

Aug. 11, 1942.

J. CROMONIC

2,292,364

DUAL BLADE ADJUSTING DEVICE FOR HAIR CLIPPERS

Filed July 26, 1940.

2 Sheets-Sheet 1

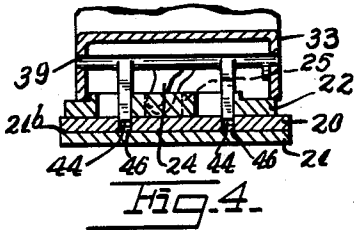


Fig. 4.

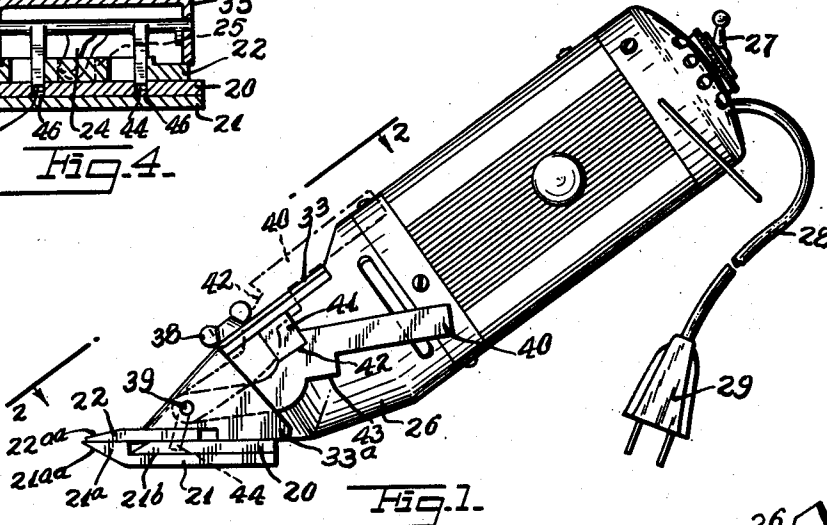


Fig. 1.

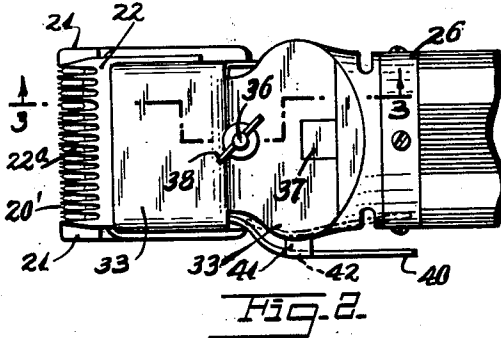


Fig. 2.

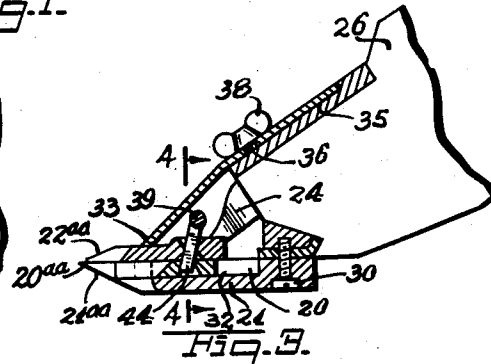


Fig. 3.

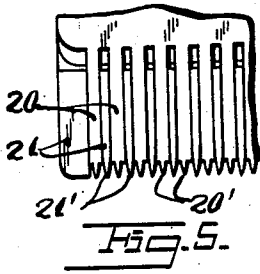


Fig. 5.

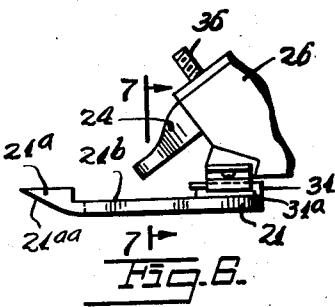


Fig. 6.

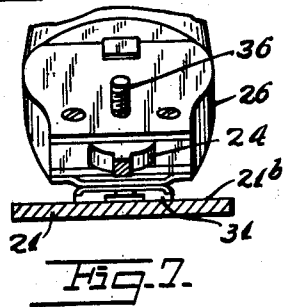


Fig. 7.

