June 19, 1956 L. M. COLES 2,750,663

HAIR TRIMMER

Filed Aug. 9, 1951 3 Sheets-Sheet 1

Fig. 1.

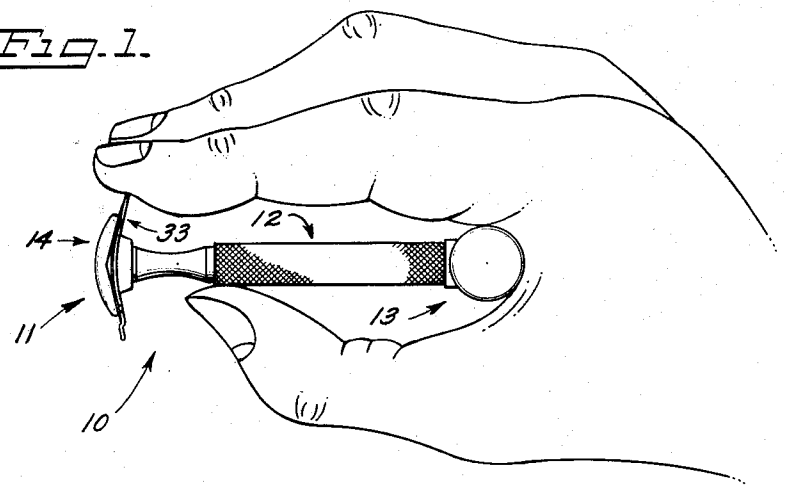


Fig. 2.

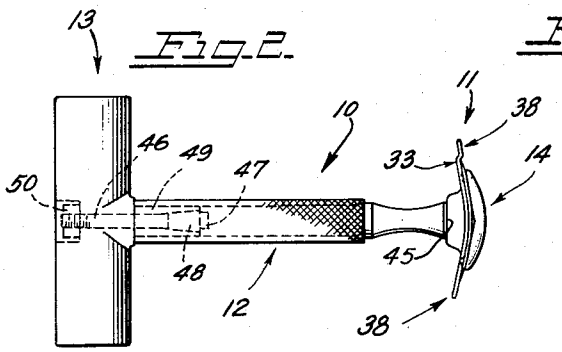
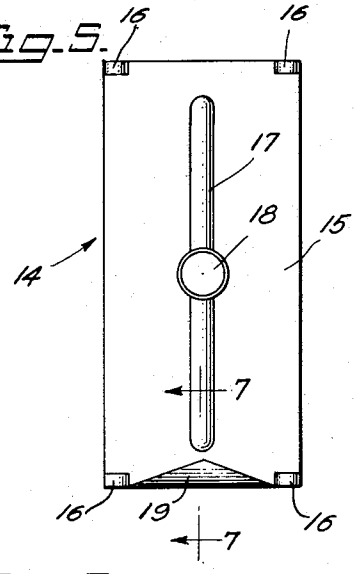


Fig. 5.



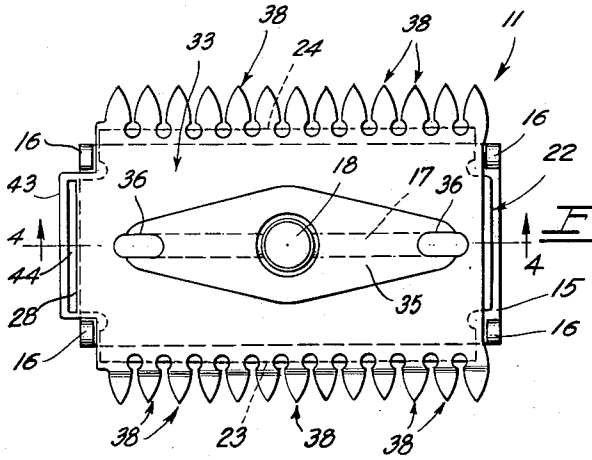


Fig. 3.

Fig. 6.

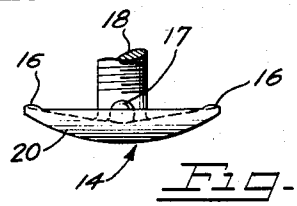
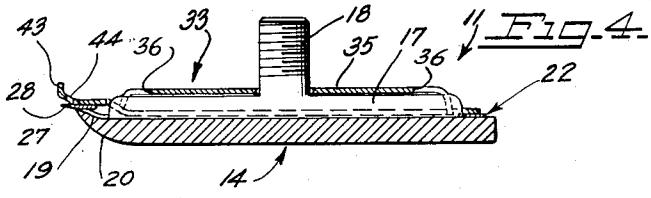


Fig. 4.



