

Nov. 16, 1965

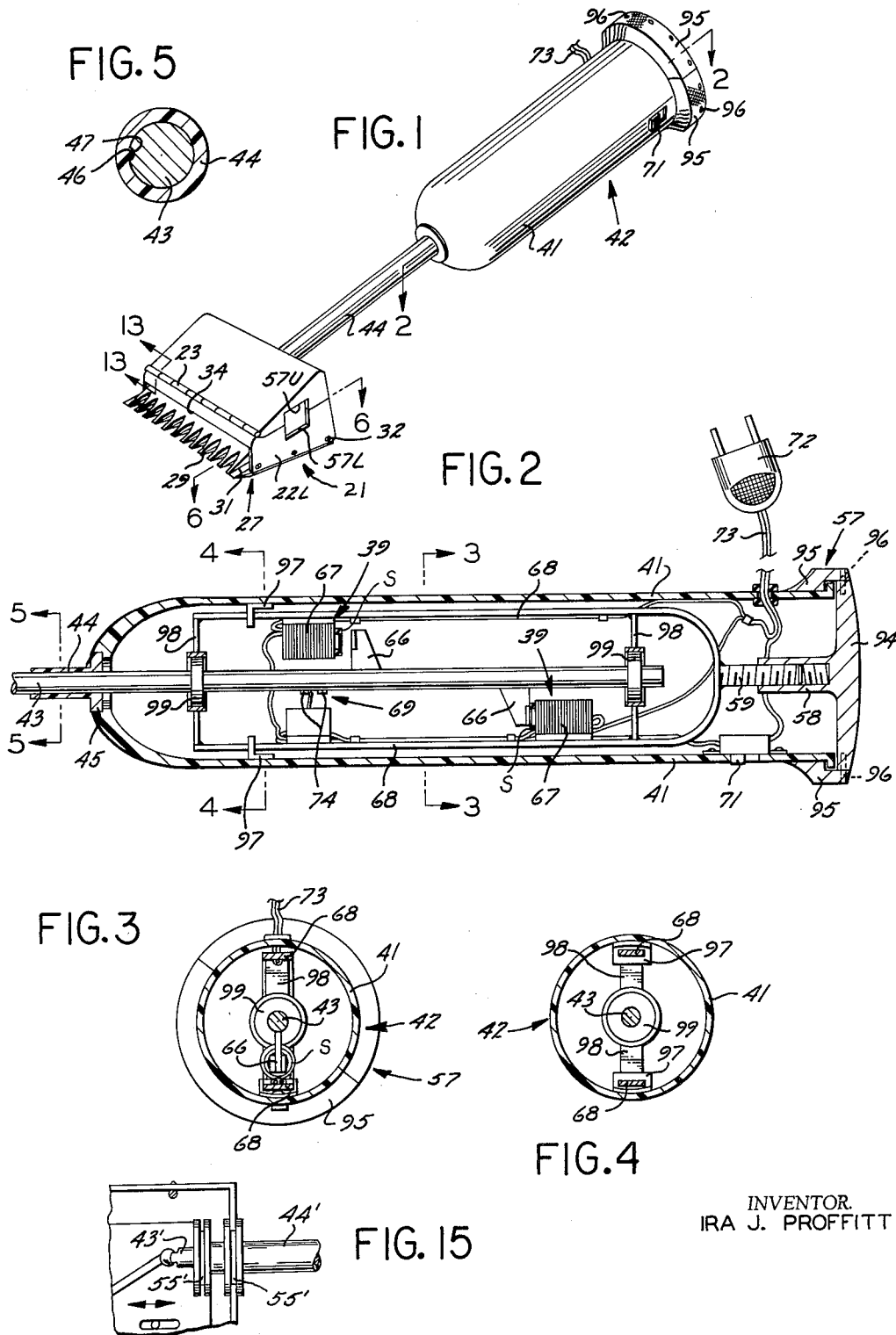
I. J. PROFFITT

3,217,409

POWER-DRIVEN HAIR CLIPPER MEANS WITH POSITIONALLY
ADJUSTABLE HAIR CLIPPING HEAD

Filed June 17, 1963

2 Sheets-Sheet 1



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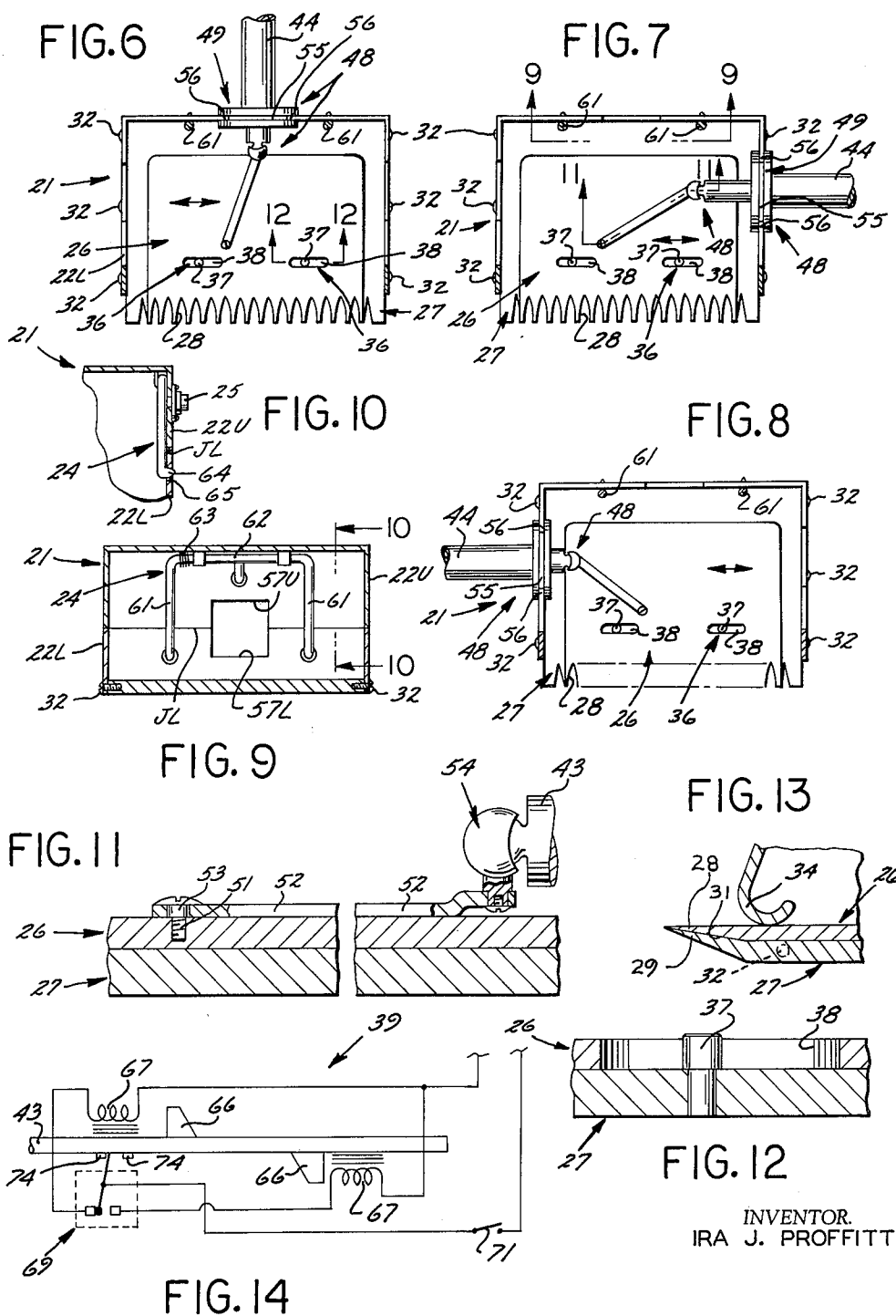
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**POWER-DRIVEN HAIR CLIPPER MEANS WITH
POSITIONALLY ADJUSTABLE HAIR CLIP-
PING HEAD**

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Filed June 17, 1963, Ser. No. 288,341
7 Claims. (Cl. 30—199)

Generally speaking, the present invention relates to the barbering art and, more particularly, pertains to an improved type of power-driven hair clipper means having a positionally adjustable hair clipping head which can be controllably and very easily adjusted into any of three different positions relative to a handle portion of the hair clipper means whereby to make it possible for the hair clipper means to be held in a very adaptable manner by either hand of a person using same.

The invention is particularly well suited for home and personal use since it makes it possible for an individual to very easily trim his own hair by reason of the three different positions which the hair clipping or cutter head may assume so that the person can easily reach and trim the hair at virtually any portion of his head or neck. This may be done by holding the handle of the hair clipper means in either hand or by changing it from one hand to another if desired. Of course, this operation will normally be conducted while the person either stands in front of a single mirror means or effectively between two mirror means so that rear portions of his head and neck can be easily seen, if desired. One of said two mirror means may be a hand mirror held by the other hand of the person from that hand which holds the hair clipper means.

In addition to the above type of usage, the novel power-driven, adjustable-head, hair clipper means of the present invention is well adapted for use all over the body, and in particular for underarm hair removal.

It should be noted that the above adjustable hair clipping head, or cutting head, feature of the present invention has been a desirable objective for a long time but has not been achieved in a power-driven hair clipper means in the advantageous manner of the present invention primarily because of problems in coupling a driving motor means (especially a reciprocating type of driving motor means) with respect to the hair clipping head means in each of the three different positions in a quick and easy manner. However, the present invention achieves precisely this in a manner which only takes a moment for the relative adjustment of the hair clipping head means with respect to the handle portion of the hair clipper means and with respect to the motor means carried by said handle portion, thus for the first time making such a power-driven, positionally adjustable head, hair clipper means practical and feasible in a relative small, lightweight, easy-to-use device.

