 28 within the teeth, within which the guide members 29, 29 of the magazine shown in Figure 7 will pass during the blade withdrawal operation.

The modified form of my device shown in Figures 11 and 12 comprises a safety razor head cap 30, having the blade positioning extended members 31, 31 and the interiorally threaded member 32 for the insertion of a handle. The cap is so constructed as to have a shoulder 33 on each side thereof upon which the guide members 34, 34 of the magazine will abut and move during the blade withdrawal operation.

The modified form of my device shown in Figures 13 and 14 comprises a safety razor head cap 35 having the blade positioning extended members 36, 36 and the interiorally threaded member 37 for the insertion of a handle. The cap is so constructed as to have a longitudinal recess 38 on each side thereof within which the guide members 39, 39 of the magazine will move during the blade removal operation.

It will thus be seen that the device of my construction comprises a safety razor head element, including both the cap and the guard, adapted to withdraw a razor blade from a magazine containing a plurality of such blades while at the same time co-acting with guide members of the magazine to insure longitudinal movement of the magazine and head element during such blade removal.

It will be noted that an independent movable ejecting means carried by the magazine is not necessary in the withdrawal of a blade from a magazine by my head element, the withdrawal being accomplished by simply contacting a blade magazine with my razor head element and moving them longitudinally with respect to each other.

I do not limit myself to the specific size, shape, number or arrangement of parts as shown and described as these are mentioned solely for the

purpose of clearly describing the devices of my invention.

What I claim is:

1. A device of the character described comprising a safety razor head element having spaced longitudinally positioned head guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guide walls, the head guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head element and said magazine in longitudinal alignment during a longitudinal movement of said head element and said magazine with respect to each other and means carried by said head element removing a single blade from said magazine during said movement.

2. A device of the character described comprising a safety razor head cap element having spaced longitudinally positioned head cap guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head cap guide walls, the head cap guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head cap element and said magazine in longitudinal alignment during a longitudinal movement of said head cap element and said magazine with respect to each other and means carried by said head cap element removing a single blade from said magazine during said movement.

3. A device of the character described comprising a safety razor head guard element having spaced longitudinally positioned head guard guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guard guide walls, the head guard guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head guard element and said magazine in longitudinal alignment during a longitudinal movement of said head guard element and said magazine with respect to each other and means carried by said head guard element removing a single blade from said magazine during said movement.

4. A device of the character described comprising a safety razor head element having spaced longitudinally positioned outwardly extended head guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guide walls, the head guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head element and said magazine in longitudinal alignment during a longitudinal movement of said head element and said magazine with respect to each other and means carried by said head element removing a single blade from said magazine during said movement.

5. A device of the character described comprising a safety razor head element having spaced longitudinally positioned recessed head guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guide walls, the head guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head element and said magazine in longitudinal alignment during a longitudinal movement of said head element and said magazine with respect to each other, and means carried by said head element removing a single blade from said magazine during said movement.

6. A device of the character described comprising a safety razor head cap element having spaced longitudinally positioned recessed head cap guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head cap guide walls, the head cap guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head cap element and said magazine in longitudinal alignment during a longitudinal movement of said head cap element and said magazine with respect to each other, and means carried by said head cap element removing a single blade from said magazine during said movement.

7. A device of the character described comprising a safety razor head guard element having spaced longitudinally positioned outwardly extended head guard guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guard guide walls, the head guard guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head guard element and said magazine in longitudinal alignment during a longitudinal movement of said head guard element and said magazine with respect to each other, and means carried by said head guard element removing a single blade from said magazine during said movement.

8. A device of the character described comprising a safety razor head guard element having spaced longitudinally positioned recessed head guard guide walls; a safety blade magazine having a plurality of stacked blades therein; magazine guide walls carried by said magazine co-operating with said head guard guide walls, the head guard guide walls and the magazine guide walls being substantially equally spaced from each other and maintaining said head guard element and said magazine in longitudinal alignment during a longitudinal movement of said head guard element and said magazine with respect to each other, and means carried by said head guard element removing a single blade from said magazine during said movement.

SIDNEY H. BENJAMIN.