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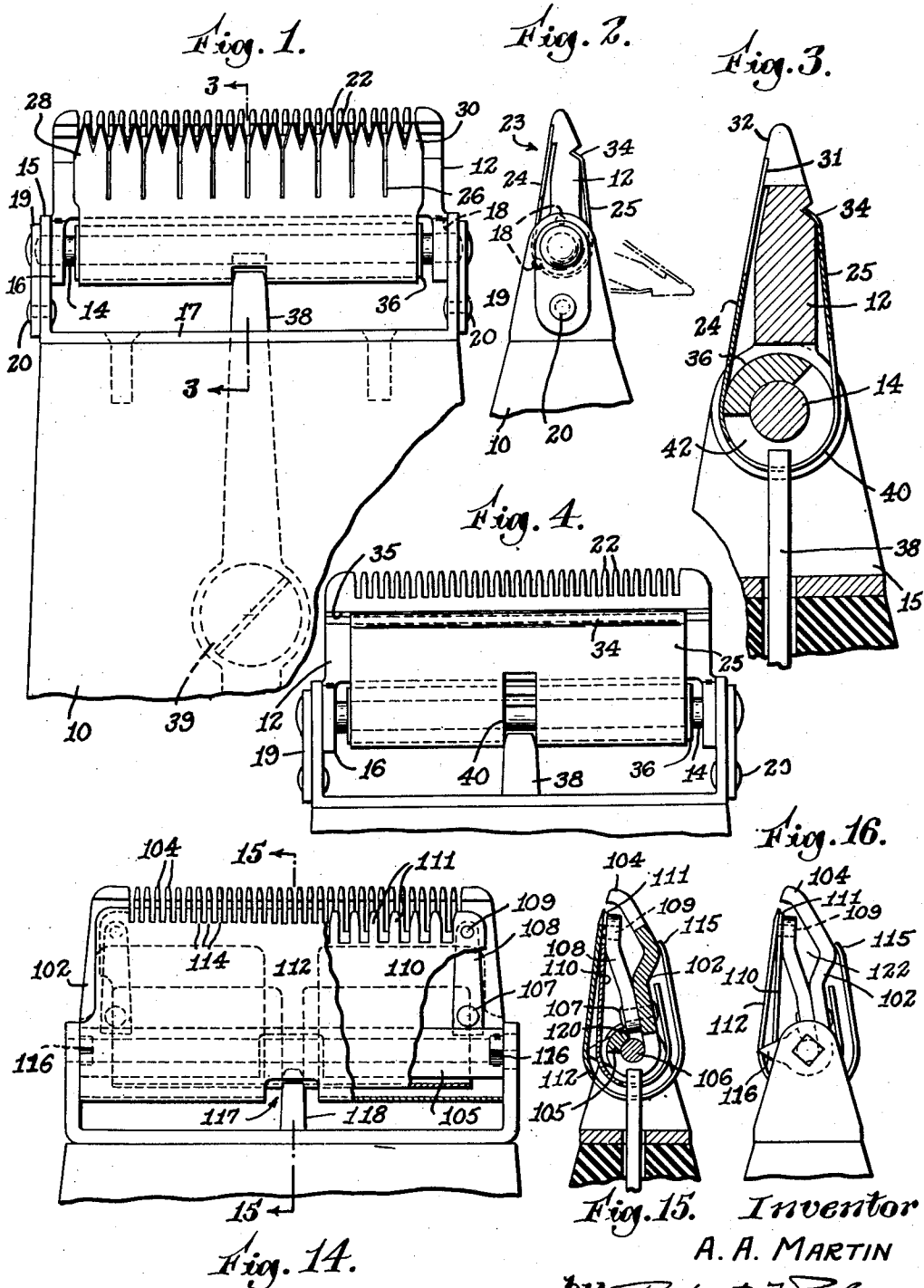
A. A. MARTIN

