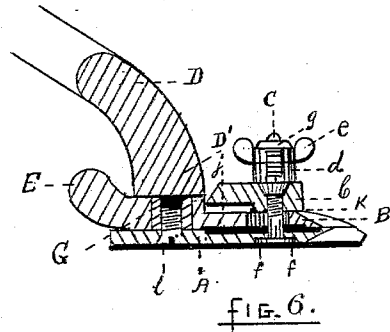
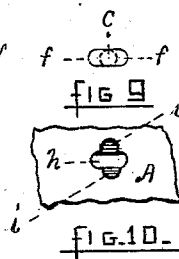
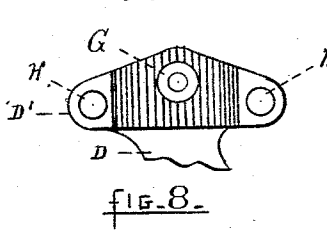
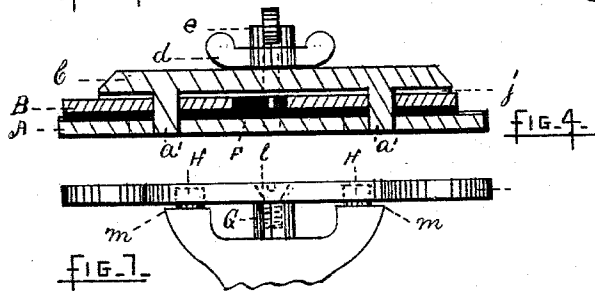
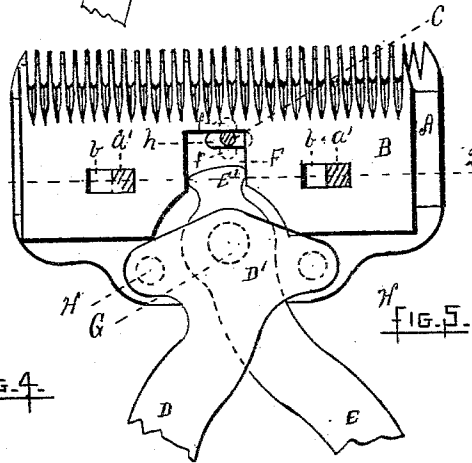
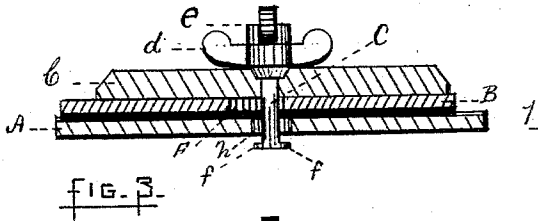
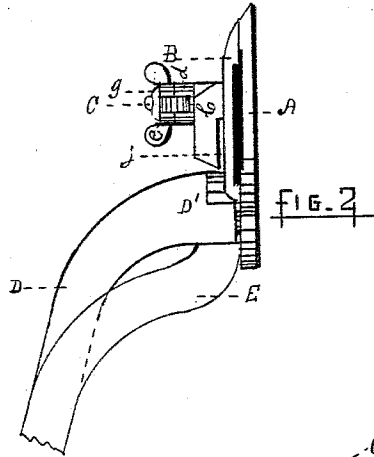
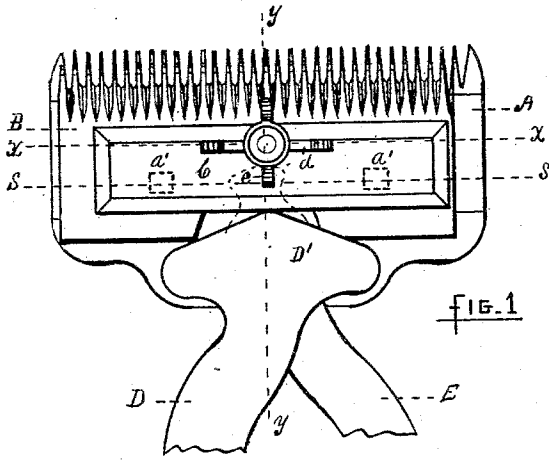


(Model.)

G. H. COATES.
ANIMAL SHEARS.

No. 315,733.

