

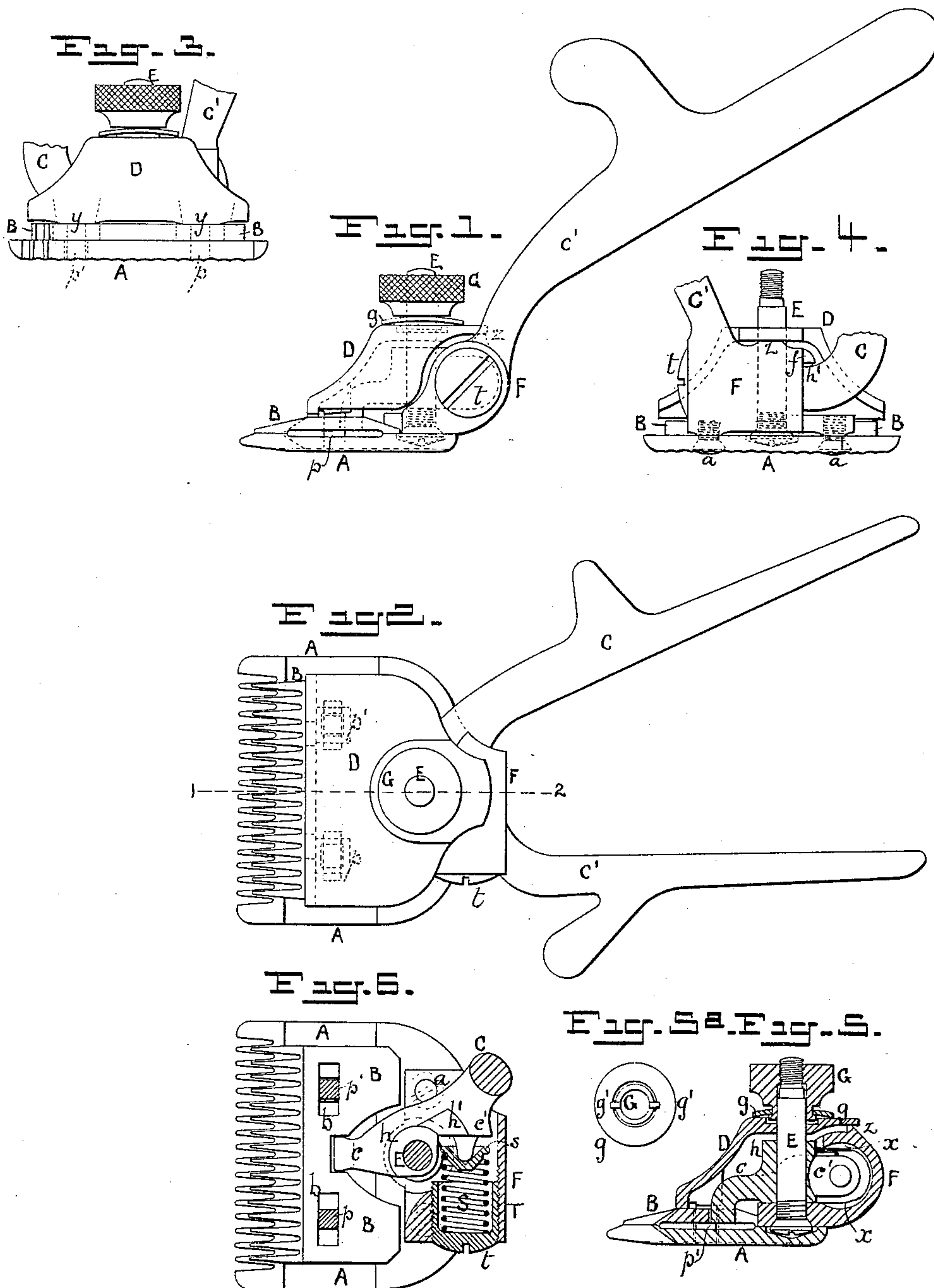
(No Model.)

2 Sheets—Sheet 1.

C. CARLETON.
HAIR CLIPPER.

No. 481,254.

Patented Aug. 23, 1892.