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HAIR CLIPPING INSTRUMENT

Filed Oct. 20, 1937

2 Sheets-Sheet 1



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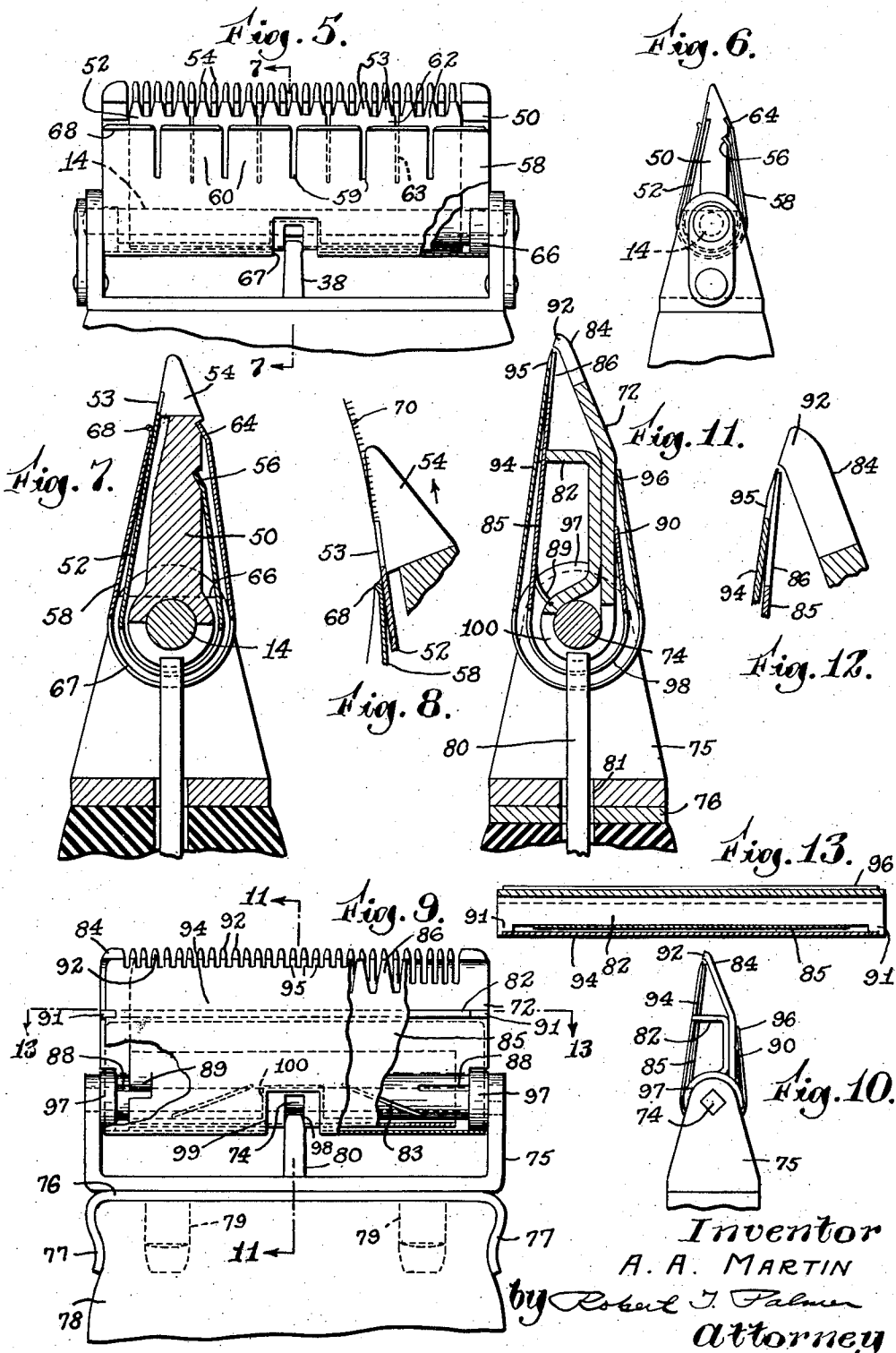
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UNITED STATES PATENT OFFICE

