Nov. 14, 1944. W. L. MILLS 2,362,765

SAFETY RAZOR

Filed March 16, 1944

Fig. 1.

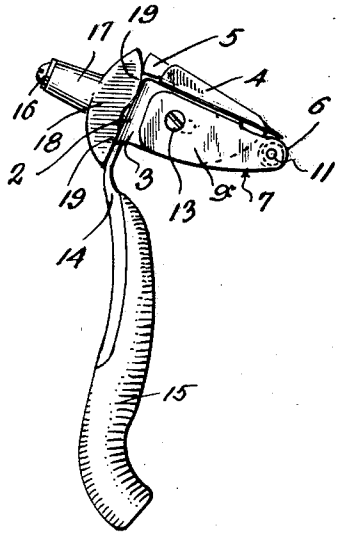


Fig. 2.

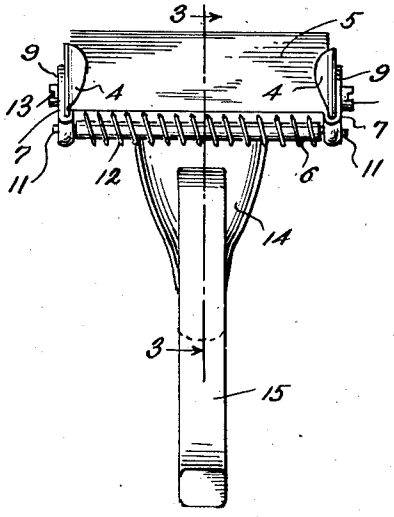


Fig. 3.

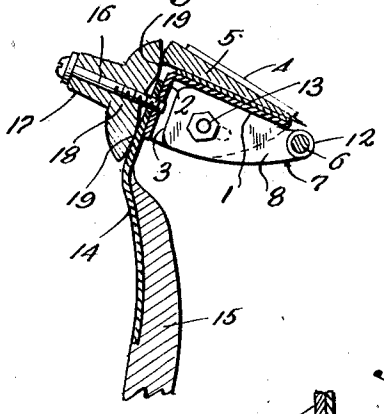


Fig. 4.

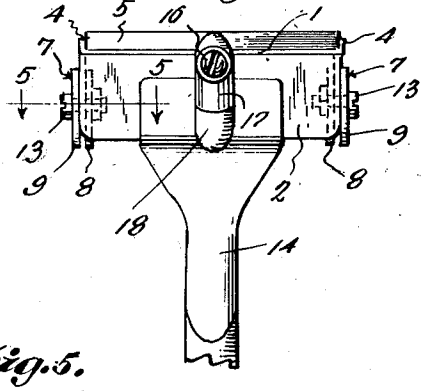
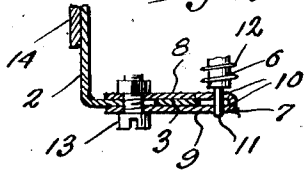


Fig. 5.



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SAFETY RAZOR

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6 Claims. (Cl. 30—63)

This invention relates to a safety razor and it is one object of the invention to provide a safety razor having a frame and embodying improved means for detachably holding a blade in engagement with the frame, said means consisting of a fastener rotatably mounted and having a cam surface for engaging across the upper edge of the blade and holding the blade firmly in place when the fastener is in its operative position.

Another object of the invention is to provide the razor frame with a blade fastener which is rotatably mounted for movement into and out of operative position and so formed that it is provided with a turning head or foot at its lower end having its under face formed with cam surfaces for engaging across the upper edge of the blade.

Another object of the invention is to provide the razor with a guide roller rotatably mounted along the lower edge of the frame in cooperating relation to the sharpened edge of a blade carried by the frame, the roller being rotatably mounted between arms carried by end flanges of the frame and spaced a predetermined distance from the cutting edge of the blade.

Another object of the invention is to provide a safety razor wherein the guide roller is rotatably carried by arms which straddle end flanges of the frame and are held to the flanges by bolts which create frictional binding between the flanges and inner and outer leaves of the arms and serve as pivots so that the arms may be swung about the bolts to move the roller toward and away from the blade.

Another object of the invention is to provide a safety razor which is simple in construction, capable of having a blade very easily applied or removed, and so formed that it may be quickly cleaned and its roller set in desired spaced relation to the blade.

The invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a side elevation of the improved safety razor.

Figure 2 is a front view thereof.

Figure 3 is a sectional view on the line 3—3 of Fig. 2.

Figure 4 is a top view of the safety razor.

Figure 5 is a fragmentary sectional view on the line 5—5 of Figure 4.

This improved safety razor has a frame formed of metal or other suitable material and having a front plate 1 which may be of double thickness, as shown in Fig. 3, or of single thickness. Flanges 2 and 3 extend rearwardly along the upper edge and opposite ends of the front plate and, at its opposite ends, the front plate carries lips 4 which overlap the front face of the front plate in spaced relation thereto and are in such angular relation to the frame plate that when a blade 5 of the type which is sharpened along one edge is thrust into place, its end portions will have wedging fit between the front plate and the lips. This blade has its sharpened lower edge projecting from the front plate and, in order to guide the blade when shaving, there has been provided a guide roller 6 which extends longitudinally of the front plate downwardly therefrom and rotatably mounted between arms 7. These arms are formed from folded strips of sheet metal or other suitable material and each arm has inner and outer leaves 8 and 9 formed with alined openings 10 near their integrally united lower ends to rotatably receive pintles 11 at ends of the roller. The roller may be formed with a spirally extending rib 12, as shown, or may be smooth. The leaves of the arms are resilient and mounted at opposite side faces of the end flanges 3 by bolts 13 which pass through alined openings formed in the flanges and the leaves, as shown in Fig. 5. Referring to this figure, it will be seen that when the nut of a bolt is tightened, the leaves will be drawn toward the end flange and have frictional gripping engagement therewith. Threfore, by loosning the bolts, the arms may be swung about the bolts as pivots or slid along the bolts to move the roller toward or away from the lower edge of the front plate and dispose it in predetermined spaced relation to the cutting edge of the blade and after the roller has been disposed in the desired position, the bolts may be tightened to firmly hold the arms in set position. This also permits the roller to be thoroughly cleaned and, in addition, permits removal of the roller from the arms if necessary.

