April 2, 1940. J. BRUECKER 2,196,098

SHAVING IMPLEMENT

Filed May 9, 1938

Fig. 1

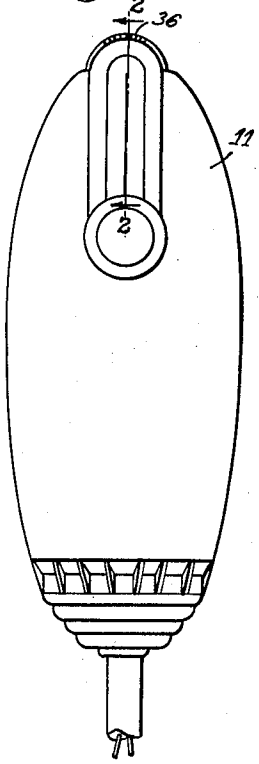


Fig. 2

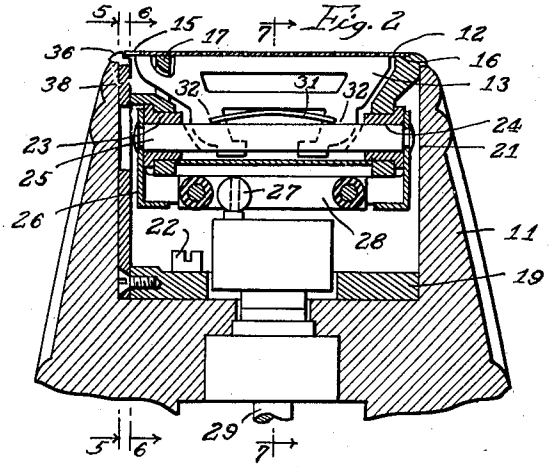


Fig. 3

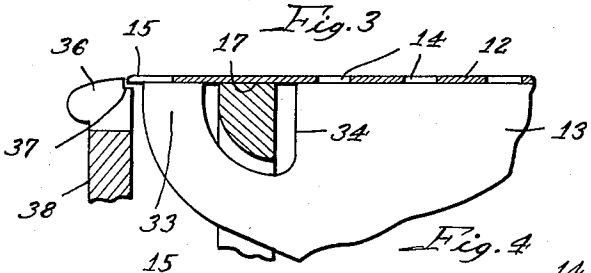


Fig. 4

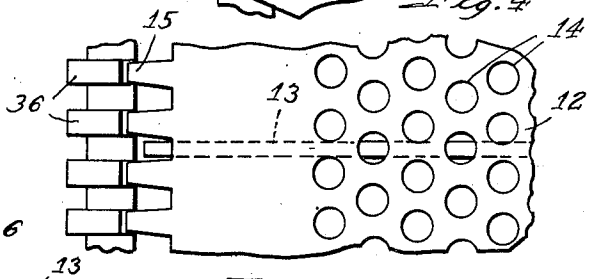


Fig. 5

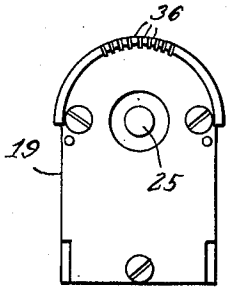


Fig. 6

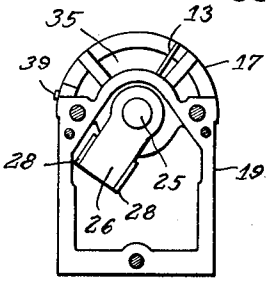


Fig. 7

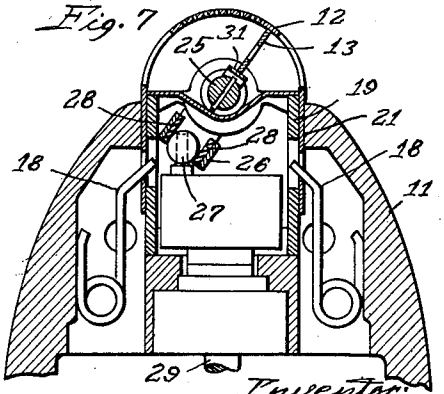
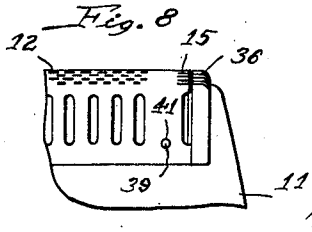


Fig. 8



Inventor:
John Bruecker
By McCanna, Wintercorn & Morsbach
Attys.

