

F. W. TALLY & M. RYAN.

Impt. in Animal Shearing Machines.

116885

PATENTED JUL 11 1871

Fig. 1.

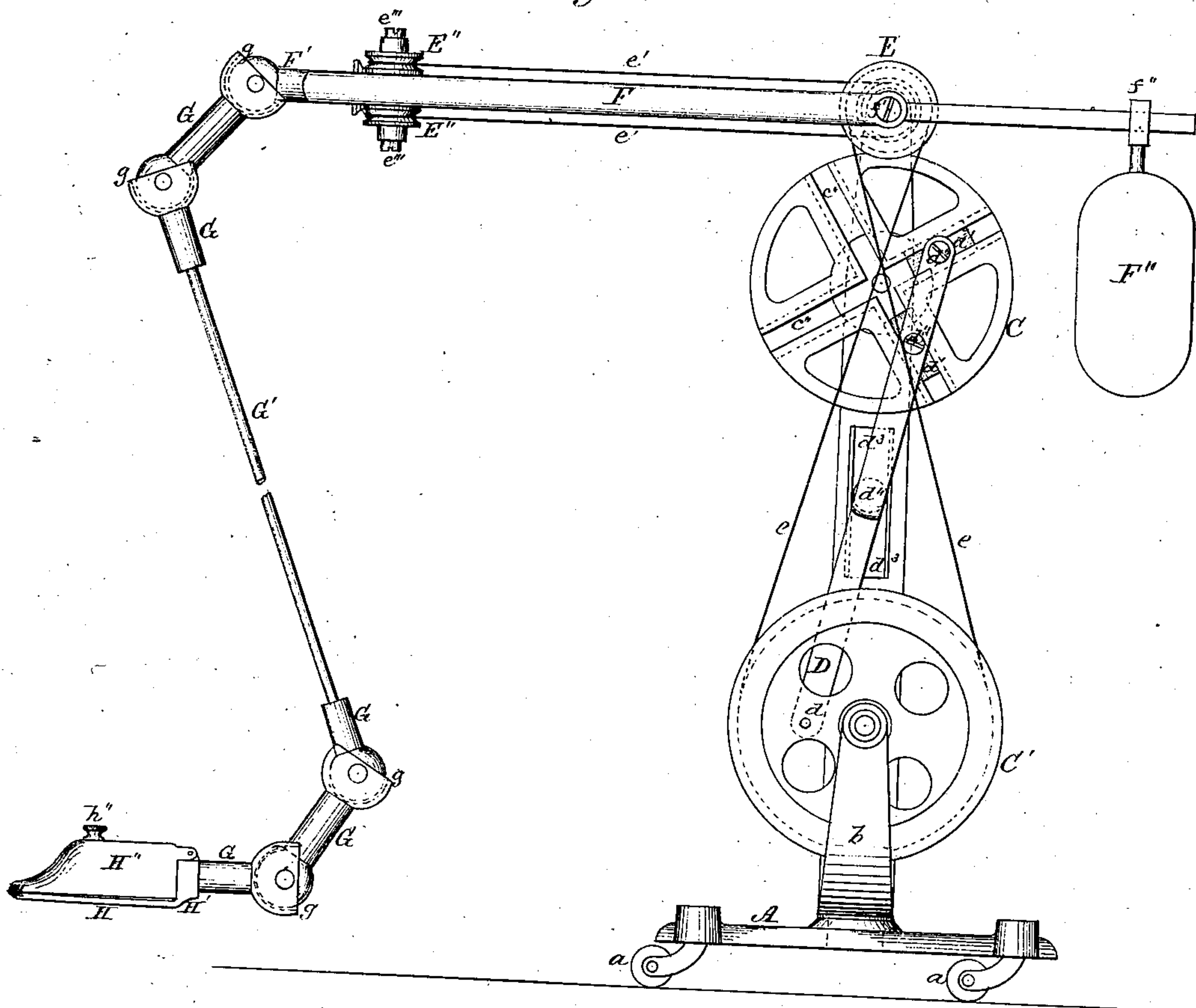
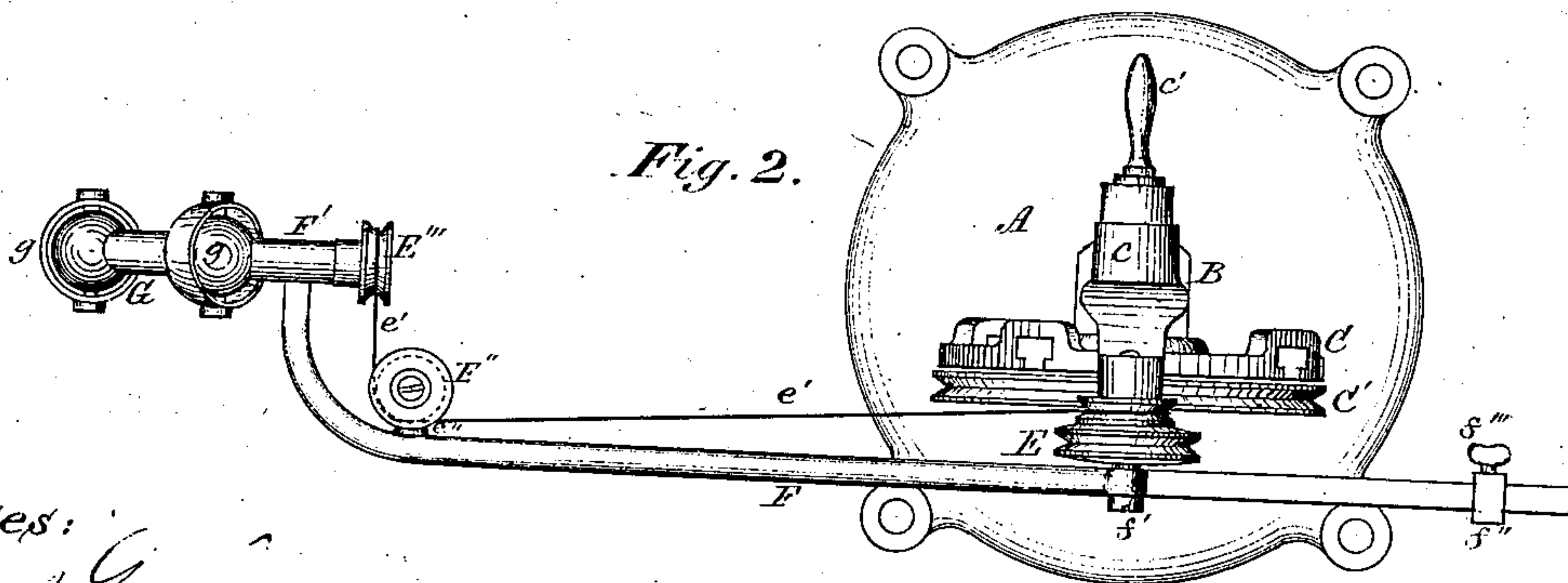