INVENTOR.
Leon M. Coles
BY
John P. Hanrahan
ATTORNEY

June 19, 1956 L. M. COLES 2,750,663

HAIR TRIMMER

Filed Aug. 9, 1951 3 Sheets-Sheet 2

Fig. 7.

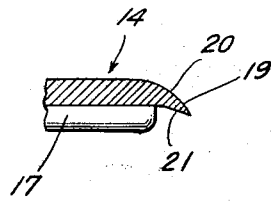


Fig. 11.

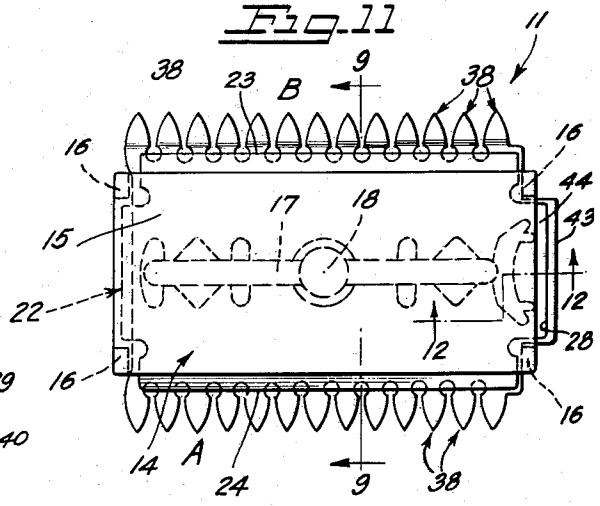


Fig. 8.

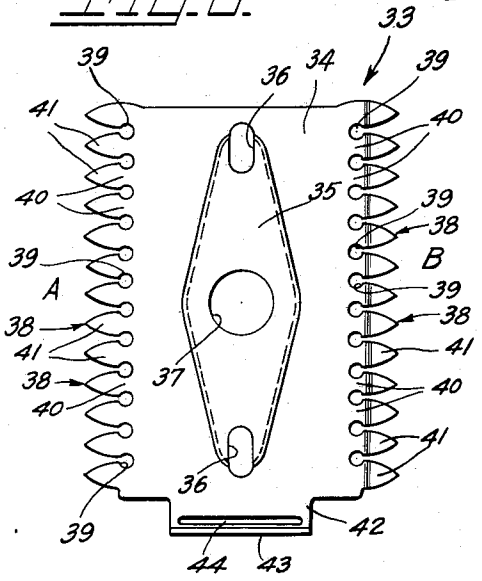
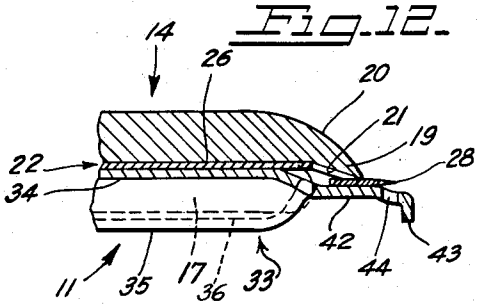


Fig. 12.



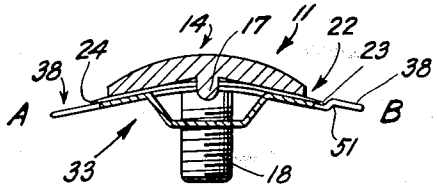


Fig. 9.

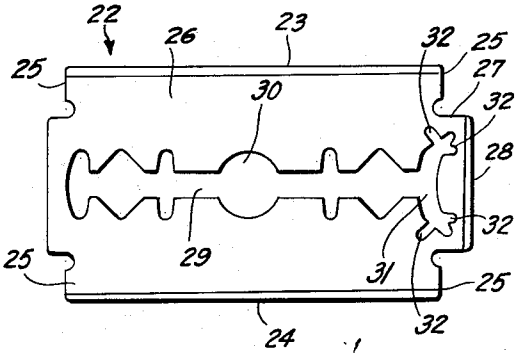


Fig. 13.

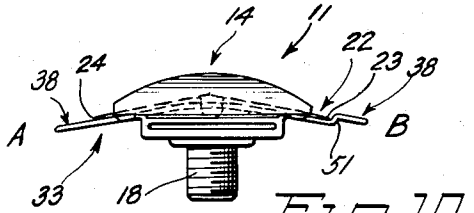


Fig. 10.