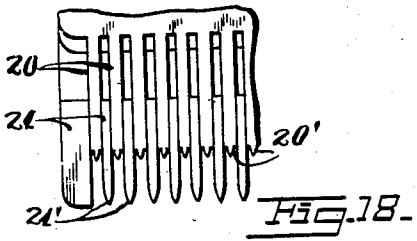


Fig. 18.

INVENTOR
Joseph Cromonic
BY *John H. Schick*
ATTORNEY

Aug. 11, 1942.

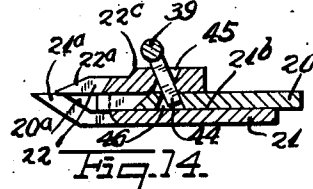
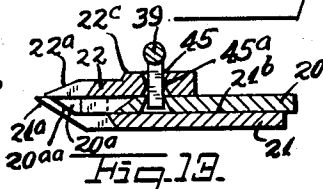
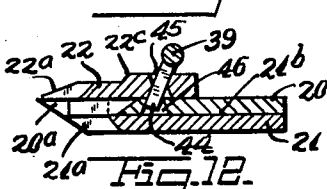
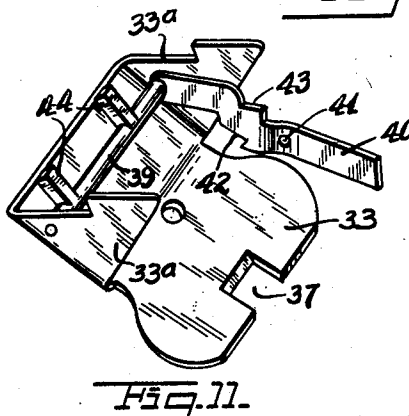
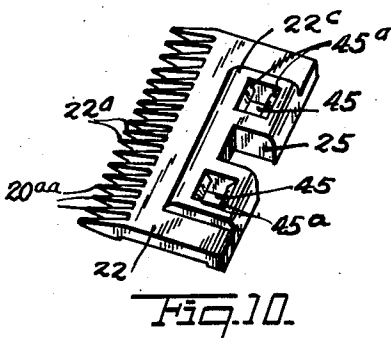
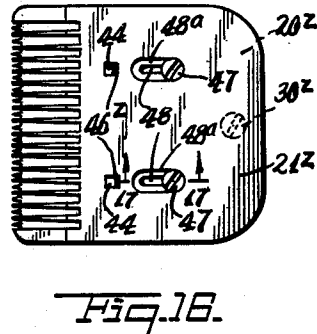
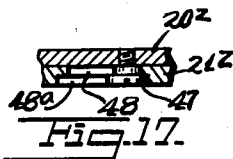
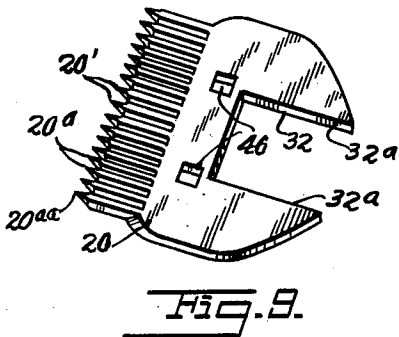
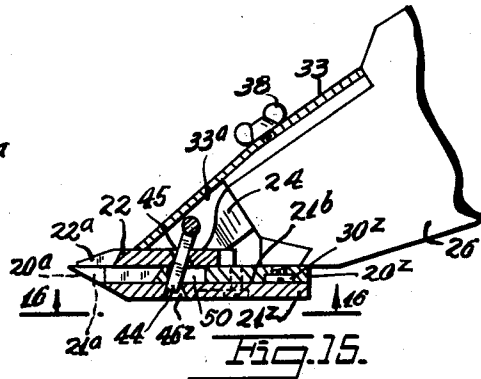
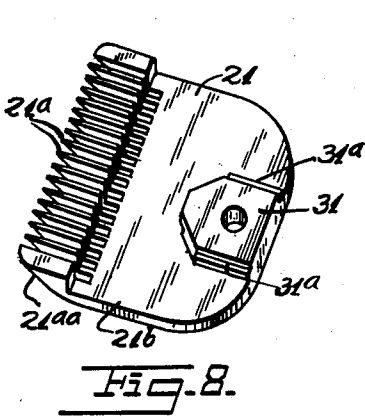
J. CROMONIC

2,292,364

DUAL BLADE ADJUSTING DEVICE FOR HAIR CLIPPERS

Filed July 26, 1940

2 Sheets-Sheet 2



INVENTOR
Joseph Cromonic
BY *John H. Polachuk*
ATTORNEY

UNITED STATES PATENT OFFICE

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DUAL BLADE ADJUSTING DEVICE FOR HAIR CLIPPERS

Joseph Cromonic, Brooklyn, N. Y.

