June 17, 1930. A. J. DREMEL 1,764,614

CLIPPERS

Filed March 11, 1929

Fig. 1.

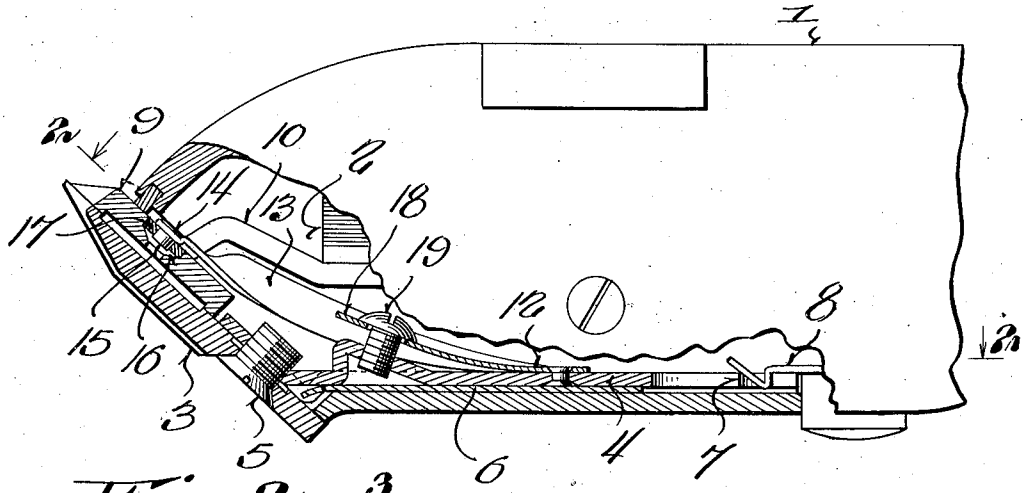


Fig. 2.

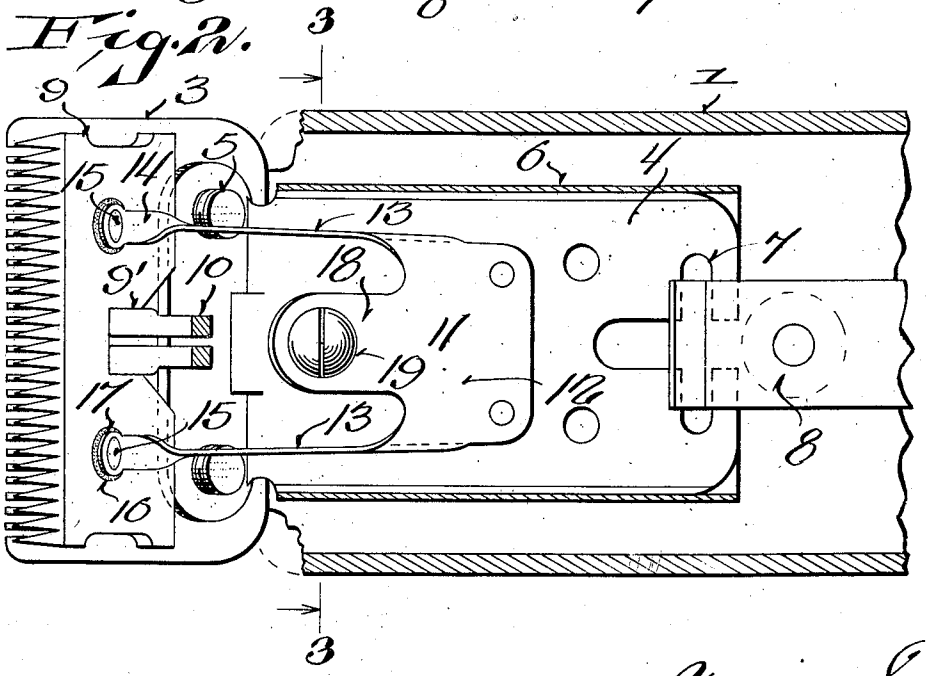
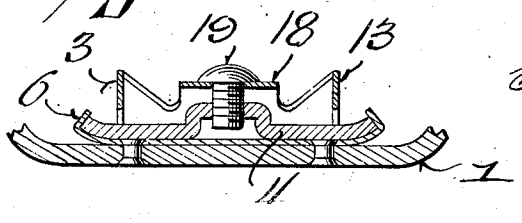


Fig. 3.