Patented Apr. 2, 1940

2,196,098

UNITED STATES PATENT OFFICE

2,196,098

SHAVING IMPLEMENT

John Bruecker, Chicago, Ill.

Application May 9, 1938, Serial No. 206,750

5 Claims. (Cl. 30—43)

This invention relates to shaving implements and is an improvement on the invention covered by my Patent No. 2,081,694, granted May 25, 1937.

One of the objects of my invention is to provide improved means for cutting long hairs, preferably in conjunction with a close shaving comb. My invention here contemplates the provision of a comb having an arcuate form and cutting teeth along a marginal edge, together with a cutter blade rapidly moved across the inner side of the comb and urged by centrifugal force or spring force, or both, into shearing engagement with the cutting edges of the comb. My object in this respect is to enable quick cutting of long hairs by the use of a free cutter blade acting in cooperation with open end teeth arranged in an arcuate row at a marginal edge of the comb so as to work into curvatures of the skin not usually accessible with the use of a flat faced instrument.

Another object is to provide an improved form of cutter blade and means for supporting and urging it into shearing engagement with the comb.

Other objects and attendant advantages will be appreciated by those skilled in this art as the invention becomes better understood by reference to the following description when considered in connection with the accompanying drawing, in which—

Figure 1 is a side elevation of a shaving implement embodying my invention;

Fig. 2 is an enlarged sectional view through the instrument taken substantially on the section line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary section of the cutter, comb and guard;

Fig. 4 is a fragmentary plan view in the nature of a development of the parts shown in Fig. 3;

Figs. 5, 6 and 7 are sections taken substantially on the section lines 5—5, 6—6, and 7—7, respectively, of Fig. 2; and

Fig. 8 is a side elevation of one end portion of the cutting head.

In the form of my invention here shown, a suitable body structure designated generally by 11 is employed which preferably forms a handle and houses an electric motor which serves to operate the cutter. In the preferred form of my invention a comb of arcuate form designated generally by 12 is in cooperative relation with a cutter blade 13 which is moved rapidly across the inner side of the comb in a shearing action operated by the electric motor through any suitable operating means. My invention contemplates, however, an arrangement wherein the blade has a portion free to move or be pressed under the influence of force, including centrifugal force, into constant shearing engagement with the comb and particularly into such shearing engagement with teeth arranged in a curved path at a marginal edge of the comb. In the form here shown, the comb is provided with a shaving area having small, closely positioned hair-receiving openings 14 in a shaving area and is also provided with a row of open end teeth 15 formed on one of the marginal edges of the comb in an arcuate plane. The comb is preferably of extremely thin sheet steel such as may be perforated by a punching operation and it may be supported in the desired form by any suitable means. In the present form the comb is supported on arcuate shoulders 16 and 17, the former being located at one extreme end of the comb and the latter at a point intermediate the opposite end of the shaving area and the marginal teeth. Any suitable means may be employed for holding the comb in this supported position and as here shown, spring holding elements 18 are used to detachably engage end portions of the comb to normally hold the comb seated against the arcuate shoulders 16 and 17. The comb supporting shoulders are in this instance part of a cutter unit body 19 mounted in an open end socket 21 in the body structure 11 and held therein by fastening screws 22. The cutter unit carries opposed bearings 23 and 24 in which a rock-shaft 25 is journaled, this shaft being rapidly oscillated by means of a yoke 26 connected to its ends, the yoke in turn being operated by an eccentric driving member 27 disposed between parallel bearing surfaces 28 on the yoke and carried on a drive shaft 29 which in this instance is the armature shaft of the motor. This cutter operating means is an invention claimed in my application Serial No. 178,221, filed December 6, 1937 and insofar as the present invention is concerned any suitable means may be employed for rapidly moving the cutter blade.

