May 9, 1933. P. M. JULLIEN 1,907,978

RAZOR WIPER

Filed April 26, 1932 3 Sheets-Sheet 1

Fig. 1.

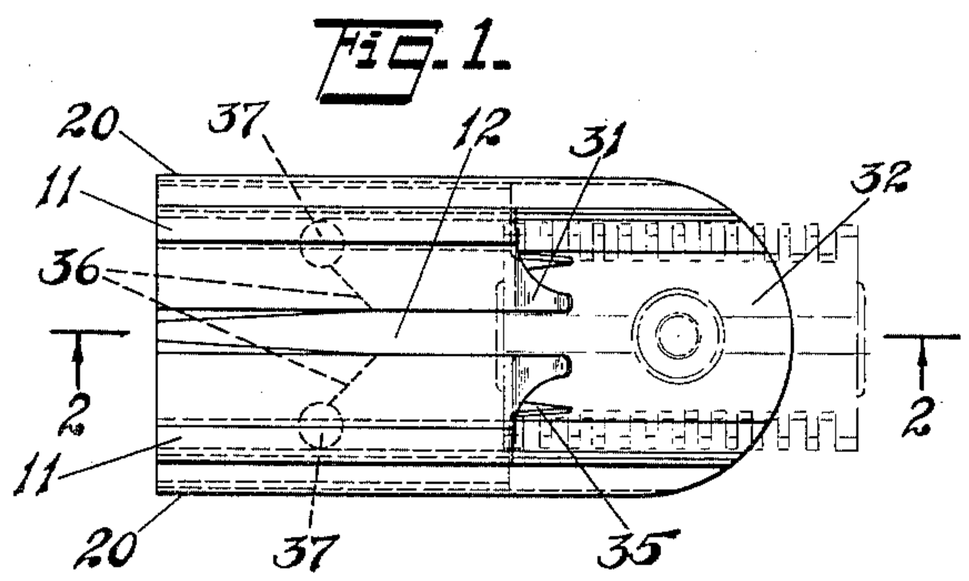


Fig. 2.

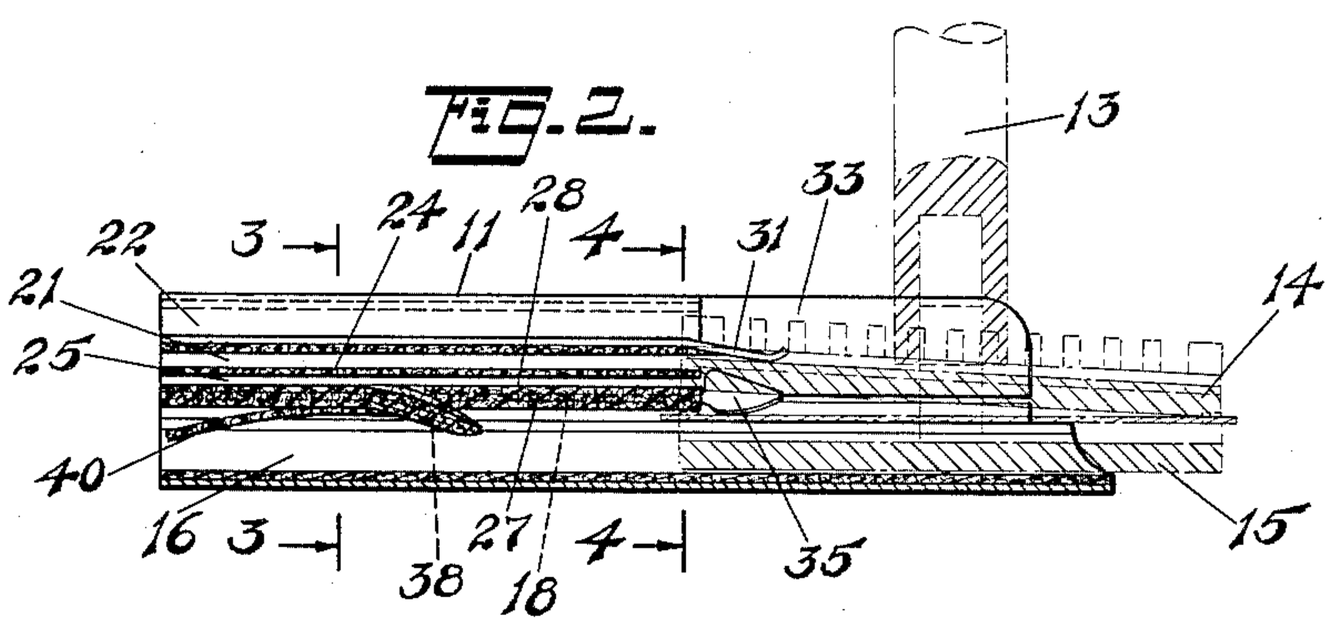


Fig. 3.

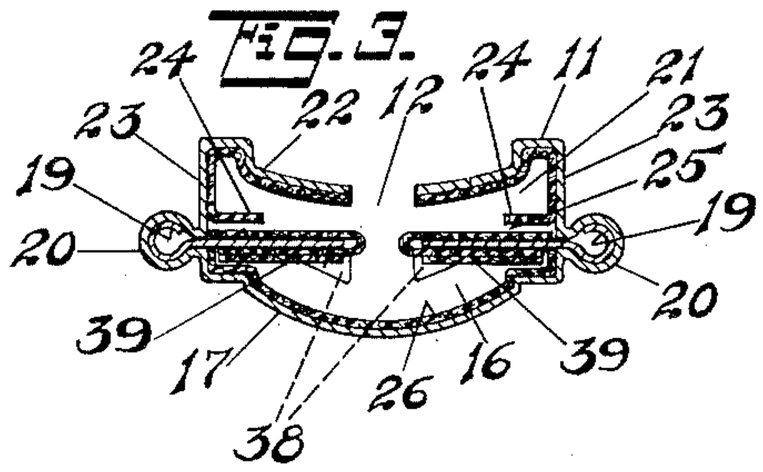


Fig. 4.

