June 4, 1940. R. E. JONES 2,203,021

MECHANICAL SHAVING OR HAIR CLIPPING DEVICE

Filed Sept. 7, 1937 2 Sheets-Sheet 1

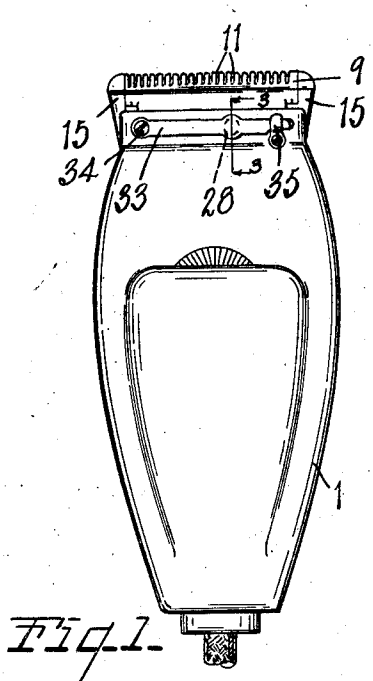


Fig. 1.

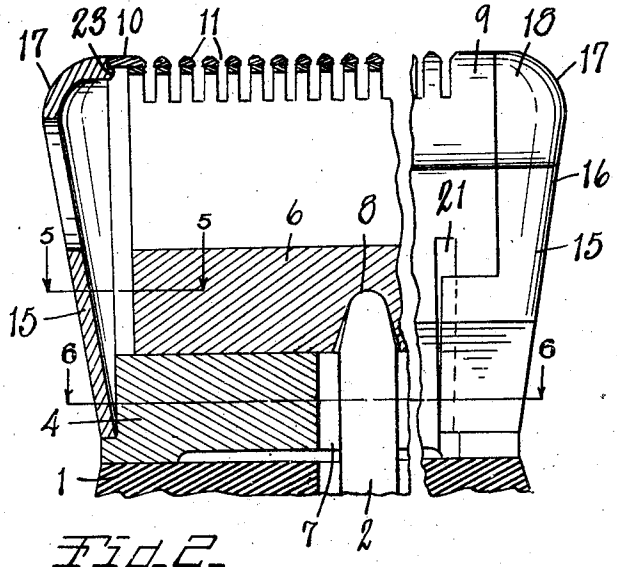


Fig. 2.

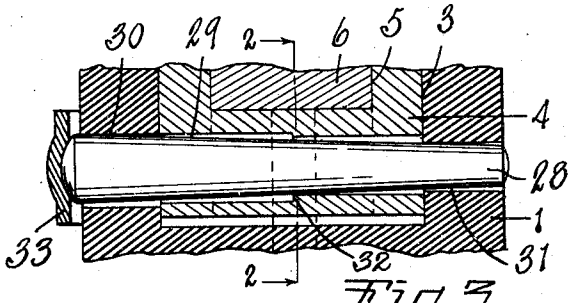


Fig. 3.

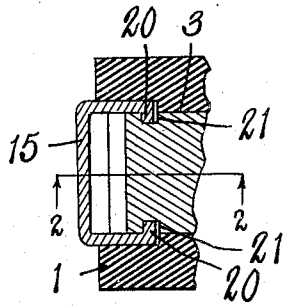


Fig. 5.

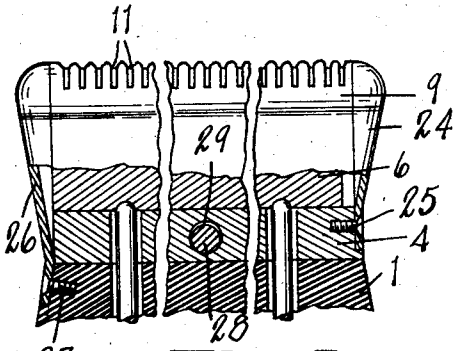


Fig. 7.

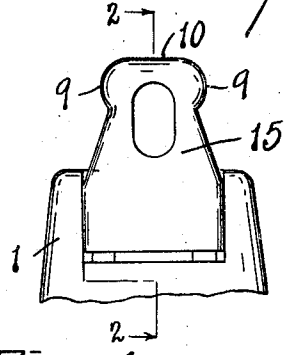


Fig. 4.

