

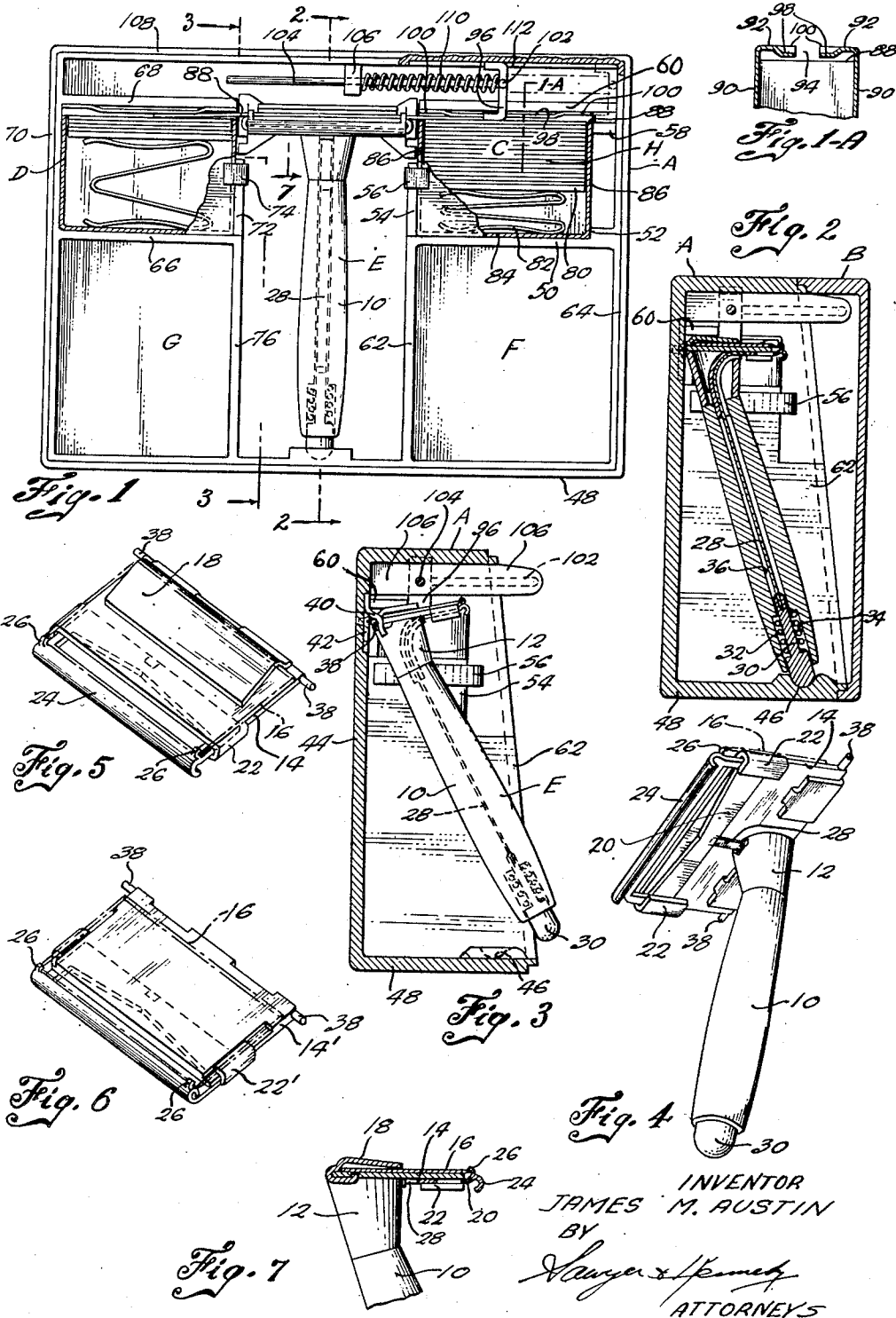
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RAZOR AND BLADE CHANGER

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RAZOR AND BLADE CHANGER

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This invention relates to improvements in razors and blade changers therefor.