WITNESSES:

John Revell
George Baumann

INVENTOR
Cyrus Carleton
BY
Horizon and Horizon
his ATTORNEYS

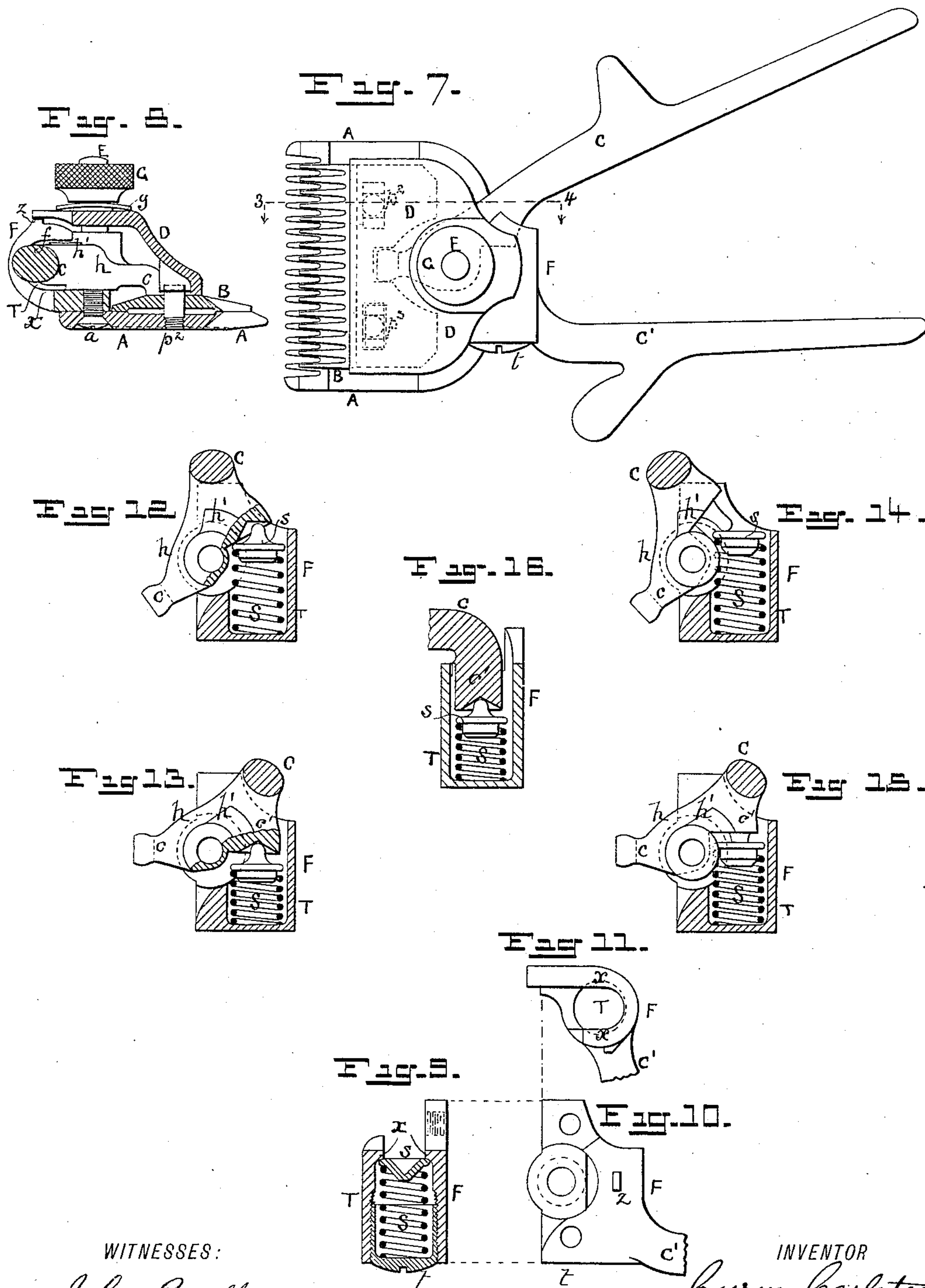
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UNITED STATES PATENT OFFICE.

CYRUS CARLETON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
BROWN & SHARPE MANUFACTURING COMPANY, OF SAME PLACE.

HAIR-CLIPPER.

SPECIFICATION forming part of Letters Patent No. 481,254, dated August 23, 1892.

Application filed September 29, 1891. Serial No. 407,157. (No model.)

To all whom it may concern:

Be it known that I, CYRUS CARLETON, a citizen of the United States, and a resident of Providence, Providence county, Rhode Island, have invented an Improved Hair-Clipper, of which the following is a specification.

My invention has more especial reference to that class of hair-clippers in which a spring is combined with the operating handle or lever for the reciprocating cutter to move the latter in a direction opposite to that in which it is moved by the hand of the operator.

One of the main objects of my invention is to so construct the spring and combine it with the other parts of the clipper as to lessen the liability of the spring to get out of order, to equalize its action and the power needed to compress it, to reduce the friction to a minimum, to protect the spring from becoming clogged with hair and other impurities, and to permit the clipper to be taken apart for grinding or cleaning without need of removing the spring.

My invention also comprises certain other features of improvement in the construction of the clipper, as more particularly herein-after set forth.