INVENTOR.
Ralph E. Jones
BY Earl & Chappell
ATTORNEYS

June 4, 1940. R. E. JONES 2,203,021

MECHANICAL SHAVING OR HAIR CLIPPING DEVICE

Filed Sept. 7, 1937 2 Sheets-Sheet 2

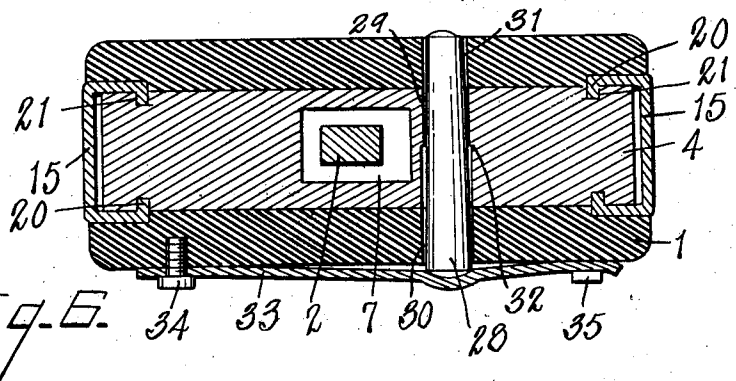


Fig. 6.

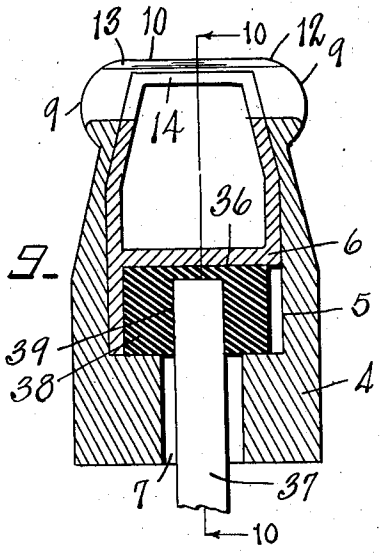


Fig. 9.

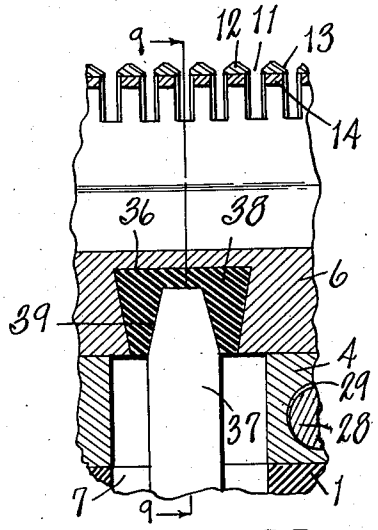


Fig. 10.

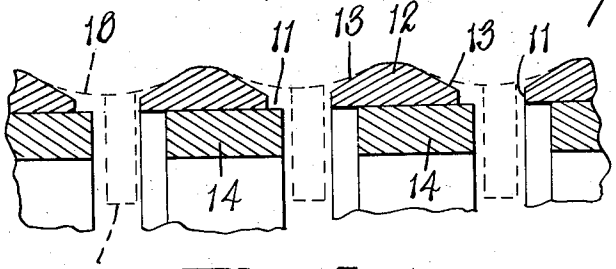


Fig. 8.

INVENTOR.
Ralph E. Jones
BY Earl & Chappell
ATTORNEYS

Patented June 4, 1940 2,203,021

UNITED STATES PATENT OFFICE

2,203,021

MECHANICAL SHAVING OR HAIR CLIPPING DEVICE

Ralph E. Jones, Grand Rapids, Mich.

Application September 7, 1937, Serial No. 162,575

22 Claims. (Cl. 30—43)

This invention relates to improvements in mechanical shaving or hair clipping device.

The main objects of this invention are:

First, to provide an improved mechanical shaving or hair clipping device in which an effective flat face is provided and at the same time there are no relatively sharp edges or ends likely to produce disagreeable sensations when pressed against the skin or to impede free and easy manipulation of the device.

Second, to provide a device or apparatus of the character described in which the shear surfaces may be brought into very close relation to the skin without likelihood of cutting or injuring the skin.

Third, to provide a device of the character described in which the head and the cutter may be readily disassembled for cleaning and sterilizing and quickly and easily reassembled for use.

Fourth, to provide a device of the character described in which the parts are held in assembled relation without the aid of screws and at the same time are very firmly clamped or retained in assembled position.

Fifth, to provide a mechanical razor or hair clipping device which is very quiet in operation.

Sixth, to provide a device of the character described having these advantages which is quite simple and economical in its parts.

Further objects pertaining to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawings in which:

Fig. 1 is a side view of a shaving or hair clipping device embodying a preferred form of my invention.

Fig. 2 is an enlarged fragmentary view partially in section on line 2—2 of Figs. 3, 4 and 5.

Fig. 3 is an enlarged fragmentary view mainly in section on the line 3—3 of Fig. 1 illustrating the means for securing the head to the handle.

Fig. 4 is a fragmentary end view with one of the head end members partially detached, other parts being omitted.

Fig. 5 is a fragmentary section on line 5—5 of Fig. 2 showing further details of the preferred form of end member attachment.

Fig. 6 is an enlarged section on a line corresponding to line 6—6 of Fig. 2 showing further details of the head end member mounting.

Fig. 7 is a fragmentary view of a modified form or embodiment of my invention, the modifications being primarily in the manner of securing the head end members and in the cutter actuating members.

Fig. 8 is an enlarged detail section through the face of the head and the cutter illustrating the advantages of the peculiar shape of the guard bars, the surface being shaved being conventionally illustrated by dotted lines as are also the hairs thereon.

Fig. 9 is a fragmentary section on line 9—9 of Fig. 10 showing a modification in the form of the attachment or engagement of the cutter actuating member with the motor.

Fig. 10 is a fragmentary section on line 10—10 of Fig. 9.

It should be understood that no attempt has been made in the accompanying drawings to show the parts in commercial sizes or proportions.

In the accompanying drawings the handle 1 is preferably of insulating material as is common practice in devices of this character and is of suitable size and proportions for convenient grasping and also to serve as a housing for the electric motor which I have not illustrated. It will be understood that a suitable motor is provided to oscillate the cutter actuating member 2.

The handle is provided with a channel-like recess 3 in its outer end removably receiving the head 4. This head 4 is provided with a channel-like chamber 5 receiving and housing the cutter 6 for reciprocal movement therein. The head is provided with an opening 7 at its inner end through which the actuating member 2 projects to engage with a socket 8 in the cutter so that the cutter is reciprocated from the motor.

At each side the head 4 has a curved bead-like portion 9 merging into the flat face 10. This flat face 10 has transverse slots 11 therein which extend into the curved portions 9. These slots provide a series of transverse combined guard and shear bars 12. The slots 11 are preferably of outwardly diverging cross section as shown in the drawings which results in providing the guard bars with outer beveled corners as shown at 13.

The cutter 6 has a plurality of spaced cutter members 14 which are supported in reciprocating relation to the combined guard and shear bars as is shown in Figs. 2 and 10. The operative relation of the cutter to the shear bars is well understood in the art.

The cutter head is provided with end members 15 which in the embodiment illustrated are of channel section, preferably sheet metal stampings, and these end members have curved side portions 16 which complement the curved side portions 9 of the cutter head and curved end por-

tions 17 which merge into the curved side portion 16 and also with the face 10 of the cutter head. This results in a flat face, which is a desirable feature, and curved side and end surfaces merging into the flat face so that the device slips freely over the surface and may be pressed very firmly against the surface without resulting in a disagreeable feeling or abrasion to a delicate skin. The outwardly diverging slots between the guard bars permit the skin, as indicated at 18, to be pressed somewhat between the guard bars so that the hair, indicated conventionally at 19, is cut off close to the skin.

It will be understood, of course, that the parts are greatly enlarged and that no attempt has been made to accurately illustrate these parts. The illustration is merely intended to disclose my invention so that it may be embodied as desired.

In the embodiment shown in Figs. 1–5, inclusive, the end members 15 are provided with inturned flange-like lugs 20 at their lower ends removably engageable with the grooves 21 in the head member. These flange-like lugs 20 are inclined somewhat as illustrated in Fig. 2 so that they engage the grooves with a camming action. At their upper ends the end members 15 are provided with lugs 23 which engage within the head with a snap action, that is, when the lugs 20 are in engagement the lugs 23 may be snapped or sprung under the ends of the heads, effectively retaining the end members while permitting their disengagement. This effectively retains the parts without the aid of screws or other fastenings which require the use of tools or are likely to become misplaced or lost. One or both of the ends members may be quickly removed to permit removal of the cutter for cleaning and sterilizing the head parts and the cutter.

In the embodiment shown in Fig. 7 the end member 24 is secured to the head by means of a screw 25 and the head member 26 is secured to the handle by means of a screw 27. This arrangement in combination with the detachable mounting of the head on the handle renders it possible to remove the cutter for cleaning without releasing either of the end members as when the head is released from the handle by removing the anchoring pin, the removable head leaves one end of it open and the cutter may be slipped out through the open end.

To detachably secure the head by means which does not require the use of tools I provide a tapered pin 28 engageable with the holes 29, 30 and 31 in the head and in the arm portions of the handle between which the head is supported. The holes 30 and 31 are of different size while the hole 29 is a stepped hole, with the result that the pin engages the shoulder 32 in the head to urge the head downwardly and engages the upper sides of the holes 30 and 31. This provides an effective clamping action and at the same time the pin slips very freely into and out of position.

To retain the pin in position I provide a turn button or clip 33 which is pivoted at 34 to be swung into and out of engagement with the keeper 35. This provides a very effective and readily manipulated means for securing the head in position.

In the embodiment shown in Figs. 9 and 10 the reciprocating cutter 6 is provided with a dovetailed recess 36 alined with the actuating member 37 of the motor, this recess receiving a block 38 of non-metallic resilient or yieldable material having a socket 39 therein receiving the end of the actuating member. Block 38 moves with cutter 6 when the latter is shifted by actuating member 37. The recess 36 is preferably dovetailed in section and open at one side (see Fig. 9) to facilitate the insertion and removal of the non-metallic socket member. Block 38 in recess 36 reciprocates with cutter 6 under the influence of actuating member 37, cushioning the connection between the said member and the cutter. This results in a substantial reduction in the noise incident to the operation of the device.

My improved shaving or clipping machine is highly desirable in that, while it presents an effective face, this face merges both at the sides and ends thereof into rounded surfaces so that the device is not only easy to operate but is very agreeable to the user and is not likely to abrade or roughen the skin against which it is pressed; also, a very close shave may be had. The present application is a continuation in part of my co-pending application Serial No. 131,230, filed March 16, 1937, for Hair clipping and shaving devices.

I have illustrated and described my invention in embodiments which I consider highly practical. I have not attempted to illustrate or describe certain modifications and adaptations which I contemplate as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the class described, the combination of a handle, a head chambered to receive a reciprocating cutter, said head having curved bead-like portions on each side at its outer end and a flat end face between said curved side portions, the curvature of said curved side portions merging into the face, the face having a plurality of transverse slits which extend into the curved side portions providing spaced combined guard and shear bars, head members constituting closures for the cutter chamber of the head and having curved outer ends comprising curved side portions complementing the curved side portions of said head and curved end portions merging therewith and with the face of the head, said head having vertical side grooves and said head end members having inwardly projecting flange-like lugs at their lower ends engageable with said grooves, at least one of the lugs of each head end member being inclined to provide a camming retaining action, said end members having inwardly projecting lugs at their outer ends engaging within the head member, and a cutter within said head operatively associated with said shear bars thereof.

2. In an apparatus of the class described, the combination of a handle having a transverse channel-like recess in its outer end, a head removably mounted in said recess and chambered to receive a reciprocating cutter, said head having curved bead-like portions on each side at its outer end and a flat end face between said curved side portions, the curvature of said curved side portions merging into the face, the face having a plurality of transverse slits which extend into the curved side portions providing spaced combined guard and shear bars, head end members of inwardly facing channel section constituting closures for the cutter chamber of the head and having curved outer ends comprising curved side portions complementing the curved side portions of said head and curved end portions merging

therewith and with the face of the head, a cutter within said head operatively associated with said shear bars thereof, a tapered head retaining pin, said handle and head having alined holes to receive said pin, the hole in said head being stepped and the holes in the handle at opposite sides of the head being of varying diameters whereby the pin coacts with the holes to retain the head with a clamping action, and a retaining clip for said pin carried by said handle.

3. In an apparatus of the class described including a head chambered to receive a reciprocating cutter, said head having curved side portions at its outer end and a flat end face between said curved side portions, the curvature of said curved side portions merging into the face, the face having a plurality of transverse slits which extend into the curved side portions providing spaced combined guard and shear bars, head end members of inwardly facing channel section constituting closures for the cutter chamber of the head and having curved outer ends comprising curved side portions complementing the curved side portions of said head and curved end portions merging therewith and with the face of the head, said head having vertical side grooves and said head end members having inwardly projecting flange-like lugs at their lower ends engageable with said grooves, at least one of the lugs of each head end member being inclined to provide a camming retaining action, said end members having inwardly projecting lugs at their outer ends engaging within the head member, and a cutter within said head operatively associated with said shear bars thereof.

4. A device of the class described, including a chambered head transversely slitted to provide a plurality of combined guard and shear bars, a cutter reciprocatingly mounted within said head to coact with said bars, end members for said head constituting closures for the chamber thereof, said end members being of inwardly facing channeled section, said head having vertical side grooves and said head end members having inwardly projecting flange-like lugs at their lower ends engageable with said grooves, at least one of the lugs of each head end member being inclined to provide a camming retaining action, said end members having inwardly projecting lugs at their outer ends engaging within the head member.

5. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at the ends thereof and having grooves therein parallel to the ends, and head end members having inwardly projecting flange-like lugs at their inner ends engageable with said grooves by lengthwise sliding movement, at least one of said lugs of each head member being inclined to provide a camming retaining action in the groove therefor, said end members having inwardly projecting lugs at their outer ends engaging within the head member, and a cutter within said head member.

6. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at the ends thereof and having grooves therein parallel to the ends, and head end members having inwardly projecting flange-like lugs at their inner ends engageable with said grooves by lengthwise sliding movement, said end members having inwardly projecting lugs at their outer ends engaging within the head member, and a cutter within said head member.

7. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at the ends thereof and having grooves therein parallel to the ends, and head end members having inwardly projecting flange-like lugs at their inner ends engageable with said grooves by lengthwise sliding movement, at least one of said lugs of each head member being inclined to provide a camming retaining action in the groove therefor.

8. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at one end thereof and having a groove parallel to the end, and a head end member having a lug at its inner end engageable with said groove by lengthwise sliding movement, said lug being conformed to provide a camming retaining action in the groove, said end member having an inwardly projecting lug at its outer end engaging within the head member, and a cutter within said head member.

9. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at one end thereof and having a groove parallel to the end, and a head end member having a lug at its inner end engageable with said groove by lengthwise sliding movement, said end member having an inwardly projecting lug at its outer end engaging within the head member, and a cutter within said head member.

10. In an apparatus of the class described, the combination of a handle, a head member chambered to receive a reciprocating cutter, said head member being open at one end thereof and having a groove parallel to the end, and a head end member having a lug at its inner end engageable with said groove by lengthwise sliding movement.

11. In an apparatus of the class described, the combination of a handle, a chambered head member, a cutter reciprocatingly mounted in said head member, said handle and head member having aligned pin receiving holes, the hole in the head member being stepped and the holes in the handle at opposite sides of the head member being of varying diameters, a tapered pin engageable with said holes and acting to retain said head with a clamping action, and a retaining clip for said pin.

12. In an apparatus of the class described, the combination of a handle having a transverse channel-like recess in its outer end, a chambered head removably mounted in said channel and chambered to receive a reciprocating cutter, detachable end members, constituting closures for said head member, said head and end members having co-engaging lugs providing a snap retaining engagement without the aid of screws, a tapered head retaining pin, said handle and head having alined holes to receive said pin, the hole in said head being stepped and the holes in said handle at opposite sides of the head being of varying diameters whereby the pin coacts with the holes to retain the head with a clamping action and at the same time is easily released, and a retaining clip for said pin carried by said handle.

13. In an apparatus of the class described, the combination of a handle having a transverse channel-like recess in its outer end, a chambered head removably mounted in said channel

and chambered to receive a reciprocating cutter, a tapered head retaining pin, said handle and head having alined holes to receive said pin, the hole in said head being stepped and the holes in said handle at opposite sides of the head being of varying diameters whereby the pin coacts with the holes to retain the head with a clamping action and at the same time is easily released, and a retaining clip for said pin carried by said handle.

14. In an apparatus of the class described, the combination of a handle, a chambered head detachably mounted on said handle, a reciprocating cutter removably mounted within said head, said cutter being provided with an inwardly facing transverse dove-tailed recess open at the side of the cutter, and a non-metallic actuating member receiving block removably engaged in said recess.

15. In an apparatus of the class described, the combination of a handle, a chambered head detachably mounted on said handle, a reciprocating cutter removably mounted within said head, said cutter being provided with an inwardly facing recess, and a non-metallic actuating member receiving block removably engaged in said recess.

16. A hair clipper including a handle having a channel defined by parallel walls, a hollow cutting head having a base resting flat against the end of the handle, and a tapered pin passing through both of said walls and through the base and detachably holding the head in place on the handle.

17. A hair clipper including a handle having a channel defined by parallel walls, a hollow cutting head having a base resting flat against the end of the handle, a tapered pin passing through both of said walls and through the base and detachably holding the head in place on the handle, and means detachably holding the pin in place.

18. A hair clipper including a handle having a channel defined by parallel walls, a hollow cutting head having a base resting flat against the end of the handle, a tapered pin passing through both of said walls and through the base and detachably holding the head in place on the handle, and means holding the pin in place from detachment and urging the pin inward.

19. A hair clipper including a handle having a channel defined by parallel walls, a hollow cutting head having a base resting flat against the end of the handle, a tapered pin passing through both of said walls and through the base and detachably holding the head in place on the handle, and means holding the pin in place from detachment and urging the pin inward, the base having an aperture for the passage of the pin, the aperture having a shoulder midway of its length against which the tapered pin abuts to thereby wedge the base downward firmly against the end face of the handle.

20. A hair clipper including a handle having a channel end defined by parallel walls, a hollow cutting head disposed in said channel and having a base resting flat against the end of the handle, a tapered pin passing through both of said walls and through the base and detachably holding the head in place on the handle, a spring engaged with one of said handle walls, the spring bearing against the head of said pin, and a keeper on the handle wall beneath which the spring may be engaged to hold the spring in close engagement with the head of the pin.

21. A hair clipper including a handle, a hollow cutting head disposed on said handle and having a slitted outer wall and side walls and having a base resting flat against the end of the handle, and guards disposed at the ends of the hollow head, the outer ends of the guards being transversely and longitudinally curved to merge into the outer face of the slitted and side walls of the head, the inner end portion of one guard having laterally disposed inwardly projecting extensions, the extensions on their inner ends having flanges projecting towards each other, the lateral walls of the head being recessed to receive said extensions and the lateral faces of the base being grooved to slidably receive said flanges, the extremity of the guard having a protuberance constructed and arranged to engage beneath the end of the outer head to detachably latch the guard in place.

22. A hair clipping device including a handle, an outer hollow cutting head having an outer face, a movable cutter disposed within the outer head and guards partly closing the ends of the outer head, each guard having a longitudinally rounded outer face merging into the outer face of the head, at least one of the guards slidably engaging with the end portion of the outer head for removal therefrom parallel to the end of the head and a latch securing the said guard in its position at the end of the head, the inner cutter being removable from the outer head at the end having the slidable guard.

RALPH E. JONES.