It is an object of the invention to provide a case including means for discharging a used blade from a razor and reloading the same.

A further object of the invention is to provide an improved form of razor blade magazine.

A still further object of the invention is to provide an improved form of automatic loading safety razor.

In the drawing:

Figure 1 is a view of a case embodying the invention in a preferred form, the cover being removed;

Figure 1-A is a detail view of the magazine shown in Figure 1;

Figure 2 is a section on the line 2—2 of Figure 1, the cover being in place;

Figure 3 is a section on the line 3—3 of Figure 1, showing the razor in position for insertion in the case;

Figure 4 is a perspective view of the razor;

Figure 5 is a perspective view showing details of the razor head;

Figure 6 is a view similar to Figure 5, showing a modified form of head; and

Figure 7 is a section on the line 7—7 of Figure 1.

It has been proposed to provide razor blade magazines which are capable of discharging the used blade of a razor and of inserting a new blade, the razor being held in one hand and the magazine in the other. Such devices make no provision for disposing of the used blades. It has also been proposed to discharge a used blade into a receptacle provided for that purpose while simultaneously loading a new blade. However, in such devices, the user has been required either to hold the razor in position during the blade exchange, with accompanying uncertainty in the positioning of the parts, or to disassemble the razor or realign its parts in different positions from those normally occupied in use, prior to positioning the same in the blade loading device.

The present invention contemplates the provision of a case which may also form the package in which a razor, blades, and other articles are marketed, and which incorporates means for holding a magazine of new blades and a magazine for receiving used blades, together with means for holding the razor in position for reloading and operating mechanism for ejecting the old blade and inserting a new one.

In the drawing there is shown a case A having a cover B and provided with means for holding a new blade magazine C and reject magazine D, a razor E and operating mechanism for ejecting a used blade into the magazine D and inserting a new blade from the magazine C, these parts being positioned and interrelated as hereinafter described.

The razor E comprises a handle 10 having a head portion 12, to which is attached a blade support 14 on which the blade 16 lies, being held thereon by an upper spring member 18. A guard plate 20 is slidably mounted under the blade rest 14, being held in position thereunder by means of the guide members 22, which are bent under as indicated. The guard 20 has a curved face-engaging edge 24 and an upwardly extending pair of blade-engaging projections 26. The guard is yieldingly pulled back against the blade 16 by means of a strap 28 which extends through an opening in the handle head 12 and connects toward the end of the handle with a plunger 30, which is forced outwardly by means of a spring 31, accommodated with a bore 34 in the handle. Bore 36 accom-

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modates the strap 28 and also serves to keep the plunger 30 in alignment.

The blade rest 14 is formed with a pair of lateral projections such as the pins 38 for positioning the razor in the case A. In placing the razor in the case, it is inserted in the approximate position indicated in Figure 3, being moved upwardly and rearwardly to press the pins 38 under a pair of projecting tongues 40, formed on a plate 42 secured to the rear wall 44 of the case. The razor is now pressed back within the case until it assumes the position of Figure 2. The end of the plunger 30 will meanwhile be pressed into the razor against the pressure of spring 32 and will ultimately be seated in a concave depression 46 formed in the bottom wall 48 of the case, as shown in Figure 2. Pins 38 being thus pressed upwardly under the tongues 40, will hold the razor in a definitely fixed position. In this position, the compression of the plunger 30 into the handle will force the guard 20 outward slightly (to the right in Figures 2, 3 and 7) thus freeing the edge of the blade in preparation for discharge of the used blade and the insertion of a new one. The slidable mounting of the guard member 20 may be provided for in any convenient manner. For example, as shown in the modified structure of Figure 6, projections 22' extending outwardly from the guard member may be turned over and seat in grooves at the edges of the blade support 14', the parts being otherwise the same as in the construction of Figure 5.