Patented Apr. 14, 1885.



WITNESSES.

Rufus B. Fowler
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UNITED STATES PATENT OFFICE.

GEORGE H. COATES, OF WORCESTER, MASSACHUSETTS.

ANIMAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 315,733, dated April 14, 1885.

Application filed August 4, 1883. (Model.)

To all whom it may concern:

Be it known that I, GEORGE H. COATES, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Animal-Shearing Machines, of which the following is a specification.

My invention relates to the construction of animal-shearing machines or "clipping" machines, as hereinafter set forth, and illustrated in the accompanying drawings, in which Figure 1 represents a top view of the machine, a portion of the handles being removed. Fig. 2 is a side view of the same; Fig. 3, a sectional view on line X X; Fig. 4, a sectional view on lines S S; Fig. 5, a top view with the presser-plate C removed. Fig. 6 shows a transverse sectional view on line Y Y. Fig. 7 is an inverted rear view of the plate A and the head D', and Fig. 8 shows the under side of the head. Fig. 9 is a view of the lower end of the binding-bolt, showing the "button," and Fig. 10 shows the "slot" and "recess" in the plate A adapted to receive the button.

Similar letters refer to similar parts in the several views.

My invention has for its objects to simplify the construction, reduce the cost, decrease the wear, increase the efficiency of the machine, and lessen the number of detached pieces when it is required to remove the cutting-plates for sharpening or other purposes.

A is a toothed plate fixed to the handle D. B is a movable toothed plate resting upon the plate A, and having a vibratory motion imparted by the handle E, which is pivoted on the boss G on the "head" D' of the fixed handle D. Above the vibrating cutter-plate B is the presser-plate C, which holds the two cutting-plates in contact by means of the binding-bolt *c*. From the under side of the presser-plate square studs *a' a'* extend downward, passing through the rectangular slots *b b* in the vibratory plate B and entering square holes in the lower or fixed plate, A, as shown in Fig. 4. These studs serve as guides for the plate B. Passing through all the plates A, B, and C is the binding-bolt *c* with a screw-thread on a portion of its length to receive the two nuts *d* and *e*, and at the lower or opposite

end are two spurs, *f f*, projecting radially from the bolt for a short distance and on opposite sides. The bolt *c* is put through the presser-plate C, and the thumb-nuts *d* and *e* screwed on. A washer, *g*, is then put on the end of the bolt, and the end upset or "headed" to prevent the thumb-nuts *d* and *e* from coming off. The bolt may then be passed through the wide notch F in the center of the plate B and through the plate A, the slot *h* allowing the spurs *f f* to pass. The bolt *c* is then turned one-quarter of a revolution, bringing the spurs *f f* at right angles to the slot *h*, when they are drawn up into the recesses *i i* in the bottom of the fixed cutting-plate A, so the head of the bolt will not project beyond the lower surface of the plate A, and a sufficient pressure given to hold the cutting-plates closely together by means of the nut *d*, the nut *e* serving as a check-nut. The under side of the presser-plate I cut away at the back side, as at *j*, leaving only the surface K in contact with the upper side of the vibrating cutter-plate B, in order to reduce friction and obviate the necessity of finishing so large a surface of the plate B. The opposing surfaces of the cutting-plates A and B are also channeled through their center, leaving only a narrow strip at their front and rear edges in contact. The fixed handle D is enlarged to form the head D', having the central boss, G, which forms the pivot for the lever-handle E and the two bosses H H, which enter holes in the plate A. The plate A rests against the end of the central and pivotal boss, G, and is held firmly in place by the screw *l*, the bosses H H serving to keep the plate A from turning on the screw *l*. I make the boss G long enough with reference to the shoulders *m m* so the shoulders *m m* will not touch the plate A when it is brought against the end of the boss G, and I prefer to make the bosses H H slightly tapering, and by filing off the end of the boss G the bosses H H may be drawn farther into the holes in the plate A, thereby insuring a perfect fit and allowing any wear or "lost motion" to be taken up, and a perfectly tight and rigid joint to be maintained at all times between the head D' and the plate A. The fixed handles D, carrying the lever-handle E on the boss G, are attached directly to the plate A by the single screw *l*, allowing the handles to be removed

