

[54] SAFETY RAZOR WITH ROLLER MOUNTED STRIP BLADE
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[22] Filed: June 1, 1972
[21] Appl. No.: 258,499

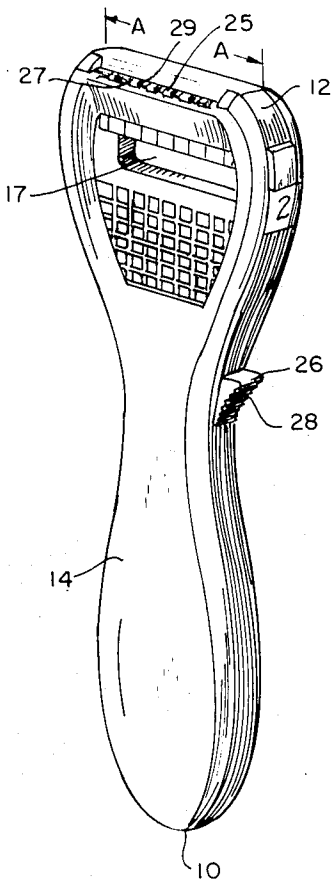
[52] U.S. Cl. 30/40.1, 30/65
[51] Int. Cl. B26b 21/26
[58] Field of Search 30/40.1, 62, 65, 30/346.5

[56] References Cited
UNITED STATES PATENTS
2,710,445 6/1955 Fitzpatrick 30/40.1

2,871,561 2/1959 Garvin 30/65
3,543,399 12/1970 Yager 30/40.1
Primary Examiner—Othell M. Simpson
Assistant Examiner—Gary L. Smith
Attorney—Alfred E. Miller

[57] ABSTRACT
A self-contained safety razor having a band or a continuous strip razor blade provided with a finger-actuated operator of the push button type, and having rollers located in depressions or apertures spaced longitudinally in the strip blade. The shaver housing further has a tracking groove for the rollers in the strip blade.