Furthermore, the novel hair clipper means of the present invention of a structure such that the housing surrounding the complete hair clipping head means can be opened virtually instantaneously so as to expose the entire hair clipping head means for very rapid and easy cleaning and sterilizing before and after each usage if desired. This may be accomplished by merely pressing a button which causes the entire top of said housing to snap open and expose the complete hair clipping head means, or cutting mechanism, which may then be blown out with an air pump of the collapsible hand bulb type (or any other type) which, if desired, may either initially contain, or be followed by, an initial spray of disinfectant material whereby to, not only completely clean the complete hair clipping head means, but also to disinfect same. Thus, all residual hair of a previous user will be readily and easily removed and cannot be carried on to the next user and the entire apparatus will also be completely disinfected.

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Furthermore, the apparatus lends itself to a very small slim-handled lightweight construction which makes it possible to use it for a considerable period of time with a minimum of hand and arm fatigue. The size, shape, and configuration of the handle and the positional adjustment feature of the hair clipping head will also act to keep an operator's hand and arm out of flying particles of hair during a hair clipping operation.

The structure of the device is such as to virtually eliminate any possibility of transfer of any substantial amount of heat from the hair clipper means to a user's head (or body). Also, the structure of the motor means and the power transmission and coupling means, in addition to the hair clipping head means, are such that very little noise is produced by power-driven operation of the clipper means which is a highly desirable objective in a device used so close to one's ears.

Furthermore, in one preferred form of the invention, the complete cutting mechanism of the hair clipping head is retained in the housing therefor only by readily disengageable means, thus making it possible to virtually instantaneously remove the cutting head mechanism should changing be necessary for any purpose.

It should also be noted that the slim lengthy structure of the handle means and the positionally adjustable hair clipping head features of the present invention make it possible for an operator to achieve a better hair clipping operation by reason of optimum positioning of his hand and arm for hair clipping use and by reason of the minimization of any substantial degree of obstruction of the operator's vision while operating the hair clipper means. This is important since non-optimum positioning of the operator's hand and arm and partial visual obstruction when using the relatively large unwieldy and heavy prior art type of hair clipper, frequently results in either over or under clipping of hair in certain regions.

With the above points in mind, it is an object of the present invention to provide a novel power-driven hair clipper means with positionally adjustable hair clipping head means embodying any or all of the various generic and/or specific aspects and/or features referred to above, either individually or in combination, and having any or all of the various advantages referred to above as flowing therefrom.

It is a further object of the present invention to provide a novel power-driven hair clipper means with a positionally adjustable hair clipping head means which embodies a very novel and simple type of reciprocating electric motor means, power transmission means, and effective positionally adjustable coupling means which makes it possible to very quickly and easily adjust the position of the motor means (and the handle means carrying same) with respect to the hair clipping head means to any of a plurality of different positions whereby to greatly facilitate a hair clipping operation by reason of said adjustable feature.

It is a further object of the present invention to provide a novel electrically energized power-driven hair clipper means with positionally adjustable hair clipping head means of the type referred to in the preceding object, wherein said adjustable arrangement of the coupling means with respect to said hair clipping head means provides for the relative adjustable positioning of said hair clipping head means with respect to said motor means (and said handle means carrying same) in three distinctly different positions sequentially angularly displaced from each other by substantially 90 degrees.

It is a further object of the present invention to provide an improved electrically energized power-driven hair clipper means with a positionally adjustable hair clipping head means which can be virtually instantly completely

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opened up and/or removed for ready cleaning and sterilization in any convenient manner.

It is a further object of the present invention to provide a novel electrically energized power-driven hair clipper means with positionally adjustable hair clipping head means of the character referred to hereinbefore and which effectively comprises a time and labor saving type of hair clipper means which greatly simplifies a hair clipping operation and which is of relatively simple, inexpensive, fool-proof, easy-to-use, easy-to-adjust, easy-to-clean and/or sterilize, and virtually maintenance-free construction such as to be conducive to widespread use thereof.

Further objects are implicit in the detailed description which follows hereinafter (which is to be construed as exemplary of the invention but not specifically limiting it) and said objects will be apparent to persons skilled in the art after a careful study of the detailed description which follows hereinafter. For the purpose of clarifying the nature of the present invention, several exemplary embodiments are illustrated in the hereinbelow-described figures of the accompanying two sheets of drawings and are described in detail hereinafter.

FIG. 1 is a reduced-size perspective view of one exemplary embodiment of the invention.

FIG. 2 is a larger scale fragmentary view, in section with respect to the casing (or handle) along a longitudinal central plane taken in the direction of the arrows 2—2 of FIG. 1, and in elevation with respect to the motor means and associated parts carried within the casing (or handle).

