

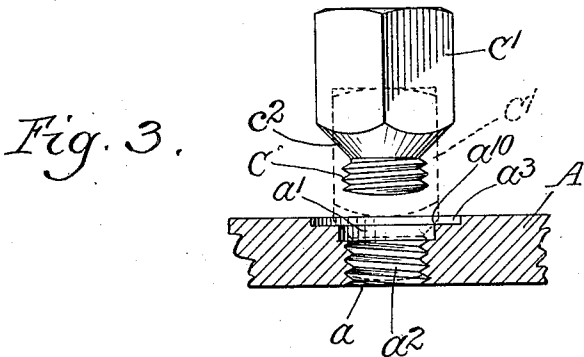
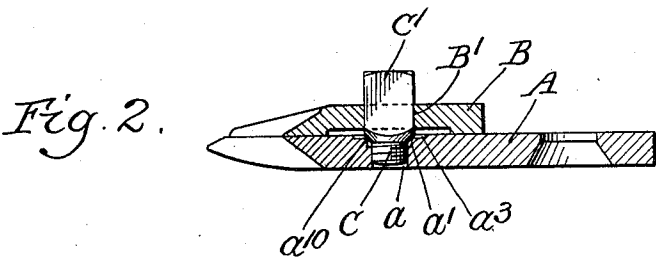
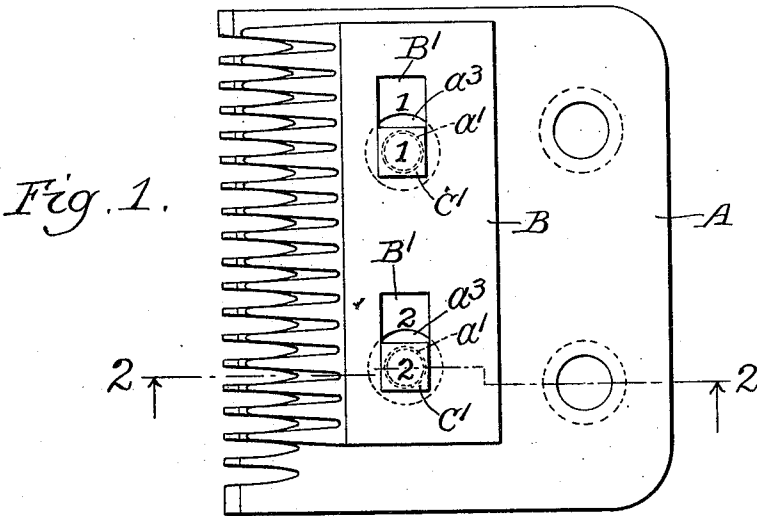
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H. KOCOUREK

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HAIR CLIPPER

Filed April 18, 1928



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UNITED STATES PATENT OFFICE

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HAIR CLIPPER

Application filed April 18, 1928. Serial No. 270,866.

The purpose of this invention is to provide an improved construction in hair clippers and like tools in respect to the means for guidance of the vibrating cutter on the fixed cutter. It consists in the elements and features of construction shown and described as indicated in the claim.

In the drawings:

Figure 1 is a plan view of a portion of hair clipper comprising the fixed and vibrating cutter members and showing the means of guidance which constitutes the present invention on an enlarged scale.

Figure 2 is a section at the line 2—2 on Figure 1 upon the same scale.

Figure 3 is a dissected detail sectional view, section being made at the same plane on Figure 2.

In hair clippers and like tools of common construction, the vibrating cutter blade mounted upon the upper surface of the fixed cutter and comb and actuated by any operating means for reciprocating or vibrating the upper blade on the lower, is commonly guided in the reciprocation by studs projecting upwardly from the fixed blade engaging slots elongated in the direction of the vibratory movement of the cutter blade, the studs having their heads which afford the guidance dimensioned transversely of the direction of the reciprocation for fitting the slots as closely as consistent with the necessary movability involved in the vibration. These studs have their heads, as indicated, formed to afford adequate bearing surface on the sides of the slot to endure the wear resulting from the vibratory movement without being too rapidly worn away so as to defeat the accuracy of the guidance for which the studs are provided. And when the studs, as is customary, are secured to the fixed cutter blade by being screwed therein, it will be seen that the threading of the hole in the plate and of the studs must be very accurately done to cause the stud when screwed into the hole to come tight at the position at which the head stands with the flat sides with which the edges of the slot co-operate for guidance in the vibratory movement, positioned parallel to said movement. And it will be