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HAIR CLIPPING INSTRUMENT

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15 Claims. (Cl. 30—43)

This invention relates to hair-cutting instruments of the clipper type wherein two sets of cooperating teeth or shearing edges engage and sever the hair therebetween. Hair cutting clippers operating on this principle have been known and in use for years, and closer cutting instruments commonly known as "dry shavers" have more recently come into use. These latter instruments, by employing relatively thin guard teeth, sever the hair closely adjacent to the skin surface, it being understood that it is desirable to sever the hair as closely as possible since the character of the shave depends largely upon this approximation. My Patent No. 2,222,317, dated November 19, 1940, discloses an improved instrument of this nature for "dry shaving" close to the skin and one object of my invention herein is the production of a further improved instrument of that nature.

These clipper type instruments employ a stationary toothed member and cooperating therewith is a toothed member arranged to have a relative shearing movement. In accordance with my present invention one of the shearing members comprises a resilient blade or blade-like member, preferably of U-shape, arranged conveniently to snap into position on the supporting head of the instrument and retain its operative position thereon solely through the resilient grip of the member on the head. This shearing member may be the blade or a member cooperating with the blade and holding the blade in position on the supporting head. In either case, the blade is mounted for reciprocation relative to the stationary shearing teeth cooperating therewith and, in one preferred form of the invention, anti-friction means supports the blade for free reciprocation on the head and said U-shaped resilient member removably secures the blade in such position. The production of such an improved instrument in which the resilient member may be easily snapped into operative position on the head and as conveniently removed therefrom comprises one object of the invention.

This blade supporting head is preferably provided with guard means for the clipping teeth and the stationary clipping teeth may be an integral part of the head or may be provided by the employment of an independent member cooperating with the blade. A further feature of my invention relates to such a member, preferably of U-shape and resilient, adapted to cooperate with the head and blade to shield the blade from the skin being shaved and assist in holding the blade in clipping position on the head. In

one preferred form of the invention, this member is provided with clipping teeth cooperating with the clipping teeth of the blade, both sets of teeth being located rearwardly of the protective guard means on the forward edge of the head. This member, as well as the blade, is preferably U-shaped and conveniently removable from the head.

As in my said copending application, the supporting head of my improved instrument is preferably mounted for pivotal adjustment to different angular positions and the resilient blade and U-shaped member are adapted to serve their functions in all positions of head adjustment.

A further feature of the invention relates to means carried by the head and projecting outwardly from the front face thereof adjacent to and rearwardly of the clipping area of the teeth for engaging the skin being shaved and drawing it rearwardly as the instrument moves forwardly over the skin. Such projecting means may conveniently be formed as an integral part of the forward portion of the resilient member where it engages the blade and as so formed serves conveniently to draw the skin rearwardly and the hair into the clipping teeth.

These and other features of the invention will be best understood and appreciated from the following description of preferred embodiments thereof, selected for purposes of illustration and shown in the accompanying drawings in which,

Fig. 1 is a fragmentary front elevation of an instrument embodying one form of my invention,

Fig. 2 is a side elevation thereof,

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1,

Fig. 4 is a rear elevation of the head shown in Fig. 1,

Fig. 5 is a fragmentary front elevation of a modified form of the invention,

Fig. 6 is a side elevation thereof,

Fig. 7 is an enlarged sectional view thereof taken on line 7—7 of Fig. 5,

Fig. 8 is a fragmentary detail view illustrating the use of the instrument,

Fig. 9 is a fragmentary front elevation, partially broken away, of a further modified form of the invention,

Fig. 10 is a side elevation thereof,

Fig. 11 is an enlarged sectional view taken on line 11—11 of Fig. 9,

Fig. 12 is an enlarged detail view thereof,

Fig. 13 is a sectional view taken on line 13—13 of Fig. 9,

Fig. 14 is a fragmentary front elevation, par-

tially broken away, of another modified form of the invention.

