

Sept. 29, 1931.

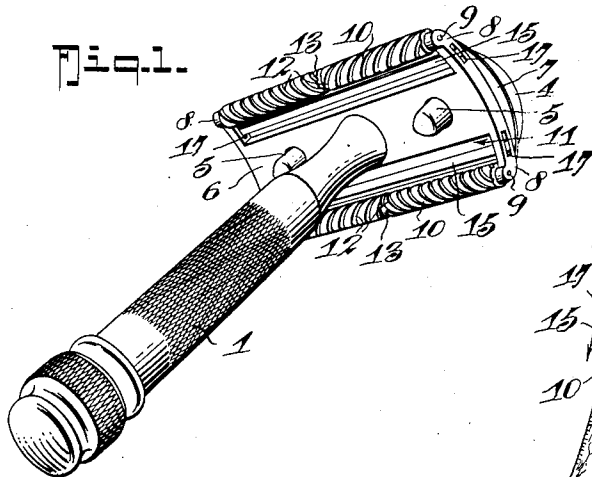
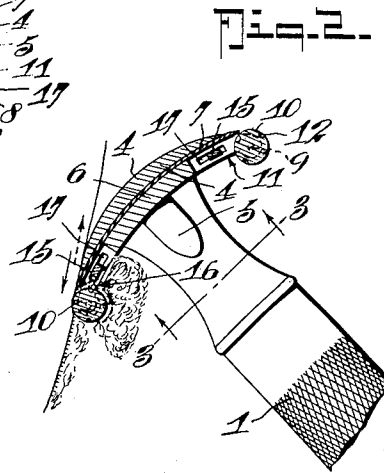
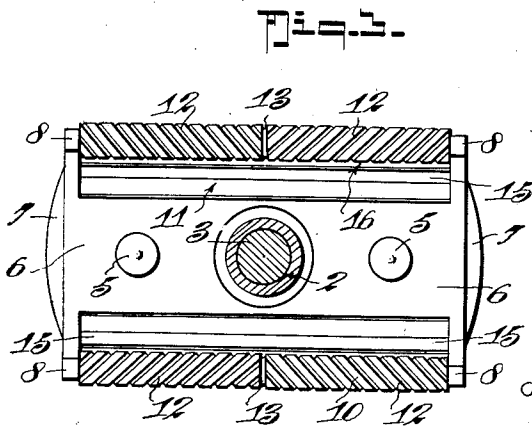
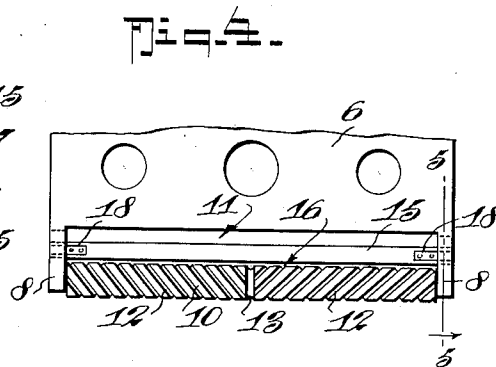
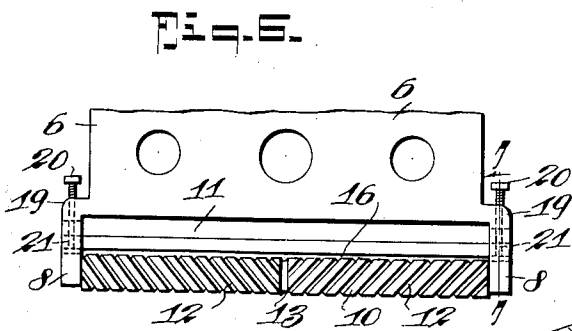
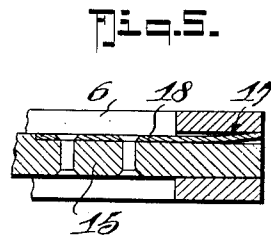
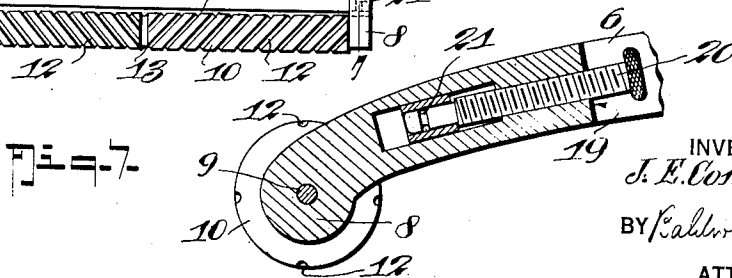
J. E. CONNOLLY

