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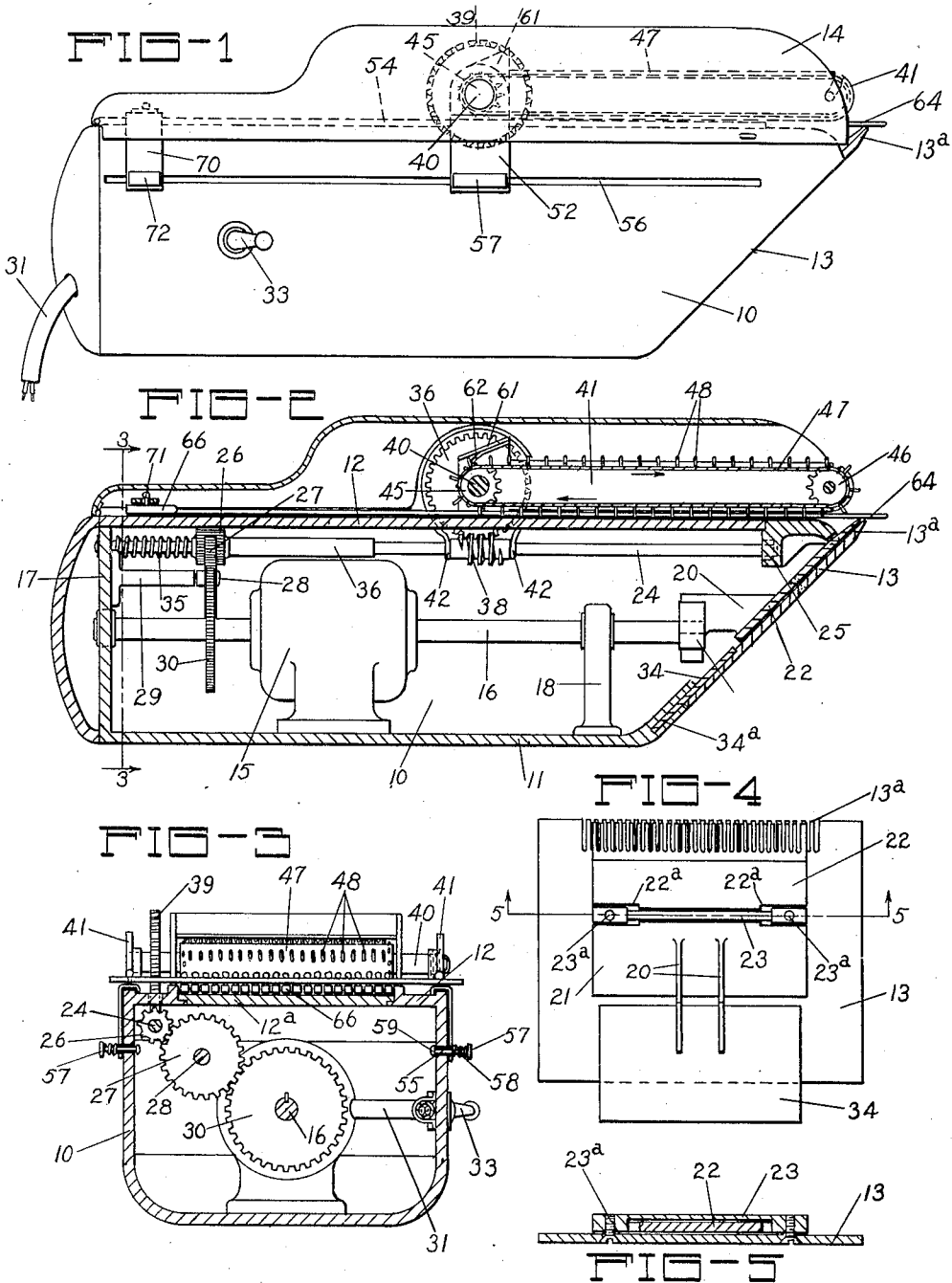
W. A. SNEED

