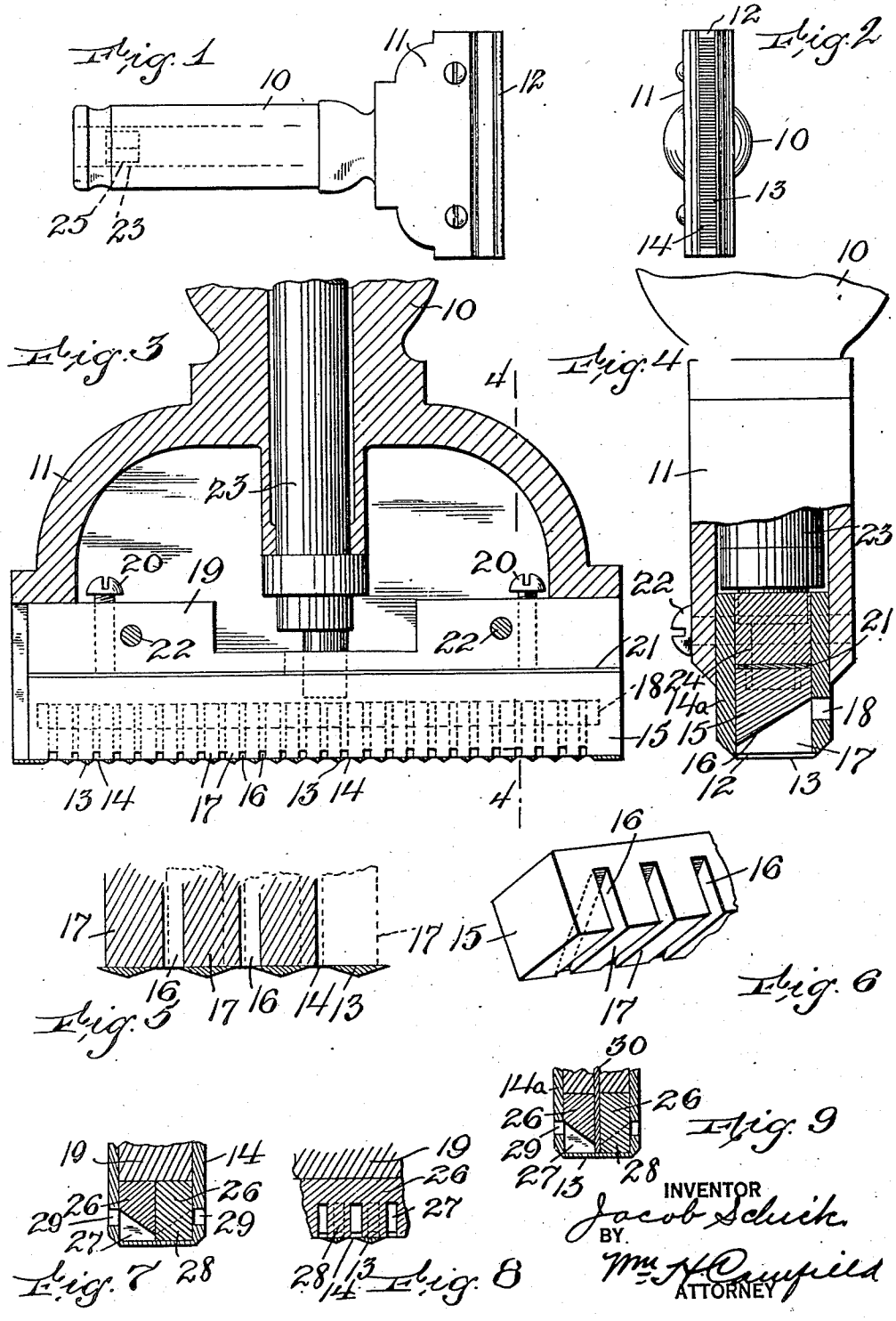
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SHAVING IMPLEMENT

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SHAVING IMPLEMENT.

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This invention relates to an improved shaving implement that has a shear plate that rests against the face and has a cutter operating under the plate to cut the hairs. The machine can be used for shaving without the use of lather.

The invention comprises an implement in which the shearing action takes place practically on the surface of the skin as the shearing plate or its equivalent is extremely thin. The thin plate is held in place against flexing and collapsing under inward pressure by the cutter which is disposed inside the shearing plate to co-operate with it in shearing and to support it against flexing.