In the accompanying drawings, Figure 1 is a side view of my improved clipper. Fig. 2 is a plan view of the same. Fig. 3 is a front view with the handles broken off. Fig. 4 is a rear view, also with the handles broken off and the thumb-nut removed. Fig. 5 is a vertical section on the line 1 2, Fig. 2. Fig. 5^a is an inverted plan view of the spring-washer and thumb-nut I prefer to use. Fig. 6 is a sectional plan view. Fig. 7 is a plan view of a modification. Fig. 8 is a vertical section on the line 3 4, Fig. 7. Figs. 9, 10, and 11 are sectional and detached views of the pocket and the contained spring. Figs. 12 and 13 are views of a modified form of spring-containing pocket, showing the lever in its two different positions. Figs. 14 and 15 are corresponding views of another modification. Fig. 16 is a view of still another modification.

In the several figures in which the movable cutter is shown it is intended to be represented about midway of its stroke.

In many of its features my present clipper is not unlike that illustrated in Letters Pat-

ent granted to me July 1, 1879, No. 216,998, and, like the clipper of that patent, it has a comb-plate A, a reciprocating cutter-plate B, and a movable handle or lever C for operating the movable cutter-plate and mounted to turn upon the central pivot E, the upper end of which is provided with a thumb-nut and washer holding in place the cap or cover D. The fixed handle or lever C' may be made in one with or affixed to a frame F, to the under side of which is secured the comb-plate by means of suitable screws or bolts *a*. The central bolt or pivot E, upon which the hub *h* of the movable operating-lever C turns, is preferably threaded into the lower part of the frame F, and the upper side of the comb-plate A may have a countersink for the reception of the head of the bolt, as shown in Figs. 4 and 5. The upper end of this bolt passes freely through the cover D and is threaded at its outer end for the reception of a thumb-nut G, which thus makes the pivot E at the same time a securing-bolt to hold the cover in place. I prefer to combine with this thumb-nut a spring-washer *g* of the curved form shown in the drawings, and which fits loosely on a reduced tubular extension of the nut, but is held thereon by lips or projections *g'*, forced up from the tubular extension, as shown in Figs. 5 and 5^a.

The operating-lever C has the usual short bent arm *c* entering a notch in the reciprocating cutter-plate B to impart motion to the latter. This cutter-plate is guided in its lateral reciprocating motion by two pins *p p'* or *p² p³*, carried either by the comb-plate or by the cover. If these guide-pins for the cutter are carried by the cover, as illustrated in the construction shown in Figs. 1 to 6, they pass through the guide-slots *b* in the cutter-plate and enter openings or sockets in the comb-plate below. One of the pins—as, for instance, that *p*—is made to fit accurately the corresponding opening in the comb-plate, while a little play is allowed the other pin *p'* in its opening in the comb-plate. When the guide-pins are carried by the comb-plate instead of the cover, as in the construction shown in Figs. 7 and 8, they pass up through the guide-slots *b* in the reciprocating cutter-plate and enter notches or openings provided for them

in the under side of the cover, one pin p^2 , for instance, fitting accurately in its opening, while the other one p^3 fits its opening in the cover with a slight play. The reason for allowing a little play in the fitting of one of these guide-pins in its opening in the opposite plate is because the pivot E forms a third pin for fixing the position of the cover, and the slight play is needed for one of the three pins to allow for unavoidable variations in the making and fitting of the different parts.

The reciprocating cutter-plate is held down to its work by the front edge of the cover bearing upon the upper surface of the cutter-plate, and in order to exert the pressure upon the most favorable part of the reciprocating cutter this front edge of the cover is made with two short bearing-surfaces $y\ y$, as will be seen on reference to Fig. 3. The extreme rear edge of the cover D finds a bearing-point at z on the upper side of the frame F, and, the thumb-nut G, with its spring-washer, being between the front and rear bearing-points, any desired friction or pressure may be brought to bear upon the reciprocating plate.

As shown in Figs. 5 and 8, I prefer to leave a space between the top of the hub h of the lever C and the cover to allow the latter to be set up; but in order to prevent the lever rising on the pivot a shoulder h' is formed on the hub to take under the overhanging part f of the frame F.

The form of spring most commonly employed in these hair-clippers is the torsion-spring—such as illustrated, for instance, in my patent, No. 216,998—and so long as such a spring remains in good order it works well. Such a spring is, however, very apt to break when in use, thus causing expense, trouble, and delay to remove and replace it, especially in the hands of the average user who is not a mechanic.