Application July 26, 1940, Serial No. 347,655

23 Claims. (Cl. 30—201)

This invention relates to new and useful improvements in hair clippers. It has more particular reference to a hair clipper having a dual blade adjusting device.

More particularly, the invention proposes the construction of a hair clipper having a compound cutting blade comprising a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth and formed with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides. It is proposed that this compound cutting blade be used in conjunction with a single blade having teeth with flat sides engaging against said flat sides and also having opposed tapered sides. It is also proposed to provide a means for moving the blades of said compound blade simultaneously forwards and rearwards of the single blade at different relative speeds and distances. The advantage of a hair clipper so constructed resides in the fact that it may easily be changed to cut the hair to different lengths.

Still further, the invention proposes the usual means for oscillating one of the blades, specifically the single blade.

Still further, the cooperation of a handle is proposed connected with the blade adjusting mechanism arranged in a way so that the handle may be moved to various positions and cause the relative movement of the blades comprising said compound blade.

Furthermore, the invention proposes to connect said handle with an axle having several projecting fingers which engage into certain openings in the blades in a way as to cause the blades to move a desired amount when the handle is moved, so that when it is desired to cut the hair coarse or long, the teeth are wide and when it is desired to cut the hair close, the teeth are narrow.

The invention further contemplates fixedly mounting one of the blades of the compound blade, relative to the body of the hair clipper. In one form of the invention it is proposed that the outer blade be fixedly mounted, in another form of the invention it is proposed that the inner blade be fixedly mounted.

Still further, the invention proposes the construction of a dual adjusting device for hair clippers, as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, ref-

erence will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of the hair clipper with a dual adjusting device constructed in accordance with this invention.

Fig. 2 is a fragmentary elevational view looking in the direction of the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a transverse vertical sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary elevational view of a portion of the compound blade used in the device.

Fig. 6 is a fragmentary side elevational view similar to Fig. 1 but illustrated with certain of the portions removed, more specifically, showing only the bottom blade of the compound blade.

Fig. 7 is a transverse vertical sectional view taken on the line 7—7 of Fig. 6.

Fig. 8 is a perspective view of the bottom blade of the compound cutting blade.

Fig. 9 is a perspective view of the top blade of the compound cutting blade.

Fig. 10 is a perspective view of the single blade of the device.

Fig. 11 is a perspective view of the cover plate for the blades, and shows certain parts mounted thereon.

Fig. 12 is a fragmentary enlarged vertical sectional view similar to a portion of Fig. 3.

Fig. 13 is a sectional view similar to Fig. 12 but showing the parts in a different position.

Fig. 14 is a sectional view similar to Fig. 13 but showing the parts in still another position.

Fig. 15 is a side elevational view similar to Fig. 1 but showing a hair clipper constructed in accordance with a modification of this invention.

Fig. 16 is a fragmentary bottom view of Fig. 15 looking in the direction of the line 16—16 of Fig. 15.

Fig. 17 is a fragmentary enlarged vertical sectional view taken on the line 17—17 of Fig. 16.

Fig. 18 is a view similar to Fig. 5, but illustrating the shifted position of the blades.

This invention includes a compound cutting blade comprising a pair of adjacent cutting blades 20 and 21. The cutting blade 21 has deep teeth 21^a along its front edge. The cutting blade 20 has shallow teeth 20^a along its front edge which are meshed in between the teeth 21^a. The deep teeth 21^a project above the top face 21^b of the

cutting blade 21. The cutting blade 20 rests on the top face 21^b of the cutting blade 21. The bottom edges 21^{aa} of the teeth 21^a are tapered from the front rearwards and downwards. Similarly, the bottom edges 20^{aa} of the teeth 20^a are tapered from the front edge rearwards and downwards. The teeth 21^a are parallel. The teeth 20^a are also parallel, but set in between the teeth 21^a. The front extremities of the teeth 21^a are formed with points 21', see Fig. 5. The extremities of the teeth 20^a are formed with narrower points 20' so that there are small shoulders along the sides thereof, see Fig. 5.