Fig. 15 is a sectional view taken on the line 15-15 of Fig. 14, and

Fig. 16 is a side elevation thereof.

Referring first to the form of my invention illustrated in Figs. 1-4, 10 indicates a body member on which is mounted a blade supporting head or comb plate 12. The head is mounted for pivotal adjustment on a pintle 14 carried by and extending between two spaced lugs 15 integral with a plate 17 fixed to the body 10, the two supporting lugs 16 of the head being in contact with the inner faces of the lugs 15. The head is held in two positions of pivotal adjustment, indicated by full and broken lines in Fig. 2, by means of a detent carried by one of the lugs 16 and cooperating with depressions 18 in the adjacent lug 15. The pintle 14 is held in place by clips 19 pivotally mounted on the head at 20. The forward portion of the head may be bevelled to V-shape and is serrated to form relatively spaced guard teeth 22.

My improved blade 23 is preferably of U-shape, having a front leg 24 and a rear leg 25. The forward edge portion of the front leg is slotted at 26 to produce a plurality of fingers 28 and the free end of each finger is notched to form two clipping teeth 30. The front face of the head 12 is grooved along the teeth 22 in a manner forming flat surfaces 31 thereon in a common plane and protective shoulders 32 on the teeth forwardly of these surfaces. The depth of this groove is substantially the thickness of the blade, as illustrated in Figs. 2 and 3. The forward edge of the rear leg 25 is bent inwardly at 34 to be received within a groove 35 formed across the rear face of the head, the relation of the parts being such that, when the blade is thus positioned, the clipping teeth 30 rest flatly on the surfaces 31 rearwardly of the shoulders 32. In such position the closed rear portion of the blade is carried on a sleeve 36 freely slidable on the pintle 14.

The blade may be reciprocated by a motor carried by the body 10, the motor operating on the blade through a lever 38 pivoted at 39. The front end of the lever extends through a slot 40 in the blade and into a like slot 42 in the sleeve 36, these slots being of an extent permitting pivotal adjustment of the head to the positions indicated in Fig. 2. It will be apparent that oscillatory movement of the lever serves to reciprocate the blade along the groove 35 and that such groove serves to locate and hold the blade in proper working position. The instrument may be used for either clipping or "dry shaving," it being apparent that engagement of the rear face of the head with the skin will leave a relatively long hair stubble while engagement of the front face of the head with the skin will clip the hair closely adjacent to the skin. The blade may be removed and replaced merely by displacing one of the plates 19, removing the pintle 14, and then sliding the blade from the head and sleeve.

In Figs. 5-8, I have illustrated a somewhat modified form of the invention wherein a blade supporting head 50 is mounted for pivotal movement on a pintle 14 in like manner as that illustrated in Fig. 1. A U-shaped blade 52 is mounted on the head and has clipping teeth 53 cooperating with the teeth 54 of the head, the rear edge 56 of the blade being seated for longitudinal reciprocation within a groove in the head.

This form of the invention, as thus far described, is substantially the same as that illustrated in Figs. 1-4.

Also cooperating with the head 50 and superposed over the blade 52 is a resilient U-shaped shield 58. The front leg of the shield is slotted at 59 to produce a plurality of fingers 60 having their free ends resting on the blade fingers 62, the slots 59 alternating with the slots 63 in the blade. The rear edge 64 of the shield is bent inwardly and rests in a groove in the head and the U portion of the shield is supported on arcuate portions 66 of the head 50. Thus the blade is firmly supported on the head in the position illustrated. The blade is reciprocated by the lever 38 engaged within a recess in the blade, the shield also being recessed at 67 to provide clearance for the lever movements.