The invention also comprises various details of the construction which details will be more fully set forth hereinafter and will also be embodied in the claims.

The invention is illustrated in the accompanying drawing in which Figure 1 is a side view of a shaving implement embodying my invention. Figure 2 is a bottom view thereof. Figure 3 is an enlarged section of the shaving head of the machine and Figure 4 is a transverse section on line 4—4 in Figure 3. Figure 5 is a still larger showing of the detail of the shear plate and the cutter and Figure 6 is a perspective view of a part of the cutter shown in Figures 2 and 3. Figures 7 and 8 are longitudinal and cross-sections of a modified form of cutter. Figure 9 is another modification of cutter.

The implement or machine is constructed to shear close to the skin to accomplish a close shave and in order to do this I provide a very thin shear plate or its equivalent, this plate resting on the skin and having an opening or openings against the edge of which a cutter operates to cut the hair. The shear plate is so thin that it would collapse or flex under inward pressure and the cutter is therefore disposed in a way to support the shear-plate over its inner surface. The preferred form is to have the cutter support the shear-plate over practically its entire surface at all times.

The device is constructed to present a shear plate for movement along the skin, which plate has slots with both ends open. This form therefore provides a plate with no defined front or back but which can be moved back and forth across the skin and can therefore rest close to the skin and the hairs that are still uncut and in the slots do not raise the device out of close contact with the skin. This allows a very close shave to be accomplished. The inside cutter that operates across these slots and transverse relative to the direction of movement of the machine cuts across the edges of the slots to sever the hair, the slots being close together to form a series of narrow teeth which are prevented from moving inwardly by the support given by the inside cutter, which cutter has its teeth arranged on the end as differentiated from prior cutting devices in which the movable cutters have the teeth operating alongside the shear plate.

The device comprises, in its preferred form, a handle 10 on the end of which is the shaving head 11. On the end of the shaving head is the shear-plate 12 which in this instance is shown as a series of parallel blades 13 on the end of the U-shaped piece 14ª. The blades 13 are formed by cutting parallel slots 14 across the end of the piece 14ª. This plate 13 can be provided with openings of other shapes as will be evident but this form is though to be the easiest and cheapest to make.

The plate 12 is made extremely thin and when used against the skin the skin forms a cushion so that the shearing or cutting edge which is on the inside face of the plate is practically flush with the surface of the skin. The blades 13 are too close together, however, to allow the skin to pass up into the slots 14 and the skin is therefore safe from cutting. The angle of the blade edge sloping about as shown in Fig. 5 has been found advantageous in practice.

The cutter can be of a design to co-operate with the opening or openings in the shear plate and is arranged to support the shear plate 12 from the inside. This prevents flexing and bending of the shear plate and thus provides a firm and smooth-feeling surface presented to the skin.

The cutter in this form comprises a bar 15 which is cut away as at 16 to form teeth 17 which teeth pass across the edges of the blades 13 to shear the hair. The teeth are arranged so that a tooth passes over an opening in one direction and shears against one edge of the opening and moves far enough to uncover the other edge of the opening and shear against the latter on the return stroke. The teeth are wider than the openings and this causes the teeth to bear at all times on a

major portion of the blades 13 as one tooth engages a blade before the preceding blade leaves it. This will be evident from the showing by full and dotted lines in Figure 5, these lines showing the extremes of movement of the teeth.

The cut-away parts 16 are deep enough to allow the hair to enter the spaces 14 and are inclined at the top to direct the cut hair to the slot 18 in the side wall of the shaving head 11 from which it falls or from it can be conducted by a flexible tube which in turn might be connected to a vacuum pump.

The cutter reciprocates in the U-shaped member 14ª and is mounted on a bar 19 which acts as a support for the cutter and which carries means such as the screws 20 and the soft metal plate 21 for adjusting the cutter when it wears. The U-shaped piece and the bar 19 can be held in place by the screws 22 between the side-pieces of the shaving head 11. This enables the U-shaped piece and its contents to be taken out as a unit whenever it is necessary to do so by simply removing the screws 22.

The cutter is reciprocated and I show the shaft 23 for the purpose, one end having an eccentric stud 24 in a transverse slot in the cutter so that when the shaft rotates the cutter is moved back and forth across the blades 13. The shaft extends into the handle and can have any form of attachment for a flexible shaft such as exemplified by the recess 25.

