(No Model.)

H. DRYSDALE.

HAIR CLIPPER.

No. 574,243. Patented Dec. 29, 1896.

Fig. 3.

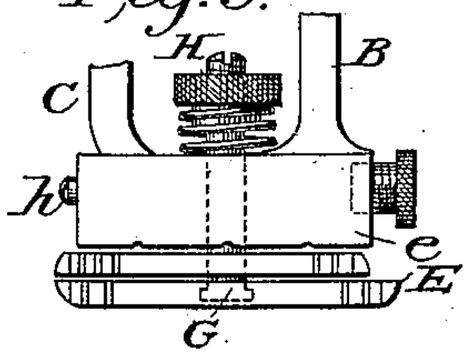


Fig. 2.

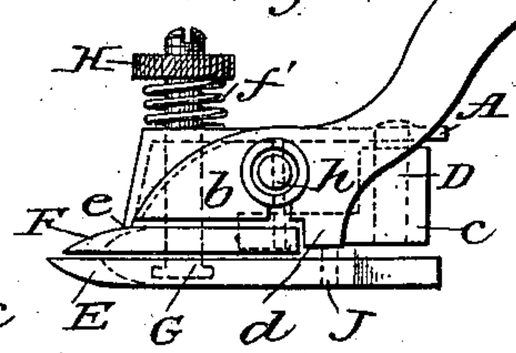


Fig. 9.

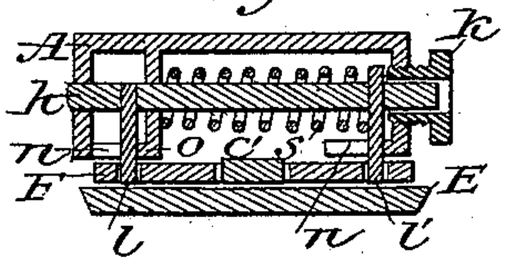
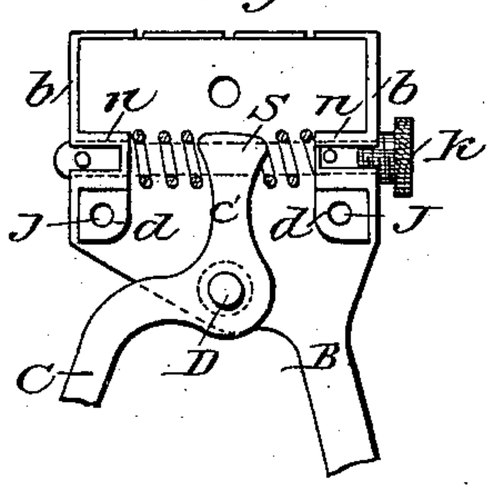


Fig. 4.