9 Claims, 6 Drawing Figures



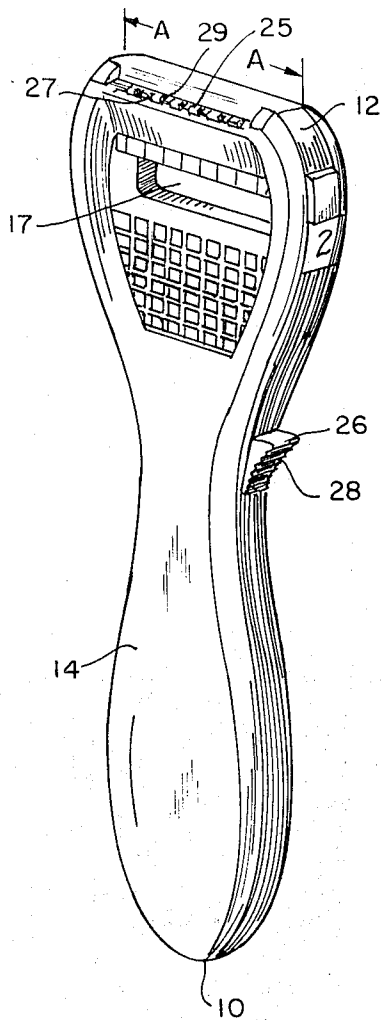


FIG. 1

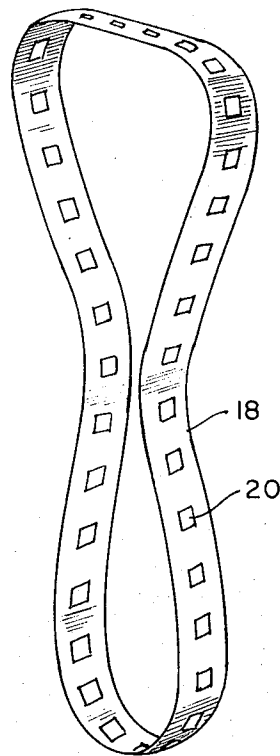


FIG. 2

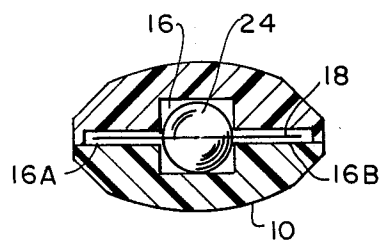


FIG. 3

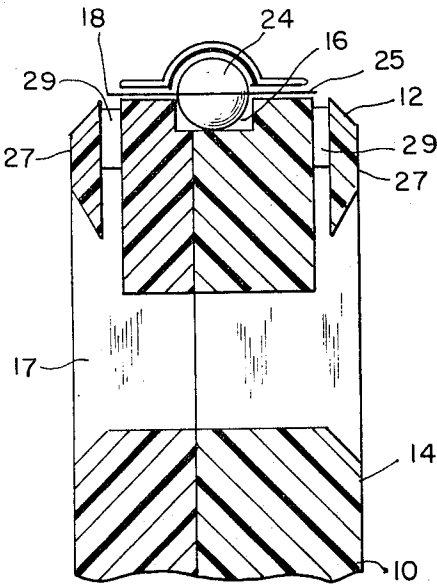


FIG. 4

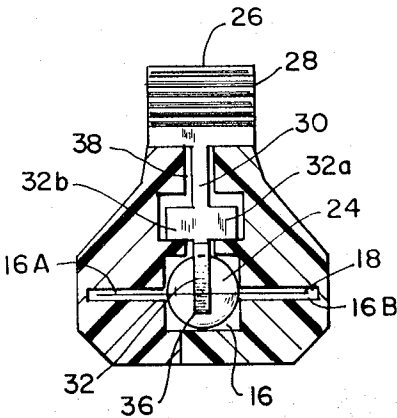


FIG. 6

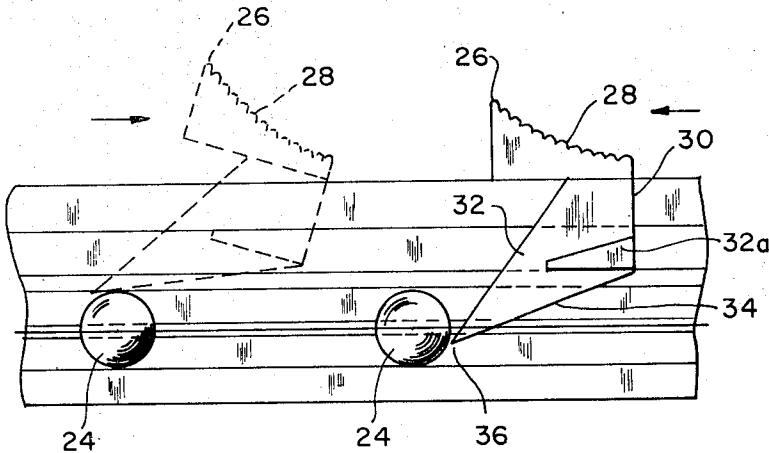


FIG. 5

SAFETY RAZOR WITH ROLLER MOUNTED STRIP BLADE

This invention relates to safety razors and more particularly to razors incorporating a band or continuous strip razor blade.

An object of the present invention is to provide a razor housing having an internal continuous strip blade representing a multiplicity of shaving sections moved successively into shaving positions in the head portion of the razor housing.

It is a further object of the present invention to provide roller means in depressions or apertures of the strip razor blade.

Another object of the present invention is to provide a finger-actuated operator of simplified design for reliably engaging the spaced roller means and thereby moving the blade strip in said housing through the shaving head portion thereof.

Another object of the present invention is to provide a tracking groove construction for said roller means and strip blade whereby the latter is guided smoothly in said razor housing without the shaving edges thereof contacting any portion of the housing.

A further object of the present invention is the provision of a continuous strip razor blade having spaced means thereon for capturing said roller means and thereby permitting the blade to move in the razor housing by means of rolling friction.

An object of the present invention is to provide an opening in the safety razor body for the accumulation of lather utilized in shaving.

The invention will now be more fully described with reference to the accompanying drawings wherein:

FIG. 1 is a perspective view of the safety razor embodying the invention.

FIG. 2 is a perspective view of the continuous, band-type razor strip blade.

FIG. 3 is an enlarged cross-sectional view of a detail of the safety razor.

FIG. 4 is an enlarged sectional view of the shaving head portion of the safety razor.

FIG. 5 is an enlarged partial sectional and partial elevational view of the finger piece and balls in two positions thereof, and

FIG. 6 is a sectional view of the construction shown in FIG. 5.

Referring more particularly to the drawings, the safety razor fabricated in accordance with the teachings of the present invention comprises a shaver housing 10 construction including a head portion 12 and a body portion 14. As seen in FIG. 4, the housing 10 may be two parts which are secured together in a permanent or non-permanent fashion. About the inner periphery of the shaver housing 10 is a track 16 for guiding a continuous razor blade strip 18 therein. As seen in FIG. 2, the razor blade strip 18 is provided with openings 20 which may be apertures or depressions in the blade. The track 16 accommodates a plurality of roller means such as balls 24 which are inserted in the openings 20 in the blade strip 18 and are therefore spatially located in the blade strip. Each ball 24 is captured in the openings 20 but is free to rotate within the confines of the opening. As seen in FIG. 3, the ball 24 is located in the opening 20 and the blade strip 18 is suspended in the track 16 and its wings 16a and 16b.

It should be apparent that the blade strip 18 is guided in the track 16 and its wings 16a and 16b by means of

the balls 24 rotating or rolling in the track 16. It should be noted in FIG. 4 that the head portion 12 of the shaver housing 10 is provided with an elongated, slit-like opening 25 communicating with the interior of the shaver housing through which the double-edged blade shaving sections of the blade strip 18 project. In addition, the usual guard 27 appears on the head portion adjacent to the shaving sections, and a bridge element 29 spans the position marked A-A in the head portion 12. The blade strip 18 is propelled around the inner periphery of the shaver housing 10 by means of a finger piece 26. The finger piece 26 operates to move successive shaving sections in the head portion 12 of the housing into the position marked A-A similar to the operation of the shaver disclosed in U.S. Pat. No. 2,710,445 issued June 14, 1955, of which the present inventor is the inventor. Each shaving section after having been used may be moved on and a new shaving section appears in the position A-A by means of manipulation of the finger piece 26.