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HAIRCUTTING APPARATUS

Filed June 8, 1939

2 Sheets-Sheet 1



INVENTOR.
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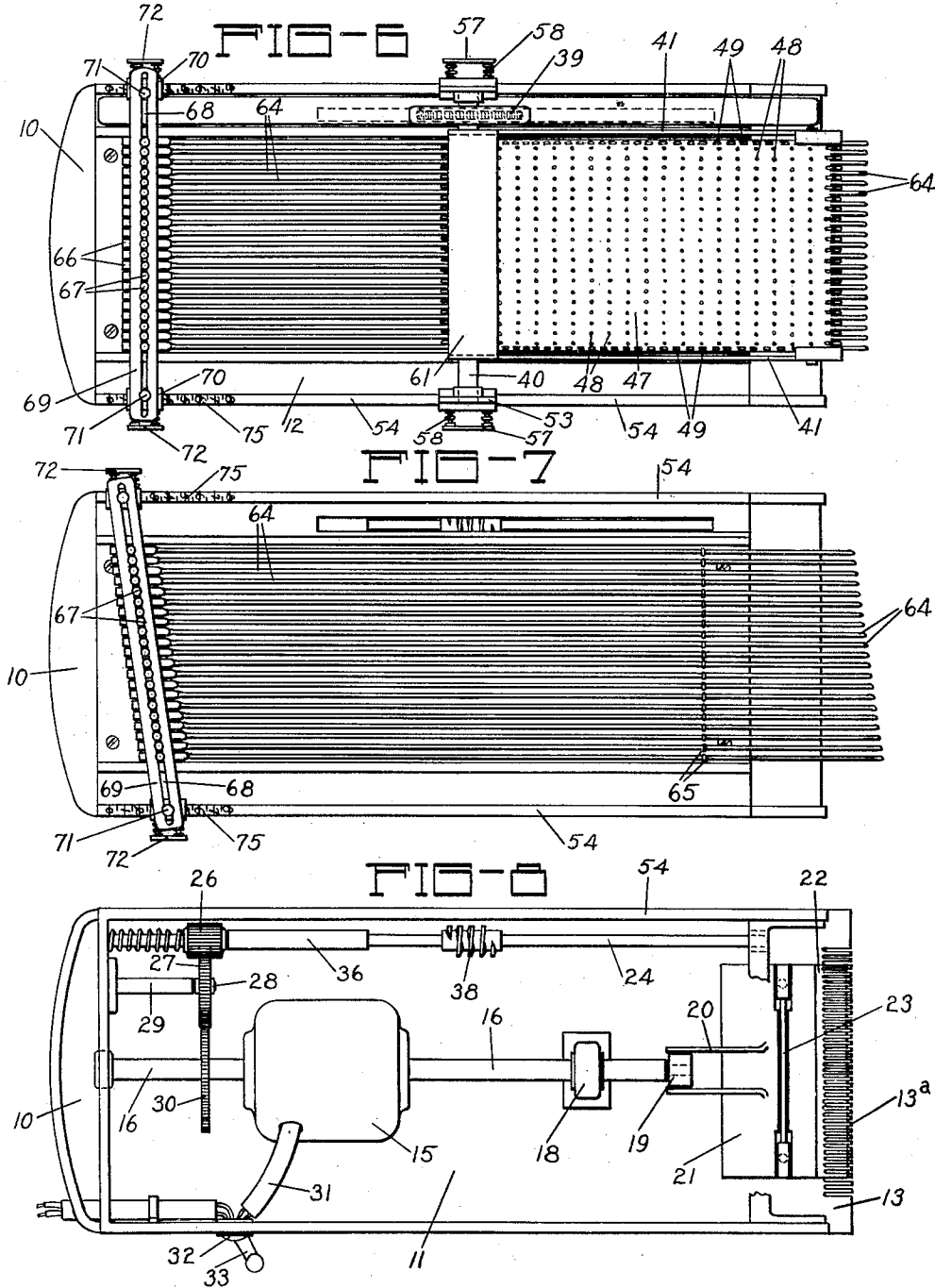
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UNITED STATES PATENT OFFICE

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HAIRCUTTING APPARATUS

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Application June 8, 1939, Serial No. 277,969

11 Claims. (Cl. 30—132)

My invention has reference to a haircutting machine, and has for its chief purpose to improve and simplify instruments of that class. It is of that type in which the hair cutting is performed by electrically operated clippers, and is of convenient size and shape for holding in the hand. It can be readily employed by the user in cutting and trimming his own hair, and is also useful for cutting hair in barber shops, also in community homes and other institutions containing a number of men or boys. By its use it is possible to cut around the sides of the head, and secure a uniform slope or taper to the hair.