The cutter can be made in various ways and I show in Figures 7 and 8 a cutter consisting of two parallel bars 26 cut away at 27 so as to form teeth 28 and these teeth in the bars are arranged so that the teeth in one bar are opposite the recesses in the other bar so that they are staggered to insure the support of the blades 13, both bars being adapted to feed the cut hair through the recesses and out through the openings 29 in the sides of the shaving head 11.

Another modification is shown in Figure 9 in which two parallel bars are cut away to form teeth and between them I arrange a continuous strip 30, this strip being without recesses or teeth and forming a solid support for practically the entire length of the shaving head whereby all the blades are supported at the centre.

In these various modifications the ends of the teeth are flat so as to give a maximum surface bearing against the inner faces of the blades 13. The blades 13 are made of extremely hard material to form a series of keen cutting edges and when the end of the shaving head is passed over the face a close comfortable shave is accomplished.

In shaving devices that are to be used on long hair such as in clipping as distinguished from shaving the plate is of course made of material thickness and can support itself. The use of a relatively thin plate with a cutter operating under it and offering the easy adjustment possible in this case is novel. The old-fashioned clipper is cumbersome and forms such a broad and deep surface that it can not be used to clip with comfort in recessed places or where obstructions are offered. The use of a flat cutter operating in conjunction with a narrow shear-plate also offers advantages apparent to one familiar with the use of such implements.

It will be understood that modifications can be made in the construction of the implement as shown without departing from the scope of the invention.

I claim:—

1. A shaving implement comprising a shearing plate of extreme thinness to rest against the skin, having an opening for the reception of hair, a cutter to travel across the opening to provide a shear cut with one edge of the opening, and means for holding the parts to insure the supporting of the plate against flexing by means of the cutter.

2. A shaving implement comprising a shearing plate thin enough to be readily flexed and having an opening therein, and a cutter operating across the opening to form a shearing and supporting means for the flexible plate.

3. A shaving implement comprising a perforated flexible sheet and a cutter to operate across the flexible sheet for shearing purposes and to maintain the sheet in operative position under external pressure.

4. A shaving implement comprising a movable cutter and a perforated shear plate supported against external pressure by the cutter and of extreme thinness whereby the shearing is done at substantially the surface of the skin.

5. A shaving implement comprising a movable cutter and a highly flexible perforated shearing plate on the face of the cutter, the plate being extremely thin and maintained against flexing by the cutter.

6. A shaving implement comprising a holder with a sheet of perforated material on its outer end, said sheet being too thin to maintain its shape under a shaving strain unless it is supported, and a cutter in rear of the sheet to co-operate with the sheet for shearing and to support the sheet in position.

7. A shaving implement comprising a holder having a series of blades at its end, the blades being so thin that they need support in shaving, a cutter with teeth to engage the blades to provide a shear cut and having flat ends to support the blades and hold them in position, and means for moving the cutter along the blades.

8. A shaving implement comprising a holder having a series of blades at its end, the blades being so thin that they need sup-

port in shaving, a cutter with teeth to engage the blades to provide a shear cut and having flat ends to support the blades and hold them in position and means for reciprocating the cutter.

9. A shaving implement comprising a holder having a series of blades at its end, the blades being so thin that they need support in shaving, a cutter with teeth to engage the blades to provide a shear cut and having flat ends to support the blades and hold them in position, and means for moving the cutter along the blades, the teeth being wider than the space between the blades.

10. An implement for shaving comprising a handle with a shaving head thereon, a shear-plate on the end of the shaving head, a cutter with teeth to engage at their ends against the rear face of the shear plate, an adjustable support for the cutter, and means for moving the cutter.

11. A shaving implement comprising a shear-plate with open slots extending across the plate from side to side to form teeth between them, and a cutter operating in rear of the plate to co-operate with the edges of the teeth.

12. A shaving implement comprising a shear-plate with open slots extending from side to side of the plate to form teeth between them, the teeth being so thin that they need support under shaving pressure, and a cutter under the plate and having teeth to move under the shear plate and hold the teeth thereof in position.

13. A shaving implement comprising a shear-plate with slots extending from side to side, a cutter under the plate and having teeth to co-operate with the edges of the slots in cutting, and means for operating the cutter transversely of the slots.