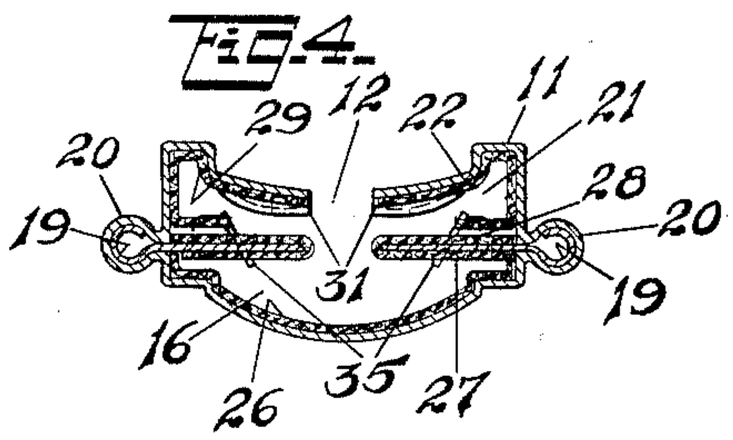
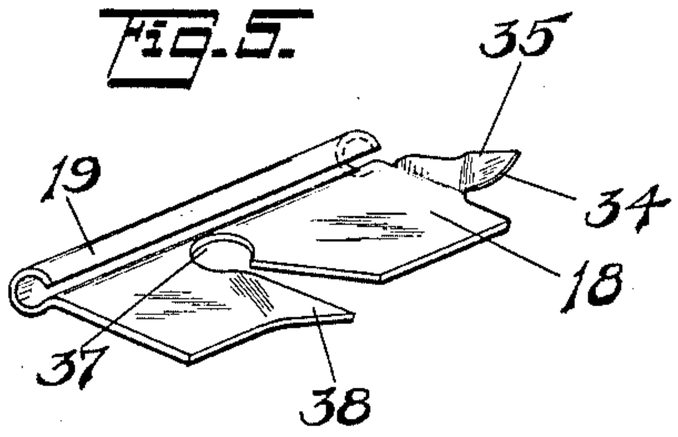


Fig. 5.



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May 9, 1933. P. M. JULLIEN 1,907,978

RAZOR WIPER

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Fig. 6.

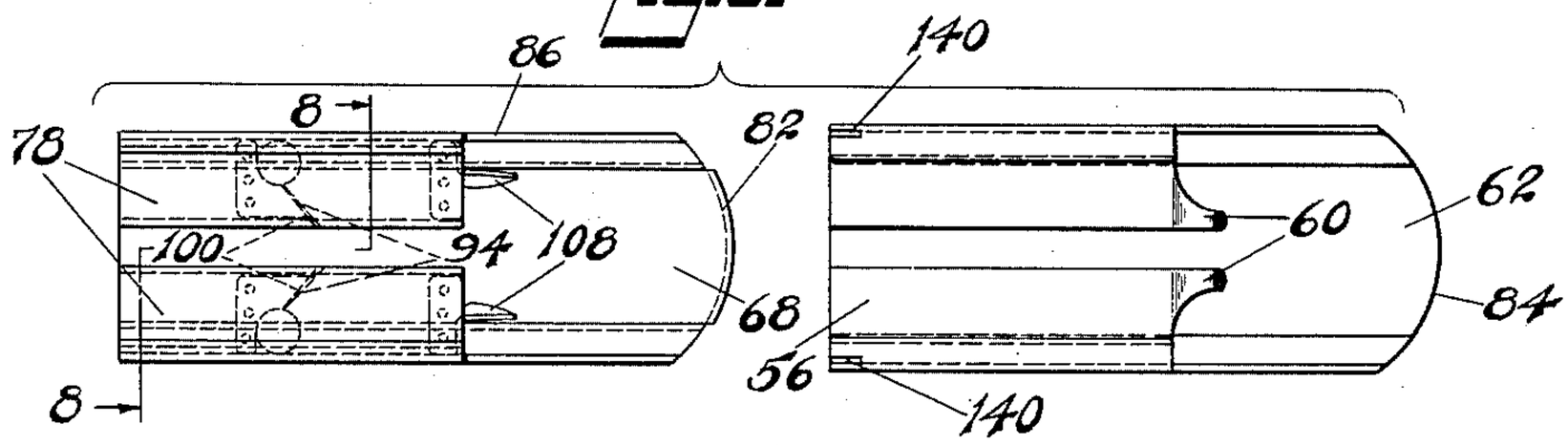


Fig. 7.

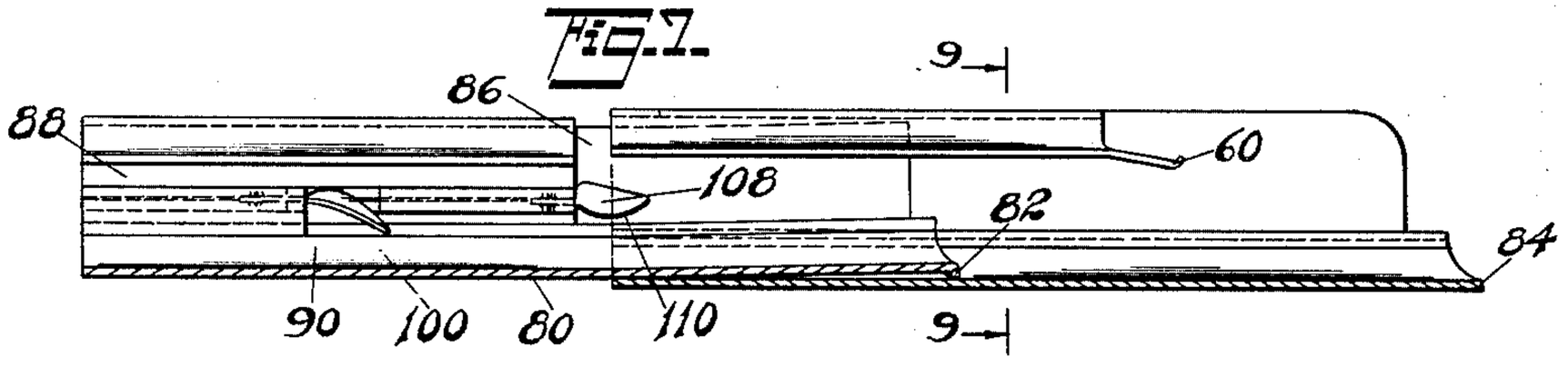


Fig. 8.