To either side of the razor position the case A is formed with means for holding the new blade magazine C and used blade magazine D.

As best shown in Figures 1, 2 and 3, a shelf 50, having a shoulder 52, as shown in Figure 1, supports the new blade magazine C, which is further held in position by partition wall 54 and snap spring 56 and by abutment 58 and upper ledge 60. Below the shelf 50 the downward continuation 62 of the partition wall 54, together with the bottom wall 48 of the case, shelf 50 and side wall 64, forms a compartment or space F which may be utilized for holding shaving lotion, shaving soap or any other suitable toilet articles.

The used blade magazine D is similarly supported on a shelf 66, being held in proper position by the shelf 66 and by upper ledge 68, side wall 70 of the case, partition wall 72 and snap spring 74. A compartment G is formed by partition wall 76 and the other elements shown, and may also be used for holding shaving lotion, shaving soap or any other desired articles, as in the case of compartment F.

The magazine C is generally rectangular in form and may be formed as a sheet metal stamping or in any other convenient way. The cross sectional form is such as to accommodate and guide a stack H of new blades which are forced upwardly by a plate or platform 80 and spring 82, reacting against the bottom 84 of the magazine. The end walls 86 of the magazine terminate short of the top thereof as at 88 and the side walls 90 are bent over so as to form the top of the magazine. The bent over portions 92 of the side walls do not meet so that a central slot 94 is left for accommodating a blade ejector 96. Intermediate their ends, the bent over portions 92 are depressed, as at 98, so as to hold down the top of the stack of blades, while the ends of the bent over portions 92 are somewhat elevated as at 100. The various parts are dimensioned and arranged so that the upper blade of the stack H will be in alignment with the blade already in the razor.

Ejector 96 carries a protruding pin 102 for operation by the finger, and is carried on a poppet rod 104 slidably mounted in a block 106 attached to the upper wall or top 108 of the case A. Block 106 extends outwardly as shown best in Figures 2 and 3. A spring 110 urges the ejector 96 to the right, the ejector being further guided in its movements by a groove 112 formed in the top wall 108. In operating the device, the thumb may be placed to the left of projection 106 and the forefinger to the right of the pin 102, so that pressing the thumb and forefinger together will cause the ejector 96 to move to the left against the pressure of spring 110.

Movement of the actuator 96 to the left, as above described, forces out the uppermost blade in the magazine C. This blade being in registry with the used blade al-

ready in the razor, forces the used blade out into the magazine D at the same time as the new blade is inserted. Since the trailing edge of the discarded blade will be in contact with the newly inserted blade in the razor, it will not have entered completely into the magazine D but will be resting on the lower lip 88 of the entrance slot in the used blade magazine D. The trailing edge of the last used blade which has been inserted in magazine D will be in position such that the next blade discharged from the razor will abut against it and complete the operation of sliding it into the used blade container D. As soon as the used blade has passed the lip 88 of the entrance slot into the used blade magazine, it will snap down slightly and assume a horizontal position, thus clearing the way for full insertion of the following blade. Between the elevated portion 100 and the depressed portion 98 of the upper part of the magazine, a bevel is formed as indicated. When the leading edge of a used blade which is being discharged engages the bevel it is forced downwardly so that the blade enters the used blade magazine in the manner shown in Figure 1.

The used blade magazine D is preferably identical with the new blade magazine so that when all the blades in the new magazine have been used, it may be shifted over into the used blade magazine position, the previous used blade magazine and the stack of used blades therein being discarded or returned to the manufacturer. It is contemplated that the device as shown in Figure 1 will be sold complete. Thereafter, it is necessary only to purchase magazines of new blades as required, since each associated magazine becomes in turn a used blade magazine.