14. A shaving implement comprising, in combination, a series of thin and narrow blades having outer surfaces adapted to lie against the surface of the skin while shaving, said blades being separated by slots of such width as to permit at least one hair to enter, said width being so proportioned in respect to the thin and narrow dimensions of said blades as to prevent the surface of the skin being shaved from extending above the rear surfaces of the blades when the blades contact the surface of the skin during a shaving operation, cutter means having shearing edges in contact with the rear surfaces of the blades, and means for operating said cutter means in relation to the blades.

15. A shaving implement comprising, in combination, a series of closely spaced blades whose outer surfaces are applied to the skin during a shaving operation and whose rear surfaces have edges against which hair is cut close to the surface of the skin, the blades being spaced sufficiently to permit hair to enter therebetween but to exclude the passage of skin above the rear surfaces of the blades when the outer surfaces of the blades are applied to the skin and drawn thereover in a direction substantially continuous with the edges of the blades, cutter means having teeth bearing against the rear surfaces of the blades, and means to translate said cutter means whereby the shearing of hair between the blades and teeth is attained.

16. A shaving implement comprising, in combination, a shear-plate having a series of closely spaced blades adapted to lie in contact with the skin and whose shearing edges are disposed in a direction substantially continuous with the direction of manipulation of the implement during a shaving operation, the blades of the shear-plate being relatively thin and of substantially the same cross-sectional area along their shearing lengths, cutter means having teeth bearing against the rear faces of the blades of the shear-plate and forming shearing edges co-operative with the shearing edges of said blades, and means to translate said cutter means in a direction lateral to the blades.

17. A shaving implement comprising, in combination, a shear-plate having a series of parallel spaced blades separated by slots open-ended on at least one side of the shear-plate, said slots being of such a width as to accommodate hair and to maintain the surface of the skin being shaved from extending above the rear surfaces of said blades while permitting it to extend substantially to said rear surfaces along the lengths of said slots as the outer surface of the shear-plate is held flat against the skin, cutter means having edges contacting the rear surface of the shear-plate, and means to operate said cutter means in relation to the shear plate.

18. A shaving implement comprising, in combination, a narrow shear-plate having alternate blades and slots running widthwise of the shear-plate, the high lines of the outer surface of the shear-plate defining a plane parallel to the shearing edges of the implement, said implement being thereby adapted to be placed against the surface of the skin and to be moved thereover in the direction widthwise of the shear-plate during a shaving operation, cutter means bearing against the rear surface of the shear-plate, and means to translate said cutter means over the rear surface of the shear-plate, whereby the full lengths of the blades are effective for shaving hair over the entire slotted area of the shear-plate.

19. A shaving implement comprising, in combination, a rectangular shear-plate having alternate blades and slots across its narrow dimension and walls bordering its longest dimension, said shear-plate constituting a relatively narrow skin contacting area,

said slots being open-ended and extending from side to side of said shear-plate, cutter means disposed rearward of said shear-plate and intermediate said walls, said cutter means having teeth contacting said blades, and means for translating said teeth over the rear surface of said blades whereby hair engaged by said teeth and blades is severed.

20. In a shaving implement, a thin shear-plate of uniform thickness having a series of alternate slots and blades, the walls of each of the slots being inclined toward each other and approaching a line of convergence above the rear surface of said shear-plate, and the slots being of sufficient width to accommodate at least one hair in erectile position and to exclude the extension of the surface of the skin above the rear surface of the shear-plate when the outer surface of the shear-plate is placed against the surface of the skin to be shaved.

21. In a shaving implement, a series of closely spaced blades separated by parallel edged slots of sufficient width to receive at least one hair, said blades being of such thickness as to maintain the surface of the skin being shaved from entering said slots above the rear face of the blades while permitting the surface of the skin to extend substantially to the rear surfaces of the blades when the outer surfaces of the blades are applied to the surface of the skin during a shaving operation.

In testimony whereof I affix my signature.

JACOB SCHICK.

DISCLAIMER

1,721,530.—*Jacob Schick*, Stamford, Conn. SHAVING IMPLEMENT. Patent dated July 23, 1929. Disclaimer filed September 4, 1940, by the assignee, *Schick Industries, Limited.*

Hereby makes this disclaimer of claims 10, 11, 13, 14, 15, 18, 19, and 20 of said patent.

[*Official Gazette October 1, 1940.*]