

May 13, 1930.

J. SCHICK

1,757,978

SHAVING MACHINE

Filed April 23, 1928

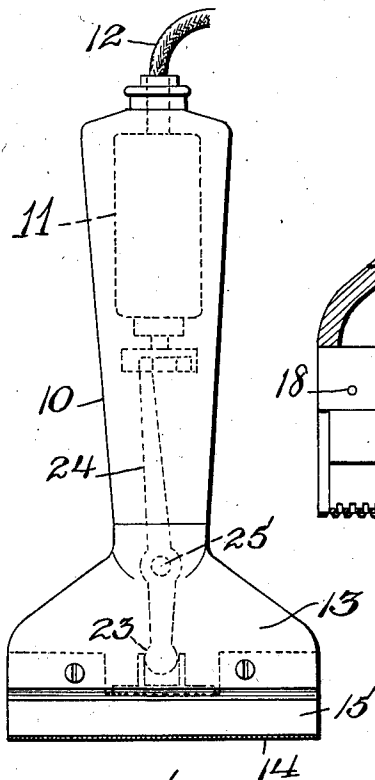


Fig. 1

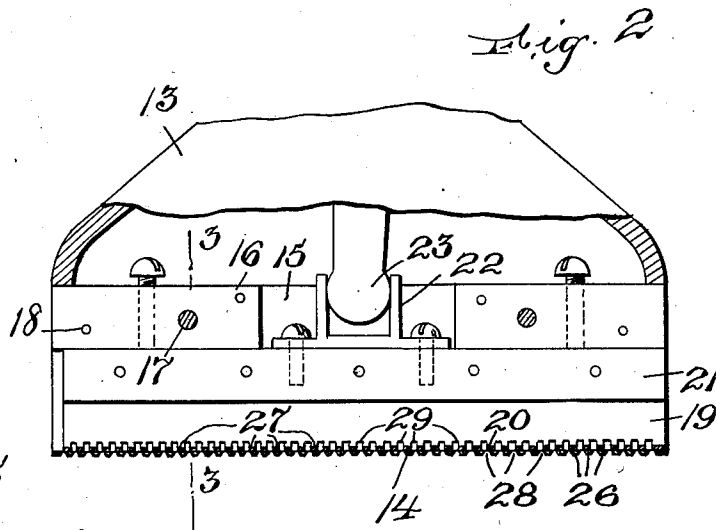


Fig. 2

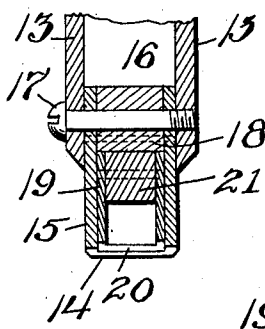


Fig. 3

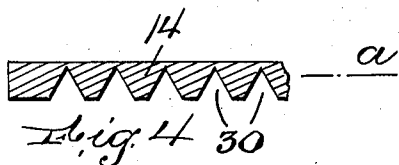


Fig. 4



Fig. 5

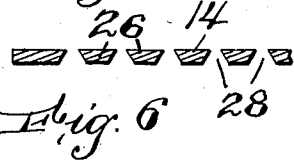


Fig. 6

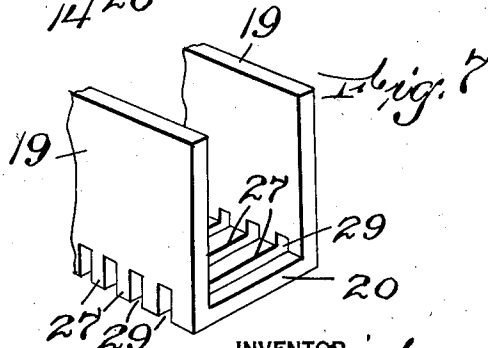


Fig. 7

INVENTOR  
Jacob Schick.  
BY  
Wm. H. Caulfield.  
ATTORNEY.

## UNITED STATES PATENT OFFICE

JACOB SCHICK, OF STAMFORD, CONNECTICUT

## SHAVING MACHINE

Application filed April 23, 1928. Serial No. 272,074.

This invention relates to an improved shaving machine of the type that is designed to be used for shaving without the necessity of the use of lather or equivalents for softening the hair on the face.

The invention is designed to provide a small device to be held in the hand like a razor would be held, the machine having a shear-plate to rest on the face and a cutter in rear of the shear-plate, both the plate and cutter having teeth to cooperate to do the shearing. The plate is provided with a channel for the cutter and the cutter is provided with a passage in rear of the teeth in order to allow the escape of cut hair from the device. The various angular positions given to the machine in shaving will cause the hair to fall out of the machine and thus make it unnecessary to provide a suction apparatus for withdrawing the hair. The passage can be thoroughly cleared by blowing through the passage formed in the cutter.

The invention is also designed to provide a shear-plate with openings large enough to admit hair but small enough to prevent the skin from entering the openings to cause cutting or irritation. The skin passes into the openings far enough to allow the hair to be nipped at the surface of the skin. I have found that the preferred size of opening is eight thousandths of an inch (.008 inches) and that the maximum opening is twenty thousandths of an inch (.020 inches) and these openings are in plates of a thickness equal to approximately the size of the opening. A plate made of these proportions with a cutter operating on the rear face of the plate will provide a close comfortable shave even on tender skin.

A preferred form of the invention is illustrated in the accompanying drawings in which Figure 1 is a side view of a shaving machine embodying the invention and Figure 2 is an enlarged side view of the shaving head with the casing illustrated in section to more clearly disclose the inside structure. Figure 3 is a cross-section on line 3-3 in Figure 2. Figure 4 is an enlarged section of the shearing plate showing the first step in its manufacture. Figure 5 is a similar

view showing the second step in its manufacture and Figure 6 is another similar view of the completed shear-plate. Figure 7 is a perspective view of a portion of the cutter.