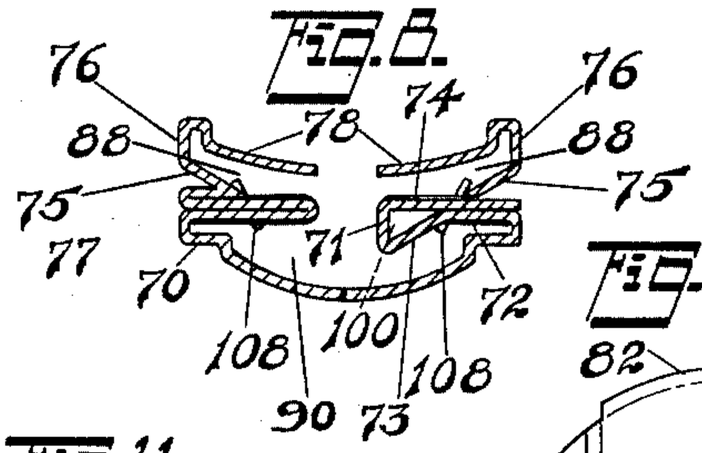


Fig. 9.

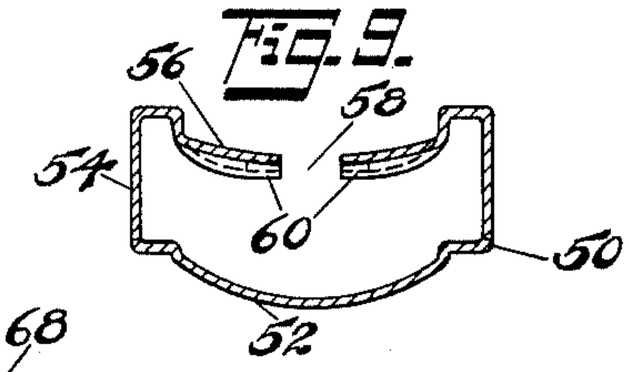


Fig. 10.

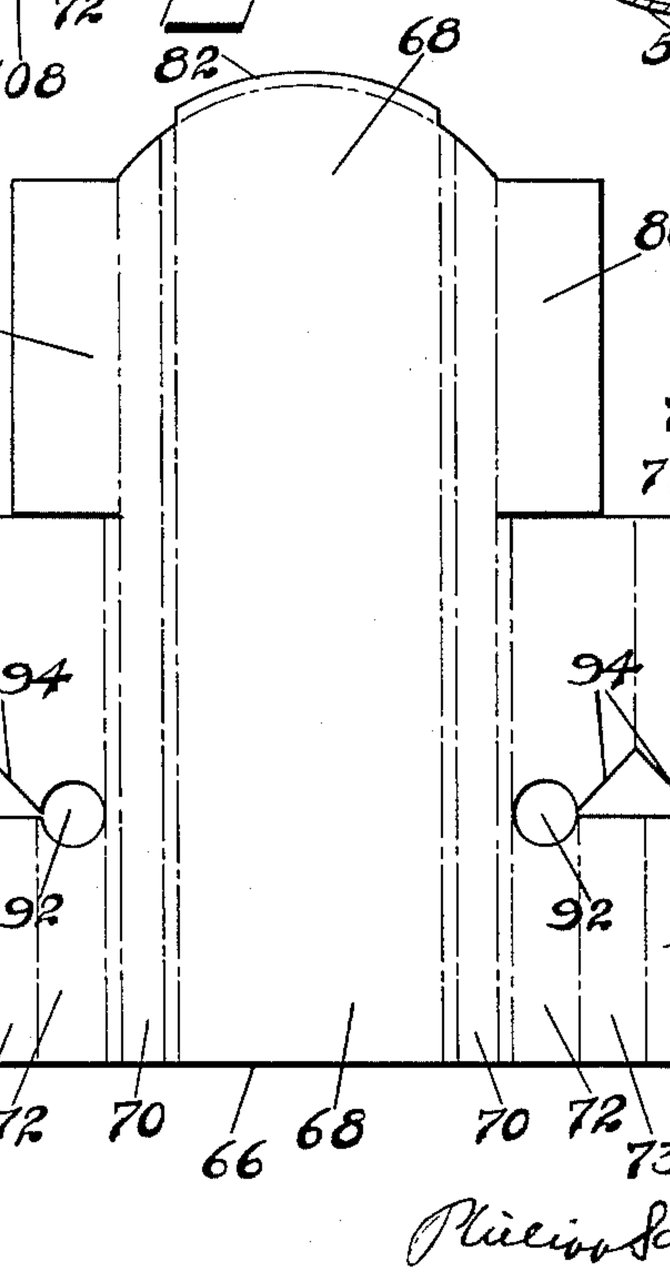


Fig. 11.

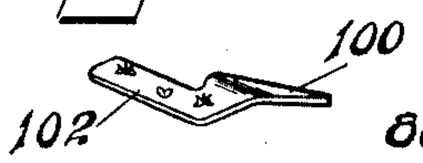
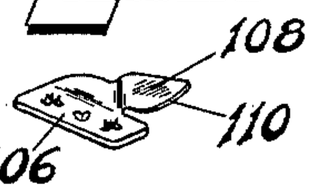


Fig. 12.



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RAZOR WIPER

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Fig. 13.