FIG. 3 is a cross-sectional view of the handle means taken in the direction of the arrows 3—3 of FIG. 2.

FIG. 4 is another cross-sectional view of the handle means, taken in the direction of the arrows 4—4 of FIG. 2.

FIG. 5 is an enlarged cross-sectional view of a portion of the reciprocating motor output shaft and of the key or spline means allowing said motor to longitudinally reciprocate said shaft in its tubular housing but preventing it from rotating with respect thereto.

FIG. 6 is a slightly enlarged fragmentary view taken in the direction of the arrows 6—6 of FIG. 1, and is largely a top plan view of the lower portion of the housing which carries the hair clipping head means—said plan view lying below the controllably openable and closable top cover portion of said housing. This view also shows the shearing members of the hair clipping head means in top plan view with the coupling means driven by the output shaft of the reciprocating motor means carried by the handle means in one of the three different adjustable positions which it may assume, said position comprising a rearwardly directed position as is best shown in FIG. 1.

FIG. 7 is a view similar to FIG. 6, but shows the adjustable coupling means in a second one of the three adjustable positions which it may assume with respect to the complete hair clipping head means, said position comprising a laterally rightwardly directed position as shown in FIG. 7.

FIG. 8 is another view similar to FIGS. 6 and 7, but shows the positionally adjustable coupling means in a third one of its adjustable positions with respect to the complete hair clipping head means, said position comprising a laterally and leftwardly directed position with respect to said hair clipping head means exactly opposite to that shown in FIG. 7.

FIG. 9 is a view, partly in section and partly in elevation, taken in the direction of the arrows 9—9 of FIG. 7 and primarily illustrates the means for virtually instantly controllably opening the housing means which carries the shearing members of the hair clipping head means therein so that they can be blown out or otherwise completely cleaned and sterilized in a very rapid and easy manner.

FIG. 10 is a fragmentary view, partly in section and partly in elevation, taken in the direction of the arrows 10—10 of FIG. 9 and further illustrates said housing cover opening or releasing means.

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FIG. 11 is a greatly enlarged, fragmentary, partly broken away, staggered-plane, sectional view, taken in the direction of the arrows 11—11 of FIG. 7 and illustrates the details of a portion of the exemplary type of adjustable coupling means illustrated in the drawings.

FIG. 12 is a fragmentary, greatly enlarged view, partly in section and partly in elevation, illustrating a typical one of the two laterally spaced constraint pin means which constrain the upper shearing member for lateral slidable movement only with respect to the fixed lower shearing member.

FIG. 13 is a fragmentary sectional view taken in the direction of the arrows 13—13 of FIG. 1 and illustrates the fastener means which normally rigidly, but controllably removably, fasten the bottom shearing member to the bottom of the cutting head housing means and also illustrates the downward biasing action of the forward upper edge of the top part of said cutting head housing means as it presses downwardly against the top surface of the laterally slidably movable upper shearing member just rearwardly of the cutting teeth of said upper and lower shearing members.

FIG. 14 is an electrical schematic view of the reciprocating motor means, the input lead means and switch means in circuit therewith for energizing said reciprocating motor means.

FIG. 15 is a fragmentary view illustrating a modification of the forward end of the longitudinal tubular member which slidably mounts the motor output shaft and comprises an arrangement wherein it includes two longitudinally spaced slotted engaging collars, either one of which is adapted to be controllably locked with respect to the hair clipping head means whereby to provide the requisite longitudinal positional adjustment required when the handle means and the hair clipping head means are in one of the two possible laterally related positions.

Generally speaking, the power-driven hair clipper means of the present invention comprises hair clipping head means, one exemplary form of which is indicated generally at 21, which includes a partially enclosing housing means comprising a lower housing portion 22L and an upper housing portion or cover portion 22U which are hingedly connected together along a forwardly positioned horizontal line by hinge means 23 which is preferably of the spring-biased type adapted to normally bias the upper housing portion or cover portion 22U upwardly away from the lower housing portion 22L so that whenever the housing cover opening or release means, indicated at 24 (best shown in FIGS. 9 and 10) is operated by pressing the button 25, the upper or cover housing portion 22U will be spring biased into a completely opened relationship with respect to the lower housing portion 22L, thus completely exposing the interior thereof for hair clipping head cleaning and/or sterilizing purposes as will be referred to hereinafter in greater detail.

The hair clipping head means, indicated generally at 21, also comprises first and second relatively slidable substantially flat, shearing members, each provided with a plurality of substantially similar parallel laterally spaced forwardly projecting cutting teeth having flat shearing surfaces lying as close as possible to a common plane and adapted to slidably abut the shearing surfaces of the cutting teeth of the other one of said shearing members for relative lateral reciprocation. In the exemplary form of the invention illustrated, said first and second shearing members comprise a laterally slidably movable upper shearing member 26 and a fixed lower shearing member 27. The above-mentioned cutting teeth of the upper shearing member 26 are indicated at 28 and the above-mentioned cutting teeth of the lower shearing member 27 are indicated at 29. The above-mentioned flat shearing surfaces and the common plane of abutting sliding contact thereof are indicated by the common reference numeral 31 since the physical positioning of said two shearing surfaces and said common plane is so close that they could

not be conveniently distinguished from each other on the drawing and appropriately designated by three different reference numerals and three different lead lines.