INVENTOR.
Leon M. Coles
BY
John A. Hannahan
ATTORNEY

June 19, 1956 L. M. COLES 2,750,663

HAIR TRIMMER

Filed Aug. 9, 1951 3 Sheets-Sheet 3

Fig. 14.

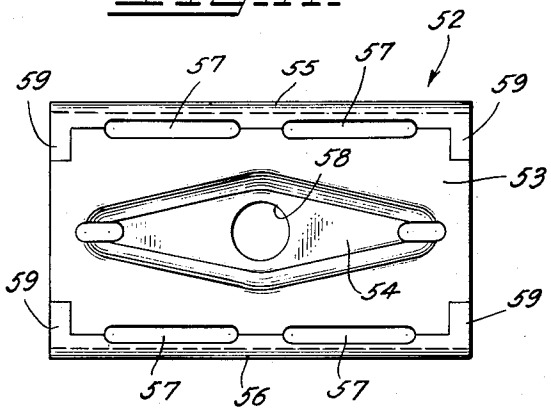


Fig. 18.

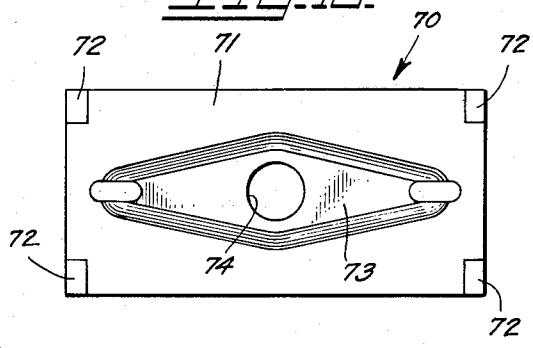
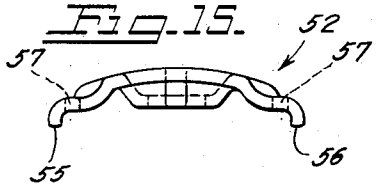


Fig. 15.



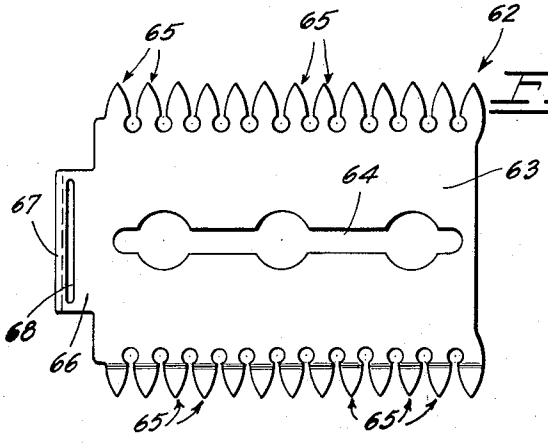
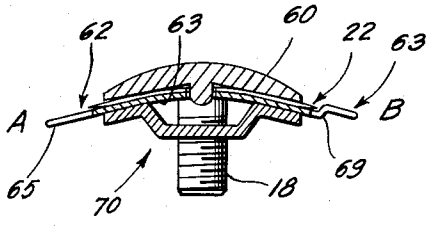


Fig. 16.

Fig. 19.



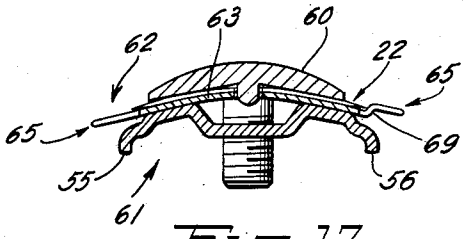


Fig. 17.

INVENTOR.
Leon M. Coles
BY
John J. Hanrahan
ATTORNEY

United States Patent Office

2,750,663

Patented June 19, 1956

2,750,663

HAIR TRIMMER

Leon M. Coles, Portchester, N. Y.

Application August 9, 1951, Serial No. 241,064

6 Claims. (Cl. 30—31)

This invention relates to new and useful improvements in hair trimmers and has particular relation to a hair trimmer employing as the cutting member a readily renewable blade.

An object of the invention is to provide a hair trimmer adapted for use in trimming close on some portions of the head and for trimming the hair longer on other portions of the head at the option of the user.

Another object is to provide a hair trimmer including tooth formations for holding in place the hairs to be cut.

A further object is to provide a hair trimmer having the tooth construction mentioned and comprising a construction providing for the use of the complete edge or edges of the cutting member or blade.

An additional object is to provide an improved construction of blade for use in a hair trimmer.