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UNITED STATES PATENT OFFICE

ALBERT J. DREMEL, OF RACINE, WISCONSIN

CLIPPERS

Application filed March 11, 1929. Serial No. 346,049.

This invention relates to hair clippers and more particularly to the cutter blades, rather than to the actuating structure.

The present invention is particularly designed for application to what are known as alternating current clippers, such as illustrated in my copending application filed August 22, 1927, Serial No. 214,750, and has primarily for its object the provision of a simple, inexpensive and efficient means for mounting and guiding the reciprocative cutter blade upon the stationary comb plate, whereby desired tension is obtained between the two, and friction is reduced to a minimum.

Incidental to the foregoing, a more specific object is to provide unitary means for so guiding and creating tension upon the reciprocative blade as to avoid friction between said blade and said guiding and tension means.

Another object of the invention is to provide a structure of the foregoing character which avoids the necessity of finely machined guideways, and yet definitely guides the cutter blade to maintain parallel relation of the cutting teeth with the teeth of the comb plate.

A still further object is to provide a simple resilient connection between the guiding and tension means and the cutter blade, which can be readily replaced in case of wear and whereby tension upon both sides of the blade is equalized.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawings, wherein a large scale is employed for the purpose of clarity, Figure 1 is a fragmentary view of a clipper embodying the present invention with parts broken away and in section to more clearly illustrate structural details;

Figure 2 is a longitudinal section taken on the line 2—2 of Figure 1; and

Figure 3 is a transverse section taken on the line 3—3 of Figure 2.

Referring now more particularly to the accompanying drawing, the invention is illustrated in connection with a clipper of the general structure disclosed in the above referred to pending application, and, therefore, the drawing and description are confined to the essential features of the invention.

The numeral 1 designates a casing that houses an actuating mechanism comprising an armature 2, which is dependent for its lateral reciprocation upon an alternating current motor, not shown.

Detachably connected to the casing 1 is a cutter head comprising a stationary comb plate 3 secured to a shank plate 4 by means of the screws 5. As best shown in Figure 1, the forward end of the casing 1 is open and receives the shank 4 which is held against lateral movement by a resilient guide plate 6 secured to the bottom of the casing. The inner end of the shank 4 is provided with a transverse opening 7 which receives a spring latch 8 carried by the casing.

The foregoing structure is fully described and shown in the copending application referred to and, therefore, forms no specific part of the present invention, which may be applied to any clipper structure embodying a stationary and movable blade.

As set forth in the foregoing objects, the present invention resides in the novel means provided for guiding and creating tension upon the movable cutter blade 9, which is mounted upon the stationary blade 3 for slidable movement. The cutter blade 9 is actuated by a tongue 10 extending from the armature 2 and received in a central recess 9′ formed in the cutter blade.

This connection between the armature and cutter blade is also illustrated and described

in my copending application. However, in that case a positive guide between the stationary blade and the cutter blade was provided, and the tension between the blades obtained by means of a tension spring bearing upon the top of the cutter blade. Obviously, while the foregoing structure served to guide the cutter blade and provide the required tension, it also necessitated finely machined guideways, and, due to the fact that the tension spring engaged the top face of the cutter blade, considerable friction resulted.

The present invention, which aims to overcome the foregoing objections, comprises a unitary guiding and tension device 11, which is anchored with relation to the stationary blade 3. In the present form of the invention, this is accomplished by attaching the device to the shank 4 which carries the stationary cutter blade. However, in instances where the stationary cutter blade is carried directly by the housing 1, it is obvious that the device could be secured to the housing.