A shank 14, formed of sheet metal and carrying a handle 15, is fixedly carried by the upper flange 2 of the frame and, since the shank is located midway the width of the upper flange and extends rearwardly from the same at a downward incline, the handle may be conveniently held during use of the razor.

A post or stem 16 extends upwardly from the flange and shank midway the width of the upper flange and this post carries a blade fastener 17 which is rotatable about the post. The lower portion of the fastener is enlarged to form a turning head or foot 18 which projects from opposite sides of the fastener and has flat sides so that it may be readily grasped when the fastener is to

be turned to the operative position shown in the drawings or to an inoperative position at right angles to the operative position. The under face of the head or foot has its end portions curved longitudinally to form cam surfaces 19 and when the fastener is turned to the operative position, one of these surfaces rests upon the upper surface of the shank while the other extends across the upper edge of the blade and exerts pressure to force the blade downwardly into tight wedging engagement with the lips 4. The blade will then be firmly held in place and the razor is then ready for use. If it is found that the roller is not in proper spaced relation to the cutting edge of the blade, the bolts 13 may be loosened, the arms 7 swung to an adjusted position, and the bolts tightened again to firmly hold the arms in the adjusted position.

Having thus described the invention, what is claimed is:

1. A safety razor comprising a frame having a front plate and flanges extending rearwardly along the upper edge and opposite ends thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, arms having inner and outer leaves extending longitudinally of the end flanges with the end flanges between their leaves and lower portions of the arms projecting from the flanges, a roller rotatably mounted between the projecting ends of the arms, bolts passing through the end flanges and upper portions of the arms to pivotally mount the arms and hold their leaves in frictional gripping engagement with the end flanges with the roller extending along the sharpened edge of the blade in desired parallel spaced relation thereto, a handle extending from the upper flange midway the width thereof, a portion extending upwardly midway the width of the upper flange, and a blade fastener rotatably mounted about said post and having a turning head at its lower end projecting from the post in opposite directions and having under faces of its projecting portions formed with cam surfaces for extending forwardly and engaging across the upper edge of the blade to hold the blade firmly in place when the fastener is turned about the post to operative position.

2. A safety razor comprising a frame having a front plate and flanges extending rearwardly along the upper edge and opposite ends thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, arms having inner and outer leaves extending longitudinally of the end flanges with the end flanges between their leaves and lower portions of the arms projecting from the flanges, a roller rotatably mounted between the projecting ends of the arms, bolts passing through the end flanges and upper portions of the arms to pivotally mount the arms and hold their leaves in frictional gripping engagement with the end flanges with the roller extending along the sharpened edge of the blade in desired parallel spaced relation thereto, a fastener over the upper flange movable into and out of position to engage across the upper edge of said blade and firmly hold the blade in place, and a handle for said frame.

3. A safety razor comprising a frame having a front plate and flanges extending rearwardly along the upper edge and opposite ends thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, arms having inner and outer leaves extending longitudinally of the end flanges with the end flanges between their leaves and lower portions of the arms projecting from the flanges, a roller rotatably mounted between the projecting ends of the arms, bolts passing through the end flanges and upper portions of the arms to pivotally mount the arms and hold their leaves in frictional gripping engagement with the end flanges with the roller extending along the sharpened edge of the blade in desired parallel spaced relation thereto, and a handle for said frame.

4. A safety razor comprising a frame having a front plate and a flange extending rearwardly along the upper edge thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, a roller rotatably mounted below the lower edge of the front plate and extending longitudinally of the front plate and the sharpened edge of the blade, a post extending upwardly from the upper flange midway the width thereof, a fastener rotatably mounted about said post and having its lower end provided with a turning handle extending in opposite directions from the fastener and formed with cam surfaces for engaging across the upper edge of the blade and firmly holding the blade in place, and a handle for said frame.

5. A safety razor comprising a frame having a front plate and a flange extending rearwardly along the upper edge thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, a guide for the cutting edge of said blade extending along the lower edge of the front plate, a handle for said frame, a post extending upwardly from the upper flange, and a fastener for the blade rotatably mounted about said post and having its under face formed with a cam surface for engaging across the upper edge of the blade and firmly holding the blade in place when the fastener is turned to an operative position.

6. A safety razor comprising a frame having a front plate and a flange extending rearwardly along the upper edge thereof, lips at opposite ends of said front plate overlapping the front face thereof, a blade disposed against the front face of said front plate with the ends fitting under said lips and its lower sharpened edge projecting from the front plate, a guide for the cutting edge of said blade extending along the lower edge of the front plate, a handle for said frame, and a fastener over the upper flange movable into and out of operative position and formed with a cam surface for engaging across the upper edge of the blade and firmly holding the blade in place when the fastener is in its operative position.

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