The compound blade is so constructed that the blades 20 and 21 thereof may be moved forwards and rearwards relative to each other to place the pointed ends of the extremities of the teeth in various relative positions. The advantage of this construction resides in the fact that when the clipper is used it will cut the hair to different lengths depending upon the position of the blades. Three of the positions are illustrated in Figs. 12, 13 and 14. With the points 20' and 21' in a position as illustrated in Fig. 12, the clipper will cut the hair the shortest. When the blades are moved relative to each other, for example, to the position of these parts shown in Fig. 13 the hair will be cut somewhat longer. With the parts shown in Fig. 14 the hair will be cut still longer.

A single blade 22 is cooperative with the compound blade 20, 21, for cutting the hair. The single blade 22 has a plurality of teeth 22^a along its front edge, see Fig. 10. These teeth have flat sides engaging against the flat sides of the teeth 20^a and 21^a. The teeth 22^a also have tapered opposed sides 22^{aa} tapering away from the tapered sides 20^{aa} and 21^{aa}. The single blade 22 is adapted to be oscillated transversely of the compound blade for cutting hair in the usual fashion.

There is means for oscillating the single blade 22. This means includes the usual oscillatory member 24. This member 24 extends outwards into a slot 25 formed inwards from the rear edge of the blade 22. The oscillatory member 24 projects from the usual handle 26 of the hair clippers. This handle 26 is provided with the usual electric motor controlled by the usual switch 27. A cable 28 extends from the rear end of the handle 26 and is provided with the usual electric plug 29 adapted to be plugged into an electric socket of the electric wiring of a building, or other place.

The bottom blade 21 of the compound cutting blade is fixedly mounted upon the front end of the handle 26. A fastening element 30, such as the screw engages through the rear portion of the blade 21 and engages into the material of the handle 26 for connecting these parts together. The parts are so connected together that when the blade 21 is horizontal, the handle 26 is inclined rearwards and upwards. The blade 21 is provided with a boss 31 at its rear end. This boss has flat sides 31^a. The boss 31 projects from the top face of the blade 21. The fastening element 30 passes through this boss.

The top blade 20 of the compound cutting blade is provided with a slot 32 extending inwards from its rear end. This slot has parallel sides 32^a. These sides engage the straight sides 31^a of the boss 31. This construction serves to hold the top blade 20 longitudinally slidably on the bottom blade 21.

A cover 33 is fixedly mounted on the top of the handle 26 and extends over the rear portion of

the blade 22. The top portion of the handle 26 has a cutout 35 into which the rear of the cover 33 engages. A stud 36 projects from the handle 26 and passes up through a slot 37 formed in the rear portion of the cover 33. A wing nut 38 threadedly engages on the stud 36 and serves to releasably clamp the cover 33 in position. The cover 33 extends over and covers the oscillating member 24. At the front, the cover 33 is provided with side walls 33^a. An axle 39 is pivotally mounted across said side walls. The handle 40 is mounted on the axle 39 and projects rearwards and extends outwards from the rear edges of the side walls 33^a, and extends a short distance along the side of the handle 26. There is means for holding the handle 40 in various pivoted positions. As shown, this means includes a projecting bulge 41 formed on the handle 26 and the top edge of the handle 40 is formed with a cutout 42 engageable beneath the bulge 41 and the bottom is formed with a cutout 43 engageable on top of the bulge 41. The arrangement is such that the handle 40 is adapted to be flexed to be disengaged from the ends of the bulge 41 to be manually pivoted, and maintains various positions in which it is placed along the length of the bulge 41.

The axle 39 has several projecting fingers 44 which extend downwards and engage openings in the single blade 22 and furthermore engage openings 45 in the top blade 20 of the compound cutting blade. The openings 45 have their front and rear faces formed with knife edge portions 45^a which engage the sides of the fingers 44. These knife edge portions are intermediate the height of the blade 22. At the area of the openings 45 the blade is formed with a thickened section 22^c. The openings 46 in the blade 20 have their front end rear walls tapered. They diverge from the top downwards. The top edges of the openings 46 engage the sides of the projecting fingers 44.