The guiding and tension device 11 is preferably formed from a blank of resilient material, such as spring steel, and comprises a central portion 12, the rear end of which is riveted, or otherwise anchored to the shank 4, while its forward end is spaced from its support. The sides of the central portion 12 are turned downwardly to form forwardly projecting arms 13 disposed at right angles to the central portion and terminating in ends 14 at right angles to the major portion of their length. The ends 14 are provided with lugs 15 for pivotal connection with the cutter blade 9. This connection is preferably formed by the provision of recesses 16, in which are disposed washers 17 preferably formed from yieldable material and receiving the lugs 15.

Extending forwardly from the central portion 12 is a tongue 18 provided with an opening for the reception of a regulating screw 19 having threaded engagement with the shank 4.

In the operation of the clipper, wherein the cutter blade 9 is reciprocated at a relatively high rate of speed, it is obvious that the same will be guided in its movement upon the stationary blade by the arms 13 which, due to their spaced relation, serve as parallel links to maintain parallel relation between the teeth of the cutter blade and the comb blade.

It will also be apparent that any desired tension may be exerted upon the movable cutter blade by means of the regulating screw 19 that controls tension of the tongue 18, which is transmitted to the arms 13.

Particular attention is also directed to the fact that in forming the major portion of the arms 13 at right angles to the central portion 11, the same are strengthened in the direction of the tension to be exerted upon the cutter blade, and offer the greatest resiliency in the direction of movement of the cutter blade, thus reducing strain upon the armature and the amount of current required for its actuation.

It will also be appreciated that the novel connections between the arms 13 and the cutter blade permit ready replacement in the event of wear, and due to the yieldable structure of the washers 17, any slight variation in the tension of either arm 13 will be readily compensated for, thus insuring an even tension upon both sides of the cutter blade.

I claim:

1. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means being anchored with relation to said stationary blade and including a central body portion of resilient material having spaced arms pivotally engaging said cutter blade.

2. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means being anchored with relation to said stationary blade and including a central body portion of resilient material having spaced arms pivotally engaging said cutter blade, and means for regulating the tension exerted upon said arms.

3. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means including a central body portion anchored with relation to said stationary blade, spaced arms extending forwardly from the sides of said central body portion and pivotally engaging said cutter blade, and means for regulating the tension exerted upon said arms.

4. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means including a central body portion of resilient material anchored adjacent its rear edge with relation to said stationary blade and spaced from its support forwardly of its rear edge, spaced arms extending forwardly from said central body portion with their outer ends arranged at right angles to the same and pivotally engaging said cutter blade, a central tongue projected from said central portion, and means for regulating the tension of said tongue.

5. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, and unitary guiding and tension means for said cutter blade, said means including a central body portion of resilient material having spaced arms pivotally connected with said

cutter blade, a yieldable connection between said arms and said cutter blade, and means for regulating the tension exerted upon said cutter blade.

6. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means comprising a central portion anchored with relation to said stationary blade, arms extending forwardly from the sides of said central portion and formed at right angles thereto and pivotally connected with said cutter blade, a yieldable connection between said arms and said cutter blade, a central tongue projecting from said central portion, and means for regulating the tension of said tongue.

7. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means comprising a pair of flexible arms anchored at one of their ends with relation to said stationary blade, and pivotally connected at their opposite ends to said cutter blade, and means for regulating tension upon said arms.

8. In a clipper of the class described, a stationary blade, a cutter blade slidably mounted upon said stationary blade, unitary guiding and tension means for said cutter blade, said means comprising a pair of flat arms anchored at one of their ends with relation to said stationary blade and pivotally connected at their opposite ends to said cutter blade, the width of said arms throughout the major portion of their length being positioned at right angles to the plane of traverse of said cutter blade, and means for applying tension upon said arms.

In testimony that I claim the foregoing I have hereunto set my hand at Racine, in the county of Racine and State of Wisconsin.

ALBERT J. DREMEL.