One of the features of the machine consists of a combing apparatus, capable of presenting the hair at a point and in suitable position for efficient operation thereon by the cutting tools. This apparatus is supported so as to be adjustable with reference to the cutters, and when it is desired to use the cutting tools independently thereof, the cutting unit can be moved away therefrom, and rendered inoperative. The adjustment can be effected by the thumb and finger of the operator, pressing upon release devices on opposite sides of the instrument, and coincidentally moving the same to an inoperative position. By a similar method the combing unit is returned to an active position.

Another feature of the invention consists of a guard or spacing device, usable in connection with the combing apparatus, and interposed between said combing apparatus and the cutting tools. It is formed of a plurality of closely spaced rods, provided with rounded ends for contact with the scalp, and capable of being adjusted to determine the depth of cut of the tools, as well as the slope or taper thereof. The cutting can be done either from front to rear, or rear to front, and the shape of the end of the guard can be varied, to adapt the same to use on either side of the head.

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

Fig. 1 shows the invention in side elevation.

Fig. 2 is a similar view with one of the side plates of the casing removed.

Fig. 3 is a vertical cross-section on the line 3—3 of Fig. 2.

Fig. 4 shows the clipper mechanism in detail.

Fig. 5 is a cross-section on the line 5—5 of Fig. 4.

Fig. 6 is a top plan view with the shield 14 removed.

Fig. 7 is a similar view with the combing unit omitted.

Fig. 8 is a detailed plan view of the mechanism within the casing 10.

The invention is partly contained within a casing 10, having a bottom plate 11 and upper plate 12, with an upwardly inclined plate 13 at one end, forming the stationary part of a hair clipping apparatus, provided at its upper end with teeth 13^a. Mechanism supported above the plate 12 is enclosed within a shield 14, which, with the casing 10, forms a suitable contour for grasping the same by the hand of the operator.

Mounted on the plate 11 is a small electric motor 15, the shaft 16 of which is extended in both directions, and supported at one end in a bearing in a cross-plate 17 in the casing, and at the other end in a bearing on a support 18, fixed on the plate 11. On the latter end is a crank-head 19, engaging a pair of arms 20 on a plate 21, slidably supported in rear of the plate 13, and carrying a clipper plate 22, having teeth for cooperation with the teeth on the stationary plate, in the well-known manner. By the operation of the crank-head the desired oscillatory movement is given to the plate 21 and cutter-blade 22.

In the upper part of the casing 10, near one side thereof, is a shaft 24, one end of which is supported for rotation in the plate 17, and the other end of which is journaled in a bearing 25, at the end of the plate 12. Slidable on the shaft 24, and keyed thereon so as to rotate therewith is a gear-pinion 26, the gears of which are engageable by those of a gear-wheel 27, fixed on a shaft 28, supported in a sleeve bearing 29, secured to the inner face of the cross-plate 17. In mesh with the wheel 27 is a gear wheel 30, fixed to the shaft 16, and communicating the rotary movement of said shaft to the shaft 24, while the machine is in operation. The relative sizes of the wheels 30, 27, and 26 is such as to considerably multiply the speed in the latter shaft.

The motor 15 is provided with current through a cable 31, provided in the casing 10 with a switch 32, and handle 33 for turning the same on and off.

The pinion 26 is held in a normally operative position by means of a coiled spring 35 on the shaft 24, and at the other end of said pinion is a tubular member 36, slidable on the shaft 24, and capable of acting as a medium to move the pinion out of engagement with the wheel 27

by certain operations, hereinafter related. Also keyed on the shaft 24 is a worm 38, in mesh with a worm gear wheel 39 supported on a transverse shaft 40, the ends of which are mounted for rotation in a frame 41, slidably mounted on the plate 12 longitudinally of such plate. Depending from said frame are guards 42, engaging the ends of the worm 38, and maintaining the same in position with relation to the wheel 39.

In the forward end of the frame 41 is a shaft 44, in parallel relation with the shaft 40, and mounted on the shafts 40 and 44 are rollers 45 and 46, around which passes an endless carrier 47, provided at regular intervals with series of teeth 48. On the edges of said carrier are rows of perforations 49, engaged by the teeth of sprocket wheels 50, fixed on the shaft 40. The movement of said shaft operates to give continuous movement to the apron 47, in a direction indicated by the arrows, and cause the series of teeth to comb the hair on the head of the person being operated on, and raise such hair into position for operation by the clipper devices. The teeth can be arranged in staggered positions if desired.