The blade engages the head only along the teeth 53 and at its rear edge 56. The shield 58 engages only that portion of the blade rearwardly of and extending along the teeth 53, such engagement assisting in holding the teeth 53 in firm contact with the teeth 54. The shield provides a non-reciprocating part for engaging the skin being shaved, it being understood that the instrument can be used with or without the shield, as each individual user may prefer.

It will also be noted that the free ends of the fingers 60 are turned outwardly at 68 whereby providing means projecting outwardly of the front face of the head adjacent to and rearwardly of the clipping area of the teeth for engaging the skin being shaved and drawing it rearwardly as the instrument moves forwardly over the skin. The function of these projections is illustrated in Fig. 8. As the instrument moves forwardly over the skin 70 in the direction of the arrow, the projections press the skin inwardly whereby drawing it rearwardly, such action serving to draw the skin taut in the area of the clipping action and pulling the hair toward and into better cutting relation with the teeth.

In Figs. 9-13 I have illustrated another form of the invention which embodies various novel and valuable features. The head 72 is supported on a pintle 74 carried at its ends in the two arms of a yoke 75, the pintle having a square end (Fig. 10) to prevent its rotation in the yoke. The yoke is permanently secured to a strap 76 having resilient arms 77 arranged to engage a body member 78, pins 79 carried by the strap being adapted to engage in sockets formed in the body member. A blade-reciprocating lever 80 projects outwardly of the member and through openings 81 in the strap and yoke.

The head 72 is formed from a plate bent upon itself to provide outer and inner legs and an eye for engaging the pintle, the eye being slitted at 83 and bent inwardly to form a frictional contact with the pintle. The two legs are in engagement along their parallel portions and the free ends are bent forwardly at 82 and 84. A blade 85 has relatively large and long teeth 86 formed on and along its forward edge, and its rear portion is bent to U-shape to extend around the pintle engaging portion of the head but free from engagement therewith (Fig. 11). The head is provided with two longitudinal grooves 88 and two wings 89 cut from the blade are adapted to slidably engage in these grooves, and engagement of the free rear edge 90 of the blade with the head is adapted resiliently to hold the blade onto the head and the wings engaged with-

in the grooves. In such position the blade rests with relatively light pressure on the end 82 of the head between two lugs 91 thereon, the blade teeth being located slidably beneath and rearwardly of the guard teeth 92 on the end 84 of the head.

Superposed over the blade is a resilient U-shaped member 94 having clipping teeth 95 along the free edge of its front leg cooperating with the clipping teeth 86 of the blade and having its rear edge 96 in resilient engagement with the rear face of the head. The ends of the U-portion of this member rest on discs 97 carried on the pintle and the member is held in position by notches cut in the edges thereof and engaging over the lugs 91. The resiliency of the member holds it in firm position on the head with its teeth 95 in register with the guard teeth 92. The blade is notched at 98 to receive the blade-reciprocating lever 90 and the member 94 and head 72 and also cut away at 99 and 100 to provide clearance for the lever movements.

As best illustrated in Fig. 12, the guard teeth 92 are located just forwardly of the clipping teeth 86 and 95 and the teeth 95 are preferably beveled down toward their free ends so that the portion thereof where clipping of the hair takes place is very thin thus assuring a closer cut than could otherwise be obtained. The instrument may be used for clipping by engaging the face 84 with the skin being clipped.

In Figs. 14-16, I have illustrated a further refinement of the form of invention illustrated in Figs. 9-13, the prime purpose thereof being to relieve the blade reciprocation of all unnecessary friction. The blade supporting head 102 may be constructed of a metal strap bent to the shape illustrated and having guard teeth 104 along its forward edge and an eye 105 on its rear edge engaging the pintle 106. Pivoted to the head adjacent to each end thereof at 107 is an arm 108 carrying an upstanding stud 109 at its free end. A blade 110 has clipping teeth 111 along its forward edge and is provided with two pivot holes at its ends for receiving the studs 109. The blade is preferably U-shaped to extend about the rear portion of the head and is mounted on the studs for free reciprocation on the head.

