

May 27, 1941.

G. DALKOWITZ

2,243,196

SHAVING DEVICE

Filed June 22, 1937

Fig. 1.

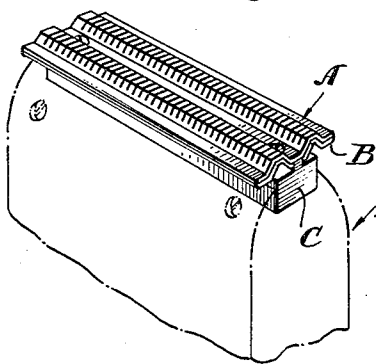


Fig. 4.

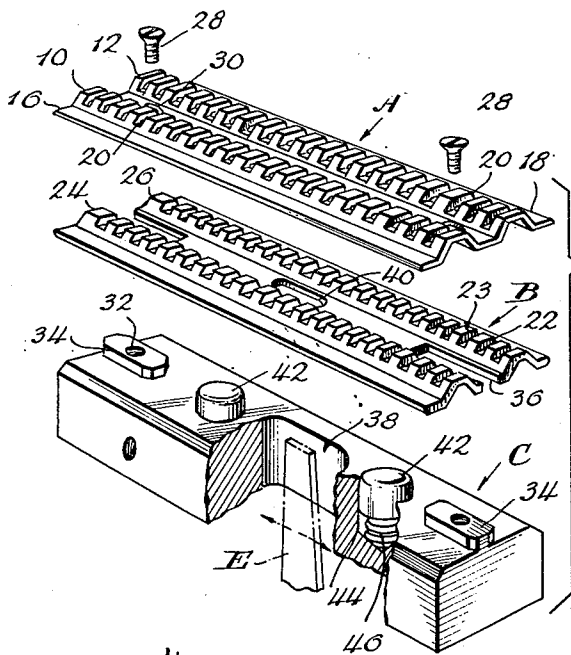
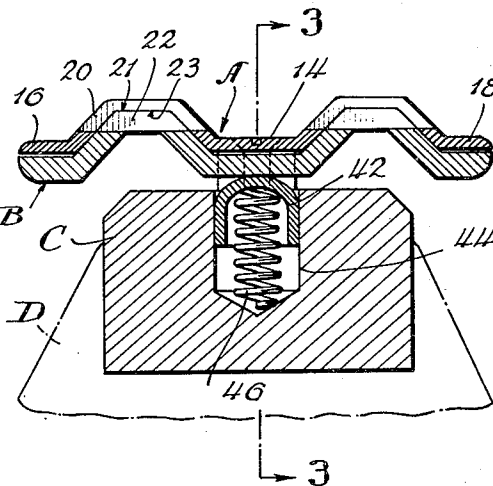


Fig. 2.

Fig. 5.

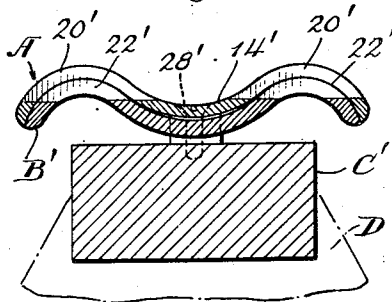
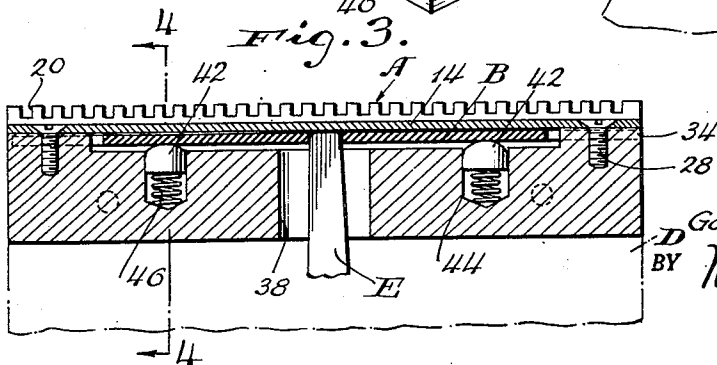


Fig. 3.



INVENTOR.
GODFREY DALKOWITZ
BY *McLean & Shurt*
ATTORNEY

UNITED STATES PATENT OFFICE

2,243,196

SHAVING DEVICE

Godfrey Dalkowitz, Brooklyn, N. Y., assignor to
American Safety Razor Corporation, Brooklyn,
N. Y., a corporation of Virginia

Application June 22, 1937, Serial No. 149,568

2 Claims. (Cl. 30-43)

This invention relates to the art of shaving and in particular to the art of dry shaving, that is, shaving without the use of unguents or detergents applied to the hair to be removed.