Another object is to provide a hair trimmer of the character indicated and including an improved tooth construction and including at one end an edge for use in shaving about the ears of the user.

An additional object is to provide a hair trimmer of the character indicated and including as a feature an improved handle construction facilitating use of the trimmer.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawings wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawings:

Fig. 1 is an end elevational view showing the trimmer of the invention as held in the hand of a user;

Fig. 2 is a similar view of the trimmer but with the handle turned at right angles as when the instrument is to be used for shaving about the ears, etc.

Fig. 3 is a bottom plan view of the head of the trimmer, the handle and shank being omitted;

Fig. 4 is a central longitudinal sectional view through the head of Fig. 3, the view being taken as along the line 4—4 of Fig. 3;

Fig. 5 is a bottom plan view of the top plate of the trimmer head, such plate being shown alone;

Fig. 6 is an end elevational view of the top plate;

Fig. 7 is an enlarged detail sectional view through one end portion of said top plate, the view being taken along the line 7—7 of Fig. 5;

Fig. 8 is a bottom plan view of the combined clamp and guard member of the trimmer head, such member being shown alone;

Fig. 9 is a transverse sectional view through the assembled trimmer head, the view being taken along the plane of the line 9—9 of Fig. 11;

Fig. 10 is an end elevational view of the assembled trimmer head, the view being taken as looking into the right hand end of Fig. 11;

Fig. 11 is a top plan view of such trimmer head;

Fig. 12 is a further enlarged detail sectional view taken as along the line 12—12 of Fig. 11;

Fig. 13 is a plan view of my improved blade for use in my hair trimmer;

Fig. 14 is a bottom plan view of a combined clamp and guard which is substituted for the clamp and guard of Fig. 8 when the device is being used as a razor for shaving;

Fig. 15 is an end elevational view of the substitute clamp and guard;

Fig. 16 is a plan view of a ductile sheet metal device adapted to be incorporated in a razor to convert the latter into a hair trimmer;

Fig. 17 is a transverse sectional view showing such device in a razor head and converting the razor into a hair trimmer;

Fig. 18 is a bottom plan view of a clamp to be substituted for the guard and clamp of Fig. 17 when converting a razor into a trimmer; and

Fig. 19 is a view similar to Fig. 17 but showing the clamp of Fig. 18 in use.

Referring in detail to the drawings and at first more particularly to Figs. 1–13, at 10 is generally indicated the hair trimmer of the invention and the same includes a head generally indicated **11**, a shank generally indicated **12**, and on the outer end of the latter a hand or finger piece generally designated **13**. It is noted that the shank **12** and the hand or finger piece **13** together comprise a handle by means of which the head **11** may be manipulated.

The head **11** comprises an outer or top plate **14** including an elongated body **15** transversely curved on its outer and inner sides whereby in transverse section it is concavo-convex. In each corner of the underside of the top plate **14** is a locating lug **16** and projecting from the longitudinal center of the underside of said plate is a rib **17** from the mid portion of which projects an externally threaded stud **18**. For a purpose to be described, on the underside of the top plate **14** at one end is a fillet **19** and this end portion is curved on its outer side as at **20** and said fillet tapered on its inner side at **21**, thus leaving this fillet with a straight-across free edge.

According to the invention, an elongated blade generally designated **22** (Fig. 13) comprises part of the head **11** and this blade is sharpened along each of its longitudinal edges **23** and **24** as is usual in the art. Additionally, said blade is provided with four end shoulders **25** for cooperation with the locating lugs **16** as will be set forth. At one transverse end, blade **22** which includes a body **26** is provided with an extension **27** of less width than said end and located between the shoulders **25** at said end.

Extension **27** has an edge **28** located generally remote from the body **26** of the blade and such edge **28** is sharpened providing a cutting edge. Along its longitudinal center, the blade body **26** is cut away or cut through having therein a slot **29** enlarged in its mid portion at **30** to provide clearance for the stud **18** and generally speaking, the slot **29** is for the accommodation of the rib **17** of top plate **14** in the assembled head.

A transversely extending slot **31** communicates in its mid portion with one end of the slot **29** and then is somewhat arcuate and just short of its ends has slight extensions **32**. The purpose of this construction is to provide a structure wherein the body **26** of the blade may be transversely curved to conform with the inner curvature or under curvature of the top plate **14** while the cutting edge **28** of the extension **27** may be maintained straight due to its engagement with the continuous edge, heretofore mentioned, of the fillet **19**, without breaking of extension **27** from the body **26**. Any other

desired or necessary slotting of the blade for this purpose may be employed.