In the specific example illustrated the lower shearing member 27 is fastened to the bottom part of each side wall portion of the open bottom of the housing 21 by a plurality of threaded fastening screws 32 (although other fastening means may be employed) whereby to firmly fasten said lower shearing member 27 to the bottom of the housing 21 and yet to do so in a controllably removable manner in the event that said lower shearing member 27 needs to be removed for any purpose at any time.

In the specific example illustrated, the upper shearing member 26 is mounted with respect to the housing 21 (largely within the hollow interior thereof) by merely placing it in direct overlying abutting contact with the upper surface of the lower shearing member 27, with a forward portion of the upper shearing member 26 comprising the portion adjacent to the teeth 28 thereof being forcibly pressed under a resilient forward lip portion 34 of the housing 21 and resiliently snapped into downwardly spring biased engagement therewith, thus firmly mounting the upper shearing member 26 above the lower shearing member 27 with said upper shearing member 26 being spring biased downwardly by said resilient lip 34 so as to cause the two flat shearing surfaces of the two sets of teeth 28 and 29 to be in forcible resilient contact with each other along the common plane coextensive therewith, as indicated at 31. Also, it should be noted that the cooperation of said resilient biasing lip 34 and said upper shearing member 26 is such as to freely allow lateral slidable movement of said upper shearing member 26.

It should also be noted that, in the exemplary form of the invention illustrated, said two shearing members 26 and 27 are effectively provided with positive constraint means slidably mounting them for the desired laterally directed relative reciprocating movement and constraining them against longitudinal movement transverse thereto. In the exemplary first form of the invention illustrated, said positive constraint means is indicated generally at 36 and comprises a pair of laterally spaced upwardly vertically directed, headed constraint pins 37 carried by the lower shearing member 27 and extending upwardly into slidable constraining relationship with respect to two corresponding laterally elongated slideway slot means 38 formed in the upper shearing member 26.

The novel hair clipper means of the present invention also includes motor means, power transmission means, and coupling means controllably adjustably connected with respect to said hair clipping head means 21 for relatively reciprocating the shearing members thereof. In the exemplary form of the invention illustrated, said motor means is indicated generally at 39, as best shown in FIGS. 2 and 14, and is carried within a thin, elongated cylindrical hollow casing 41 which effectively comprises longitudinal handle means as generally designated by the reference numeral 42 and which is adapted to be grasped by the hand of a person using the hair clipper means.

In the exemplary form of the invention illustrated, the above-mentioned power transmission means comprises a longitudinal shaft 43 which is adapted to be longitudinally reciprocated by the motor means 39 within a hollow tubular member 44 which effectively comprises a longitudinal reciprocating bearing means which is rigidly connected, as indicated at 45, with respect to the forward end of the hollow casing 41 comprising the longitudinal handle 42. Said rigidly mounted hollow tubing 44 is adapted to longitudinally slidably but non-rotatably carry the motor output shaft means 43 therein by reason of a spline arrangement comprising the longitudinal inwardly directed spline member 46 carried by said tubing member 44 which slidably but non-rotatably cooperates with a cor-

responding longitudinal groove 47 carried by said motor output shaft 43. This is best shown in FIG. 5.

The forward end of said power transmission means effectively comprising said motor output shaft 43 is effectively provided with the above generically mentioned coupling means, one form of which is generally indicated at 48 and which is adapted to be controllably adjustably connected and positioned with respect to the hair clipping head means, indicated generally at 21, in any of three different positions as exemplified in one position in FIGS. 1 and 6, a second position in FIG. 7, and a third position in FIG. 8.

The above-mentioned adjustable positioning and connection of the coupling means 48 with respect to the hair clipping head means 21 in any of the above-mentioned three positions is accomplished by positioning and locking means 49 for effectively relatively positioning and locking said motor means 39, said handle means 42 carrying same, said motor output shaft 43, and said tubular member or longitudinal reciprocating bearing means 44 carrying same in any of the above-mentioned three different relative positions with respect to both the upper and lower housing portions 22U and 22L, and also by means for positionally adjustably coupling the forward end of said motor output shaft 43 with respect to said upper shearing member 26 in each of said three different positions, said latter means comprising an upwardly projecting coupling pin or screw member 51 (best shown in FIG. 11), or any effective functional equivalent thereof, carried by said upper shearing member 26 and connecting rod means 52 pivotally connected at its forward end, as indicated at 53, to said coupling pin or screw member 51 and universally rotatively connected by ball and socket means 54 at its other end to the remote forward end of said motor output shaft 43. The driving operation of this forward, and three-way positionally adjustable, portion of the coupling means will be described in detail hereinafter.