Preferably the blade contacts with the head only at its engagement with the studs 109 whereby the blade is floatingly mounted on the arms 108 for free reciprocation. A U-shaped resilient member 112 is superposed over the blade and head and has clipping teeth 114 at the forward edge of one leg cooperating with the clipping teeth of the blade. The rear leg of this member engages the head at 115 whereby resiliently pressing the teeth 114 into clipping contact with the blade teeth 111. Two V-shaped detents 116 are provided at the ends of the head for engaging corresponding recesses in the member 112, to hold the member in place on the head, the member being removable by pressing the rear portion thereof in a direction to lift the member from these detents. The blade and resilient holding member are recessed at 117 to receive the blade reciprocating lever 118.

It will be apparent that the arms 108 provide anti-friction means supporting the blade for free reciprocation on the head, the only friction being in the pivotal engagement of the arms with the head and the contacting engagement of the two sets of clipping teeth. Attention is furthermore called to the rear ends 120 of the arms 108 which engage beneath the rear edge of the head whereby resisting downward pressure of the

member 112 on the free ends of the arms and preventing contact of said free ends with the head.

It will be noted that the head 102 is shaped to provide a substantial pocket 122 therein entirely across the head beneath the clipping teeth. This pocket is adapted to receive the clippings and the arms 108 adjacent to the head serve to aid in keeping the clippings in the pocket during the shaving operation, it being apparent that, if desired, other means may be provided to form further end walls for the pocket or the arms may be constructed more substantially to form such walls.

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

1. A hair-cutting instrument, comprising a supporting head, a U-shaped blade having legs at opposite faces of the head and having clipping teeth along the forward edge of one leg, the blade having a tongue and groove connection with the head locating the blade with said teeth parallel with the groove and permitting reciprocating movement of the blade longitudinally of the groove, means providing clipping teeth cooperating with the first-named teeth, and means for reciprocating the blade.

2. A hair-cutting instrument, comprising a supporting head having guard means extending along the forward edge thereof and mounted for pivotal movement about an axis located adjacent to the rear edge thereof and parallel with the guard means, a U-shaped blade extending about said rear edge, enveloping the head between the two legs thereof and having clipping teeth along the forward edge of one leg, means providing clipping teeth cooperating with the first-named teeth, and means providing a relative clipping movement between the two sets of teeth when said head is adjusted to different pivotal positions about said axis.

3. A hair-cutting instrument, comprising a supporting head having guard means extending along the forward edge thereof and clipping teeth rearwardly of the guard means, a U-shaped blade resiliently engaging the head between the two legs thereof and having clipping teeth along the forward edge of one leg cooperating with the first-named clipping teeth, and means for reciprocating the blade in a direction parallel to the two sets of teeth.

4. A hair-cutting instrument, comprising a supporting head having teeth projecting forwardly from the forward edge thereof, the front face of the head being grooved along said teeth and providing flat surfaces thereon in a common plane and protective shoulders on the teeth forwardly of the surfaces, a U-shaped blade resiliently engaging the head between the two legs thereof and having clipping teeth along the forward edge of one leg and held in flat engagement with said surfaces by the resiliency of the blade, and means for reciprocating the blade parallel to the two sets of teeth.

5. A hair-cutting instrument comprising a supporting head having guard means extending along its forward edge, a blade mounted on the head and having clipping teeth on its forward edge located rearwardly of the guard means, a U-shaped resilient member carried by and straddling the head and having one leg engaging the outer face of the blade and resiliently holding it on the head, means providing clipping teeth cooperating with the first-named teeth, and

means providing a relative clipping reciprocation between the two sets of teeth.

6. A hair-cutting instrument comprising a supporting head having guard means extending along its forward edge, a blade mounted on the head and having clipping teeth on its forward edge located rearwardly of the guard means and a portion located in a groove in the head parallel with the guard means whereby holding the blade for reciprocation along the groove, a U-shaped resilient member carried by and straddling the head and having one leg engaging the outer face of the blade and resiliently holding it on the head, means providing clipping teeth cooperating with the first-named teeth, and means for reciprocating the blade along the groove.