When the blade 22 is against the inner or under face of the top plate 14, the shoulders 25 at the respective ends of the longitudinal edges of the blade are located between the locating lugs 16 at the ends of the respective longitudinal edges of said top plate. However, the length of the blade between the mentioned pairs of shoulders is somewhat less than the distance between the opposed edges of a pair of the lugs. In addition, the slot 29 in the blade is slightly longer than the rib 17 on the underside of the top plate. Therefore, the blade may be shifted longitudinally while against the underside of the top plate and in one extreme position the shoulders 25 at the end of the blade having the extension 27 will be against the lugs 16 at the end of the top plate having the fillet 19 and at such times the sharpened edge 28 at the end of the blade is exposed for use.

Alternatively, when the blade is shifted into its opposite extreme position, the shoulders 25 at the blade end remote from the extension 27 are against the lugs 16 of the top plate remote from that end of the top plate carrying the fillet 19. At such times, the cutting edge 28 of the extension 27 is drawn into a position of non-use, as will later fully appear.

In addition to the top plate 14 and blade 22, the head 11 includes a combined clamp and guard, generally designated 33 and shown alone in Fig. 8. This member 33 is formed of relatively heavy gage stock and includes a body 34, the mid portion of which is shown as bumped out providing a hollow strengthening rib 35 and this hollow rib accommodates the rib 17 of the top plate when the parts are assembled, the ends of the latter rib entering openings 36 in the ends of the rib 35. Additionally, body 34 is provided with an opening 37 located midway the ends and sides thereof for the accommodation of the externally threaded stud 18 of the top plate 14.

Along its opposite longitudinal edges, the combined clamp and guard member 33 is provided with rows of teeth 38. Each of these teeth is substantially pointed at its outer end and then its edges are in diverging relationship for a distance whereupon such edges are cut inwardly providing shoulders 39 and neck portions 40 for the teeth. Thus, each of the teeth includes a head-like portion 41 and a neck-like portion 40, the head-like portion having the inwardly diverging edges and with the neck-like portion forming the shoulders 39 which, during use of the trimmer, serve to retain a portion of the hairs which move inwardly between the teeth from moving outwardly therebetween as said hairs are engaged by one or the other of the longitudinal cutting edges 23 and 24 of the blade whereby such hairs are prevented from moving away from such cutting edge and will be cut.

At one transverse edge the body 34 is provided with an extension 42 the free end of which is bent downwardly providing a guard 43 immediately inwardly of which is a slot 44 for the passage of hairs and/or soap when the blade edge 28 is used for shaving to straighten the edges of the hair about the ears, the sideburns, etc.

From the foregoing it will be seen that in the assembled hair trimmer the blade 22 is placed against the under concave side of the top plate 14 with the rib 17 of the latter received in the slot 29 of the blade and the stud 18 of the top plate projecting through the enlarged opening 30 through the longitudinal and transverse mid point of the blade. At this time, the extension 27 of the blade will be against the continuous free edge of the fillet 19 with the cutting edge 28 of said extension exposed and with the pair of shoulders 25 at the ends of said extension against the locating lugs 16 of the top plate.

Now the combined clamp and guard 33 is disposed against the blade and this combined guard and clamp is transversely concave in all its portions with the exception of its portion 42. The rib 17 of the top plate is accommodated by the hollow rib 35 of the combined guard and clamp member 33 and the stud 18 extends through the opening 37 in said member. In this connection it is noted that the opening 30 through the blade is of considerably greater diameter than the diameter of the stud 18.

The extension 42 of the combined guard and clamp member has its portion immediately along the inner edge of the slot 44 disposed on the blade extension 27 and the cutting edge 28 of the latter is under the slot 44. Now the handle comprising the shank 12 and the hand or finger piece 13 is threaded onto the stud 18 until the inner end 45 of the shank, Fig. 2, presses against the outer surface of that portion of the combined guard and clamp 33 immediately about the opening 37.

As the shank is threaded onto the stud 18 the combined guard and clamp member 33 is forced tightly against the blade seating the latter in a transversely curved condition against the top plate. However, the extension 27, particularly in its free edge portion having the cutting edge 28, is maintained straight by engagement with the continuous edge of the fillet 19 and by being clamped against such edge of the fillet by the extension 42 of member 33.

The hand or finger piece 13 is secured to the outer end of the shank 12 in a manner whereby such hand or finger piece may be turned about an axis represented by the longitudinal center line of the shank 12 but will frictionally stay in the position into which it is turned. Thus, the longitudinal axis of such hand or finger piece may be parallel with the longitudinal axis of the head 11, as in Fig. 1, or may be at right angles thereto, as in Fig. 2.