The frame 41 is connected with a pair of plates 52, (Fig. 3) having flanges 53 slidable on rails 54 at the sides of casing 10. Pins 55 pass through openings in the lower ends of the plates 52, and through channels 56 in the side walls of the casing. The pins are provided at their outer ends with finger-bars 57, between which and the plates 52 are coiled springs 58, holding said bars normally outwardly, with the heads 59 of the pins in contact with the inner faces of the casing walls, and holding the plates 52 and frame 41 from movement. By pressing said bars inwardly with the thumb and finger of one hand the pins are released, permitting a sliding adjustment of the plates and frame. In case it is desired to use the clipper device without the comb, this can be done by moving the frame 41 rearwardly until the end of the movable comb is some distance from the clipper blades. In this movement the worm 38 is moved along the shaft 24 until one of the guards 42 contacts the end of the tube 36, and carrying with it such tube until the pinion 26 is moved out of engagement with the wheel 27, interrupting the movement of the shaft 40 and combing unit. The finger bars at the sides are then released and the parts are held in adjusted position. To return to operating position the finger-bars are again actuated, and the comb mechanism moved back to position at the forward part of the tool.

Above the shaft 40 is a hood 61, provided with ribs 62 which tend to remove fragments and loose ends of hair from the teeth of the combs as they pass beneath the same.

A guard is provided for the clippers consisting of a plurality of narrowly spaced rods 64, slidable in guides 65, and provided at their rear ends with heads 66 of square formation in cross-section. Projected upwardly from said heads are pins 67, engaged in a channel 68 in a cross-head 69. Slidable on the casing 10 is a pair of plates 70, also having pin connections with the channel 68, as at 71. Said plates have a spring pin connection with the channels 56, similar to that of the plates 52, (not shown) and similarly controlled by means of finger-bars 72.

By releasing the plates 70 at the ends of the bar 69 the rods 64 can be adjusted length ways of the casing, so as to vary the depth of cut of the hair, and by further manipulation of said

bar the ends of the rods can be given an angular arrangement, or inclined position, as shown in Fig. 7. The tool is moved along with the ends of the rods bearing against the scalp, and the depth of cut determined by the relative projection of the ends of the rods beyond the clippers. With the tool being operated round the side of the head, the shorter ends would be down at or near the neck, and the longer ones up where the longer hair is desired. By further manipulation of the bar 69 the arrangement of the ends of the rods can be reversed, for use on the other side of the head. After the sides and back have been cut the guard can be given a straight positioning, as shown in Fig. 6, for use in straight cutting, with any degree of spacing desired.

The plate 12 is provided with an opening at 12^a, (Fig. 3) through which access can be had to the interior of the casing, for installing the parts, or giving attention thereto. The unitary parts of the structure can be removed or replaced by sliding the same along the tracks 54, or other means can be provided for holding the same removably in place.

On the tracks 54 at the sides of the instrument are scales 75, which indicate in degrees the position of the bar 69, and the variations in the positioning thereof. The angle or bevel of said bar is always the same as that of the ends of the rods 64, and by releasing the finger clips at the ends of the bar the instrument can be set for any depth or bevel of cut desired, and held in such position. In order to make this effective, the rods 64 are all of the same length, and held in parallel relation with each other.

In Figs. 4 and 5 is shown a unitary form of clipper apparatus, in which the clipper plates are united by a bar 23, set in a channel in the plate 22, so as to allow said plate to reciprocate. The enlarged heads of the bar are secured by screws 23^a to the plate 13, and the plate 22 has a limited free movement by means of openings 22^a therein. Fixed to the lower part of the plate 13 is a support 34, held in a recess 34^a in the casing 10. When it is desired to change the clippers the tongue 34, with clipper plates attached, is slipped out of place and another one slipped in. The bar 23 is formed of spring metal, to allow a little flexibility to hold clipper blade under slight amount of tension.

What I claim, and desire to secure, is:

1. In a haircutting machine, the combination of a casing, a hair clipping apparatus carried thereby, a motor in said casing operatively connected with said apparatus, to operate the clippers, a comb apparatus mounted on said casing, including an endless carrier and series of teeth thereon, for operation in proximity to said clipping apparatus, and means for imparting the movement of said motor to said endless carrier, for the suitable operation thereof.