Fig. 2.



Witnesses:

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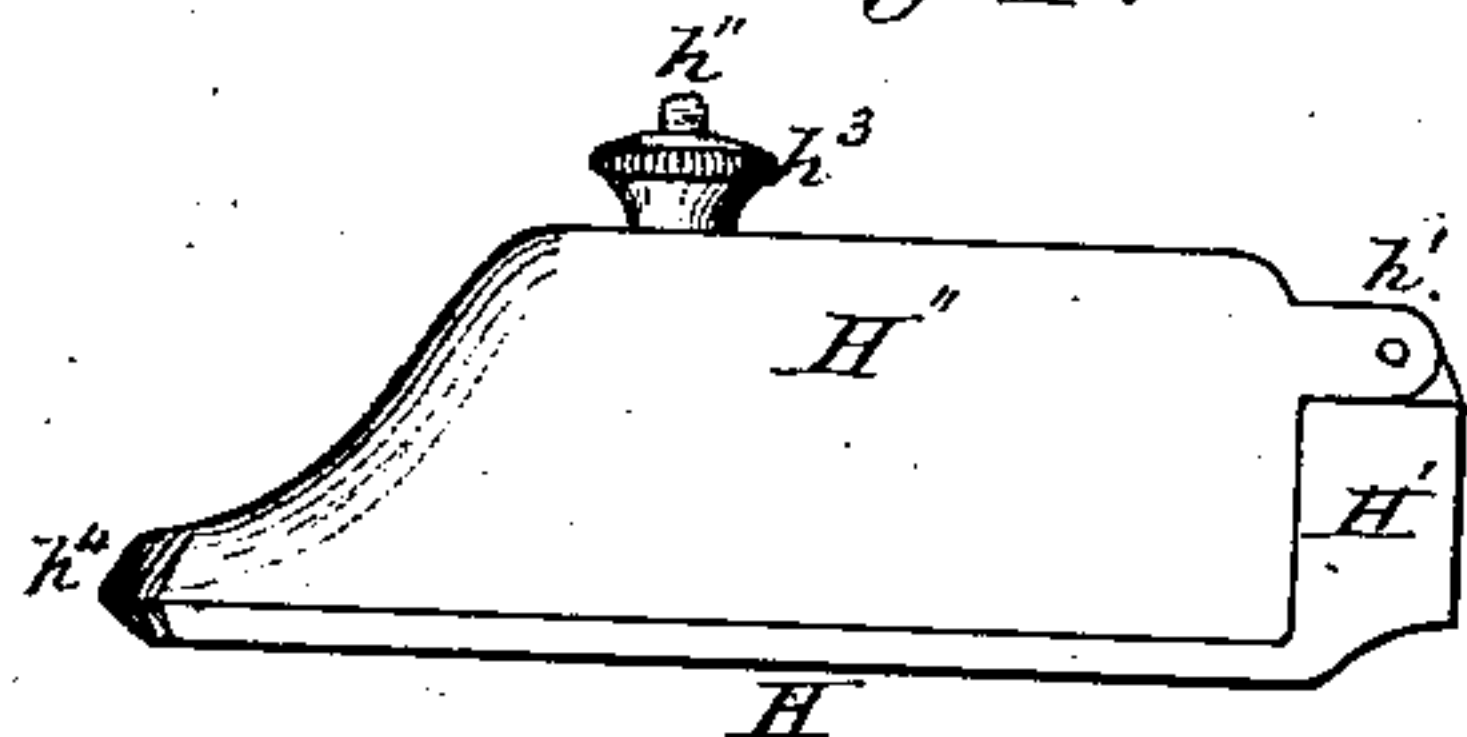