While the shank and hand or finger piece may be secured together in any desired manner, here the shank is shown as hollow and receiving a bolt 46, the head 47 of which is at the underside of a tapered plug 48 located in a taper in one end of a bushing 49 located within the outer end portion of the hollow shank. Bolt 46 extends through the finger or hand piece 13 and at the outer side of the latter is equipped with a nut 50. Clearly, on tightening of this nut, the cone 48 is wedged tighter in place and the hand piece and shank frictionally secured together by the pressure between such hand piece and the adjacent end of the shank.

In Figs. 3 and 11, the assembly is shown with the blade 22 in position whereby its cutting edge 23 is located for use. It is noted that the longitudinal cutting edges of the blade project from under the top plate 14 or are located beyond the longitudinal edges of such top plate and extend across the neck-like portions 40 of the teeth. In this way, alternate portions of said longitudinal cutting edges 23 and 24 are covered by said neck portions and are exposed through the rounded apertures defining the edges of the neck portions of the adjacent teeth.

With the trimmer assembled as described, where a trimming operation is to be performed using the longitudinal cutting edge of the blade, the hand piece 13 is preferably related to the shank 12 and the entire assembly held in the hand as illustrated in Fig. 1. Now the operator uses the device as though he were combing the portion of his hair which he wishes to trim. Preferably, about the edges, he combs against the lay of the hair or in a manner to raise the hair up where it is lying along the scalp or the skin.

For medium long hair, the device, when held with the blade normal to the scalp, may be used as a comb to direct the hair in one direction and then by reversing the motion and combing back through his hair with the blade at an incline, the hair will be trimmed. The longitudinal edges of the blades are preferably used for trimming the hair at the back of the head or at the sides of the head and on the neck or even on the top of the head. Hair can easily be trimmed about the ears by cutting upwardly, the outer surface of top plate 14 being used to press the ears downwardly or out of the way.

However, these longitudinal edges cannot be expeditiously used for shaving the edges of the hair about the ears. When such shaving is to be done, the hand piece

13 may be related to the head, as in Fig. 2, and then the short transverse cutting edge 28 of the blade is employed. Edge 28 is primarily for a shaving process without any necessity for changing of parts or the employment of another instrument. It is especially useful for straight edging the hair around the ears, the sideburns, etc. The narrow width of the blade with the receding adjacent portion of the top plate (Fig. 12) provides a structure much more practical for this purpose than the using of a corner of a longitudinal blade edge. Where a corner of a long edge is so used, the remainder of the blade nicks the skin or remote portions of the hair. Due to the presence of the guard 43, the instrument may be safely used in the manner last indicated and the curved surface 20 at the outer side of this end portion of the top plate 14 permits of a close relation of the blade edge 28 to the scalp.

The teeth 38 along one edge of the combined guard and clamp 33 are designated A while those along the other edge are designated B. With particular reference to Figs. 9 and 10, it is noted that the teeth B are offset upwardly as at 51 so that they overlie the cutting edge 23 of the blade. With this construction, using the device for cutting with that edge of the blade which is adjacent the teeth B, the hair cannot be cut very close because the cutting edge of the blade cannot be brought close to the scalp or skin. Therefore, it is recommended that this edge of the trimmer be used for trimming the hair on the top and at the back of the head and even along the sides. Then the opposite edge of the trimmer, or that edge having the non-offset but curved teeth A, will be used for trimming the hair on the neck and in other places where it is desired that the hair be cut close.

Thus, it will be appreciated that the offset 51 is recommended as a safeguard for optional use whereby to prevent cutting the hair too close at the edges. This particular construction, however, does not prevent the use of the edge portion B of the trimmer in the same manner as the edge portion A when cutting long hairs. Hairs may be cut with either edge portion of the trimmer and long hairs may be cut using either edge of the trimmer. But the edge B, because of the offset 51, will not cut as close to the scalp or skin as will the edge A. With edge portion B you cannot shave the head and thus will not inadvertently cut the hair too close at the back and along the sides of the head and the sideburns. Therefore, the use of edge portion B for trimming the back, sides and even the sideburns is recommended while use of edge A is recommended for taking the hairs off short on the neck.