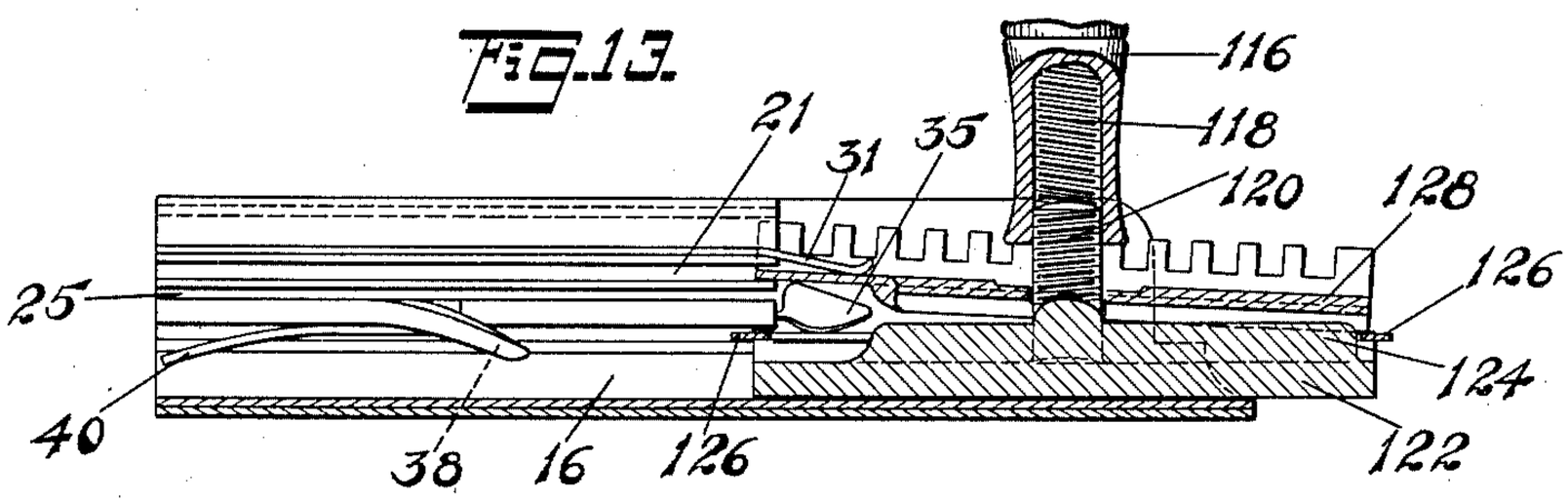


Fig. 14.

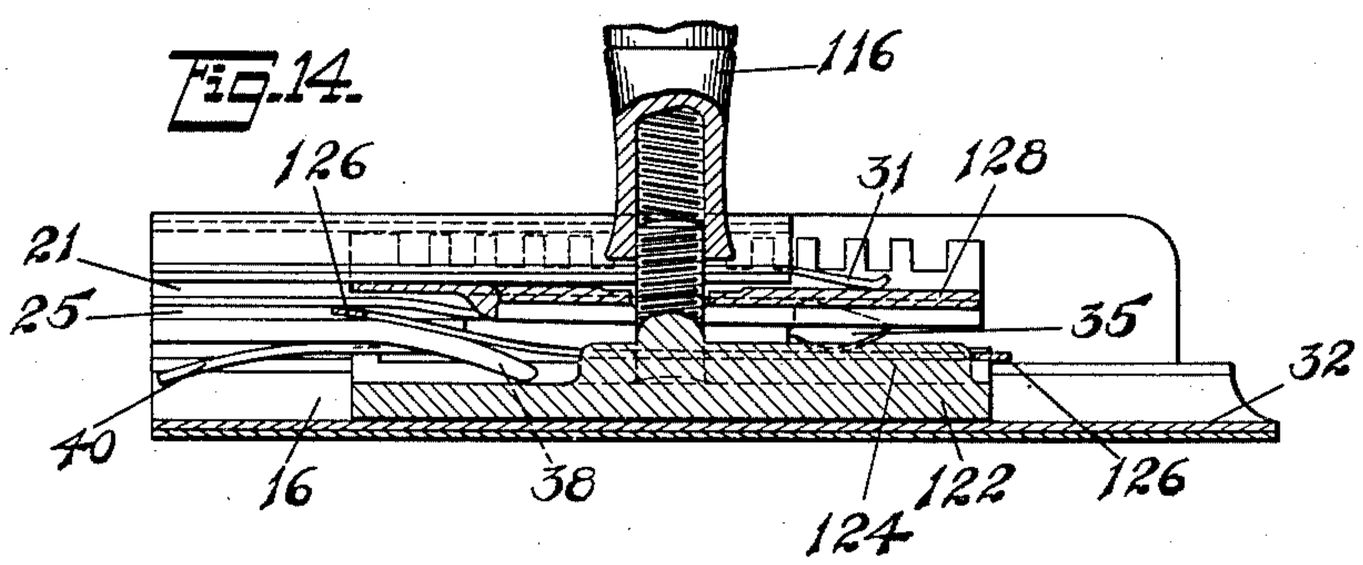


Fig. 15.

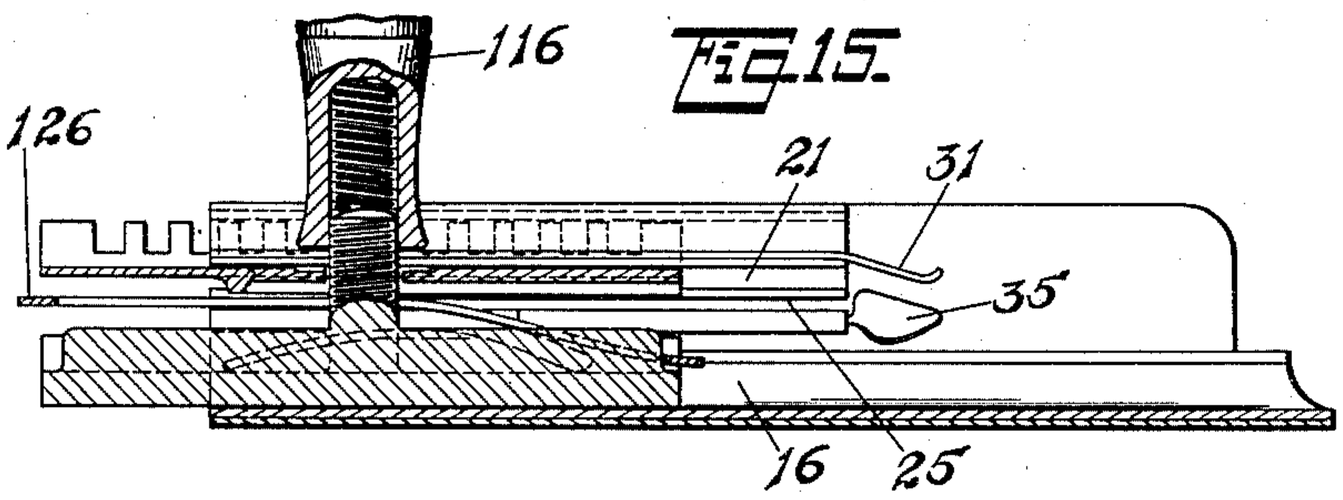


Fig. 16.