2. In a haircutting machine, the combination of a casing, a hair clipping apparatus carried thereby, an electric motor in said casing, operatively connected with said apparatus, to operate the clippers thereof, a comb apparatus mounted on said casing for movement lengthways thereof, and including an endless carrier and teeth carried thereby, gearing connecting said motor with said endless carrier to give movement thereto, and means for disconnecting said gearing upon movement of said comb apparatus rearwardly along said casing, for independent operation of the clipper devices.

3. In a haircutting machine, in combination

with a casing, a hair clipping apparatus carried thereby, including clipper blades, an electric motor in said casing, operatively connected with the clipping apparatus, a hair combing unit, slidably supported on said casing, including an endless carrier and series of teeth carried thereby, for operation in proximity to said clipper blades, and retractable therefrom, means for holding said combing unit in adjusted positions, gearing operatively connecting said motor with the endless carrier, and yieldable means for releasing said last named means, operable by the fingers of the user.

4. In a device of the class described, a casing, a hair clipping device carried thereby, including a stationary blade and movable blade, an electric motor in said casing, provided with a shaft operatively connected with said moveable blade, a hair combing unit slidably mounted on said casing, including a continuously movable comb member, means for locking said combing unit in adjusted positions with relation to said clipper blade, spring impelled releases for said last named means, engageable by the fingers of the operator, transmission devices connecting said shaft with said movable comb member, to actuate the same, and means for interrupting the movement of said transmission devices when the comb member is in retracted position with relation to said clipper blades.

5. In a haircutting machine, the combination of a casing, a hair clipping device carried thereby, including relatively movable blades, an electric motor in said casing, provided with a shaft, operatively connected with the clipper devices, a hair combing device supported on said casing, and a hair spacing device, consisting of a plurality of closely spaced rods interposed between the combing device and clipper device.

6. In a haircutting machine, the combination of a casing, a hair clipping instrument carried thereby, an electric motor in said casing, provided with a shaft operatively connected with said clipping instrument, a hair combing device supported on said casing, a spacing device interposed between said clipping instrument and said combing device, and means for adjustment of said rods to vary the length of cut of the hair.

7. In a haircutting machine, a casing, a hair clipping instrument carried by said casing, including a stationary blade and movable blade, an electric motor contained in said casing, provided with a shaft operatively connected with the clipping instrument, a hair combing device supported above the casing, including a movable comb member, means for moving said member, a hair spacing device interposed between said comb and clipper instrument, consisting of a series of closely spaced rods, and means for adjustment of

said rods to vary the depth of cut and the angle thereof.

8. In a haircutting machine, the combination of a casing, a hair clipping device carried by said casing, an electric motor in said casing provided with a shaft operatively connected with said clipping device, a hair combing mechanism supported on said casing in proximity to said clipping device, a plurality of rods supported slidably between said combing mechanism and said clipping device, and of equal length, a cross-bar uniting the rear ends of said rods, means for holding the ends of said cross-bar in adjusted positions, and means for the release of the last-named means, to vary the amount of projection, and the angle of the engaging ends of said rods.

9. In a haircutting machine, the combination of a casing, a hair clipping instrument at one end thereof, including a fixed blade and a movable blade, an electric motor in said casing, provided with a shaft operatively connected with said movable blade, a combing apparatus slidably mounted on said casing, including an endless carrier and teeth thereon, gearing imparting the movement of said shaft to said endless carrier to give movement thereto, a spacing element between said combing apparatus and said clipping instrument, consisting of a plurality of closely spaced rods, means for uniting said rods for adjustment to vary the length of the rods and the bevel thereof in both directions, and means for holding said last named means in adjusted positions.

10. In a haircutting machine, the combination of a casing, a haircutting apparatus carried thereby, an electric motor in said casing, and drive-shaft thereof, operatively connected with said cutting apparatus, to operate the cutters thereof, a comb mechanism mounted on said casing, including an endless carrier, and rows of teeth carried thereby, gearing connecting said carrier with said shaft, for operation of the carrier, and a hair cleaning apparatus supported in proximity to said endless carrier, and adapted to clean the severed hairs from the teeth thereof.

11. In a haircutting machine, the combination of a casing, provided at one of its ends with a tongue-holding recess, a stationary clipper plate provided with a tongue for engagement with said recess, to hold said plate removably in place, a clipper plate connected with said first-named plate for reciprocation with reference thereto, and removable with said first-named plate, an electric motor in said casing, and drive-shaft thereof, a cam on said shaft in proximity to said movable clipper plate, and connections on said plate engageable with said cam, and detachable therefrom upon the removal of said plate from the casing.

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