Heretofore has been described the manner in which on loosening of the shank on the stud 18 to loosen the clamp and guard 33 from tight engagement with the blade the latter could be shifted longitudinally to withdraw its transverse cutting edge 28 into an inoperative position. This shifting of the blade longitudinally results in the portions of its longitudinal edge which have heretofore not been in use owing to the fact that they are covered by the neck-like portions 40 of the teeth, being exposed between such portions of the teeth for use while the heretofore used portions of such edges which may have become dulled are now covered by the neck-like portions of the teeth and are no longer used. Thus, all portions of the longitudinal cutting edges of the blade may be brought into use merely by shifting of the blade in the head.

When the blade has been shifted the shank 12 will be tightened on the stud 18 drawing the top plate 14 and the combined clamp and guard 33 tight against the blade securing the latter in its adjusted position. In such position the edge 28 of the blade is not drawn entirely into the head but is brought in under the extension 42 so as to be ineffective for cutting and thus there is no possibility at such time that during use of one of the longitudinal edges the user may accidentally nick himself with the edge 28.

It is proposed that the hair trimmer, as described, be sold as part of a set which may be used either as a hair trimmer or as a razor. Such set will include the structure heretofore set forth in detail and in addition thereto, will include a combined clamp and guard such as that generally designated 52 and shown along in Figs. 14 and 15.

Such combined guard and clamp comprises a body portion 53 having the raised hollow rib 54 corresponding with the rib 35 of the combined clamp and guard 33. In addition, its longitudinal edge portions 55 and 56 are bent downwardly providing guards in the rear of which are slots 57 for the passage of soap and cut hairs. Centrally, body 53 has an opening 58 for the passage of the stud 18 and then at its corners is provided with depressed portions 59 to accommodate the locating lugs 16 on the top plate 14.

From the foregoing it will be seen that the member 52 is a standard guard and clamp device for razors and when it is substituted in the described assembly for the combined guard and clamp 33, the device may be used as a razor.

Referring now to Figs. 16 and 17, according to these figures an ordinary razor comprising a top plate 60 and a combined clamp and guard 61 and one of the blades 22 is readily convertible into a hair trimmer. Thus, in this instance, the set includes the top plate 60 corresponding with the top plate 14 first described, the combined clamp and guard 61 corresponding with the clamp and guard 52 above described, and the blade 22 and, in addition thereto, a trimmer guide generally designated 62 and shown alone in Fig. 16.

This trimmer guide comprises a body 63 of ductile sheet metal having centrally thereof a longitudinally extending slot 64 and along its longitudinal edges provided with teeth 65 corresponding exactly with the teeth 38 previously described. On one transverse edge, body 63 is provided with an extension 66 having its free edge down-turned providing a guard 67 and immediately inwardly of said guard provided with a slot 68 for the passage of hair, soap and the like. Thus, the extension 66, guard 67 and slot 68 on the body 63 correspond exactly with the extension 42, the guard 43 and the slot 44 on one end of the combined clamp and guard 33.

When using the guide 62, the razor is opened and then the guide is disposed with one side against the blade, the blade having one side against the top plate 60 which corresponds exactly with the top plate 14 previously described. Now the guard 61 is positioned and the handle threaded onto the stud 18. As the handle is tightly threaded home the pressure on the blade 22 and the guide 62 causes these parts to conform to the inner curvature of the top plate and where the trimmer guide 63 is of ductile metal, the clamping action is relatively tight. Thus, the guide 62 and the guard 61 together constitute a combined guide and guard corresponding with the combined guard and guide 33.

The teeth along one or even both longitudinal edges of the guide 62 may be offset or bent about one or more edges of the blade, as at 69 in Fig. 17. This bending action may be accompanied by pressing the teeth against a solid object to offset them about the edge of the blade. The offsetting of the teeth along one edge of the trimmer guide 62 will be for the purpose set forth when described the offsetting of the teeth B along one edge of the combined clamp and guide 33. The fact that guide 62 is of ductile metal is a particular advantage to the experienced user since by forcing it sideways against a rigid surface he can force the teeth away from the blade to the desired extent and nearly to the point where he may use the adjacent blade edge for feather edging the hair to the desired shortness.

Because of the presence of the guard edges 55 and 56 on the combined guard and clamp 52, the device shown is not particularly good as a hair trimmer. The guards have a tendency to push the hair ahead of the device and

not permit it to enter between the teeth for cutting. Therefore, in a set, along with the trimmer guide 63 I propose to sell as one element or part a clamping plate, generally designated 70 and shown alone in Fig. 18. This clamping plate includes a body 71 and has the offsets 72 at its corners for the purpose of the offsets 59 of guard 52 and further has the hollow central rib 73 provided with the opening 74 for the purpose of the rib 54 and opening 58 of guard and clamp 52 of Fig. 14. However, the clamp 70 does not have any guard feature and does not have downwardly bent longitudinal edges. Thus, when this device 70 is substituted for the guard and clamp 61 of Fig. 17 we have the assembly of Fig. 19 wherein it will be clear that there are no parts to move ahead of the cutting edges and to press the hair back to keep it from entering between the teeth 65 and thus being presented to the cutting edge of the blade.