Fig. 5.

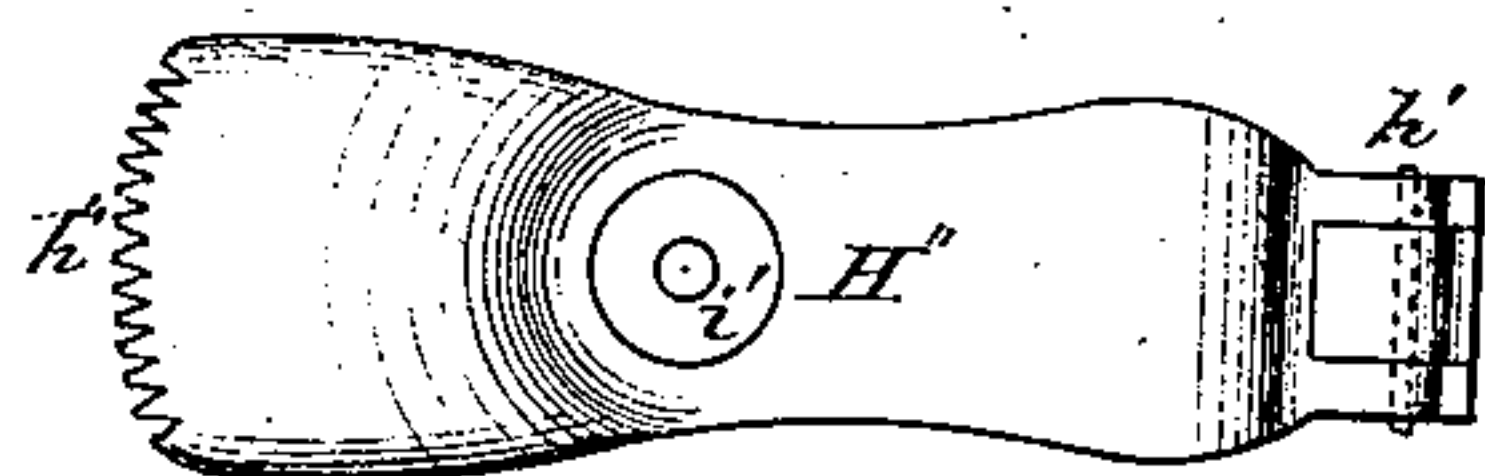


Fig. 6.