Spiral push-springs have been used in some cases, but placed between the handles at some distance back from the frame and held in place by guide-pins on the handles. Such construction is objectionable for a number of reasons: The spring is long and has a long movement in compression and expansion, and consequently there is uneven action, the coils of the spring rub more or less upon the guide-pins, and there is a tendency for the spring, which is thus located at some distance from the axis of the bent operating-lever, to cant the latter unfavorably upon its axis. In addition the spiral spring as heretofore used is apt to become clogged by hair and other dirt.

In my invention I make use of a spiral push-spring, and, while retaining all its advantages, I overcome the objections to the construction above noted in the manner which I will now describe. In the first place I make use of a comparatively short spiral push-spring S, which I arrange within the frame or cover quite close to the axis of the movable operat-

ing-lever, the spring being interposed between the movable handle and the frame. In practice I prefer to form the frame F with a hollow pocket T for the reception of the push spiral spring S, one end of which bears against the bottom of the pocket, while the other end bears against the movable lever or, by preference, against a bearing or cap piece s for a pin or projection upon the elbow c' of the movable handle or lever. This pocket for the spring may have a solid bottom, as illustrated in Figs. 12, 13, 14, and 15, in which case the spiral spring and the bearing or cap piece s will have to be introduced into place in the receiving-pocket before the operating-handle is put in place. I prefer, however, to provide for the introduction of the spiral spring into the pocket from the outer end of the latter. For this purpose I provide a threaded cover or shell t , which is adapted to be screwed into the pocket in the frame from the outside, as shown in Figs. 6 and 9, and I then provide at the inner end of the pocket shoulders $x\ x$ of such a character that, while not interfering with the free movement of the elbow of the operating-lever C, they will retain the bearing-piece s and spring S in place, as shown in Fig. 9, when the operating-lever is detached. In practical use this is an important feature, for the unskilled user can thus take the device apart even to the operating-handle without freeing the spring; but whether this construction be used or not it will be seen that the comb-plate, and therefore also the cutter-plate, can be detached for grinding or cleaning without removing the securing bolt or pivot E and without disturbing the operating-handle, and in that case the spring would of course not be disturbed either. The axis of the spiral spring is brought by the construction described into a plane at right angles to the axis of the bolt and about midway between the top and bottom of the hub of the operating-lever, so that the described construction has the additional advantage of avoiding any tendency to cant the operating-lever upon its axis. This tendency is present when a spring is used between the handles at some distance back from the frame or cover plate, for in these clippers the handles are always bent more or less, as shown, for instance, in Fig. 1. In order to bring the spring still closer to the axis of the operating-lever, I prefer to cut away the hub h of the latter, as shown in Fig. 5. Inasmuch as the spring is thus close to the axis of the operating-lever, its extent of movement is quite short, and consequently its action is practically uniform. I prefer, also, to round or bevel the bottom of the pocket or threaded thimble for the spring, so that the latter will be self-centering and the coils will be kept from rubbing against the walls of the pocket.

Instead of having a recessed cap-piece s for the spring, in combination with a bearing-pin or projection on the elbow of the lever C, as shown in Figs. 6, 9, 10, and 11, the cap-piece s may have the bearing-pin, while the elbow

of the lever is recessed for the reception of the pin on the cap-piece, as shown in Figs. 12 and 13.

In Fig. 14 I have shown a modified form of lever-elbow which will be understood without further explanation.

I claim as my invention—

1. A hair-clipper having a movable cutter and a pivoted operating-lever therefor, with a push spiral spring within the cover or frame close to the pivot to act on the said lever.

2. A hair-clipper having a frame, movable cutter, and operating-lever, with a pocket in the frame containing a push spiral spring to act upon the operating-lever.

3. A hair-clipper having a movable cutter and an operating-lever therefor, a push spiral spring within the frame or cover close to the pivot, and means for retaining the spring in place when the clipper is taken apart and the operating-lever is removed.

4. A hair-clipper having a frame, a movable cutter, and an operating-lever therefor, in combination with a push spiral spring, the frame having a pocket with removable cover or thimble to retain the spring, the inner end of the

pocket being provided with shoulders, whereby the clipper may be taken apart without removing the spring.

5. A hair-clipper having a frame, a movable cutter, and an operating-lever, with a push spiral spring to act on the lever, and a pocket with a beveled bottom for the reception of the spring.

6. A hair-clipper having a securing-nut with a tubular extension carrying a spring-washer secured thereto by forced-up lips or projections on the extension.

7. A hair-clipper having a frame, movable cutter, and a pivoted operating-lever therefor, a cap, securing-bolt, and retaining-nut for the cap, the hub of the operating-lever being out of contact with the cap and having a shoulder to take under an overhanging part of the frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CYRUS CARLETON.

Witnesses:

GEORGE H. NOBLE,
GILMAN E. JOPP.