7. A hair-cutting instrument, comprising a supporting head, a U-shaped blade having oppositely disposed legs engaging the head therebetween and having clipping teeth along the forward edge of one leg, a U-shaped resilient member superposed over the blade and having one leg resiliently engaging the outer face of the blade adjacent to said teeth, means providing clipping teeth cooperating with the first-named teeth, and means for reciprocating the blade.

8. A hair-cutting instrument, comprising a supporting head having guard means extending along the forward edge thereof, a U-shaped blade having oppositely disposed legs engaging the head therebetween and having clipping teeth along the forward edge of one leg and rearwardly of the guard means, a U-shaped resilient member superposed over the head and having one leg resiliently engaging the outer face of the blade adjacent to said teeth, means providing clipping teeth rearwardly of the guard means cooperating with the first-named teeth, and means for reciprocating the blade relative to the second-named teeth.

9. A hair-cutting instrument comprising a supporting head, a U-shaped blade positioned over the head with the head located between the two legs of the blade and having clipping teeth along the forward edge of one leg, a U-shaped resilient member superposed over the blade and having clipping teeth along the forward edge of one leg and having its other leg engaging the head and holding said clipping teeth in clipping engagement with the first-named teeth, and means for reciprocating the blade within and relative to said member.

10. A hair-cutting instrument comprising a supporting head, a blade mounted on the head and having clipping teeth at its forward edge, a plurality of anti-friction elements between the blade and the head and supporting the blade for reciprocation on the head, a U-shaped resilient member superposed over the blade and having clipping teeth along the forward edge of one leg and having its other leg engaging the head and holding said clipping teeth in clipping engagement with the first-named teeth, and

means for reciprocating the blade within and relative to said member.

11. A hair-cutting instrument comprising a supporting head having guard means extending along its forward edge, a U-shaped blade positioned over the head with the head located between the two legs of the blade and having clipping teeth along the forward edge of one leg, anti-friction means supporting the blade for reciprocation on the head, a U-shaped resilient member superposed over the blade and having clipping teeth along the forward edge of one leg and having its other leg engaging the head and holding said clipping teeth in clipping engagement with the first-named teeth, and means for reciprocating the blade within and relative to said member.

12. A shaving instrument comprising a supporting head having guard means extending along the forward edge thereof, clipping teeth rearwardly of the guard means, a blade mounted on the head and having clipping teeth cooperating with the first-named clipping teeth, and a U-shaped resilient member superposed over the head and having one leg resiliently engaging the outer face of the blade, said one leg having its forward end portion adjacent to and rearwardly of and along the clipping area of the teeth projecting outwardly for engaging with the skin being shaved and drawing it rearwardly as the instrument moves forwardly over the skin.

13. A clipping blade comprising a sheet-like U-shaped member bowed outwardly at the closed end and having the two legs thereof extending in the same general direction but converging toward their free ends, and clipping teeth projecting forwardly along the forward edge of one leg, said clipping teeth and said forward edge being one extremity of a sheet from which the member is formed.

14. A clipping blade comprising a resilient U-shaped member formed from a single piece of sheet steel, the member being bowed outwardly at the closed end and having the two legs thereof extending in the same general direction but converging toward their free ends, and clipping teeth projecting forwardly along the forward edge of one leg, said clipping teeth and said forward edge being one extremity of the sheet from which the member is formed.

15. A hair-cutting instrument comprising a supporting head, a blade mounted on the head and having clipping teeth therealong, a plurality of anti-friction arms pivoted on the head for movement about axes extending transversely of the arms, the blade resting on and supporting by portions of the arms remote from the said axes and in a position causing pivotal swinging movement of the arms about said axes as the blade is reciprocated, means providing clipping teeth cooperating with the first-named teeth, and means for reciprocating the blade.

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