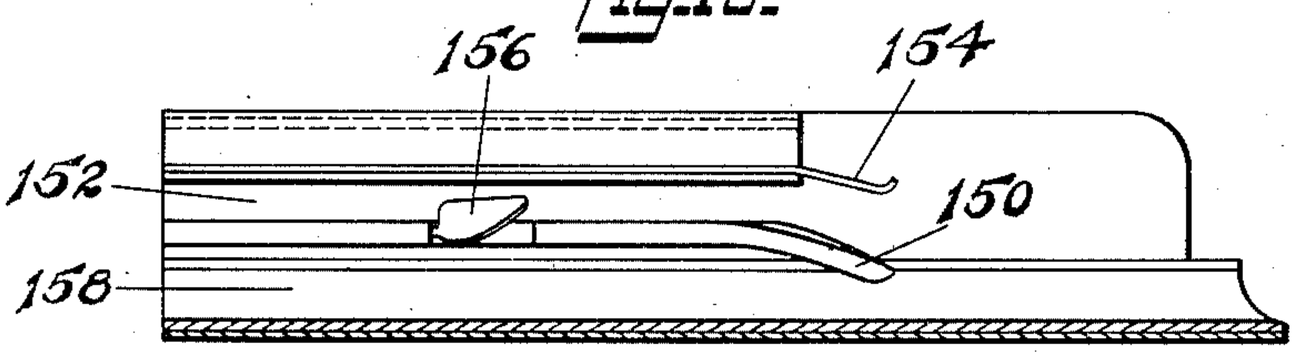
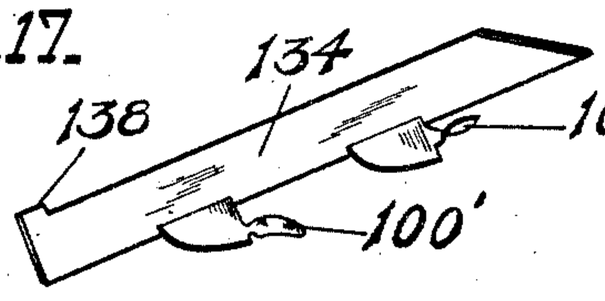


Fig. 17.



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Patented May 9, 1933 1,907,978

UNITED STATES PATENT OFFICE

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RAZOR WIPER

Application filed April 26, 1932. Serial No. 607,518.

This invention relates to razor wipers.

A certain type of safety razor commonly comprises a cap, a guard, a flexible blade and a handle. The blade is positioned between the cap and guard and is clamped in position by screwing up the handle which has a threaded connection with a projection on the guard which passes through a hole in the blade.

In order to thoroughly wipe and dry all the parts of this type of razor it has heretofore been necessary to disassemble the parts completely, wipe and dry each part separately, and thereafter reassemble the parts.

It is an object of the present invention to provide a wiper for a razor of this type such that all the parts, and particularly the cutting edges of the blade, may be thoroughly wiped and dried with the handle slightly loosened and without disassembly of the parts.

With this general object and others in view, the invention consists in the features, combinations, details of construction and arrangements of parts which will first be described in connection with the accompanying drawings and then more particularly pointed out.

In the drawings:

Figure 1 is a top plan view of a wiper constructed in accordance with the invention;

Figure 2 is a sectional view (enlarged) taken on the line 2—2 of Figure 1;

Figures 3 and 4 are sectional views taken on the lines 3—3 and 4—4, respectively, of Figure 2;

Figure 5 is a perspective view of one of the parts removed;

Figure 6 is a top plan view of a slightly modified form of the invention showing, disassembled, a wiper holder and a wiper to be inserted therein;

Figure 7 is a central longitudinal vertical sectional view, on an enlarged scale, of the parts of Figure 6 in partly assembled relation;

Figure 8 is a transverse vertical sectional view on the lines 8—8 of Figure 6;

Figure 9 is a similar view on the line 9—9 of Figure 7;

Figure 10 is a plan view of an absorbent material cut-out before folding and assembly as shown in Figure 6;

Figures 11 and 12 are detail perspective views of parts of the wiper of Figures 6 and 7;

Figures 13, 14 and 15 are central vertical longitudinal sectional views, on an enlarged scale, showing progressive stages of a razor through the wiper of Figures 6 and 7; and

Figure 16 is a central vertical longitudinal sectional view through a wiper modified to operate with a razor of a type slightly different from that shown in Figures 13, 14 and 15.

Figure 17 is a detail perspective view of a finger member of a form other than that shown in Figure 5.

Referring in detail to the drawings and especially to Figures 1 to 5 inclusive, there is provided a casing which encloses a plurality of channels for the passage of the several parts of the razor, the walls of these channels being lined with an absorbent material. The absorbent material may, for example, be blotting paper or any other desired suitable material.

In the embodiment here illustrated as an example, a casing 11, formed of sheet metal or other suitable material, encloses a plurality of channels hereinafter referred to. As indicated in Figure 2, the razor is drawn through the wiper, handle uppermost and the casing has a longitudinal slot 12 for the passage of the razor handle. The razor, indicated in dotted lines in Figure 2, comprises a handle 13, a guard 14 and a cap 15. The blade is provided with an opening for cooperation with a positioning lug or projection on the cap 15.