1,825,335

SAFETY RAZOR

Filed April 28, 1928

2 Sheets-Sheet 1



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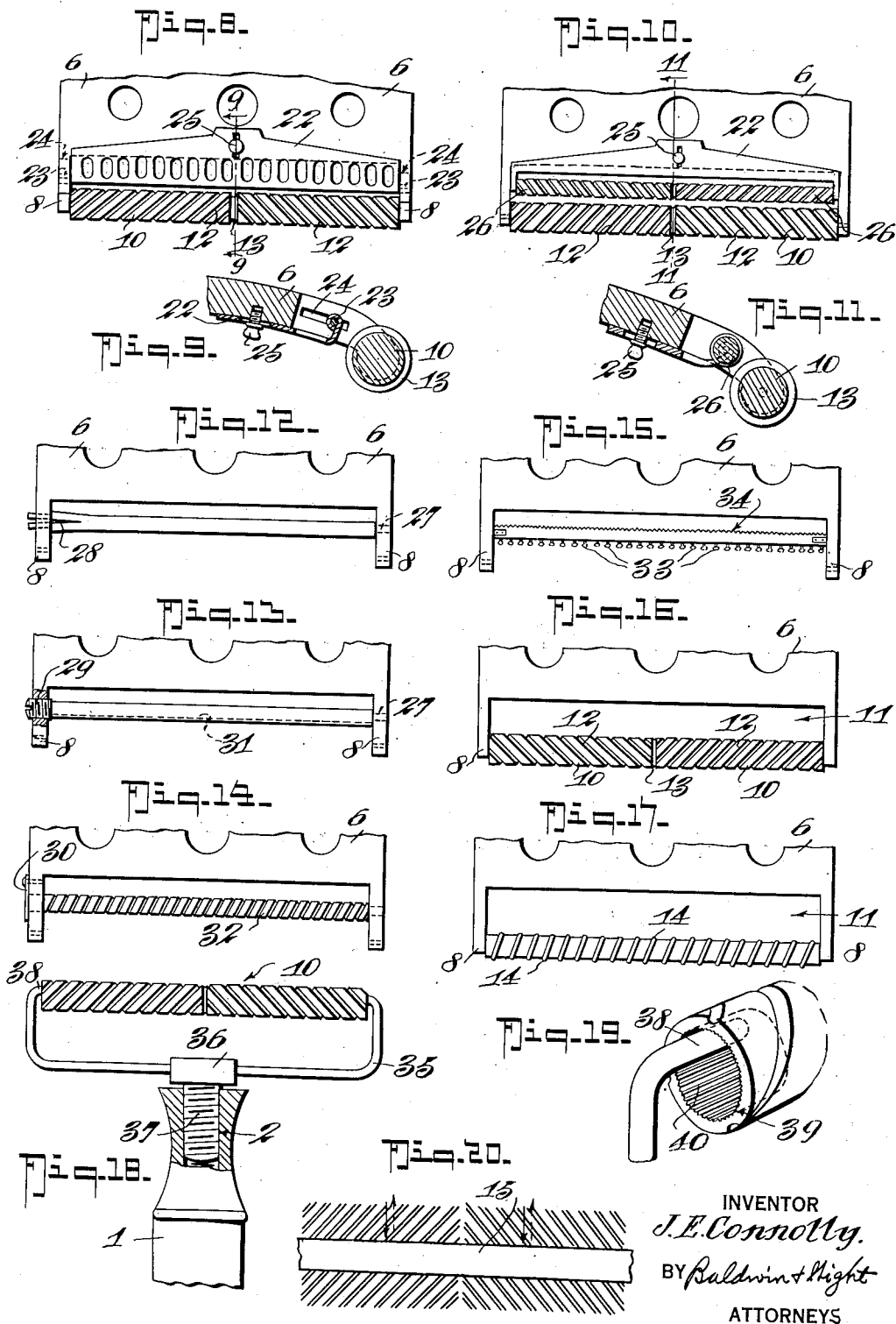
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1,825,335