without disturbing any other part of the machine. In case the vibrating plate B is to be taken out, it is done by loosening the nuts *d* and *e*, allowing the binding-bolt *c* to be pushed down until the spurs *f f* clear the plate A, when the bolt may be turned to bring the spurs *f f* in line with the slot *h*, permitting the presser-plate C to be removed, the plate C, the bolt *c*, and the nuts *d* and *e* all being attached together and forming but a single piece. The bolt *c*, with the spurs *f f*, it will be seen, act as a button to hold the fixed cutter-plate A and the presser-plate C together, and the nut *d* serves to adjust the pressure between the cutting-plates as desired, and the check-nut *e* may be added to prevent the loosening of the nut *d* when the machine is in use, if found necessary. Upon the under side of the nut *d*, I make a conical projecting seat, *n*, fitting a like conical depression in the upper surface of the presser-plate C and concentric with the bolt-hole, as shown in Fig. 3. This construction causes the bolt to be held in the center of the bolt-hole, and prevents any pressure upon the side of the bolt. Power is imparted to the vibrating plate B by the end *E'* of the lever-handle E, working against the sides of the central notch, F, in the plate B; and I place the guiding-studs *a' a'* so their centers shall come in a line cutting the points of contact of the lever end *E'* on the sides of the notch F, or so the power moving the plate B shall be applied to the plate in the line of the centers of the guiding-studs. By this means I obviate the tendency of the lever *E'* to cause an oscillating motion of the plate, for if the power were applied at either side of the broken line 1 2, Fig. 5, that side of the plate would have a tendency to advance faster than the opposite side, and that tendency would be resisted by the guiding-studs *a' a'*, thereby increasing the friction of the plate B and the power required to operate it.

I do not confine myself to the particular form of button as shown and described, as any other well-known form of button might be equally well adapted for the purpose—such as having a spur on one side, instead of the two spurs *f f*, or a semicircular projection, making the slot in the plate A to correspond therewith.

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

1. The combination, with the fixed cutting-plate of a clipping-machine, of a handle, D, having a central boss, G, resting against the surface of the fixed cutter-plate, and two

bosses, H H, entering holes in the fixed cutter-plate, and an attaching-screw, *l*, as and for the purpose set forth.

2. In a clipping-machine, the combination, with a fixed cutting-plate having an elongated or suitably-shaped opening to receive the button-shaped head of a connecting-bolt, a vibrating cutting-plate resting thereon, and a presser-plate resting on the vibrating cutting-plate, of a stud or bolt connected with and turning in the presser-plate, and having a button-shaped head formed of a radially-projecting spur or spurs adapted to pass through the opening in the fixed cutting-plate, and by a partial rotation of the bolt so act against the under side of the said plate as to securely unite the fixed cutting-plate and presser-plate with the vibrating plate held between them, as described, and for the purpose set forth.

3. In a clipping-machine, the combination, with a fixed cutting-plate having an elongated or suitably-shaped opening to receive the button-shaped head of a connecting-bolt, a vibrating plate resting thereon, and a presser-plate resting on the vibrating plate, of a screw-threaded bolt passing through and turning in the presser-plate, and having a head formed of a radially-projecting spur or spurs adapted to pass through the opening in the fixed cutting-plate, and by a partial rotation of the bolt be turned upon and against the under side of the fixed cutting-plate, and a nut screwing upon said bolt and resting against the presser-plate, whereby its pressure upon the vibrating plate may be adjusted, as and for the purpose set forth.

4. In a clipping-machine, the combination of a presser-plate, a rotating stud or bolt passing through the presser-plate and having a head formed of radially-projecting spur or spurs, a fixed cutting-plate having an opening corresponding with the head of the bolt, and having recesses in its under surface to receive the projecting spur or spurs forming the head, said bolt having a nut resting on the presser-plate or other suitable connected means for the purpose of drawing the spurs forming the head of the bolt into said recesses after the bolt has been partially rotated and the spurs and recesses made coincident, whereby the bolt is prevented from turning, as and for the purpose set forth.

GEO. H. COATES.

Witnesses:

RUFUS B. FOWLER,
GEO. E. SMITH.