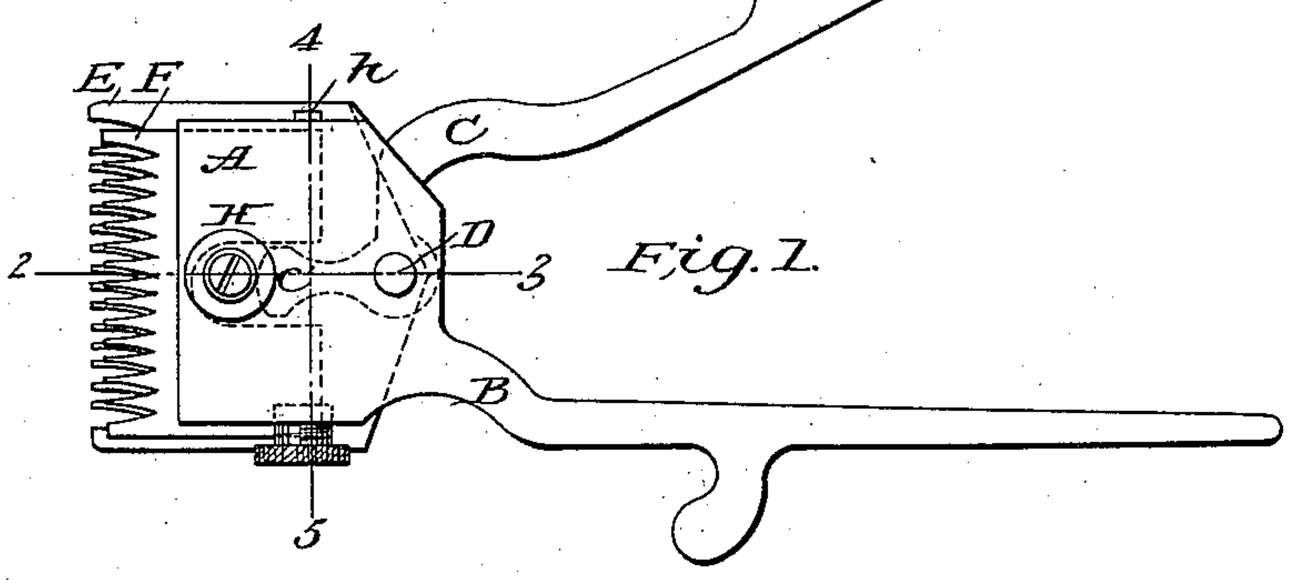


Fig. 1.

Fig. 5.

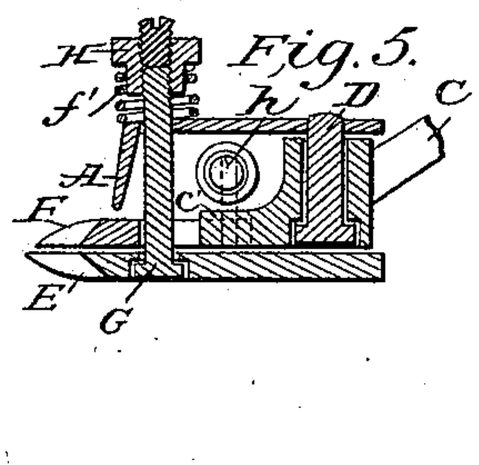


Fig. 6.

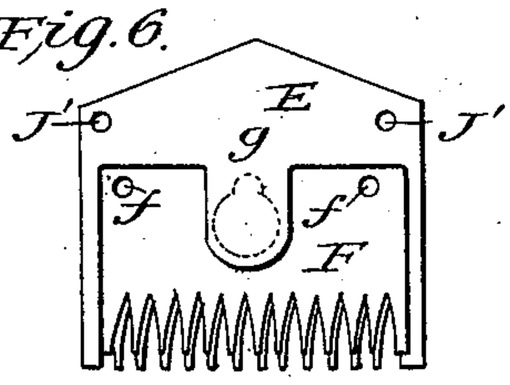


Fig. 7.

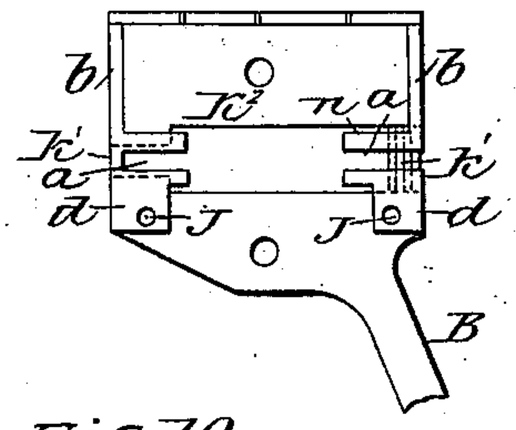


Fig. 8.

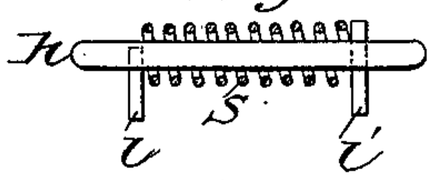
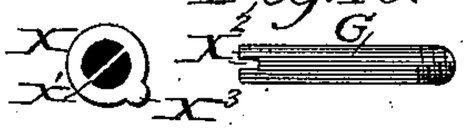


Fig. 10.



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Hugh Drysdale

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HUGH DRYSDALE, OF CLEVELAND, OHIO.

HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 574,243, dated December 29, 1896.

Application filed March 14, 1894. Serial No. 503,604. (No model.)

To all whom it may concern:

Be it known that I, HUGH DRYSDALE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Hair-Clipper, of which the following is a specification.

My invention relates to that class of hair-clippers in which a comb-plate forms a base for all the parts of the clipper to be secured to and in which a spring is combined with a movable lever and central pivot-securing bolt for reciprocating the cutter-plate in a direction opposite to that in which it is moved by the hand of the operator; and the objects of my invention are, first, to provide a hand clipper that is adapted for barbers' use, and with a proportionate enlargement is suitable to clip the hair of animals; second, to provide a frame that is the base to secure all the parts of a clipper to; third, to provide a frame wherein the movable handle may be operated independent of the securing-bolt; fourth, to so construct a frame and combine it with a spiral spring and slide-pin and other parts of the clipper as to guide the movable cutter-plate in its lateral reciprocation; fifth, to so construct a spiral spring and slide-pin and combine them with the frame and other parts of the clipper as to realize the immediate and full power of the spring directly upon the movable cutter-plate in its lateral reciprocation, the latter in turn acting upon the movable lever; sixth, to so construct the spring and slide-pin and combine them with the frame and other parts of the clipper as to lessen the liability of the spring to get out of order, to require less power to compress the spring, to avoid friction to the spring and lost motion to the cutter-plate, to protect the spring and slide-pin from dirt and grit, and to permit the clipper to be taken apart to be ground or cleaned by simply removing the tension-bolt without removing the spring and slide-pin.

My invention also comprises other features of improvement in the construction of the clipper, as is more particularly hereinafter set forth.

I attain the above objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved hair-clipper. Fig. 2 is a side view of the same. Fig. 3 is a front view with the handles broken off. Fig. 4 is an inverted plan view of the cover or frame with handles broken off and showing position of spring and slide-pin to the frame. Fig. 5 is a vertical section taken on the dotted line 2 3 of Fig. 1. Fig. 6 is a plan view of the comb-plate and cutter plate detached from the frame. Fig. 7 is an inverted and naked view of the frame with the fixed handle broken off. Fig. 8 is a plan view of the slide-pin, spiral spring, and guide-pins. Fig. 9 is a vertical section view taken on the dotted line 4 5 of Fig. 1. Fig. 10 is a plan view of the tension-bolt and head detached from each other.

Similar letters refer to similar parts throughout the several views.

The frame and cover A, comb-plate E, cutter-plate F, tension-bolt G, thumb-nut H, engaging cutter-plates to frame, a fixed handle B, a movable handle C, mounted on an independent pivot to operate the cutter-plate, constitute the principal parts of my improved hair-clipper.

In my invention I use a covered frame for a base, to which is secured all the parts of my improved clipper and in which is provided means for a forward securing-bolt and a rear pivot-stud, one independent of the other. Said frame is constructed box-like of a single piece and consists of two side pieces *b b*, (see Figs. 2 and 4,) inward-extending guide-slits *a a*, (see Fig. 7,) downward-extending heels *d d*, a cover A, and fixed handle B. The forward portion of said cover is rounded for appearance and serves as a front piece of the box or frame and is provided with a lip *e*, extending slightly below the level of the side pieces, formed with an oval edge and short bearings, that makes contact connection with a movable cutter-plate F and is referred to hereinafter. The rear portion of said frame extends back, formed with a fixed handle B and a downward-extending pivot-stud D, that engages the movable handle C independent of the securing-bolt G and is referred to hereinafter. Said heels *d d* are merely the termination of the side pieces *b b*, but extend downward a shade more than the thickness of the cutter-plate intended to be used. Then

they develop into pins J J, that correspond to and engage in openings J′ J′ in the rear edge of the comb-plate E. (See Figs. 2, 4, and 6.)