Having thus set forth the nature of my invention, what I claim is:

1. In a hair trimmer, an elongated top plate having a pair of spaced locating lugs on its under side, an elongated blade having a pair of end shoulders received between said lugs when said blade is disposed against the underside of said plate, a clamp disposed against the under side of said blade, means for drawing said clamp and plate toward one another to clamp said blade between them, said blade having a longitudinal cutting edge and a cutting edge at one of its ends, and said shoulders on said blade being so located that on loosening of said means the blade may be shifted longitudinally to dispose the selected shoulder of the blade against the selected one of said lugs whereby to selectively dispose said blade with said end cutting edge of the blade located between and extending beyond the end of the plate and clamp.

2. In a hair trimmer, a head, an elongated blade in said head and including a longitudinal cutting edge and a transverse cutting edge, said blade being longitudinally shiftable in said head between a position wherein said transverse cutting edge is exposed at one end of said head for use and a position wherein said transverse cutting edge is withdrawn into the head, and means for securing said blade in its selected position.

3. The trimmer as in claim 2 wherein said head includes at one end a fixed guard positioned to guard said transverse cutting edge of the blade when said edge is projected for use.

4. In a hair trimmer, a trimmer head comprising separable parts and an elongated blade held between said parts having a cutting edge along at least one of its longitudinal edges, and one of said parts having a series of longitudinally spaced and aligned teeth along at least one of its longitudinal edges, said teeth each including a narrow neck portion, having substantially semi-circular concave edges forming substantially circular open spaces between the neck portion of adjacent teeth, and an outwardly projecting head portion, having outwardly converging edges forming inwardly convergent entrance slots between adjacent teeth extending to said circular open spaces, means on said separable parts positioning said blade with its said cutting edge extending across the longitudinally aligned diameters of said open spaces, and the upper surfaces of said head portions of said teeth being upwardly offset from the upper surfaces of said neck portions by longitudinally aligned shoulder formations at the inner ends of said head portions in parallel outwardly spaced relation to the longitudinally aligned diameters of said circular openings and in outwardly opposed spaced relation to said cutting edge.

5. In a hair trimmer, an elongated top plate having a concave under surface and a pair of spaced locating lugs on its inner surface at the opposite ends of one of its longitudinal edges, an elongated blade having a pair of end shoulders received between said lugs when said blade is disposed against said surface, said blade having sharpened longitudinal edges providing cutting edges, an extension on one transverse end of said blade and of less width than the blade and having its free end sharpened providing a transverse cutting edge, a clamp disposed against the inner side of said blade and clamping it against said concave surface of the top plate, said top plate having a straight edge at one transverse end and against which said blade extension is disposed whereby said extension is maintained straight when the blade is clamped against said concave surface, said clamp including an extension at one end disposed to clamp said blade extension against said straight edge, means for drawing said plate and clamp toward one another to clamp said blade between them, and said shoulders on said blade being so located that on loosening of said means the blade may be shifted longitudinally to dispose a selected shoulder of the blade against a selected one of said lugs whereby to selectively dispose said blade with said transverse cutting edge of the blade projected for use or retracted with respect to said clamp extension to a position of non-use.

6. The trimmer as in claim 5 wherein said clamp includes teeth along its longitudinal edges and projecting outwardly beyond the longitudinal cutting edges of said blade, and said teeth being spaced from one another along the line of the cutting edges of said blade whereby on shifting of the latter new portions of the edges of the blade are exposed between said teeth.

References Cited in the file of this patent

UNITED STATES PATENTS

1,052,346	Kalina	Feb. 4, 1913
1,069,831	Traylor	Aug. 12, 1913
1,486,418	Clardy	Mar. 11, 1924
1,932,876	Agostini	Oct. 31, 1933
2,034,262	Marrazzo	Mar. 17, 1936
2,055,837	Dabroski	Sept. 29, 1936
2,127,369	Ritter	Aug. 16, 1938
2,270,388	Stampleman	Jan. 20, 1942
2,589,230	Davis et al.	Mar. 18, 1952

FOREIGN PATENTS

11,797	Great Britain	1847
120,399	Great Britain	Mar. 6, 1919
132,086	Great Britain	Sept. 11, 1919