SAFETY RAZOR

Filed April 28, 1928

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SAFETY RAZOR

Application filed April 28, 1928. Serial No. 273,560.

The invention generally relates to safety razors of the type wherein is provided a guard and lather applying roller so mounted relatively to the shaving blade as to act in the twofold capacity of guarding the face of the user against cutting contact with the blade edge and to reapply lather to the face of the user, and the said invention primarily has for its object to provide a new and improved form of roller and a regulator associated with the roller and adapted to regulate the reapplication of lather and to cooperate with the said roller in holding and working the lather.

In its more detailed nature the invention seeks to provide certain new and useful improvements in the razor structure disclosed in Patent Number 1,651,917, issued to me on December 6, 1927, and resides in the provision of an improved form of guard roller and a regulator mounted with the said roller on the razor guard plate and cooperatively associated with the said roller in a manner for regulating and assisting in the reapplication of lather to the face of the user.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention consists in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a perspective view illustrating the invention mounted on a razor of well known type.

Figure 2 is an enlarged diagrammatic cross section illustrating the invention in use.

Figure 3 is a horizontal cross section taken on the line 3—3 on Figure 2.

Figure 4 is a plan view of a razor guard plate embodying one form of adjustable regulator.

Figure 5 is an enlarged detail cross section taken on line 5—5 on Figure 4.

Figure 6 is a plan view illustrating a razor guard plate embodying another form of adjustable regulator.

Figure 7 is an enlarged detail cross section taken on the line 7—7 on Figure 6.

Figure 8 is a plan view illustrating another form of adjustable regulator.

Figure 9 is a detail cross section taken on the line 9—9 on Figure 8.

Figure 10 is a plan view of another form of adjustable regulator.

Figure 11 is a detail cross section taken on the line 11—11 on Figure 10.

Figures 12, 13 and 14 are plan views illustrating individual forms of fixed regulators associated with the carrying lugs of the razor guard plate.

Figure 15 is a fragmentary plan view illustrating a still further form of regulator associated with the guard roller.

Figures 16 and 17 are plan views illustrating two related forms of guard rollers.

Figure 18 is a detail elevation illustrating one of the guard rollers mounted in a massaging frame.

Figure 19 is a detail perspective view illustrating one trunnion mounted end of the roller shown in Figure 18.

Figure 20 is a diagrammatic development of a guard roller surface and illustrates the relation of the grooves with the regulator when the roller is moving in the shaving and retracing directions.

In the drawings 1 designates the razor handle to which the clamp head is attached, the said handle being provided with a threaded socket 2 to receive the threaded shank 3 of the clamp head 4.

The guide lugs 5 of the clamp head pass through suitable receiving apertures in the guard plate 6 which is also provided with an aperture to receive the shank 3. Between the guard plate 6 and the clamp head 4 the usual double edged blade 7 is clamped in the manner illustrated in Figure 1 of the drawings.

All of the above structure will be recognized as conventional and it is to be understood that while I have disclosed the invention as applied to this particular form of razor the invention is not so limited in application and comprehends all structures coming within the scope of the appended claims.

The side edges of the guard plate are preferably cut out to provide opposed pairs of mounting lugs 8 adapted to receive the trunnions 9 of a guard roller 10 at each edge of the said plate. The cut out portions of the plate 6 are deep enough to provide an appreciable space 11 between the roller 10 and adjacent edge of the said plate, the purpose for which will presently appear.