The above-mentioned positioning and locking means 49, in the exemplary form of the invention illustrated, comprises a slotted engaging collar means 55 rigidly carried by the forward end of the hollow tubular member or longitudinal bearing means 44 which is adapted to receive in vertically straight side slot portions 56 thereof corresponding square cut out upper and lower portions 57U and 57L which effectively comprise engaging and locking mating and retaining portions of the corresponding upper and lower housing portions 22U and 22L when said upper and lower housing portions are moved into closed locking relationship with respect to said engaging collar 55 within said vertically straight side slot portions 56 of said engaging collar 55. This not only rigidly locks the entire housing means, comprising the upper and lower housing portions 22U and 22L, to the forward end of the hollow tubing or longitudinal bearing means 44, but also effectively relatively non-rotatably keys them with respect to each other so as to prevent relative rotation of the cutting head means 21 with respect to the handle 42.

It should be noted that the engaging collar 55 can be locked in any of the three positions shown in FIGS. 6, 7, and 8, relative to the housing of the cutting head means 21 by merely moving it to the proper desired position at the rear or at either side thereof while the upper and lower housing portions 22U and 22L are in relatively open position, and then merely closing said upper and lower housing portions 22U and 22L in the manner just described whereby positive locking and non-rotative keying engagement of the corresponding square cut out portions 57U and 57L of the housing means occurs with respect to the engaging collar means 55. When this occurs, the connecting rod means 52 of the forward portion of the coupling means 48 will change position, along with the forward end 43 of the motor output shaft, into a corresponding one of three corresponding different positions where it will be

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capable of laterally slidably reciprocating the upper shearing member 26, although when moved to the position shown in FIG. 7 it will be necessary to provide a very easily accomplished longitudinal repositioning of the forward end of the motor output shaft 43, which is accomplished by rotating an adjustment knob 57 at the rear of the handle means 42, which causes relative rotation of an interiorly threaded member 58 with respect to an exteriorly threaded member 59 which longitudinally slidably carries the entire motor means 39 for longitudinal movement within the handle means 42. This will, of course, longitudinally adjust both the motor means 39 and the motor output shaft 43 with respect to the handle means 42 and the longitudinal tubular member or longitudinal bearing means 44 whereby to bring about the relative longitudinal extension of the forward end of the motor output shaft 43 clearly shown in FIG. 7. Repositioning from the position shown in FIG. 6 to the position shown in FIG. 8 does not require any longitudinal adjustment of the motor output shaft 43.

It will readily be understood that longitudinal reciprocation of the motor output shaft 43 will cause lateral slidable movement of the upper shearing member 26 when in any of the three relatively adjusted positions shown in FIGS. 6, 7, and 8, and that the angular relationship of the apparatus, when in the position shown in FIG. 6, may be adjusted at will so as to provide substantially the same lateral excursion of the upper shearing member 26 as that provided by the direct drive shown in either FIG. 7 or FIG. 8.

The housing opening or release means, indicated generally at 24, comprises a pair of latch arms 61 connected together by a crossbar 62 and normally spring biased by spring means 63 so as to cause the latching tips 64 to normally extend through the latch apertures or holes 65, with the latch arms 61 extending across the junction line JL between the upper and lower housing portions 22U and 22L. It will be understood that this provides an arrangement such that the release means 24 normally is in the locked relationship clearly shown in FIGS. 6-9 and that it is necessary to forcibly press the operating push-button 25 in order to move the latch arms 61 against the operation of the biasing spring 63 whereby to move the latching tips 64 out of the latching apertures 65, which will, of course, immediately relatively release the upper and lower housing portions 22U and 22L for spring biased opening thereof as a result of the operation of the spring biased hinge means 23. It will be understood that it is not necessary to depress the button 25 in any way in order to close the housing. All that is necessary is to force the upper and lower housing portions 22U and 22L together so that the slightly cammed latching tips 64 will be snapped into the latching apertures 65 which will effectively provide the desired locking of said upper and lower housing portions together.

In the exemplary form illustrated, the motor means 39 comprises a pair of longitudinally spaced ferromagnetic armatures 66 carried by the motor output shaft 43 and a pair of substantially similarly longitudinally spaced electromagnetic field-producing coil means 67 carried by longitudinal frame members 68 in positions for intermittent alternate electromagnetic attraction of the corresponding ones of said two ferromagnetic armature means 66 in corresponding opposite directions. Said motor means also includes motor-operated electrical switch means, indicated generally at 69, electrically connected with each of said two different electromagnetic field-producing means 67 for intermittent electrical energization thereof as a result of longitudinal reciprocation of said two ferromagnetic armatures 66, and of the motor output shaft 43 carrying same, whereby to produce reciprocating movement of said output shaft 43. The operation of the motor means 39 can be readily understood from a careful consideration of FIGS. 2 and 14. Whenever the main control switch 71 is controllably closed, electrical energy supplied by way

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of the input plug 72 and the input pair of lead means 73 energizes one or the other of the electromagnetic field-producing means 67 in accordance with which one of the two different circuit closing positions the switch means, indicated generally at 69, is in.