The above construction of engagement of the frame and comb-plate may with equally good results be reversed by simply recessing the heels *d d* and fixing the pins J J in the comb-plate, the purpose in view being to engage the comb-plate to the frame at the rear in as loose a manner as possible, so as to allow the plate to find its own bearing against said heels and still avoid its turning and twisting on the frame, the former plan of engagement being preferable when the plates are to be ground, as the pins will remain with the frame and not have to be removed from the plate, as is the case with the latter plan.

A cutter-plate F is formed with a notch *g* in its rear edge to engage with the movable lever C (see Fig. 4) and to give clearance for a tension or securing bolt G and is carried on the comb-plate E, its upper surface making contact connection with the lip *e* of the frame A, aforementioned. Said comb-plate engages the pins J J, as aforedescribed, and by means of a tension-bolt G, extending through corresponding openings in the forward edge of said plate and cover, engages with the thumb-nut H and secures said comb and cutter plates to the frame. I desire to combine with this thumb-nut a spiral tension-spring *f*′, (see Figs. 2 and 5,) one end of which is fixed to the tubular portion of said nut. The opposite end surrounds the bolt G and rests upon the cover or frame A, and by turning said nut up or down on the bolt said spring becomes contracted or expanded and furnishes the proper tension for the cutter-plates independent of the movable lever C, thus avoiding to the tension all cant, cramp, and twist that is unavoidable in said lever.

The tension-bolt G has one end threaded and the other provided with a flat head and lip extension. This bolt may be milled to size out of larger stock; but with a view to cheapness and lightness I prefer to construct it in two pieces, as is shown in Fig. 10, by threading one end of the wire, and slotting the opposite end to correspond to a cross-piece *x*′, formed in the head-piece *x*, by taking out two semicircles, the wire is entered and riveted thereto. Said flat head and lip extension x^3 corresponds to and enters into a notched counterbore in the under side of the comb-plate and appears level therewith. (See Fig. 5.) Said bolt-head has reasonable play in its socket and serves as a draw-bolt, in obedience to the thumb-nut H, to draw the front edges of the cutter-plates firmly against the lip *e* of the frame in a manner not to cramp or spring the plates by reason of a slight unevenness of the heels and lip. The lip extension x^3 on the head of the bolt G prevents the latter from turning while operating the nut H to acquire a suitable tension for the knives.

The movable lever C has formed in its hub an opening corresponding to and engaging with the stud D aforementioned, and has a short bent arm *c*′, corresponding to and engaging with the notch *g* in the rear of the cutter-plate F, and by means of the hand said lever is turned upon said stud independent of the tension-bolt G and moves said cutter-plate transversely in one direction on the comb-plate, which is moved in the opposite direction by means of a spiral push-spring S, secured in the frame, and is more particularly described hereinafter. For convenience and unskilled users I prefer to construct this stud D with a shoulder and head that enters into a corresponding counterbore in the under side of the movable lever C, as shown in section view, Fig. 5. The opposite end is threaded into the frame that secures the handle thereto so that when the plates are detached said lever will remain with the frame.

By the above arrangement of a tension-bolt G and an independent pivot-stud D for the movable lever C it is obvious that said pivot-stud will retain any and all cant, cramp, and twist occasioned by said lever in operating the cutter-plate.

I am aware that spiral push-springs have been used in various ways to operate a movable handle and the handle in turn to operate the cutter-plate. Such an arrangement is objectionable for the reason that it is bungling and ineffectual, in this, a spiral push-spring, long or short, located on the handle side of the pivot and acting upon a lever to operate a cutter-plate on the opposite side of the fulcrum, has a tendency to cant the lever unfavorably upon its axis, that causes friction and play to the lever, with lost motion to the cutter-plate, and requires a stronger spring to operate the lever and more power in the hand to compress the spring than is actually necessary to cut the hair. In my invention I make use of a spiral push-spring S and slide-pin *h* and combine them with the frame in a manner to retain all the advantages and overcome the objections above noted.