In the casing 11 is a bottom channel 16 shaped to receive the razor cap and blade. This channel is bounded at the bottom by a downwardly concaved portion 17 of the casing and at the top by a main partition.

While the partition may be formed in any suitable manner, in the present exemplification (Figures 1 to 5 inclusive), it is formed by two plates 18 spaced apart horizontally to provide a central passage, in line with

slot 12, for the razor handle. One of these partition plates 18 is shown removed in Figure 5 and the two plates are reverse-hand duplicates. Along the outer edge of the plate a flange is bent over to form a bead-like side-piece 19 which slides into an eye or channel 20 formed in the side of the casing. The bead 19 is of such a size that a slight compression of it is necessary to slide it into eye 20, whereby the partition plate is held in place by the spring of the metal bead.

As here shown as an example, and as more clearly appears in Figure 4, the curved bottom 17 of the casing has a lining 26 of absorbent material. Partition plates 18 are covered top and bottom with the absorbent material, thus providing a top lining 27 for the bottom channel 18 and a bottom lining 28 for the intermediate channel 25. The top 11 at each side of slot 12 has a lining 29 of absorbent material which extends down the sides 23. The lining material is then extended inwardly to form the partition 24 above referred to. Thus linings 29 line the top, sides and bottom of upper channel 21 and the top of the intermediate channel 25. The portions of linings 29 that form partitions 24 may be reinforced by suitable stiffening elements if necessary or desirable.

With the casing resting in the palm of one hand, the razor may be drawn through the same, handle uppermost.

There is provided means for initially positioning the razor. To this end, as here shown as an example, the bottom of the casing has a receiving extension 32, rounded off at the end as appears in Figure 1. The sides of the casing have winglike extensions 33 rising from receiving extension 32. The razor being placed on receiving extension 32, handle uppermost, the razor cap fits in the concave receiving extension and the razor is positioned in the wiper by the wings or side walls 33 which serve as guides.

For the wiping operation the razor is presented to the wiping device with the razor handle unscrewed sufficiently to free the constituent parts for slight relative movement, as will hereinafter appear.

There is provided means for causing separation of the razor guard from the blade when the handle has been slightly unscrewed, and for holding down the blade against the razor cap as the razor enters the casing. While this may be accomplished in various ways, in the embodiment here illustrated as an example, formed on each of partition plates 18 is a cap separator in the form of a pair of horizontally spaced apart pointed teeth 35. As the razor is moved in the wiper, these teeth enter between the curved razor guard and the razor blade, which in the loosened position of the parts is relatively flat, so that the side edges of the guard are spaced somewhat from the blade, permitting entrance therebetween of the separating teeth 35.

On each separator 35 is a downwardly extending curved or cam portion 34, which serves to hold down the razor blade against the razor cap while the teeth 35 enter between guard and blade. Two objects are accomplished by thus holding down the blade. First, as the razor enters the wiper, the blade is thereby guided below the main partition, i. e., below but with its upper face in contact with absorbent linings 27. Secondly, the blade is prevented from swiveling with respect to the axis of the razor handle by being held to the blade positioning lug on the cap.

It will be apparent that the channel 16 is shaped to conform to the razor cap and its associated blade. As the razor enters the wiping device, therefore, the outer or lower face of the cap and the then upper face of the blade are wiped and dried by the lining of the channel 16. The upper and lower faces of the guard are wiped in channel 21. The inner face of the cap and the lower face of the blade are wiped as hereinafter described.

There is provided means, acting as the razor passes through the wiper, for guiding the razor blade from channel 16 into channel 25. To this end, as here shown as an example, the blade is separated from the cap and raised therefrom after the above described wiping action has taken place, and, as here shown, when the leading edge of the razor assembly reaches substantially midway of the wiping channels.

While this may be accomplished in various ways, in the embodiment here shown as an example, each partition plate 18 (and the wiping material as well) is provided with an opening for the passage of the blade from lower channel 16 into channel 25, and formed to separate the blade from the cap and guide the blade into channel 25. To this end, each plate 18 has a diagonal cut 36 extending from the inner edge outwardly and terminating in a cutout or eye 37. The metal of the plate at the far side of the cut is sprung or bent downwardly to form a guiding and separating tongue 38. As the razor assembly is advanced, tongues 38 pass under the relatively flat blade, separate it from the cap by entering the space between the concave upper face of the cap and the relatively flat blade, and guide the blade to a plane above the main partition, the blade flexing during this switching operation. The cutting edges of blade pass through eyes or cutouts 37, whereby any dulling or blunting thereof is avoided. If desired, there may be inserted in the cutouts 37 grommets of leather or the like, so that the cutting edges of the blade will be stropped in passing.

The guides 38 thus transfer the blade into intermediate channel 25 and the lower face

of the blade is wiped and dried by the bottom lining of this channel.

By this tilt of the blade the advancing end is raised from the razor cap, and this action serves to force down the trailing end of the blade against the cap and thus maintain the anti-swivel connection therebetween until the razor assembly begins to emerge from the wiper, at which moment the connection is broken, the trailing end of the blade leaving the cap, but since the forward end of the blade is already emerging from the wiper, there is no tendency for the blade to swivel.

Beyond the switching guides 38, each partition member carries a supplemental wiper 39. At the inner or razor-approaching end, these wipers are secured to the under side of linings 27 (Figure 3). At the other end, they are free and hang down somewhat in the nature of a flap 40 (Figure 2). As the razor is advanced past the switching guides, the inner face of the razor cap, now free of the blade, is wiped and dried by flaps 40.

In the embodiment here shown as an example in Figures 1 to 5 inclusive, the various absorbent linings are removable and replaceable. The two parts of the lining for upper channel 21 may be removed by a suitable tool and fresh lining elements substituted. These may be preformed and simply inserted into the casing by a sliding movement. Or the lining material may be inserted unformed and then formed to shape in situ by a suitable tool. The same applies to the lining 26 for lower channel 16. All other lining elements are carried by the partition plates 18. These partition units may be forced out of eyes or channels 20 and freshly covered units substituted.