One of the features of the present invention consists in diametrically slotting the shaft or holder for the cutter blade and mounting the blade in such slotted portions so that it is loose or free to have bodily movement for pressure against the inner side of the comb either under the influence of centrifugal force, or spring pressure, or both. Here, centrifugal force is a factor in urging the blade into shearing engagement with the comb and also spring pressure is applied to yieldingly urge the blade against the comb. I have provided an elongated flat spring 31 bowed and

arranged so that it presses at opposite ends against the rock shaft adjacent to opposite ends of the blade and presses at its medial point against the medial portion of the blade, the ends of the spring being preferably slotted so that they straddle the projecting end portions 32 of the blade.

Another feature of my invention consists in the provision of a row of teeth 15 above mentioned in an arcuate plane at a marginal edge of the comb, this arrangement being designed to enable quick cutting of long hairs simultaneously with the shaving operation or as a separate function. To this end the cutter blade 13 is provided with a portion 33 cooperating with the teeth 15 as shown more particularly in Figs. 3 and 4. In the form here shown, the blade is cut away at 34 to provide clearance for the comb support 17 and the adjacent end of the cutter unit body 19 is shaped to provide an arcuate opening 35, Fig. 6, for clearance of the blade when it is oscillated. While the cutter and comb thus far disclosed will serve to cut long hairs I prefer to employ in cooperation therewith a stationary toothed guard having teeth 36 in close proximity to and in alignment with the teeth 15 and arranged in an arcuate plane corresponding with that of the teeth 15 but slightly below the top surface thereof, the guard teeth preferably being rabbeted at 37 for reception of the extreme ends of the comb teeth. In this embodiment the guard teeth are integral with an end plate 38 attached to the cutter body unit and to insure alignment between the guard teeth and the comb teeth the comb is located against displacement by means of a fixed locating pin 39 (Fig. 6) engaged in a complemental opening 41 in the comb.

My invention in its broader phase is not limited to use with a comb of the construction here shown, but contemplates small, marginal teeth arranged in a curved plane together with a rapidly moving blade free to bear against the inner side of the teeth and urged by centrifugal action as an incident of its rapid movement and support into intimate shearing engagement with the teeth. This arrangement facilitates the cutting of long hairs and is particularly advantageous when used in shaving. When guard teeth are used in conjunction with the comb teeth as shown in the drawing, the hairs are definitely guided to the cutting edges and these edges are so located that the skin is prevented from being cut or irritated. In the embodiment shown the parts in Figs. 3 and 4 are approximately ten times actual size.

It is believed that the foregoing conveys a clear understanding of the invention and it will be apparent therefrom that in actual practice changes may be made in the construction and arrangement without departing from the scope of the appended claims, in which—

I claim:

1. In a shaving implement, a comb of thin material in the form of a portion of a cylindrical surface having an arcuate shaving area provided with small closely positioned hair-receiving openings, a row of teeth on a marginal arcuate edge of the comb, a cutter blade having a cutting edge free to bear against the inner side of the comb in shearing relation with edges of said openings and said teeth, means for rapidly moving the cutter to simultaneously traverse said openings and said teeth in a shearing action, and means for causing said cutting edge of the cutter to be pressed outwardly against the comb when operated in said shearing action.

2. A shaving implement as set forth in claim 1, including a stationary guard having teeth arranged in an arc conforming with the arc of the comb and in proximity to said teeth in the comb, with each guard tooth in longitudinal alignment with a tooth on the comb.

3. In a shaving implement, a comb in the form of a portion of a cylindrical surface having hair-receiving openings, a flat cutter blade, a rock-shaft on an axis concentric with the arcuate portion of the comb a supporting bearing for each end portion of the rock-shaft, the rock-shaft being diametrically slotted intermediate said bearings and the cutter blade fitting in the slot in the rock-shaft so as to be oscillated by the shaft, means for oscillating the shaft, and a spring of flat material bowed and arranged to bear at its opposite ends against the shaft adjacent to the ends of the blade and at its medial portion against the blade centrally thereof to urge the blade outwardly against the inner side of the comb.

4. A shaver as set forth in claim 3, in which each end of the spring is bifurcated and straddles the blade.

5. A shaving implement having a comb in the form of a portion of a cylindrical surface provided with hair receiving openings for close shaving and having a row of teeth formed on the extremity of one of the two arcuate ends, and a cutter bearing against the inner side of the comb operative for simultaneously traversing said teeth and said hair receiving openings in a shearing action with both.

JOHN BRUECKER.