Among the objects of my invention is the provision of an implement for dry shaving having relatively movable parts and said parts carrying cutting edges that are adapted to coact so as to effect a clipping or shearing action; the provision in a dry shaving implement of a fixed member having a slot therein, a portion of the sides of said slot being adapted to act as cutting edges and other portions of the slot being adapted to receive hair and to guide them into the zone of action of the cutting edges as the dry shaver is moved over the surface to be shaved; the provision in a dry shaver of means for permitting the escape of the waste products of the shaving operation from the active shaving zone; the provision in a dry shaver of means for securing at all times contact between the fixed and the movable parts; the provision in a dry shaver of a plurality of sets of coacting cutting edges; the provision in a dry shaver of a plurality of sets of coacting cutting edges arranged so that they successively pass over a given portion of the surface to be shaved; the provision of sets of coacting cutting edges separated from each other by a depression or recessed portion; the provision in a dry shaver of a plurality of sets of coacting cutting edges, the cutting edges of at least one of said sets having portions out of alignment with other portions thereof; and the provision in a dry shaver of a disposition and arrangement of parts adapted for securing efficient action.

For the attainment of these objects and such other objects as will hereinafter appear or be pointed out I have illustrated several embodiments of my invention in the drawing wherein—

Figure 1 is a perspective view of a shaving head illustrative of one embodiment of my invention;

Figure 2 is an exploded view in perspective, on an enlarged scale, of the parts thereof;

Figure 3 is a longitudinal cross sectional view, also on an enlarged scale, of the shaving head, of Figure 1, this view being taken along the line 3-3 of Figure 4, looking in the direction of the arrows;

Figure 4 is a transverse sectional view through the shaving head of Figure 1 taken on the line 4-4 of Figure 3, looking in the direction of the arrows, and on a still further enlarged scale, and

Figure 5 is a sectional view similar to Figure 4, of a modified form of my invention.

Shaving heads constructed according to the present invention as exemplified in the disclosure herein may be characterized by stating that they have two active or cutting portions spaced from each other by an unobstructed interval. The cutting edges of the respective cutting portions are formed on the sides of parallel slots, the slots of each cutting portion arranged in a row, and the two rows being parallel to each other, and the slots of the respective cutting portions are aligned in pairs. If the shaving head is moved over a surface to be shaved in the direction of the slots, hairs entering the foremost cutting portion and escaping cutting therein will move through the space between the cutting portions to be acted on by the second cutting portion.

Referring now to the drawing in detail I have shown in Figures 1 to 4 inclusive a first illustrative embodiment of my invention. In these figures the shaving head is shown as comprising a shear plate or guard plate A, a cutter B and a base block C, the latter serving to support the parts of the shaving head and when in use being mounted in a handle portion D, indicated in dotted lines.

The shear plate A is shown as formed with two longitudinal raised portions or ribs 10 and 12 and these are connected by a depressed portion 14 extending between them, and depressed flanges or ribs 16 and 18 are shown positioned on the outer portions of the ribs 10 and 12. Running transversely across these rib portions is a series of slots 20, these slots being shown as extending entirely across and through the upper walls of the ribs and also through the side walls thereof, these side walls being shown as inclined, although not necessarily so. The inner or lower edges of the side walls 21 of these slots serve as cutting edges. It will be understood of course, that the shear plate is made of a material suitable for the function it is to perform, a material such, for example, as hardened steel.

The cutter B is in general complementary in form to the shear plate A and is shown in Figure 4 as positioned along the underside thereof and as being provided with slots 22 running transversely across the rib portions 24 and 26 thereof, which rib portions are spaced by the depressed portion 27. The sides of the slots 22 are provided with cutting teeth 23 on their outer edges.

The shear plate A is provided with means for securing the same to the base block C, such means being shown in the form of screws 28 adapted to pass through the openings 30 in the shear plate and into the threaded openings 32 provided in

lugs 34 extending upwardly from the base block. It will be observed that as a result of this mounting a space is left between the base block B and the shear plate, and within this space is accommodated the cutter B, this cutter being free to slide longitudinally therein and being guided by and restricted to such longitudinal movement by the side walls of the lugs 34 which engage the walls of the slots 36 provided in the ends of the cutter B. The inner walls of said slots further act as stops to limit the extent of longitudinal movement of the cutter.

An opening 38 is shown in the base block and through this opening extends a reciprocating member E actuated by any suitable source of power located in the handle or elsewhere, and the upper end of which passes into a slot 40 in the cutter for the purpose of reciprocating the same in relation to the shear plate A. In order to insure contact between the cutting portions of the shear plate and the cutter I have shown, by way of example, resilient means comprising cup shaped members 42 positioned within bores 44 provided in the base block C and urged upwardly against the lower surface of the cutter B by compression springs 46 also located within said bores.

