Feb. 11, 1930. J. SCHICK 1,747,031

SHAVING MACHINE

Filed July 2, 1928

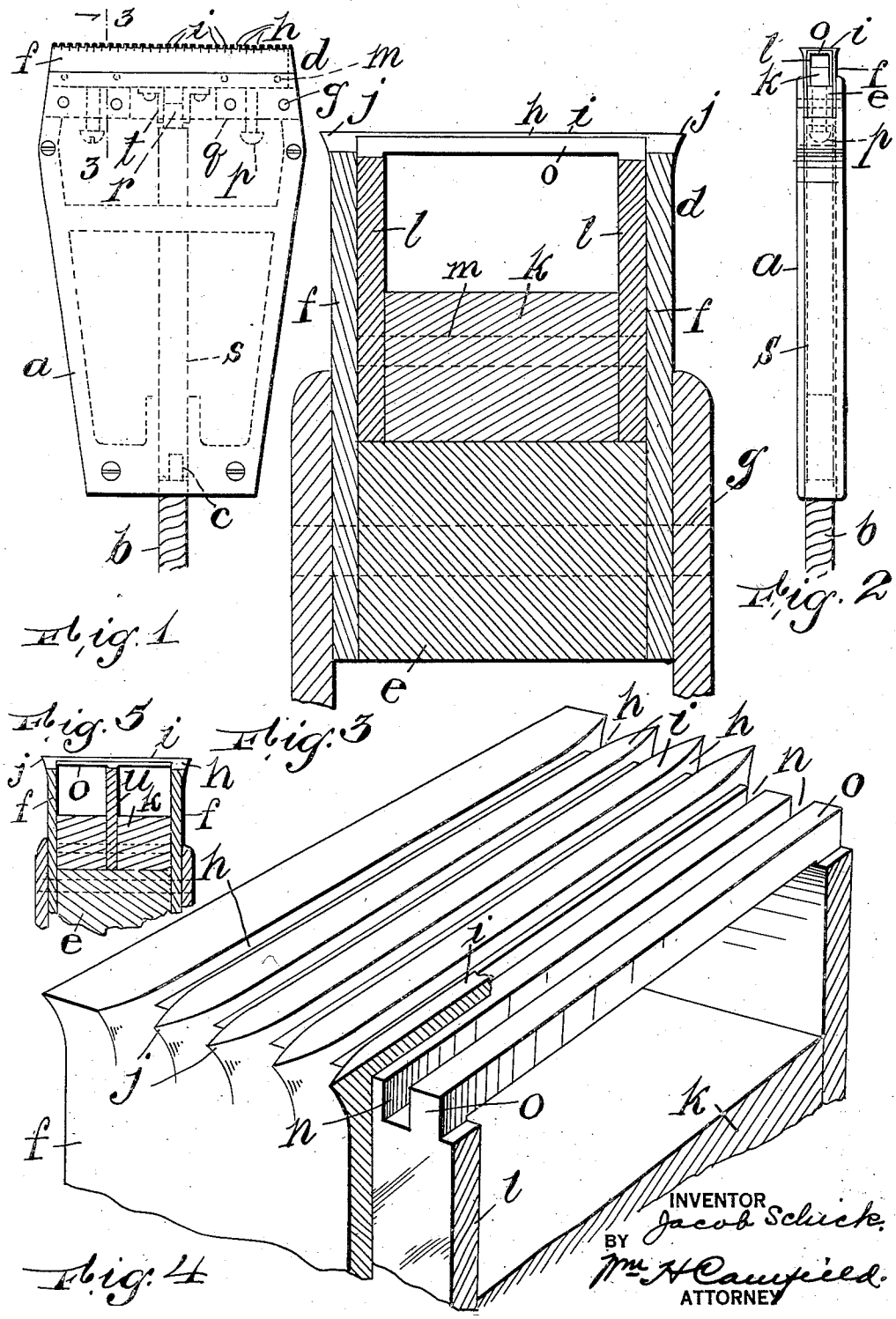


Fig. 1

Fig. 2

Fig. 3

Fig. 5

Fig. 4

Patented Feb. 11, 1930 1,747,031

UNITED STATES PATENT OFFICE

JACOB SCHICK, OF STAMFORD, CONNECTICUT

SHAVING MACHINE

Application filed July 2, 1928. Serial No. 289,686.

This invention relates to an improved shaving machine which is easily manipulated and which is used to secure a close shave and this without the necessity of using soap or a beard softener of any kind.

The feature of the invention that is pronounced is a series of minute openings between parallel teeth that are thin, the teeth having shoes or projections on the end to pick up hairs that lie close to the skin and direct them into the slots as the machine is passed over the face in a direction substantially parallel with the longitudinal axis of the teeth. The hairs are cut off as they are in the slots by teeth on a cutter under the first-mentioned teeth.