The invention comprises a suitable form of handle 10 which can be constructed to receive a suitable motor 11 which is connected by the cable 12 to an ordinary light socket. On the end of the handle is the shaving head 13 on the end of which is arranged the shaving head 14. The shear-plate is usually made from a piece of material channel shaped in cross section, usually a piece of hardened steel. The shear-plate 14 is at the shaving head which has the side walls 15. The side walls 15 of the shaving head are braced and held in position by spacing elements such as the blocks 16, all these parts being held in position by the screws 17. The blocks 16 at the ends of the side walls of the shear-plate piece are usually permanently secured by pins 18.

Within the side walls and resting on the shear-plate 14 is the cutter which usually consists of a U-shaped piece having side wall 19 and a bottom 20 secured to a bar 21, the bar being reciprocated and I show fingers 22 secured to the bar and receiving the end 23 of a lever 24 which is pivoted at 25 and is operated from the motor, so that as it is repeatedly vibrated the cutter is reciprocated against the shear-plate. The shear-plate has teeth 26 and the cutter has teeth 28, these cooperating to nip the hairs that pass up between the openings 28 between the teeth 26 of the shear-plate.

The teeth of the cutter are usually formed by cutting across the bottom 20 to form the spaces 29, the edges of these cuts being the cutting edges of the teeth 27. The shear-plate 14 is very thin and in order to make the thin slots for receiving the hairs and preventing the entrance of the skin the shear-plate is first stamped as shown in Figure 4, to provide the notches 30. Then the plate is ground off on a suitable plane such as defined by the small line *a* in Figure 4 until the upper end of the cuts forms slots of suitable width as shown in Figure 5. Then the lower face is ground off as shown at *b* in Figure 5

and this forms the completed plate as shown in Figure 6.

I find that the maximum width of the slots 28 at the top or at the cutting edge should not be in excess of twenty thousandths of an inch (.020 inch) and that the best results are secured by making shear-plate of a thickness equal to the width of the slots. The most efficient shaving on a normal skin is with an opening of about eight thousandths of an inch (.008 inches).

These openings are not necessarily the width of the slots 28 because if the throw or movement of the cutter does not move the teeth of the cutter for the full width of the slots 28 the space as defined will be that between the edge of the slot and the opposed edge of the cutter tooth. It is the width of the opening that is meant and this is usually also the width of the slot 28.

These preferred dimensions are given as a result of many experiments, smaller openings preventing a close shave and larger openings causing irritation of the skin by permitting the engagement of the teeth of the cutter with the surface of the skin.

It will be noted from this construction that the ends of the shaving head are open which avoids the necessity of withdrawing the cut hair by a suction means.

In handling the machine, the various angles at which it is placed when shaving will allow the hair to pass out at the open ends of the cutter as both ends are preferably open and the hairs can be dislodged if necessary by simply blowing through the channel or passage through the cutter.

While I show but a single cutter it will be evident that several cutters can be placed side by side in the shaving head with the teeth staggered so that the entire edge of each tooth of the shear-plate will not be engaged at the same time in the operation of shaving. Furthermore, the slots 29 instead of being placed directly across the bottom of the cutter can be arranged at an angle as will be evident.

Various modifications can be made in the construction of the parts without departing from the scope of the invention.

I claim:—

1. A shaving machine comprising, in combination, a skin contacting plate of narrow width with alternate slots and blade extending widthwise of the plate, the plate being of thin metal, walls supporting the skin contacting plate at the ends of the blades, said walls having openings opposite the slots whereby hair may enter said slots without substantial bending of the hair at the surface of the skin as the shaving implement is passed over the skin in a direction substantially parallel to the slots, cutter means including a plate in contact with the rear surface of the skin contacting plate and having alternate slots and teeth whereby hair in the slots is

sheared as said cutter means is translated, and means to translate said cutter means.

2. A shaving machine comprising, in combination a rectangular shear-plate having alternate slots and blades across its narrow dimension, walls supporting the ends of the blades, said walls being slotted opposite said slots and above the rear surfaces of the blades, a cutter having three walls defining a passage, each of the walls of said cutter being slotted, one wall of said cutter contacting the rear surface of the shear-plate and the other walls of said cutter contacting the walls of the shear-plate, and means to translate said cutter in relation to said shear-plate.

3. A shaving machine comprising, in combination, a shear-plate having alternate slots and blades across its narrow dimensions, walls supporting the ends of the blades, said walls being slotted opposite said slots and above the rear surfaces of the blades, cutter means intermediate said walls, said cutter means having teeth bearing against the rear surfaces of said blades and against the inner surfaces of said walls, and means to operate said cutter means relative to said shear-plate.

4. In a shaving machine, a thin shear-plate of uniform thickness having a series of slots and blades, the walls of each of the slots being inclined and approaching a line of convergence above the rear surface of said shear-plate, each of the slots having a width between .008 and .020 of an inch, and the thickness of said shear-plate being commensurate with the width of each slot.

5. A shaving machine comprising a shaving head channel-shaped in cross section and slotted and sharpened on its closed side to form shearing edges, and a cutter channel shaped in cross-section and slotted on its closed side and slidable in the head whereby the slotted ends co-operate to cut hair entering the slots of the shaving head.

In testimony whereof I affix my signature.

JACOB SCHICK.

---

## DISCLAIMER

1,757,978.—*Jacob Schick*, Stamford, Conn. SHAVING MACHINE. Patent dated May 13, 1930. Disclaimer filed September 4, 1940, by the assignee, *Schick Industries, Limited*.

Hereby makes this disclaimer of claims 1, 2, and 3 of said patent.  
[*Official Gazette October 1, 1940.*]