It will be observed that the drawing shows the cutter B as spaced from the base block C, whereby any friction between these parts that would serve to unnecessarily impede the movement of the cutter B is avoided. For similar reasons the cutter B is spaced from the shear plate A except at those portions where contact is necessary to insure the cutting action. This latter construction moreover serves to prevent contact of the cutter B and the shear plate A only at portions other than the cutting areas and without preventing contact thereof at the cutting areas, whereby the necessary contact at the cutting areas is secured.

In using the razor I have found that excellent results are obtained by moving the head across the surface to be shaved in the direction of the slots so that hairs will enter the slots on one side pass along them, while the cutter moves transversely across the slots and shears off the hairs, and if any hairs should escape the cutting or be incompletely cut they will pass through the intervening spaces and enter the second set of slots where they will again be exposed to the cutter. It will therefore be observed that the hair may pass unobstructedly from one side of the shear plate to the other and through two separate cutting zones. In the first portion they will be subjected to what may be termed a preliminary shaving operation, while in the second rib portion a second shaving operation that may be termed a "close shave" is obtained.

While I have not illustrated this feature it will be understood that one cutting portion may have different characteristics from the other, for example, the shear plate of one portion may be relatively thick so that the preliminary shaving portion will be relatively coarse, while the shear plate of the other portion may also be very thin, so that a very close shave may be effected.

It is also within my contemplation to position the slots of the two sets in staggered relation so as to make more certain that areas remaining unaffected by the first cutting operation will be subjected to a cutting action in the second set of slots.

It is also within my contemplation to have

different widths in the two sets of slots. For instance the first set may have its slots relatively widely spaced while the second set which serves for the final or close shave will have its slots relatively narrow. Then again the spacing or pitch of the slots of the two sets may be different. For example, where wide slots are used they may be spaced farther apart, while when narrow slots are used they may be placed more closely together.

Instead of using only two successively acting cutting areas, obviously it may be found of advantage to use more than two such areas, and these may have differing characteristics.

It will be observed that the shaving waste which is generated at the meeting points of the cutting edges of the shear plate and the cutter will be free to pass through the slots 20 and 22 either to the outside of the shear plate or to the underside of the cutter. In either case whatever waste collects on the razor is readily removable and is not accumulated at an interior portion of the shaving head from which it would be difficult to remove.

In Figure 5 I have shown a modified form of shaving head which resembles in its action the shaving head of Figures 1 to 4 but differs therefrom in that the transverse contours of the rib portions are arched along a curve instead of having the angular conformation shown in Figures 1 to 4. To avoid unnecessary description similar parts of this shaving head have been lettered and numbered similarly to the corresponding parts of Figures 1 to 4, the letters and numbers however being primed.

While I have shown and described several illustrative embodiments of my invention it is to be understood that my invention may be embodied in many other forms as will be obvious to those skilled in the art and that the disclosure herein is to be interpreted as illustrative merely and not in a limiting sense and that I do not limit myself in any way other than as called for by the prior art.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. In a dry shaver head, a stationary cutter comprising a flat horizontal face engaging surface portion of substantially uniform thickness, an outwardly and downwardly inclined flange on each side of said portion, a movable cutter having a flat portion of substantially uniform thickness in contacting relation with said flat portion of said stationary cutter and also having an outwardly and downwardly inclined flange on each side thereof respectively in contacting relation with said flanges of said stationary portion, transverse slots in said flat portion of the movable cutter traversing said flat portion and said flanges and extending to a depth just sufficient to form openings through said flat portion, and transverse slots extending through said flat portion and said flanges of the stationary cutter to a depth coextensive with the slots of the movable cutter when said cutters are in assembled relation, and horizontal reinforcing ribs extending outwardly from the flanges of said stationary cutter and the flanges of said movable cutter.

2. In a dry shaver head, a stationary cutter comprising a pair of spaced, parallel, flat horizontal face engaging surface portions each of substantially uniform thickness, an outwardly and downwardly inclined flange on each side of

each of said flat portions and a horizontal portion interconnecting the inner ones of said flanges, a movable cutter having a pair of flat horizontal portions each of substantially uniform thickness in contacting relation with each of said flat horizontal portion of said stationary cutter and also having an outwardly and downwardly inclined flange on each side thereof respectively in contacting relation with said flanges of said stationary cutter and a horizontal portion interconnecting the inner ones of its flanges, transverse slots in said flat portions of the movable cutter traversing each flat portion

and the flanges thereof and extending to a depth sufficient to form openings through said flat portion, and transverse slots extending through each said flat portion of the stationary cutter and its flanges to a depth coextensive with the slots of the movable cutter when said cutters are in assembled relation and a horizontal reinforcing rib extending outwardly from each of the other flanges of said stationary and said movable cutters at substantially the level of their respective horizontal interconnecting portions.

GODFREY DALKOWITZ.