If said switch means 69 is in the position shown in FIGS. 2 and 14, the left field-producing means 67 of FIGS. 2 and 14 have just become energized by operation of the switch means 69 by the leftmost one of the two operating projections 74 carried by the motor shaft 43. Prior to such operation of such switch means 69, it had been in its other circuit closing relationship wherein it closed the circuit to the rightmost field-producing means 67 shown in FIGS. 2 and 14 which, of course, was the reason that the motor shaft 43 was moving toward the right as shown in FIGS. 2 and 14 to the extent that it has just operated the switch means 69 into the other circuit closing relationship wherein the left field-producing means 67 of FIGS. 2 and 14 have just now become energized. This will, of course, result in the left armature 67 of FIGS. 2 and 14 being attracted toward the left field-producing means 67, which will drive the motor shaft 43 toward the left as viewed in FIGS. 2 and 14 until such time as the right switch-operating projection 74 operates the switch 69 into the other circuit closing relationship wherein it again energizes the right field-producing means 67 of FIGS. 2 and 14 which results in attracting the right armature 66 and driving the motor output shaft 43 toward the right as viewed in FIGS. 2 and 14. This type of continuous back and forth or oscillating reciprocating action occurs as long as the main control switch 71 is closed, and will continue to laterally slidably reciprocate the upper shearing member 26 with respect to fixed lower shearing member 27 and thereby operate the hair clipping head means 21 in any one of the three relative positions best shown in FIGS. 6, 7, and 8.

The adjustment knob 57 for adjusting the longitudinal position of the motor 39 and the motor output shaft 43 with respect to the handle 42 may comprise a central portion 94 and a split outer portion 95 adapted to be pinned by suitable pin means or the equivalent, as indicated at 96, to said central portion 94 when in fully assembled relationship. This provides a very convenient structure for quick and easy assembly.

In order to provide for the longitudinal slidable movement of the motor means 39 previously referred to, it should be noted that the entire motor 39 is carried by the two spaced longitudinal bifurcated frame members 68 which are connected at the rear to the exteriorly threaded screw member 59 and which are slidably carried in slotted bearing members 97 mounted on the inside of the casing 41 comprising the handle 42. The longitudinal bifurcated frame members 68 are provided with inwardly directed members 98 adjacent to front and rear ends thereof mounting longitudinally aligned bearing means 99 which slidably carry the motor output shaft 43 for longitudinal reciprocation as a result of operation of the motor means 39.

FIG. 15 illustrates in fragmentary form a slight modification of the invention and, therefore, similar parts are indicated by similar numerals, primed, however. In this modification, the forward end of the longitudinal tubular member 44' is provided with two longitudinally spaced engaging collars 55' which make it possible to adjust the entire apparatus into a position similar to that shown in FIG. 7 without the necessity of operating an adjusting knob of the type shown at 57 in FIGS. 1 and 2. In other words, with this arrangement, it is merely necessary to use the right engaging collar 55' for engagement with the upper and lower housing portions which will provide the complete required effective longitudinal adjustment of the position of the inner end of the motor output shaft 43' which is required when the complete apparatus is in a position such as that shown in FIG. 7.

It should be noted that the motor means 39 (best shown in FIGS. 2 and 14) may, in a preferred form

thereof, be provided with resilient or elastic means co-operable for effective resilient biasing and/or stopping action with respect to the moving assembly comprising the motor shaft 43 and the pair of armatures 66 carried thereby. This will act to bring said moving assembly to a stop at each end of each reciprocating stroke thereof without producing a loud impact noise which would otherwise be produced by impact of the corresponding armature 66 with the corresponding electromagnetic field-producing coil means 67 (or the core thereof). Furthermore, in certain forms of the invention, such effective resilient or elastic means may act in a manner such as to facilitate the reciprocating action of said moving assembly means at the desired frequency as determined by the frequency of alternate switching energization thereof. In the specific example illustrated said resilient or elastic means comprises the resilient or elastic compressible washer or stop means designated by the reference character S as best shown in FIGS. 2 and 3. However, various other functional equivalents thereof may be employed in lieu thereof.

It should be understood that the figures and the specific description thereof set forth in this application are for the purpose of illustrating the present invention and are not to be construed as limiting the present invention to the precise and detailed specific structure shown in the figures and specifically described hereinbefore. Rather, the real invention is intended to include substantially equivalent constructions embodying the basic teachings and inventive concept of the present invention.

