June 15, 1926. 1,589,027

L. J. WAHL

ELECTRIC HAIR CLIPPER

Filed August 9, 1923

FIG. 1

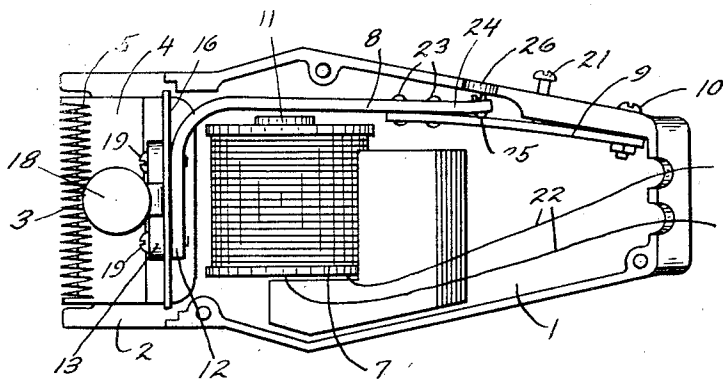


FIG. 2

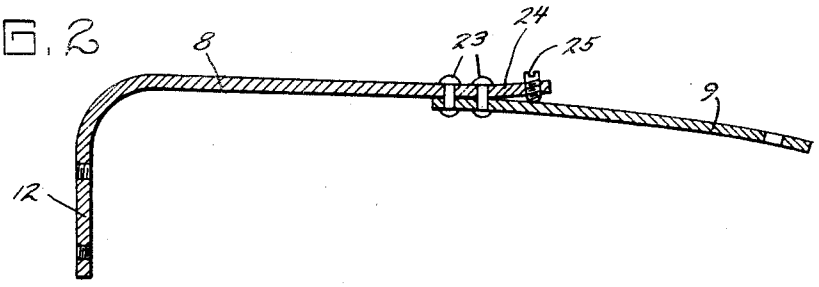
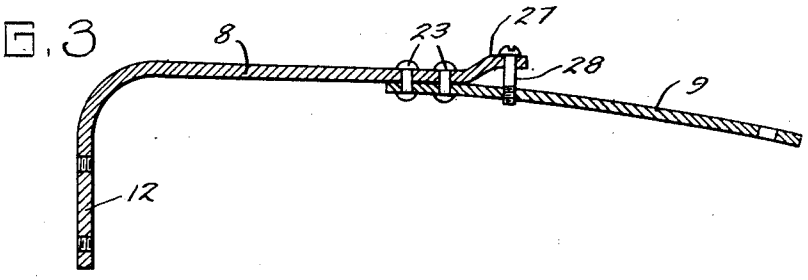


FIG. 3



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LEO J. WAHL, OF STERLING, ILLINOIS.

ELECTRIC HAIR CLIPPER.

Application filed August 9, 1923. Serial No. 656,599.

My invention relates to electric hair clippers, and has more special reference to an improvement in tools of that class which are fully set forth in an application for Letters Patent of the United States filed by myself September 22, 1922, Serial No. 589,919. The foregoing device embodied a casing in form of a handle, fitted with a stationary blade, and carrying a blade movable in opposition thereto, the movable blade being under the control of a bar or plate which is subject to the influence of electro-magnetic devices contained in said casing, and provided with an alternating current. Said controlling bar is supported by a resilient member, so that when the tool is in operation a rapid vibratory movement is imparted to said bar, and through it to the movable blade. In practice, some difficulty has been encountered on account of the operating bar, or armature, vibrating at a different degree of frequency than is desirable, resulting in an increase in the amplitude of vibration, and a building up of the action of the movable blade. As a result, a slight interference with said blade, when in operation, will interrupt the movement thereof, and render the same inoperative.

In order that the tool may operate at its highest efficiency, the operating blade with its actuating arm, and the resilient supporting member, must be properly tuned, which is only the case when such supporting member possesses the proper amount of flexibility and tension, commensurate with the load to be carried thereby. In some cases this has been undertaken to be accomplished by forming a spring arm of maximum power, and then reducing some portions thereof, until the desired flexibility is attained. This is not entirely satisfactory, however, one reason therefor being, that after the tension has been established, it cannot be readily changed to meet some conditions. In most cases the tool is operated on a 60 cycle current, but in some parts of the United States a 50 cycle current is made use of, and there might be other variations.

It is also found to be objectionable to operate at a lower frequency than that of the current, the vibratory parts being again improperly tuned, and not working harmoniously.