The magazines are preferably made symmetrical end for end, being inserted in a somewhat higher position when employed as used blade magazines. This permits the user to insert a used blade magazine with either end thereof adjacent the razor. The two ends of the magazine may, however, be different. For example, a single slot for ejection of new blades and insertion of used blades may be provided, or the dimensions and configuration of the ejecting and receiving slots may be varied as desired.

Certain dimensional relationships are of importance in the preferred construction. As will be apparent from Figure 1, the position of the uppermost blade of the stack H in the new blade magazine C is determined by the depressed portions 98 of the top of the magazine, against which the stack is pressed by the spring 82. The upper edge of the side wall 86 over which the blade is ejected should accordingly be low enough to permit free passage of the blade during injection into the razor, and accordingly should be lower than the under surface of the portions 98 by slightly more than the thickness of a blade. In the drawing, the blade thickness is considerably exaggerated, the actual thickness being of the order of one hundredth of an inch or less, so that a stack of fifty blades is accommodated readily in a magazine of the general dimensions indicated. The upper edge of the wall 86 over which the blade passes during injection into the razor will, accordingly, be about one hundredth of an inch or thereabouts below the depressed portions 98 of the top against which the uppermost blade is pressed. As will be apparent, the uppermost blade is in alignment with the used blade within the razor, so that the used blade will be ejected upon insertion of the new blade. If the used blade magazine D and the slot through which the used blade enters the same are positioned at the same height as in the case of the new blade magazine, the uppermost blade in the used blade magazine, when seated against the depressions 98 in the top, will be in alignment with the used blade being ejected from the razor and may interfere with the ejection of the used blade. If, however, the used blade magazine and the edge 88, over which the blades pass during ejection of the razor, are positioned too low, the trailing edge of a blade resting on the

edge 88 will be below the leading edge of the next blade to be ejected from the razor, so that friction between the blades must be relied upon for completing the insertion of a used blade into the used blade magazine D. It is preferred, as indicated above, to carry out this operation in a positive manner and accordingly the edge 88 of the used blade magazine, over which the blades pass, is positioned by less than the thickness of one blade below the upper surface of the blade support 14 or lower surface of the blade in the razor.

While the invention has been shown as applied to a razor utilizing a single-edged blade of the general type of the so-called Gem or Valet blade, it will be apparent that it may also be utilized in its broader aspects with single and double edged blades of other types, it being necessary only that a release mechanism for the blade already in the razor be provided, if needed, together with suitable arrangements for aligning the new and old blade magazines with the razor.

What is claimed is:

1. A device for changing razor blades comprising in combination a frame structure having means for holding a razor centrally thereof, a new blade magazine and a used blade magazine, the two said magazines being interchangeable and means detachably mounting the magazines on the frame in position, respectively, for injecting a new blade into the razor and receiving a used blade therefrom, whereby the new blade magazine, when exhausted, may be inserted in the used blade magazine position for receiving used blades, and a blade ejector mounted on the frame and movable for ejecting a blade from the new blade magazine into the razor and ejecting a blade within the razor into the used blade magazine, the two said magazines being substantially in contact with the razor.

2. A device according to claim 1, in which the magazines have slots running their full lengths for accommodating the said blade ejector.

3. A razor kit comprising in combination, a razor, a new blade magazine and a used blade magazine, the said magazines being interchangeable, a frame structure having means holding the razor centrally thereof and detachably holding the new blade magazine and used blade magazine respectively to each side of and substantially in contact with the razor so held, the razor and magazines being so aligned that ejection of a blade from the new blade magazine into the razor ejects the used blade therefrom and into the used blade magazine, and a blade ejector mounted in the frame structure and movable for ejecting a blade from the new blade magazine into the razor.

4. A razor kit according to claim 3, in which the casing and razor have parts cooperating to release a blade held in the razor when the razor is in position in the casing.

5. A razor kit according to claim 4, in which the parts releasing the blade comprise a spring pressed plunger in the razor handle and means in the casing for holding the razor so as to compress the plunger.

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