I claim:

1. Power-driven hair clipper means with positionally adjustable hair clipping head, comprising: hair clipping head means including two relatively slidable shearing members, each provided with a plurality of laterally spaced cutting teeth having shearing surfaces lying substantially in a common plane and adapted to slidably abut the shearing surfaces of the other one of said shearing members for relative lateral reciprocation, said two shearing members being provided with constraint means slidably mounting them for said relative lateral reciprocation and constraining them against longitudinal movement transverse thereto; motor means and power transmission means and coupling means controllably effectively adjustably connected between said motor means and one of said two shearing members and operable for laterally relatively reciprocating same in response to energization of said motor means; handle means effectively connected with respect to, and carrying, said hair clipping head means at one end thereof and carrying said motor means therein; said motor means being provided with longitudinally reciprocatable output shaft means comprising said power transmission means and driven by said motor means, when electrically energized, in a longitudinally reciprocating manner and terminating in a forward remote output end effectively adjustably connected to said coupling means; and means for positioning and locking said handle means, said motor means, and said power transmission means in any of a plurality of different relative positions with respect to said two shearing members of said hair clipping head means, with said power transmission means and coupling means being effectively connected thereto in a corresponding manner for said relative lateral reciprocation of said two shearing members.

2. Apparatus as defined in claim 1, wherein said coupling means comprises a vertically projecting coupling pin means carried by said one of said shearing members and connecting rod means pivotally connected at one end to said coupling pin means and pivotally connected at the other end to said forward remote output end of said longitudinally reciprocatable motor output shaft means comprising said power transmission means.

3. Apparatus as defined in claim 1, wherein said handle means is effectively provided with longitudinal bearing

means slidably mounting therein said motor output shaft means comprising said power transmission means, said longitudinal bearing means being provided with engaging collar means therearound adjacent to the forward end thereof and comprising a portion of said positioning and locking means.

4. Apparatus as defined in claim 1, wherein said hair clipping head means is provided with partially enclosing housing means including controllably openable and closable cover means adapted to enclose substantially all of said two shearing members except the forwardly extending slidably engaged cutting teeth thereof adjacent to the forward tip ends thereof, wherein said handle means is effectively provided with longitudinal bearing means slidably mounting therein said motor output shaft means comprising said power transmission means, said longitudinal bearing means being provided with engaging collar means therearound adjacent to the forward end thereof and comprising a portion of said positioning and locking means, and wherein said housing means is provided at a plurality of different positions corresponding to the different locked positions of said handle means with respect to said hair clipping head means, with engaging and locking mating and retaining portions slidably cooperable with said engaging collar means carried adjacent the forward end of said longitudinal bearing means for engaging and locking cooperation therewith.

5. Apparatus as defined in claim 1, wherein said handle means is effectively provided with longitudinal bearing means slidably and non-rotatably mounting therein said motor output shaft means, comprising said power transmission means, said longitudinal bearing means being provided with two longitudinally spaced engaging collar means therearound adjacent to the forward end thereof and comprising two different portions of said positioning and locking means cooperable for said effective positioning and locking of said motor means and said handle means in corresponding different ones of said plurality of different relative positions thereof with respect to said two shearing members of said hair clipping head means.

6. Apparatus as defined in claim 1, wherein said positioning and locking means comprises means for positioning and locking said motor means and said handle means in any of three positions, with said positions comprising a first position wherein said handle means extends longitudinally away from said cutting teeth in a direction substantially perpendicular to the direction of relative reciprocation of said shearing members, a second position wherein said handle means extends laterally away from said cutting teeth in a first lateral direction substantially parallel to the direction of reciprocation of said shearing members, and a third position wherein said handle means extends laterally away from said cutting teeth in a second lateral direction opposite to said first lateral direction of extension of said handle means when in said second position and also parallel to the direction of lateral reciprocation of said shearing members.

7. Apparatus as defined in claim 1, wherein said hair clipping head means is provided with partially enclosing housing means including controllably openable and closable cover means adapted to enclose substantially all of said two shearing members except the forwardly extending slidably engaged cutting teeth thereof adjacent to the forward tip ends thereof, wherein said handle means is effectively provided with longitudinal bearing means slidably and non-rotatably mounting therein said motor output shaft means, comprising said power transmission means, said longitudinal bearing means being provided with two longitudinally spaced engaging collar means therearound adjacent to the forward end thereof and comprising two different portions of said positioning and locking means cooperable for said effective positioning and locking of said motor means and said handle means in corresponding different ones of said plurality of different relative positions thereof with respect to said two

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shearing members of said hair clipping head means, and wherein said housing means is provided at a plurality of different positions corresponding to the different locked positions of said handle means with respect to said hair clipping head means, with engaging and locking mating and retaining cutout-defining portions slidingly and lockingly cooperable with a corresponding one of said two longitudinally spaced engaging collar means adjacent to the forward end of said longitudinal bearing means for corresponding engaging and locking cooperation therewith in corresponding different ones of said locked positions.

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