The operation of the device is as follows:

The handle 40 may easily be manually pivoted upwards and downwards so as to turn the axle 39 which moves the fingers 44 forwards and rearwards. In this way, the relative position of the blades 20, 21 and 22 may be varied. With the parts as illustrated in Fig. 12, the extremities of the teeth of these blades are substantially in a common line. When the clipper is used in this condition, it will cut the hair very short. The rear end of the handle 40 may be moved upwards so as to pivot the fingers 44 rearwards. As the fingers 44 move rearwards, the single blade 22 and the top blade 20 of the compound blade will be moved rearwards. However, they will be moved different distances depending upon the distance of the knife edges of the openings 45 and 46 from the axle 39. Because the knife edge 45^a is relatively close to the axle 39, the single blade 22 will be moved a smaller distance rearwards than the top blade 20 of the compound cutting blade. This change of the blades will cause the cutter to cut hair longer. With the parts in positions as illustrated in Fig. 14 the hair will be cut longer than with the parts as illustrated in Fig. 13.

It will be manifest from the foregoing that I have provided a device for clipping or shearing hair having a novel combination of elements characterized by what I have termed a compound cutting blade or comb having relatively movable comb blades both coacting with a single cutter blade, together with means for relatively shifting or adjusting the blades to effect differ-

ent operating conditions and new results. In the embodiments shown, one of the comb blades is shiftable between a projected and a retracted position, in the former of which the points of the teeth of both comb blades are substantially in alignment for the purpose of close or short hair cutting and in the latter of which the points of one of the comb blades are retracted so as to leave a lesser number of comb teeth in the projected position for the purpose of cutting at long lengths and for other conditions. This adjustment in effect changes the pitch of the comb from a relatively large number of teeth, 35 in the projected condition shown in Fig. 5, to 18 in the retracted condition shown in Fig. 8, this number of comb teeth being shown merely for the purpose of illustration. It will also be manifest that I have provided for effecting adjustment of the cutter blade in coaction with adjustment of the comb blades to provide improved cutting relation between the several blades in the different operative positions.

In Figs. 15 to 17 inclusive, a modified form of the invention has been disclosed which distinguishes from the prior form in the manner in which the compound blade is supported and operated. In accordance with this form of the invention the compound blade includes a top blade 20^a and a bottom blade 21^a. The top blade 20^a is fixedly mounted on the handle 26 by the fastening element 30^a. The bottom blade 21^a is longitudinally slidably mounted upon the top blade 20^a by several fastening elements 47 which are mounted upon the top blade 20^a and engage slots 48 formed in the bottom blade 21^a. These fastening elements 47 have enlarged heads which engage recessed edge portion 48^a of the slots 48. The bottom face of the fastening elements 47 are flush with the bottom face of the blade 21^a. Yet, the blade 21^a is slidably supported on the blade 20^a.

The top blade 20^a of the compound blade is formed with several elongated slots 50 through which the projecting fingers 44 engage the openings 45 in the single blade 22. The fingers 44 also engage openings 46^a in the bottom blade 21^a. In other respects the parts in this form of the invention are constructed identical to the corresponding parts shown in the prior form, and they have been identified by the same reference numerals.

The operation of this modified form of the invention is substantially identical to the prior form, distinguishing only in the fact that when the handle is moved to turn the axle 39, the fingers 44 will move the single blade 22 and the bottom blade 21^a of the compound blade into various relative positions, in respect to the stationary blade 20^a of the compound blade. The single blade 22 will be oscillated in the usual way by the oscillatory member 24. The length to which the hair will be cut can easily be controlled substantially the same way as it was done in the prior form of the invention.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A dual adjusting device for hair clipper,

comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, said deep teeth being projected above the top face of their blade, and the blade having the shallow teeth being rested upon the top face of the blade having the deep teeth.

2. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, said deep teeth being projected above the top face of their blade, and the blade having the shallow teeth being rested upon the top face of the blade having the deep teeth, and the shallow teeth being extended forwards into positions between the top portions of the deep teeth.

3. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, said deep teeth being projected above the top face of their blade, and the blade having the shallow teeth being rested upon the top face of the blade having the deep teeth, and the shallow teeth being extended forwards into positions between the top portions of the deep teeth, the front ends of the teeth of one of the blades of the compound blade being pointed and the front ends of the teeth of the other of the compound blades being pointed and having side shoulders.

4. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said

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flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other.

5. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, said openings being formed with knife edges engaging said fingers.

6. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, and means for holding said handle in various fixed positions.

7. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed ta-

pered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in the two blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, and means for holding said handle in various fixed positions.

8. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, said openings in the blades being formed in said single blade and in the top blade of said compound cutting blade.

9. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in the blades of said compound blade in a manner so that when the axle is turned said single blade and the bottom blade of said compound blade will be moved relative to each other.

10. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said

flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, the bottom blade of said compound cutting blade being stationarily mounted, and the top blade of said compound cutting blade being longitudinally slidably mounted thereon.

11. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, the top blade of said compound cutting blade being stationarily mounted, and the bottom blade being slidably mounted on the top blade to move with said single blade.

12. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, said handle being resilient, and flexed toward the body of the hair clipper device.

13. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said

axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, said handle being resilient, and flexed toward the body of the hair clipper device, and in normal position the handle being located above the said body, in flexed locking position.

14. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides and opposed tapered sides and the other having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides and also having opposed tapered sides, and a single blade cooperative with said compound cutting blade and having flat sides engaging against said flat sides and also having opposed tapered sides, means for oscillating said single blade, and a means for moving said single blade and one of the blades of said compound blade forwards and rearwards at different relative speeds and distances, comprising an axle turnably supported, a handle projecting from said axle by which it may be turned, a plurality of fingers projecting from said axle and engaging into openings formed in said single blade and in one of the blades of said compound blade in a manner so that when the axle is turned the blades will be moved relative to each other, a cover plate engaged over the rear portion of said blades and pivotally supporting said axle, and means for securely holding said cover plate in a position in which the fingers of said axle will engage said openings.

15. A dual adjusting device for hair clipper, comprising a compound cutting blade consisting of a pair of adjacent cutting blades one of which has deep teeth with flat cutting sides, said deep teeth being projected above the top face of said blade, and the other blade having shallow teeth extending in between said deep teeth with flat cutting sides in the same plane as said flat cutting sides, the said shallow teeth are pointed and have side shoulders, and a single blade with tapered teeth and flat cutting sides cooperative with said compound cutting blade, a movable handle projecting from a turnably mounted axle, said axle having a plurality of projected fingers to hold said single blade in a straight line while oscillating, and said fingers are capable of moving the said single blade and one of the compound blades forwards and rearwards at different relative speeds and distances, giving the desirable sizes in cutting depths and spacing between the teeth of the compound blade to correspond with the various cutting depths.

16. A hair clipper having plural comb blades in coaction with a cutter blade, the comb blades being relatively adjustable to change the pitch of the clipper.

17. A hair clipper having plural comb blades and a cutter blade in coaction therewith, and means for adjusting the position of the cutter blade and one of the comb blades with respect to the other comb blade to vary the length of cutting.

18. A hair clipper having a two-blade comb and a cutter blade coacting with the teeth of both said comb blades, and means for shifting one of the comb blades with respect to the other between

a projected operative position and a retracted operative position.

19. A hair clipper as set forth in claim 18, including means for causing the cutter blade to be shifted in predetermined coaction with the shifting of the first mentioned comb blade.

20. In a device for clipping or shearing hair, a compound comb having a stationary blade and an adjustable blade, the latter having teeth located intermediate the teeth of the stationary blade in a projected position, a cutter coacting with said comb blades, and means for adjusting said adjustable blade to a position in which its said teeth are retracted from said projected position.

21. A hair clipper having, in combination, a stationary comb blade, a movable comb blade having teeth located between the teeth of the stationary blade and adapted to be adjusted to change the position of its teeth with respect to

the teeth of the stationary blade, a movable cutter blade coacting with the teeth of both comb blades, and means to effect said change of position of the movable comb blade.

22. A hair clipper as set forth in claim 21, including means for shifting the operating position of the cutter blade according to the adjusted position of the said adjustable comb blade.

23. A hair clipper having a compound comb comprising a lower comb blade and an upper comb blade each having teeth with cutting edges in a common plane, a cutter blade coacting with the teeth of said comb blades, and means to effect relative movement of the comb blades between a position in which their points are substantially in alignment and a position in which the points of one of the comb blades are retracted substantially from the points of the other comb blade.

JOSEPH CROMONIC.