Guard guiding fingers 31 may be provided to act on the upper face of the guard and aid in directing it into its wiping passage.

Referring now particularly to Figures 6 to 10 inclusive, a wiper holder 50 has a concave bottom surface 52, side walls 54 and a slotted top formed by two inwardly extending flanges 56 which are horizontally spaced apart to provide the slot 58 extending longitudinally of the casing or holder and through which passes the razor handle during wiping of the razor. At their forward edges, the flanges 56 are provided with directing fingers 60 which extend forwardly and downwardly and whose function is to aid in directing the guard into the guard wiping passage hereinafter described. At its forward portion 62, the holder or casing 50 is open across its top and serves to position the razor for wiping passage through the casing, as hereinafter described.

The wiper element may be made in one or more pieces and may, if desired, be folded from the unitary cutout 66 shown in Figure 10, which is folded to have the cross section shown in Figure 8. The central portion 68 forms the curved bottom wiping surface of Figure 8, sections 72 and 74 form the lower and upper wiping surfaces respectively of Figure 8, section 76 forms the side wall portion 76 of Figure 8, section 75 of Figure 10 is the inwardly sloping section 75 of Figure 8 for wiping the lower face of the guard, especially near its edge, and end sections 78 form the guard wiping surfaces 78 of Figure 8. It will be evident that the wiping member of Figure 10, when folded as shown in Figure 8, may be inserted longitudinally into the casing of Figure 9; also that the under face 80 of the central or bottom portion 68 may be strengthened or reinforced in any desired way, but is preferably slightly resilient (Figure 7), and has a turned-down lug 82 at its forward end, so that when the wiper has been inserted in the casing to final position, the lug 82 will snap downwardly over the forward edge 84 of the casing and prevent unintentional movement of the wiper in the casing from right to left as viewed in Figure 7. Movement of the wiper in the casing from left to right, as viewed in Figure 7, may be stopped at the desired point by any suitable stop lugs or positioning means. In the embodiment now being described, there is an upper wiping passage 88 and a lower wiping passage 90. The cutout of Figure 10 include the punched-out openings 92 and augular cutouts on lines 94 which, when the wiper is folded as shown in Figure 8, permit a razor blade to pass from the bottom wiping passage 90 to the upper wiping passage 88.

Blade lifting fingers 100 may have roughened surfaces, preventing relative movement of the fingers when the finger members 102 are held between the sections 72 and 74 of the wiper, the finger 100 lying approximately at the apex of the angle formed by lines 94. The fingers 100 extend downwardly and sufficiently centrally of the wiper to enter between a razor blade and cap when the parts of the razor are sufficiently loosened, so that the blade rests near its edges on the cap but the central portion of the blade is spaced from the cap. Due to its resilience, the blade will tend to assume this position when the pressure of the guard on the blade is relieved by a slight unscrewing of the razor handle.

Guard lifting finger members 106 have finger portions 108 adapted to enter the space between the guard and the blade when the handle has been loosened, so that the guard has its central portion resting on the blade but its longitudinal edges are slightly spaced from the blade, due to the curvature of the guard. Fingers 108 have cam portions 110 adapted to bear on the upper surface of the razor blade and hold it in contact with the cap, so that the cap and blade enter the lower channel 90 while the guard is directed upwardly by fingers 108 and into the upper

wiping channel 88 by said fingers 108 and fingers 60.

Figures 13 to 15 inclusive illustrate the position of razor parts in the progress of a razor through a wiper constructed with three wiping passages such as the passages 16, 25 and 21 of the modification of Figures 1 to 5 inclusive. The razor, it will be understood, includes a handle 116 having a threaded socket 118 for threaded connection with a projection 120 on a razor cap 122. The razor cap is provided with some positioning means which may have various forms but is here shown, by way of example, as comprising a longitudinally extending central raised portion or lug 124. The razor blade 126 has a corresponding opening to receive the projection 124 and position the blade on the cap 122. A guard 128 is adapted to force the blade into curved position against the cap when the handle 116 is screwed down. For wiping action, the handle is unscrewed slightly so that the blade 126 rests upon opposite edges of the cap 122 and the central portion of the blade, while engaged with the positioning projection 124, is nevertheless spaced from the concave bottom of the cap, as shown in Figure 13. The guard 128 has its bottom surface convex and the central portion of this bottom surface rests upon the blade 126 while the opposite edges of the guard curve upwardly slightly away from the blade.

The razor, with its parts in the position above described, is placed on the forward portion 32 of the wiper and is moved longitudinally through the wiper from right to left as viewed in the drawings. The fingers 35 enter the space between the guard and blade and cam the guard upwardly as the razor is moved. The lower cam edges of fingers 35 hold the blade to the cap sufficiently to cause the blade and cap to enter the lower wiping passage 16. Fingers 31 prevent the guard from moving upwardly too far and aid in guiding it into the upper or guard wiping passage 21. The guard continues through the upper passage until it emerges from the wiper and has its upper and lower surfaces and edges wiped by the upper and lower wiping surfaces of absorbent material that define the top and bottom of the passage 21.

Intermediate the wiper ends, fingers 38 enter the space near the blade center between the blade and the bottom concave surface of the cap and cam the blade upwardly into passage 25. The under face of the cap is in wiping contact all the way through the wiper. During the passage of the razor through the first portion of the wiper, the upper face of the blade is wiped by the absorbent material 39. When the blade is cammed upwardly by fingers 38 in the passage 25, the trailing end of the blade remains in position in contact with the cap until the forward edge of the blade begins to emerge from the wiper, with the result that there is no tendency of the blade to swivel with respect to the cap or catch in the wiper. During the latter portion of the passage of the razor through the wiper, the upper face of the cap is wiped by flaps 40 and absorbent material 39, and the lower faces of the blade is wiped by the absorbent material forming the bottom of wiping passage 25.

Thus, when the razor emerges from the wiper, the upper and lower surfaces of the cap, the upper and lower surfaces of the blade, and the upper and lower surfaces of the guard have been wiped by the absorbent material.