The finger piece 26 is provided with a grip portion 28; a reduced portion 30; triangular-shaped or tapered part 32, having laterally disposed wings 32a and 32b; and an angular bottom part 34 having an end 36 in the front of the finger piece 26. It should be noted that the tapered part allows the piece to be retained in the channel while at the same time permitting pivoting movement to pass over the ball 24 in one direction of movement but engage the ball in the other direction of movement. As seen in FIG. 6, the reduced portion 30 of the finger piece 26 is movable in the opening 38 in the shaver housing 10 while wings 32a and 32b of part 32 prevent the finger piece from being removed from the shaver housing due to the restricted or narrow opening 38. The finger piece 26 may have limited movement in the razor housing both rectilinearly and pivotally. Thus, the finger piece 26 may be pushed back and pivoted over the ball 24 as seen in FIG. 5 so that the front end 36 of the finger piece may engage the ball 24 and move the razor blade strip when the finger piece 26 is pushed forward against the selected ball 24. It should also be apparent that it is within the scope of the present invention to construct a finger piece 26 which when moved to the rear will engage the ball 24 and move the razor blade strip, and when moved forwardly will pivot over the ball 24, thus having the opposite direction of movement to that set forth above. The free movement of balls 24 ensure easy and rapid movement of the saving sections into shaving positions and around the peripheral track 16.

The cross-section of the track 16 may be rectangular, round, or any other suitable configuration which permits free movement of the balls along the axis of the track without permitting appreciable lateral shifting of the balls.

As seen in FIGS. 1 and 4, the safety razor is provided with a pass through an opening 17 for the accumulation and eventual disposal of the lather used in conjunction with the razor. Thus, the lather on the face being shaved will be pushed by the scraping action of the blade 18 against the skin into the opening 17 thereby reducing the risk of the lather falling onto the body or clothing of the person shaving.

What is claimed is:

1. A safety razor comprising a housing having a body portion and a head portion, said head portion having at least two apertures therein, a tracking means in both

said body portion and head portion of said housing, a continuous razor blade strip in said tracking means, said blade strip having spaced depressions therein, roller means in said tracking means and captured in said depressions but freely movable therein, a finger piece in one of the apertures of said head portion for engaging selected roller means and moving the same together with said blade strip into successive shaving positions through the other of said apertures in said head portion.

2. A safety razor as claimed in claim 1 wherein said spaced depressions are holes and said roller means are a plurality of balls located in said holes and freely movable therein and in said tracking means.

3. A safety razor as claimed in claim 2 wherein said finger piece in one of the apertures of said head portion has an enlarged part for the prevention of removal of said finger piece from said aperture, said finger piece having a projection thereon for engagement with a selected ball and moving the same together with said blade strip into successive shaving positions through the other of said apertures in said head portion.

4. A safety razor as claimed in claim 2 wherein said finger piece in one of said apertures of said head portion has an enlarged part for the prevention of removal of said finger piece from said aperture, said finger piece having a sloping bottom surface from front to rear and pointed front end, said sloping bottom surface being adapted to ride over said balls, and said pointed front end being adapted to engage a selected ball and move the same together with said blade strip into successive shaving positions through the other of said apertures in

said head portion.

5. A safety razor as claimed in claim 1 wherein said tracking means is of a substantially rectangular cross section in both said body portion and head portion of said housing, and wherein said finger piece in the aperture is located in the side surface of said head portion.

6. A safety razor as claimed in claim 1 wherein said finger piece is pivotably movable over each adjacent roller and said finger piece is provided with a sloping bottom surface which rides over said roller and a pointed front end which is juxtaposed to said roller permitting clockwise movement of said blade strip when said finger piece is moved downwardly.

7. A safety razor comprising a housing having a body portion and a head portion, said housing having two apertures therein, at least one of which is located in said head portion, a tracking means in both said body portion and head portion, a continuous razor blade strip in said tracking means, said blade strip having spaced depressions therein, roller means in said tracking means and captured in said depressions but freely movable therein, a finger piece in one of said apertures for engaging selected roller means and moving the same together with said blade strip into successive shaving positions through said one of said apertures in the head portion of the housing.

8. A safety razor as claimed in claim 1 further comprising an opening in the head portion thereof for the reception and accumulation of shaving lather therein.

9. A safety razor as claimed in claim 8 wherein said opening passes completely through said head portion.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,762,045 Dated October 2, 1973

Inventor(s) Arthur M. Fitzpatrick, Jr.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 57, change "an" to --or--.

Column 4, line 6, change "isloated" to --is located--.

Signed and sealed this 9th day of April 1974.

(SEAL)

Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents