June 4, 1940. R. E. JONES 2,203,020

HAIR CLIPPING AND SHAVING DEVICE

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Fig. 1

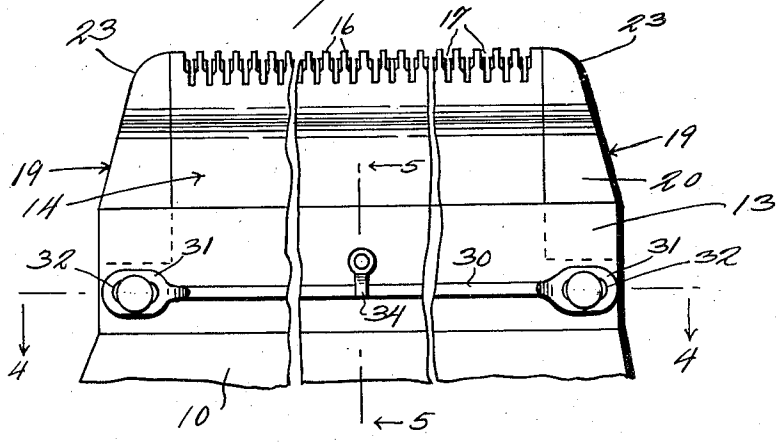


Fig. 2

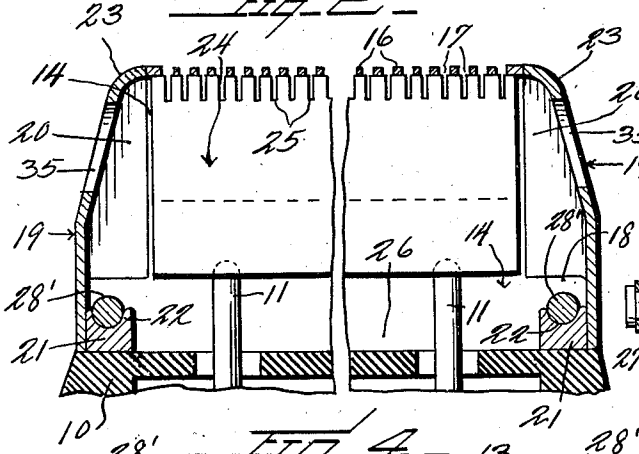


Fig. 3

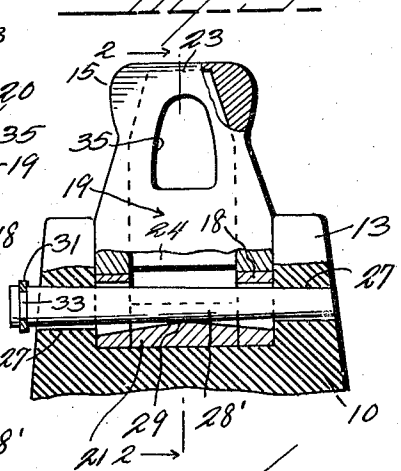


Fig. 4

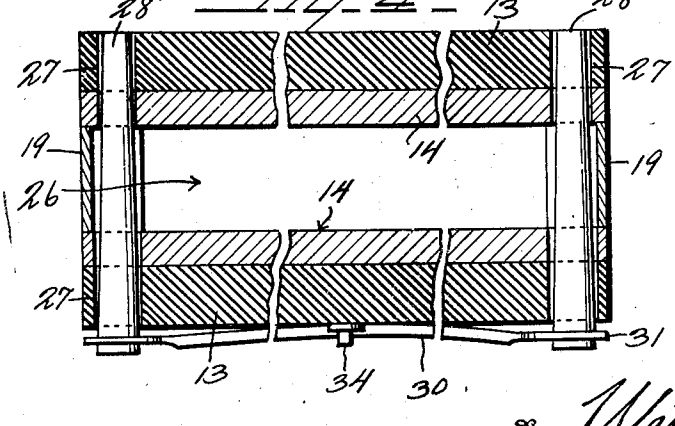
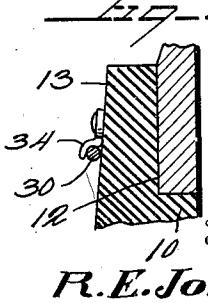


Fig. 5



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Fig. 6

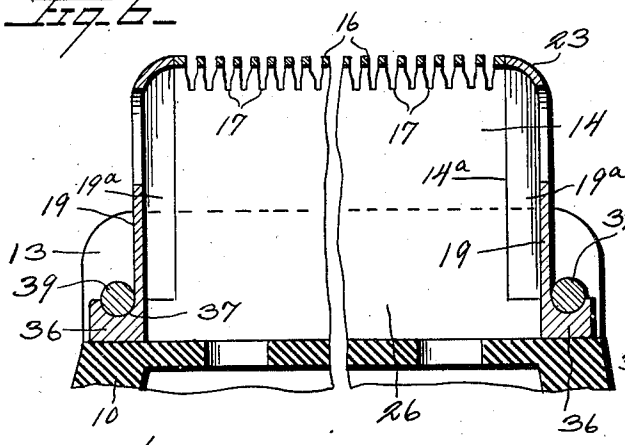


Fig. 7

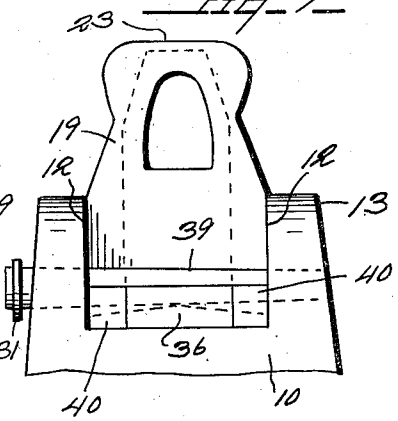


Fig. 9

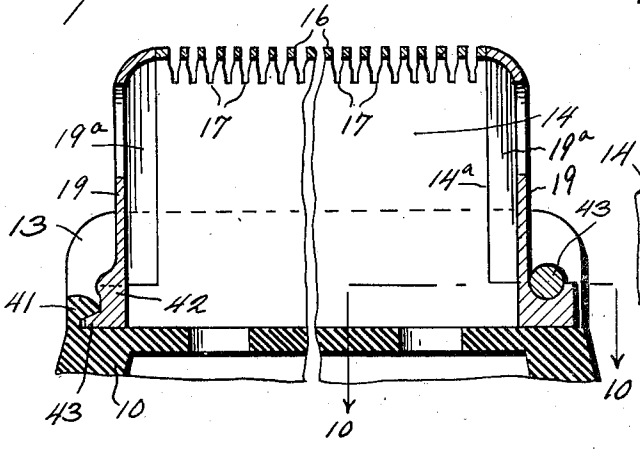


Fig. 8

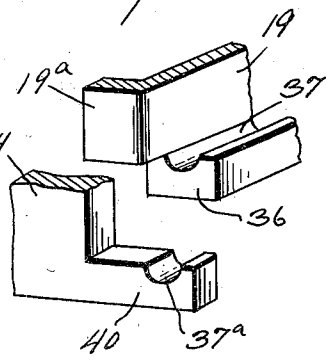


Fig. 10

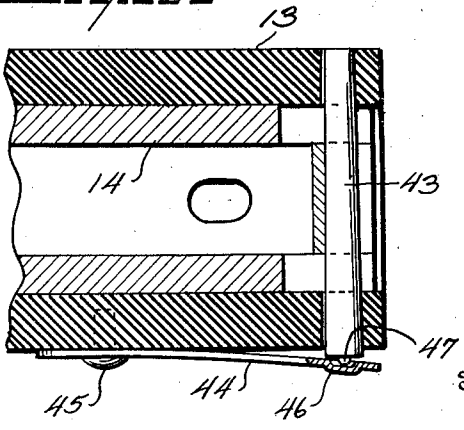
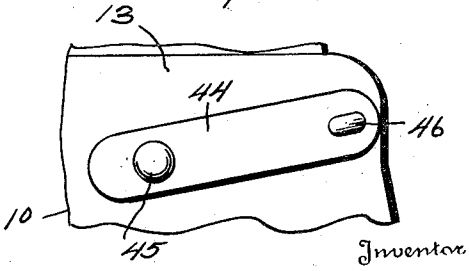


Fig. 11



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HAIR CLIPPING AND SHAVING DEVICE

Ralph E. Jones, Grand Rapids, Mich.

Application April 1, 1937, Serial No. 134,439

12 Claims. (Cl. 30—43)

This invention relates to improvements in shaving or hair clipping devices of the general character shown in the patent to Schick, #1,757,978, granted May 13, 1930. Shaving devices of this character employ an outer shaving head or cutter which is channel-shaped in cross-section, transversely slotted, and within which a reciprocating cutter or shearing member is disposed, reciprocated by an electric motor disposed within the handle of the device. The outer cutter or head as commonly made is open at its opposite ends to permit the removal of the reciprocating cutter when desired and the outer cutter or head is mounted in a channel formed in the handle and is held in place by a set screw.

Shaving or clipping devices of this kind now on the market are open to the objection that the side walls of the outer head are disposed nearly at right angles to the flat clipping face of the head or outer cutter so that there are two relatively sharp corners on each side face of the shaving head at the junction of the sides of the head with the flat face thereof and these corners, when the implement is being used against the face or other soft part, are irritating and uncomfortable, because the device must be pressed firmly against the face in order that it may cut properly and make a "clean shave." Furthermore, the ends of the outer cutter or head are open so that a sharp angle is formed at the corner or edge constituting each end of the outer cutter, making it difficult to force the implement into close contact with the face in order to secure a "clean shave."

In order to avoid these difficulties, I have in my prior application, Ser. No. 53,809, filed December 10, 1935, illustrated and claimed a shaving or hair clipping device of this general character having guards carried by the handle and extending upward at each end of the outer cutter or head, which guards are rounded at the extremities both transversely and longitudinally so as to merge into the side faces and flat outer face of the outer cutter and in said prior application, I have illustrated the outer cutter as being formed on each side edge with a deeply rounded bead merging into the outer flat face of the cutter. In the form of this shaving or clipping device as found on the market, the outer cutter is open at its ends and the inner cutter is removable through one or the other of the open ends of the outer cutter or head.

The general object of the present invention is to provide a structure of the character described wherein the inner cutter is removable, not through the ends of the outer cutter but through the bottom of the outer cutter when the latter is detached from the handle and provide guards which bear against the ends of the outer cutter and partly close these ends preferably permanently.

A further object is to provide improved means for holding the outer cutter or head in place upon the handle which will permit the ready removal of the outer cutter or head and yet hold it firmly in place.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of the upper portion of a shaver or hair clipping device constructed in conformity with one embodiment of my invention.

Figure 2 is a longitudinal vertical section through the structure shown in Figure 1 and taken on the line 2—2 of Figure 3.

Figure 3 is an end elevation of the structure shown in Figure 1 but with a portion of the handle and the lower portion of one of the guards broken away to show the locking pin in place.

Figure 4 is a section on the line 4—4 of Figure 1.

Figure 5 is a fragmentary section on the line 5—5 of Figure 1.

Figure 6 is a longitudinal sectional view of a modification of the outer cutter and the means for attaching it, the inner cutter not being shown.

Figure 7 is an end elevation of the structure shown in Figure 6.

Figure 8 is a fragmentary perspective view of one of the side walls and the adjacent guard of the outer cutter shown in Figure 6.

Figure 9 is a vertical section of a modified form of my invention.

Figure 10 is a fragmentary section on the line 10—10 of Figure 9.

Figure 11 is a fragmentary elevation of the side wall of the handle shown in Figures 9 and 10.

Referring now to Figs. 1 to 5, 10 designates the handle of the implement, which handle contains the usual motor (not shown). Extending upward through the handle are two resiliently supported pins 11, which form no part of my invention but which are found in some form or other in all shaving devices of this class. These pins 11 extend up into recesses formed in the inner cutter 24. The handle 10 is formed at its upper end with a longitudinally extending channel 12 defined by the two side walls 13. So far, the con-

struction is that found in all razors of this character. Disposed to rest against the upper or outer end face of the handle 10 is the fixed cutting head 14. The lateral walls of this head extend straight upward, then inward or towards each other, as shown in Fig. 3, and then these walls are thickened and the outer face is outwardly curved to form the beads 15, which extend longitudinally the entire length of the outer cutter. These beads, as will be seen from Fig. 3, are relatively deep and wide vertically and these beads curve gradually upward and inward and merge into the flat outer face 16 of the outer cutter 14. The outer cutter is transversely slotted at a plurality of points, as at 17, in the usual manner. The ends of the side walls of the outer cutter, as shown in Figs. 2 and 3, are longitudinally extended at 18. Disposed at each end of the outer cutter are the guards designated generally 19. Each guard has an outer end wall and the inwardly projecting side walls 20. These side walls 20 are cut away at their lower ends to fit upon the upper edges of the extensions 18 of the side walls of head 14, and attached to these extensions 18 or formed as part thereof or attached to the end wall of the guard or formed with the cutter 14 is an inwardly projecting ledge or flange 21 shown most clearly in Fig. 2, the upper face of this flange being formed with a semi-circular groove 22, the exact form of which will be later stated. The outer end wall of the guard extends upward and inward and then is gradually curved at 23 upward and inward so that the outer face of this curved portion of the guard merges gradually into the outer face 16 of the outer cutter or head 14. This portion of the guard is also concavo-convex in cross-section so that it is rounded not only longitudinally but transversely and the sides of the outer portion of the guard merge into the beads 15. These guards 19 are welded or otherwise attached to or integral with the body 14 of the outer cutter so that the guards 19 are permanently attached to this outer cutter and cannot be removed.

Disposed within the outer cutter is the inner reciprocating cutter designated generally as 24 and having the usual form shown in dotted lines in Fig. 3. This inner cutter is also transversely slitted at 25 in the usual manner and is reciprocated by any suitable means not shown. Inasmuch as the ends of the outer cutter or head are permanently closed by the guards 19, it is necessary that the walls of the outer cutter with the portions 21 shall define an opening 26 having an area larger than the area of the bottom of the inner cutter so that when the outer cutter or head is disengaged from the handle, the inner cutter may be removed through this opening 26.

For the purpose of holding the outer cutter or head with its guards in place upon the handle, I provide pairs of alined apertures 27 in the side walls 13 of the handle and dispose through these apertures the locking pins 28' shown most clearly in Figure 3. These locking pins are tapered. The bottom of the groove 22 in each flange 21 extends upward to the middle of the flange and then downward, so that the locking pins 28', when inserted, will wedge against the crest 29 at the middle of each flange 21. It will be seen from Figure 3 that the locking pins will bear against the top of both of the apertures 27 and the middle of the pins will bear against the highest portions 29 of the grooves 22, thus forcing the outer cutting head firmly down into its seat within the channel 12.

As a means of holding these locking pins detachably in place, I provide a resilient rod or spring 30, as shown in Figure 1, round in cross-section, the ends of this rod being flattened, as at 31, and longitudinally slotted as at 32. The large extremity of each pin 28' is formed with a groove 33 in which the metal of these flattened ends engages. The spring 30 is normally slightly bowed and in locking the pins into place, the middle portion of the spring 30 is forced inward and caught beneath a keeper 34 attached to a wall 13 of the handle, this keeper having a downwardly extending open hook beneath which the spring 30 may be caught.

It will be seen that with this construction the outer cutting head is held firmly in place in such manner that the continuous vibration, while the device is in operation, cannot cause the head to come loose from the handle and yet the head may be readily detached by releasing the spring 30 from the keeper 34 and withdrawing the pins, and that when the head is detached from the handle, the inner cutter may be readily removed for cleaning or other purposes. Of course, the guards are formed with openings 35 so that particles of hair collecting within the interior of the inner cutting head may be readily discharged.

In Figs. 6 and 7, I have illustrated another and modified form of guard and a modified means of holding the cutter head upon the handle. The cutter head is designated 14 as it has broadly the same form as the cutting head shown in Figs. 1, 2 and 3. The guards 19a are of the same character as those shown in Fig. 2, except that the lower end of each guard is formed with an outwardly projecting flange 36 formed with a groove 37 in its upper face, the middle of which is raised as shown in dotted lines in Fig. 7. The tapered pins 39 pass through these walls 13, as shown in Figs. 6 and 7 and engage over the lugs or flanges 36 so as to hold the outer cutting head with its guards firmly in place within the channel defined by the walls 13. These two pins 39 are held in place in the same manner as shown in Figures 1 and 5 by means of a longitudinally extending spring rod, the ends of which are flattened and engage in grooves in the extremities of the pins 39. One of these flattened ends is shown in Figure 7 and designated 31. Inasmuch as the structure of this spring bar, its engagement with the heads of the pins and the keeper for the bar are all shown clearly in Figures 1, 2 and 5, it is not believed necessary to repeat this illustration. As in Figures 2 and 3, so in Figures 6, 7 and 8, the bottom of the groove 37 in lug 36 is inclined from opposite directions upward to the middle of the lug 36, so that the locking pin will bear against this crest. This causes the pin to press centrally against the outer head and force this outer head against the handle.

In Figures 6, 7 and 8, I also show that the lateral walls of the outer cutter 14 are extended outward at 40, that the lateral walls 19a of the guard are abutted against the ends of these lateral walls of the cutter and welded thereto on the line 14a, and that the outwardly extending flange 36 is disposed between the extensions 40 and welded thereto. Of course, the extensions 40 have grooves 37a which form continuations of grooves 37 when the parts are in place and welded to each other.

In Figures 9 to 11, I illustrate another modification wherein the handle 10 at one end is formed with an integral upwardly and inwardly extending lug or flange 41 and the outer cutter 14 has

one guard 19ª welded or otherwise permanently attached thereto and formed on its outside face adjacent the base of the cutter with a coacting complementary flange 42 having a lip 43 which engages beneath the overhanging flange 41. The opposite guard 19ª is formed substantially as shown in Figure 8, but whether formed in this manner or not, it is provided with a projecting flange 36 grooved to receive the tapered pin 43 which engages with the side walls 13 formed on the handle. This pin 43, as shown in Figure 10, is held in place by a spring 44 pivoted at 45 to the handle, the extremity of the spring having a recess or socket 46 which fits over a slight protuberance 47 formed on the end of the pin. By pulling slightly outward on this spring 44 and turning it away from the pin, the pin may be removed, but, of course, when the spring engages the extremity of the pin, the pin is held firmly in place with the cutter locked to the handle. The portion 42, the guard 19ª and the side walls of the outer cutter 14 are formed preferably in the manner shown in Figs. 3 and 9, and the sloping surface of the part 41 in Figure 9 bears upon the sloping surface of the lip 43 at the center thereof similar to the construction shown as to part 36 in Figure 7.

Inasmuch as there is no bottom wall to the outer cutter, the inner cutter 24 is held up tight against the inner face of the outer cutter in cutting position by the usual resiliently mounted pins 11 present in this type of shaver.

It will be seen that in all of the various forms of my improvement as illustrated in Figures 1 to 11, the inner reciprocatable cutter is removed through the opening numbered 26 in Figs. 2, 6 and 8 formed at the lower end of the outer or fixed cutter, and that in all forms of this structure, the outer end portions of the guard or guards are relatively thick or deep and that they are longitudinally curved to merge into the upper face of the outer cutter and transversely curved to merge into the ends of the beads 15 so that the outer cutter or cutting head will move smoothly over the face and have no sharp edges which will form indentations in the face which will prevent or tend to prevent the easy movement of the shaver over the face.

It will be seen that in all forms of my invention, the outer cutter is bodily removed from the handle when the locking pins (or pin, as shown in Figure 9) are removed.

In the claims appended, I have referred to the guards as being relatively thick. The term "thick" is not intended to imply in any way that the material of the guard or the material of the metal shell forming the guard, if a hollow metal shell is used, is necessarily thick but as meaning that the distance between the outer face of the guard and its plane of juncture with the ends of the outer cutter or head is relatively great. The guard may be made solid under some circumstances or hollow; but as before stated, the term "thick" applies to the distance between the outer face of the guard and the end face of the outer cutter and has nothing to do with the thickness of the metal shell which makes a hollow guard.

What is claimed is:

1. A hair clipper, including a handle having parallel outstanding portions, a hollow outer cutting head disposed on said handle and between said portions, a movable cutter mounted within the head, the head having guards at its ends, each guard being longitudinally rounded to merge gradually into the outer face of the cutting head, the cutting head at one of its ends being formed with a projecting lug grooved upon its upper face, and a detachable tapered pin extending through the outstanding portions of the handle and extending over and bearing against the grooved face of the lug, the cutting head having further means interlockingly engageable with an element on said handle.

2. A hair clipper, including a handle having parallel outstanding portions, a hollow outer cutting head disposed on said handle and between said portions, a movable cutter mounted within the head, the head having guards at its ends, each guard being longitudinally rounded to merge gradually into the outer face of the cutting head, the cutting head at its end being formed with a projecting lug grooved upon its upper face, and a detachable tapered pin extending through the outstanding portions of the handle and extending over and bearing against the grooved face of the lug, the bottom of said groove being upwardly inclined from each end of the groove to the middle of the groove, the pin bearing against the crest thus formed.

3. A hair clipper, including a handle having parallel outwardly projecting portions, a hollow elongated outer cutting head disposed between said portions and bearing against the handle, a movable cutter mounted within the head, the cutting head having guards at its ends, the cutting head at its end being formed with a lug projecting grooved upon its upper face in a direction transverse of the length of the head, a detachable tapered pin extending through the outwardly projecting portions of the handle and extending over and bearing against the grooved face of the lugs, and means engaging the handle and said pin and formed and constructed to detachably hold the pin in place.

4. A hair clipper, including a handle having an end face formed with outwardly projecting portions, a hollow cutting head removably disposed on said handle against the end face, a movable cutter mounted within the head, guards at the ends of the hollow cutting head, each guard being longitudinally rounded to merge gradually into the outer face of the hollow head, the guards being permanently attached to the ends of the head, each guard having an inwardly projecting lug extending longitudinally of the outer face, the space between said lugs being open whereby to permit the inner cutter to be removed through said opening, and tapered pins extending transversely of the outer face through the outwardly projecting portions of the handle and bearing against the upper faces of said lugs to thereby hold the hollow head in place on the handle.

5. A hair clipper of the character described, including a handle having an end face, the end face at one end having parallel outwardly projecting portions, a hollow cutting head disposed against the end face of the handle and between said portions, a movable cutter mounted within the head, the head being open on its lower face confronting the handle to permit the removal of the inner cutter through said opening when the cutting head is removed from the handle, the end face of the handle at one end having an outstanding lug, the hollow cutting head having means at one end formed to interlock with said lug on the handle, and means engaging the other end of the cutting head and the handle and detachably holding the cutting head to the handle.

6. A hair clipper, including a handle having an

end face, the face at one end having a lug permanently secured thereto and projecting from the face, a hollow cutting head disposed on the end face of the handle, a movable cutter disposed within the head, the head having at one end a portion having detachable interlocking engagement with the lug on the handle, a guard disposed at the other end of the head and having its outer face rounded to merge gradually into the outer face of the head, and means detachably engaging the head with the handle.

7. A hair clipper, including a handle having an end face, the end face of the handle at one end having parallel outwardly projecting portions, a hollow cutting head disposed against the end face of the handle and between said portions, a movable cutter mounted within the head, the head being open on its lower face confronting the handle to permit the removal of the inner cutter through said opening when the cutting head is removed from the handle, means at the one end of the cutting head and end face of the handle constructed and arranged to have interlocking engagement, the opposite end of the head having an outwardly projecting lug disposed between said outwardly projecting portions of the handle, and a tapered pin extending through said outwardly projecting portions and over the upper face of the lug to thereby lock the cutting head to the handle.

8. A hair clipper, including a handle having at one end a channel defined by parallel walls, an outer hollow cutting head, a movable cutter disposed within the outer head, guards at the ends of the hollow head and permanently engaged therewith, each guard having a longitudinally rounded outer face merging into the face of the cutter head, lugs projecting from the guards and having channeled outer faces, and detachable tapered pins passing through the parallel walls on the handle and engaging the channeled faces of the lugs to thereby hold the hollow cutting head in place within said channel of the handle.

9. A hair clipping device, including a handle, an outer cutting head attachable to the handle, a movable cutter disposed within the head and means for attaching the head to the handle including a lip at one end of the head and a lip rigid with the handle, the two lips interlocking when the cutting head is in place on the handle, a tapered pin locking the head to the handle at the opposite end of the head, and means for holding the tapered pin in its locking position.

10. A hair clipper, including a handle, a cutting head attachable to the handle, said handle having a lip thereon extending laterally substantially parallel to the cutting surface of the head, and said cutting head having a lip thereon and being engageable with the handle by means of said lips, one of said lips being undercut to provide for interlocking engagement of said lips, another part of the cutting head being engageable with the handle by means of a removable pin.

11. A hair clipper including a handle terminating in a pair of spaced walls defining a channel, a hollow cutting head disposed in said channel, a movable cutter mounted within the head, and means for detachably holding the hollow cutting head on the handle, comprising a member secured to said head and disposed in said channel and having a projecting lug in the channel, and a pin extending through said handle and channel transversely of said head and engaging said lug, the head being open on its lower face confronting the handle to permit the removal of the cutter through said opening when the cutting head is removed from the handle.

12. A hair clipper including a handle terminating in a pair of spaced walls defining a channel, a hollow cutting head disposed in said channel and having a laterally projecting lug therein, a movable cutter mounted within the head, said head having guards attached thereto at its ends and disposed in the channel, and means for detachably securing the cutting head to the handle comprising means carried by the handle and extending through said channel for engagement with said lug, said head being open on its lower face confronting the handle to permit removal of the cutter through said opening when the head is removed from the handle, said head having an outer cutting face and the cutting face and guards being joined by gradually curved surfaces.

RALPH E. JONES.