In the disclosure made in the drawings the construction of the razor head at each side of the medial line is identical. For this reason, in the remainder of the description, detailed reference will be made to one side only of the razor head.

The guard roller 10 is preferably provided with a grooved face engaging surface, the grooves being arranged in reversed spirals 12 so as to diverge from or converge to a point intermediately of the ends of the said roller thus forming centrally disposed V's 13, see Figures 1 and 16. If desired, instead of grooving the roller the same may be provided with outstanding spiral ribs or threads 14 as indicated in Figure 17.

In the space beyond roller 10 a regulator 15 is mounted and serves to provide a regulator space 16 between it and the said roller, see Figure 3.

To provide for proper adjustment of the regulator 15 so that the space 16 may be varied at will the arms or lugs 8 may be slotted as at 17 and friction springs 18 set in the regulator bar ends to frictionally retain the same at adjusted positions, see Figures 4 and 5.

If desired the lugs or arms 8 may be offset at 19 and adjuster screws 20 threaded through the said offsets and swivelly connected as at 21 to the regulator bar 15, thus making it possible to move the said bar toward or from the roller by manipulation of the said screws, see Figures 6 and 7.

In Figures 8 and 9 I have illustrated a still further modification of the regulator mounting in which the said regulator is in the nature of a plate 22 having trunnions 23 slidable in the lug slots and having a slotted ear 24 adjustably-screw secured as at 25 to the guard plate. As is indicated in Figures 10 and 11 of the drawings this plate form of regulator may be still further modified and constructed with trunnions to enable it to carry a rotatable roller 26 and mount the same corelatively to the guard roller for lather reapplication, regulating purposes. This roller may also be provided with reversely arranged V forming surface grooves 27 preferably disposed opposite to those of the guard roller so as to coact as converging pockets to facilitate the drawing of the lather down through the regulator space 16 behind the roller 10.

If desired the regulator may be a stationary

non-adjustable element as indicated in Figures 12, 13 and 14.

In Figure 12 the regulator is a simple rod shouldered at one end as at 27 to fit a receiving hole in one of the lugs 8, and split shouldered at its other end to snap fit into a receiving hole in the other lug 8.

In Figure 13 the regulator is shouldered end mounted in one of the lugs 8 and is provided adjacent its other end with a threaded portion 29 to fit a threaded receiving bore in the other lug 8.

In Figure 14 the regulator is likewise equipped with a shouldered end to seat in one of the lugs 8, while the remaining end is cut off to lie flush with the outer face of the other lug 8 and is removably secured to position by a hinged keeper plate 30.

As will be observed by reference to Figures 13 and 14 the fixed regulators may be provided with a longitudinal lather retaining groove 31 or spiral grooves 32 designed for the same purpose.

In Figure 15 I have illustrated a still further means of retaining lather on the regulator. In this form the regulator is formed at one edge with closely arranged pin mounted balls 33 and toothed at its other edge as at 34 to facilitate the retention of lather.

In operation, when the razor is drawn across the face in the shaving direction the guard roller will serve to guard the face against any other than shaving engagement by the blade and will simultaneously manipulate and invigorate the skin. Retractable movement of the razor head will cause a reverse rotation of the engaging guard roller which will cause collected lather to pass down between the roller and the regulator, or through the regulated space 16 and be reapplied to the face to lubricate the same during the next stroke of the razor.

This cooperation of the roller and regulator constructed in the various forms disclosed serves to work the lather and keep it in proper condition and makes it unnecessary to reapply lather to the face during shaving. By simply dipping the razor head into water the lather collected thereon is moistened and by further use of the razor is worked into condition by the guard roller and regulator equipment and automatically applied to properly lubricate the shaving act. The roller, of course, also serves to work the lather on the face and materially aids in softening stubborn beards.

It will also be observed that the razor thus equipped may be divested of the blade 7 and the guard roller equipment utilized to massage the face or to efficiently apply facial creams or ointments to the skin, the peculiar construction of the roller greatly facilitating the working of the cream or ointment into the skin and the stimulating of the nerves and tissues.