seen that if the threading of the holes and the studs have been thus accurately attended to in the original construction, upon the grinding of the fixed plate for sharpening the cutter teeth, which grinding is necessarily performed upon the surface upon which the vibratory blade is lodged and slides, and from which the studs protrude, the shoulders of the studs back of the reduced terminal which is threaded for screwing into the threaded holes of the plate, will no longer be found positioned so that the stud will come tight in the threaded hole, with the head at the same point position in the path of rotation of the stud in screwing it home; and in order to have the stud come tight with the guiding faces of its head properly positioned with respect to the slot, either the shoulder of the stud must be cut back an amount corresponding to the reduction of the plate by the grinding, or the stud must be forced around after it becomes normally tight through a sufficient angle to bring a flat guiding face of the head parallel with the sides of the slot; and that a very limited amount of such forcing of the stud at its threaded engagement with the plate will so mutilate the thread either of the plate or of the stud, as to render the same insecure by reason of the stripping of one thread or the other.

The purpose of the present invention is to obviate this difficulty and provide a construction in which the customary square-headed stud may be screwed into the plate so as to be reliably tight therein with the guiding surfaces of its head properly positioned with respect to the sides of the slot, and that the grinding of the plate for sharpening the teeth to the maximum extent to which the plate is adapted to be ground without becoming too thin for service, shall not necessitate any alteration in the stud in order that it may come tight with its head in proper position when reinserted in the plate which has been thus ground.

In the construction shown in the drawings, A is the fixed cutter and comb plate; B is the vibrating cutter; C, C, are guide studs screwed into the fixed cutter plate, A, having square heads, C¹, which are dimensioned for

fitting in the elongated slots, B^1 , of the vibrating cutter, B. The holes, a , in the fixed cutter, A, for holding the studs, C, are counterbored from the upper side of the plate, as seen at a^1 , to a diameter which exceeds slightly the diameter of the bottom of the interior thread, a^2 , the depth of this counterbore being sufficient to accommodate the tapered shoulder of the stud hereinafter described; and said holes are further counterbored as seen at a^3 to a diameter for admitting the square heads, C^1 , of the studs and allowing them to rotate in said counterbore.

The studs, C, C, have their square heads, C^1 , dimensioned for a suitable sliding fit in the slots, B^1 , of the vibrating cutter, and the studs are reduced in diameter at the inner end and threaded for engaging the thread, a^2 , of the holes, a , in the plate, A, and are formed with a frusto-conical shoulder, c^2 , back of the thread. The counterboring of the plate holes at a^1 , as described, causes the corner of the hole at the surface of the plate to be angular, as seen at a^{10} , and the relative dimensions of the counterbore and the conical shoulder of the studs is such that in screwing home the stud the angular corner of the plate, which is hardened for its function of cutting, tends to cut a groove in the conical shoulder of the stud, which is relatively softer than the plate; and in the first instance of screwing home the stud to bring the flat surface of the head properly positioned with respect to the sides of the slot, the studs may be rotated through a very substantial angle, if necessary, while the angular corner of the hole cuts the groove in the conical shoulder of the stud; and the operator in the first instance of setting the studs in the plate may rotate the stud after the conical shoulder comes in touch with the corner, a^{10} , of the hole more than the distance necessary to bring the first arriving face of the stud head in alignment with the slot; and if at the position at which the shoulder comes in touch with said corner said first arriving face of the stud is so nearly in alignment with the slot that the turning of the stud enough farther to merely effect alignment will not bring the stud sufficiently in alignment in the plate, the operator may rotate the stud an additional 90° to bring the next face of the head into guiding relation of the slot.

When the plate is ground for sharpening, the grinding will not reach the shoulder formed by the counterbore, a^3 , and will not change the relation of that shoulder to the thread; and the frusto-conical shoulder of the stud will come tight upon the angular corner, a^{10} , at the same point in the rotation for screwing it into the plate as in the original setting; and the liability to mutilate the thread in order to screw the stud in to the necessary distance for setting the faces of the head properly with respect to the slot is avoided.

Two guide studs are necessary for properly

guiding the vibrating cutter, and in order that the advantage above described may be obtained, it is of course necessary that after the grinding of the plate, the studs should be replaced in the same holes in which they were originally screwed; and in order to facilitate this, the studs are identified with the respective holes by applying to the holes on the plates and to the studs on their heads, identifying markings, which may be the numerals "1" and "2"; as seen in the drawings.

I claim:—

A member having a finished surface with a threaded aperture and a guide stud screwed into said aperture with its head portion standing above the finished surface, the threaded aperture being counterbored at the upper end to form a circular angular corner and the stud having a sloping shoulder under its head portion dimensioned to engage said angular corner, the plate being hard relatively to the stud so that said corner tends to cut into the sloping shoulder and cause the stud to come tight for firm securement in the plate.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 11th day of April, A. D. 1928.

HENRY KOCOUREK.