The chief purpose of the present invention is to provide means for controlling the action of the resilient supporting member, so that the same may have the desired amount of tension, resulting in the proper tuning of the vibratory parts.

Another object of the invention, is to provide for an adjustment of said controlling means, so as to vary the tension thereof, and correspondingly affect the tune of the vibratory devices. By this arrangement it is also possible to adapt the instrument to electro-magnetic systems possessing varying cycles of frequency of current.

The above mentioned, and other features and advantages of the invention, will be more fully set forth in the following specification, taken in connection with the accompanying drawings, in which:

Fig. 1 is an inner plan view of an electric clipper equipped with the invention, one part of the casing of said clipper being removed.

Fig. 2 is a longitudinal sectional view of the arm 8 and spring 9, enlarged.

Fig. 3 is a similar view of a modification of the device.

In the present case the same system of reference numbers is adhered to as in said former application, this being purely for the purpose of illustration, however, as the improvements can be adapted and arranged for use in connection with other devices of a similar construction and operation.

The reference number 1 indicates a casing, fitted at one end with a stationary blade 2, having teeth 3. Slidable on the blade 2 is a similar blade 4, having a series of teeth 5, adapted to cooperate with the teeth 3. Centrally of the casing is an electro-magnetic coil 7, near one end of which is supported an arm 8, by means of a spring arm 9, attached at one of its ends to the inner wall of the casing, as at 10. 11 indicates the core of the coil 7, the successive energizing of which serves to attract the arm 8 toward such core, each movement in that direction being followed by a similar movement away from the core, impelled by the tension of the spring 9.

The free end of the arm 8 is formed into an angular arm 12, to which is fixed a frame 13, having a connection with the blade 4 through a pin 18 held in said frame. The foregoing structure is the same as is set forth in said former application, and nothing is claimed broadly thereon in the present application. On account of the arm 8 being in effect an armature, it is necessary to form

the same of a softer metal than that of the arm 9, said parts forming practically one arm however, a portion thereof possessing the desired amount of flexibility, and the other being inflexible. The overlapping ends of the arms 8 and 9 are preferably rigidly united, as by a pair of rivets 23, and the arm 8 is formed with a projection 24, extending beyond the point of junction of said arms, and provided in its end with a small set-screw 25, the inner end of which has a bearing against the spring 9. Access to said screw may be had through an opening 26 in the wall of the casing 1. By adjustment of the screw 25 the tension of the arm 9 may be increased or diminished, as desired, and the arm and vibratory parts by which it is supported, brought into perfect tune. If said parts are operating at too high a frequency, by the regulation of said screw, such frequency can be reduced, and if the frequency of movement is too low, by a similar operation it can be brought to the proper action.

If it is desired to use the clipper with a current of a different cycle, as, for instance, with a 50 cycle current instead of a 60, this can be readily accomplished by adjustment of the screw 25, bringing the vibratory parts into tune therewith. It will be evident that any variations of this kind can thus be taken care of.

The adjustment screw 21 of the former tool is retained, this screw having no direct effect upon the tuning of the parts, the chief purpose thereof being to determine the spacing of the arm 8 with reference to the core 11.

In Fig. 3 is shown a form of the device wherein the overlapping end of the arm 8, is projected into a curved portion 27, perforated to receive a screw 28, the threaded end of which is in engagement with a similarly threaded opening in the arm 9. By adjustment of said screw the tension of the arm 9, and variation of the tuning of the parts may be attained as in the former case. The same result can be secured, by omitting the projection 24 on the end of the arm 8, and forming a similar projection on the overlapping end of the arm 9, provided with an adjustment screw bearing against the arm 8. This is merely a reversal of the former arrangement.

Other changes in the construction and arrangement of the various parts of the invention will suggest themselves to those skilled in the art to which the same pertains, which will fall within the scope thereof.

What I claim, and desire to secure by Letters Patent, is:

1. In a device of the class described, equipped with electro-magnetic operating mechanism, a load-carrying arm comprising an armature member adapted for operation by said electro-magnetic mechanism, and a resilient supporting member, rigidly connected, and provided at the joint with means for varying the degree of flexibility of the resilient member.

2. In a device of the class described, a load-carrying arm formed of two parts overlapped at their ends and rigidly united, one of said parts comprising an armature member, adapted for control by electro-magnetic devices, and the other a resilient supporting member, one of said members being projected beyond the joint and provided with adjustment devices for engagement with the other part, to vary the tension of said resilient member and secure a proper tuning of said arm.

In testimony whereof I affix my signature.

LEO J. WAHL.