If desired one of the rollers may be mounted in a yoke frame 35 carried by a head 36 having a depending threaded shank 37 suitable for fitting the threaded socket of the razor handle so that the device may be used as a massaging implement. The frame 35 is provided with inturned trunnions 38 to fit enlarged trunnion seats 39 in the roller ends. The walls of the seats may be roughened as at 40. The provision of the enlarged trunnion seats and the roughened walls thereof serve to impart a vibratory motion to the roller as it is drawn over the skin, further facilitating its use as a massaging device.

A razor constructed as herein disclosed provides for efficient manipulation of the skin to facilitate softening of the beard and assures a clean shave by reason of the fact that the shave is better lubricated, the lather continuously worked and reapplied to the face being shaved, and further provides for such a shave with the employment of a minimum of lather.

The guard roller bears all of the weight or pressure of shaving and relieves the skin of all irritating drag.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the novel details of construction, the manner of use and the advantages of my invention will be readily apparent to those skilled in the art to which it relates.

What I claim is:

1. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, and means adjustably mounted in association with the roller to regulate the reapplication of lather.

2. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, and a regulator member carried by the guard plate in parallel spaced relation to the roller for the purpose specified.

3. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, and a regulator member carried by the guard plate in parallel spaced relation to the roller, said roller and said regulator member having grooves therein for the purpose described.

4. In safety razors, the combination with the razor shaving head and blade mounting means thereof, of a guard and applicator roller mounted on the head in associated relation to a blade mounted therein, and adapted when the razor is moved in one direction to guard the cutting edge of said blade, and when moved in the reverse direction to reapply lather to the face of a shaver using the razor, and means to regulate the reapplication of lather by said roller, said regulating means being adjustably mounted whereby its association with the roller may be varied.

5. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, and a regulator roller carried by the guard plate in cooperative relation to said first mentioned roller to regulate and assist in the reapplication of lather.

6. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, and a regulator roller carried by the guard plate in cooperative relation to said first mentioned roller, said regulator roller being adjustably mounted on said guard plate whereby its association with the first mentioned roller may be varied.

7. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, said roller having a contacting surface interrupted by two individual uninterrupted spirals reversely directed from a point intermediately of its ends, and means adjustably mounted in association with the roller to regulate the reapplication of lather, said spiral interruptions being so positioned that the meeting portions of the reversely directed portions will be directed toward said regulating means when the razor is moving in the lather reapplying direction.

8. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, a regulator mounted on the guard plate in adjacent spaced relation to and behind the roller, said roller having its contacting sur-

face spirally grooved in two directions from the center outwardly whereby the effective directions of the grooves when the razor is moved in the shaving direction will be from the center outwardly-forwardly, and when the razor is moved in the reverse direction the said grooves will be directed reversely or from the outer ends of the roller inwardly-forwardly toward the center.

9. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, a regulator member carried by the guard plate in parallel spaced relation to the roller, and means whereby the regulator member may be advanced and retracted toward and from the roller for the purpose described.

10. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, a regulator member carried by the guard plate in parallel spaced relation to the roller, means to adjustably mount the regulator to enable adjustment of its position relatively to the said roller and means on said regulator member to retain lather.

11. In a safety razor, the combination with a guard plate, of a blade mounted in operative position on the guard plate, a roller mounted on the guard plate in associated relation with the blade to guard its cutting edge and to reapply lather to the face of a user adjacent the blade cutting edge, a regulator member carried by the guard plate in parallel spaced relation to the roller, and means to adjustably mount the regulator to enable adjustment of its position relatively to the said roller, said regulator member having projections at its edges to retain lather.

12. In a razor, the combination with the blade and guard plate, of a pair of rollers carried by the guard plate and positioned in adjacent parallel spaced relation at one side of the blade, one in advance of the blade to guard its cutting edge and the other behind the first roller, said rollers being adapted to cooperate in reapplying and regulating the reapplication of lather to the face of a user of the razor.

In testimony whereof, I have hereunto subscribed my name.

JAMES E. CONNOLLY.