First, I combine the spiral push-spring S with a slide-pin *h* and arrange them laterally of the frame A beneath the cover and between the tension-bolt G and pivot-stud D, (see Figs. 2 and 5,) said frame A being constructed with a cavity for the reception of said spring S and with suitable slide-bearings in each side thereof for the reception of said slide-pin *h*, which is introduced into position from one side, passes through the slideway and centrally through the spring into the opposite slideway, thus securing the spring S within the frame aforementioned. Said spring surrounds the slide-pin *h* and is interposed between the shoulder or wall *o*, (see Fig. 9,) formed in the frame, and a pin *l*′ or projection formed on said slide-pin that finds rest against the opposite wall, or by preference a sleeve *k*, threaded into the wall and is referred to hereinafter. Said slide-pin *h*

is provided with two downward-extending pins *l* and *l'*, rigidly secured therein, that correspond to and engage in openings *f f* in the cutter-plate and in the course of their engagement pass through guideways *n n*, (see Fig. 7,) that are extended inward from each side of the frame and serve to guide said cutter-plate in its lateral reciprocation on the comb-plate. Thus the spiral push-spring S is secured in the frame and engaged with the slide-pin *h*, guide-pins *l* and *l'*, and the cutter-plate F in a manner as described, so as to act directly upon said cutter-plate in a direction opposite to that in which it is moved by the hand of the operator previously referred to. Said guide-pins *l* and *l'* may be carried on the cutter-plate F and engage in openings provided in the slide-pin with equally good results, but attended with more or less inconvenience in putting together after having been detached for cleaning or grinding.

In practice I prefer to assemble the spiral push-spring S with the slide-pin *h* and guide-pins *l* and *l'*, as is shown in Fig. 8, then to drill an opening *k'* into one side of the frame A large enough to admit of the spring, and I mean to carry this opening along, as at k^2, to the shoulder or wall *o*, then continue through said shoulder or wall with an opening to suit the slide-pin *h*. The larger opening *k'* is threaded and the guide-slits *a a* are milled across the frame that the assembled spring aforementioned is inserted at *k'* and secured in place by means of the shell *k* aforementioned, and which is understood without further explanation.

The hair of animals being more in abundance than the hair of persons is accompanied with more dirt and grit and is a somewhat more difficult job to perform. Hence to facilitate the operation of shearing them we have but to enlarge the cutter-plates and the several parts connected therewith, the combination and arrangement of the parts being substantially as aforedescribed.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a hair-clipper, the combination of a frame having side pieces *b b*, slide-bearings *k'*, therein, guideways *n n*, and heels *d d*, with a slide-pin *h*, having guide-pins *l l'*, engaging a movable cutter-plate and an interposed spiral push-spring S within said frame together with means for operating said cutter-plate and slide-pin, substantially as set forth.

2. In a hair-clipper, the combination of the movable cutter, with a frame having a slide-pin *h*, guideways *n*, *n*, guide-pins *l*, *l'*, and a push spiral spring S arranged and located within the said frame to act directly upon said cutter-plate.

3. The combination in a hair-clipper, of a frame having side pieces *b*, *b*, slide-bearings therein, inward-extending guideways *n*, *n*, with a slide-pin *h*, and spiral push-spring S secured within the frame by a pin *l'*, and sleeve *k*, and interposed between a shoulder, or wall *o*, within the frame and a pin *l'*, or projection on said slide-pin, guide-pins *l* and *l'*, extending through guide-slits *a*, *a*, past said guideways and engaging the movable cutter-plate, and operating same in one direction on the comb-plate.

4. The combination in a hair-clipper of a frame having side pieces, slide-bearings therein, inward-extending guideways, with a slide-pin and spiral push-spring secured within the frame by said pin and a sleeve, said spring being interposed between a shoulder or wall within the frame and a pin or projection on the said pin, guide-pins *l* and *l'*, extending through guide-slots *a*, *a*, and engaging the movable cutter-plate and guiding the same on the comb-plate.

5. A hair-clipper, having a comb-plate, a movable cutter-plate, and an operating-lever therefor, with a frame having pins J, J, tension-bolt G, and thumb-nut H, engaging said plates to the frame, a stud D, engaging the lever thereto, a slide-pin carrying guide-pins and a push spiral spring S arranged within the frame in a manner to act upon the said movable cutter, substantially as set forth.

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Witnesses:
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J. A. FAULK.