Figure 14 shows the forward portion of the blade being cammed into the wiping passage 25 and Figure 13 shows the forward edge of the blade emerging from the wiper and the trailing end of the blade beginning to leave the positioning projection 124 on the cap.

It will be understood that the positioning projection may take other forms and that the projection here illustrated is shown merely by way of example.

Where two wiping passages are provided, as shown in Figures 6 to 10 inclusive, the upper and lower faces of the guard are wiped in passage 88 and the upper face of the blade and lower face of the cap are wiped in lower passage 90. During the latter portion of the passage of the razor through the wiper, the blade being cammed into the upper passage, the upper face of the guard and the lower face of the blade are wiped in upper passage 88 and the upper and lower faces of the cap are wiped in lower passage 90. It will be understood that in Figures 6 to 10 inclusive the fingers 60 correspond to fingers 31 in the modification of Figures 1 to 5, fingers 108 correspond to fingers 35 and fingers 100 correspond to fingers 38.

Instead of plate 18, a different form of plate may be used, as shown in Figure 17, which may include a side wall 134 adapted to lie along the side wall 76 of Figure 8 and have guard lifting fingers 108′ and blade lifting fingers 100′, it being understood that absorbent material is provided as before to provide wiping passages into which the razor parts are directed by the fingers. Where the wiper insert is moved into the casing or holder from left to right as shown in Figure 6, and the structure of Figure 17 is used, a lug 138 on the plate 134 may enter a slot 140 in the casing to position the wiper member therein. Where the wiper insert is positioned in the casing by entering the casing on the right and moving to the left as viewed in the drawings, the lug 138 may be formed at the forward part of plate 134 and the slot 140 may be formed in the forward top portion of the casing.

In some razors of the general type herein

described, the blade is positioned between the guard and cap by positioning lugs or projections carried by the guard as distinguished from being carried by the cap, as hereinabove described. In such case, the wiper may be constructed as shown in Figure 16 where fingers 150 lift the blade and guard from the cap, holding the blade positioned to the guard and directing both blade and guard into upper wiping passage 152, fingers 154 being provided corresponding to fingers 31 and 60 already described and serving the same purpose. In the first portion of the passage of such a razor through the wiper of Figure 16, the upper and lower faces of the cap are wiped and the upper face of the guard and lower face of the blade are wiped. Intermediate the wiper ends, fingers 156 are provied which enter between blade and guard and cam the forward end of the blade into the lower passage 158, so that during the latter portion of the travel of the razor through the wiper, the bottom face of the cap and upper face of the blade are wiped in the lower passage and both upper and lower faces of the guard are wiped in the upper passage. By the time the trailing end of the blade has been cammed away from the lugs which position it to the under face of the guard, the leading end of the blade has begun to emerge from the wiper, with the result that the blade never has a tendency to catch in the wiper during its passage therethrough.

It will be understood that various changes may be made in the embodiments herein described without departing from the invention as defined in the following claims.

What is claimed is:

1. A razor wiper having blade separating means for causing relative spacing movement between a blade and a blade carrier, and blade wiping surfaces associated therewith for wiping opposite faces of a razor blade on passage of a razor into said wiper.

2. A razor wiper having a plurality of wiping passages, separating means for causing relative spacing movement between a blade and a blade carrier and directing the blade and its carrier into different wiping passages of said wiper on movement of said blade and carrier in said wiper.

3. A razor wiper having a plurality of wiping passages, separators for causing relative spacing movement between a blade, cap and guard and directing the blade, cap and guard into said wiping passages on movement of such blade, cap and guard in said wiper in the direction of said wiping passages.

4. A razor wiper for razors having a blade, a guard member and a cap member, said wiper including a plurality of wiping passages provided with absorbent material, means for directing the razor parts into said wiping passages in one portion of their travel through the wiper with the blade positioned adjacent one member while separating it from the other member, and means for separating the blade in another portion of its travel from the member adjacent which it was positioned in its first mentioned portion of travel.

5. A razor wiper for razors having a blade, a guard member and a cap member, said wiper including a plurality of wiping passages provided with absorbent material, means for directing the razor parts into said wiping passages in one portion of their travel through the wiper with the blade positioned adjacent one member while separating it from the other member, and means for separating the blade in another portion of its travel from the member adjacent which it was positioned in its first mentioned portion of travel, said wiping passages acting on opposite surfaces of the blade, of the guard member and of the cap member during passage of such razor parts through said wiper.

6. A razor wiper for razors having a blade carrier and a removable blade, said wiper including a holder, and a filler for said holder, said filler having wiping passages, and said wiper having separating means for directing the blade and carrier into separate wiping passages on passage into the wiper of the blade and carrier in loosely assembled relation, and means for positioning the filler in the holder.

7. A razor wiper having a plurality of wiping passages and blade deflector means for directing a blade from one of said passages to another during passage of the razor through the wiper.

8. A wiper for razors having a blade, guard and cap, said wiper including a plurality of passages having moisture absorbing surfaces, guard separating fingers and guard guiding fingers for separating the guard from the blade and directing the guard into one of said wiping passages, said guard separating fingers directing the cap and blade into another of said passages, and blade separating fingers for thereafter separating the blade from the guard and directing the blade from its first passage into another passage.

9. A wiper for razors having a blade, guard and cap, said wiper including a plurality of passages having moisture absorbing surfaces, cap separating fingers and guard guiding fingers for separating the cap from the blade and directing the cap into one of said passages and the guard and blade into another of said passages, and blade separating fingers for thereafter separating the blade from the guard and directing the blade from its first passage into another passage.

10. A wiper for razors having a blade, a guard and a cap, said wiper including a blade wiping passage, a guard wiping passage and a cap wiping passage, guard directing fingers for directing the guard into the guard wip-

ing passage, and blade directing fingers for directing the blade into the blade wiping passage.

11. A wiper for razors having a blade, a guard and a cap, said wiper having a pair of wiping passages, separator fingers for guiding the guard into one of said passages and the cap and blade into the other of said passages, and blade deflecting fingers for directing the blade from the second named passage into the first named passage.

In testimony whereof, I have hereunto set my hand.

PHILIP M. JULLIEN.