This form of machine provides a close shave as the hairs are cut off close to the skin, those hairs that are inclined or slightly turned are lifted and fed into the slots and the cutters cut the hairs off at the very surface of the skin but do not engage the skin as the slots are too narrow to permit the skin to be engaged by the cutters. The slots are minute as they are never more than fifteen one-thousandths of an inch in width and the usual and most efficient machines have slots of eight one-thousandths of an inch in width. In all cases I find the best results are obtained by making the teeth that engage the face of the same thickness as the width of the slots or approximately so. In other words when the thickness of the teeth is increased the width of the slots can be increased in the same amount.

The invention is illustrated in the accompanying drawings in which Figure 1 is a side view of a razor embodying my invention and Figure 2 is an end view thereof. Figure 3 is an enlarged section of the top part of the razor taken on line 3—3 in Figure 1. Figure 4 is a more enlarged perspective view of the top of the razor with one of the teeth that engage the face broken away and with the teeth of the cutter also shown in position under the first-mentioned teeth. Figure 5 is a section of a modified form.

The machine comprises a handle *a* of any desired form but I usually make it flat so as to be easily held and of a size to fit easily in the hand. The form shown is operated by suitable mechanism to which power is transmitted by a flexible shaft *b* which has any usual attachment *c* to a short shaft *s* within the handle.

On the handle is an end-piece *d* which is usually rectangular in cross section having the rib *e* which is secured to a bridge-like piece *f* these parts being secured together by such means as the pins *g* which can also extend into the handle side plates to fasten the end-piece to the handle.

The end-piece is provided with slots *h* preferable from side to side and then the inside of the end-piece is finished to bring the thickness of the teeth *i* to conform approximately to the width of the slots *h*. The sides of the walls *f* are ground to leave the projecting parts *j* which form shoes on the ends of the teeth. As the machine is used by drawing it across the face longitudinally of the slots these shoes pick up any hairs that are not straight and lead them into the slots *h* as the machine advances. The block or rib *e* is only at the lower part of the end-piece so that the ends of the end-piece are open.

Inside the end-piece is a cutter which is also open at the ends. It is usually made by fastening a rib *k* to the rectangular piece *l* by the pins *m*. The top is slotted as at *n* all the way across and this forms teeth *o* which fit under the teeth *i* and co-operate therewith to shear or nip the hairs.

The cutter fits with a sliding fit inside the end-piece and the cut hairs therefore can escape through the ends of the machine as it is handled and thus tilted and inclined while travelling over the face. The machine can also be cleared of hair by blowing through the passage in the hollow cutter.

The cutter is held in proper cutting position and compensations made for wear by such means as the screws *p* which are screw-threaded in the arms *q* of the handle and bear on the under-side of the cutter.

The cutter is reciprocated by suitable means and I illustrate one comprising an eccentrically arranged stud *r* on the shaft *s* and fitting between the arms *t* secured to the under side of the cutter.

The teeth *i* are very thin and are not strong enough to shave unless supported and the cutter does this supporting by reason of the teeth *o* being wider than slots *h* and the teeth *i* are at all times maintained in a firm level position.

For cutting long hairs and at the same time providing proper support by the cutter for the teeth *i*, I may make the teeth *i* forming the lateral branches of a vertical support *u* fastened to the block *k*. This is a modification of the side pieces *l* of the first mentioned construction.

It will be noted that these teeth *i* can engage hairs that are through the ends of the slots *h* and cut the hairs without any pulling and will take off long hairs close to the skin.

This form of implement is particularly adapted for surgical use.

I claim:—

1. A shaving machine having a hollow end piece with a series of teeth on one face, the teeth having small slots between them, pointed shoes on the ends of the teeth and cutter teeth in the hollow end piece passing under the first teeth to sever hair passing through the slots.

2. A shaving machine comprising a handle with a hollow end-piece slotted to form small spaced teeth presenting a substantially flat surface to the face, the teeth having pointed shoes at the ends to lift up and direct hair to the slots when the device is passed over the skin, and a hollow cutter having teeth engaging the under side of the teeth of the end-piece, and means for moving the cutter.

3. A shaving machine comprising a handle with a hollow end-piece slotted to form small spaced teeth presenting a substantially flat surface to the face, the teeth having pointed shoes at the ends to lift up and direct hair to the slots when the device is passed over the skin and a hollow cutter having teeth engaging the under side of the teeth of the end-piece, and means for moving the cutter, the cutter also supporting the teeth of the end-piece against flexing when shaving.

4. A shaving machine comprising a handle with a rectangular tubular end-piece having its outer face slotted to provide parallel teeth of extreme thinness and with pointed ends to pick up hairs and direct them into the slots when the machine is passed over the face, and a rectangular hollow cutter slidable longitudinally in the end-piece and slotted through its outer wall to form teeth co-operating with the teeth of the end-piece, and means for reciprocating the cutter.

In testimony whereof I affix my signature.

JACOB SCHICK.