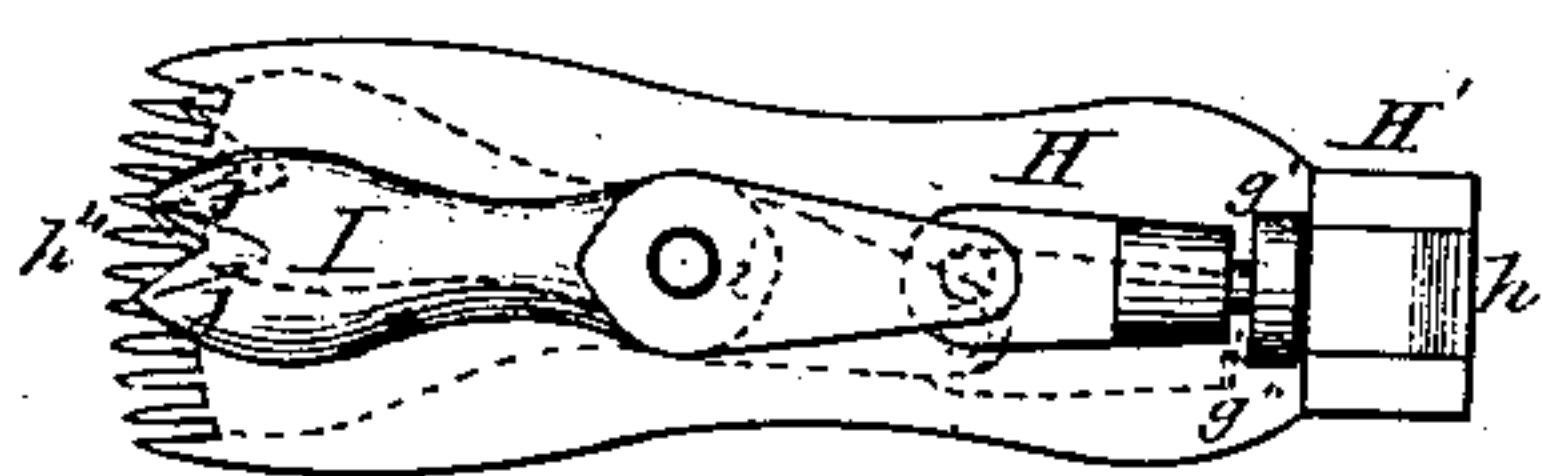


Fig. 7.

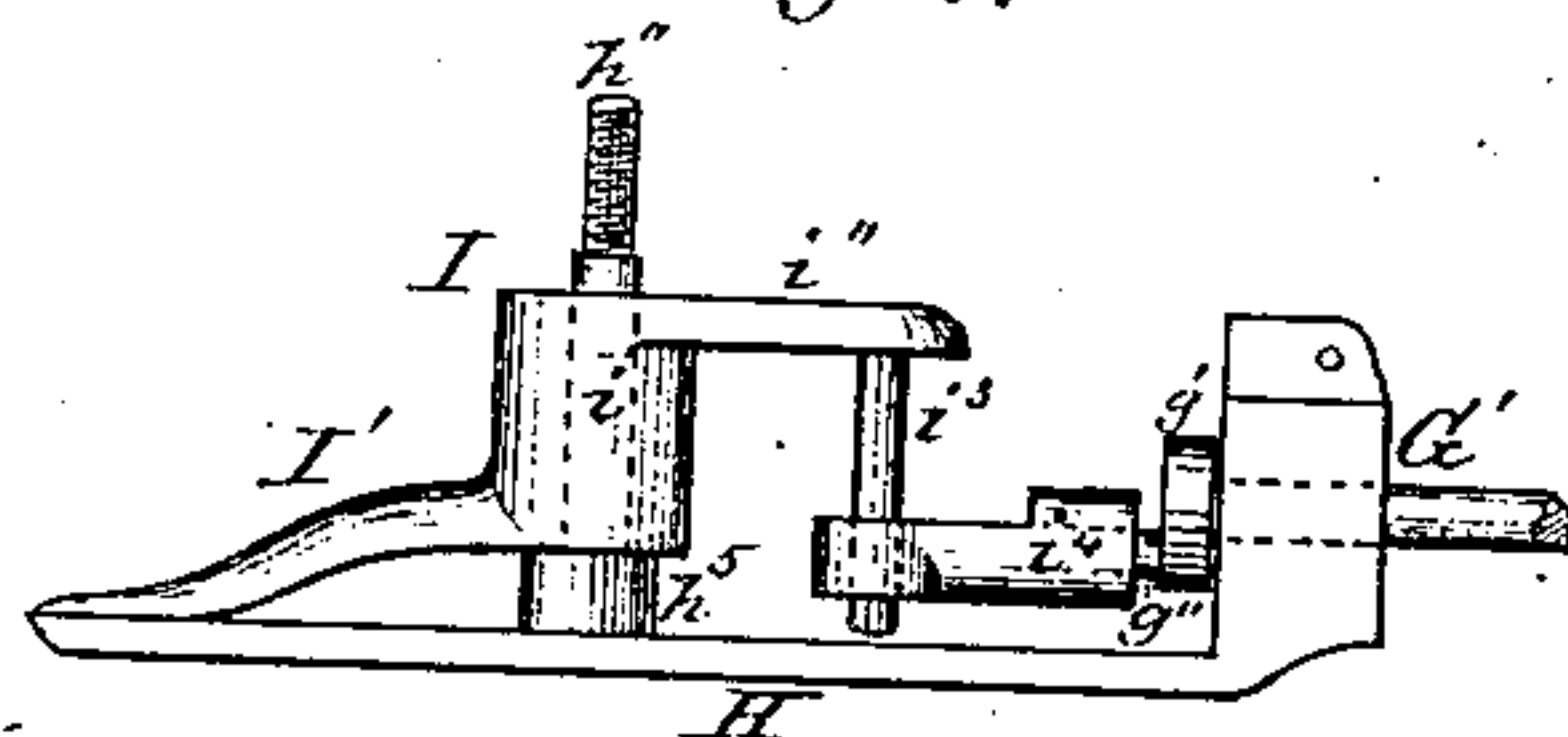


Fig. 3.

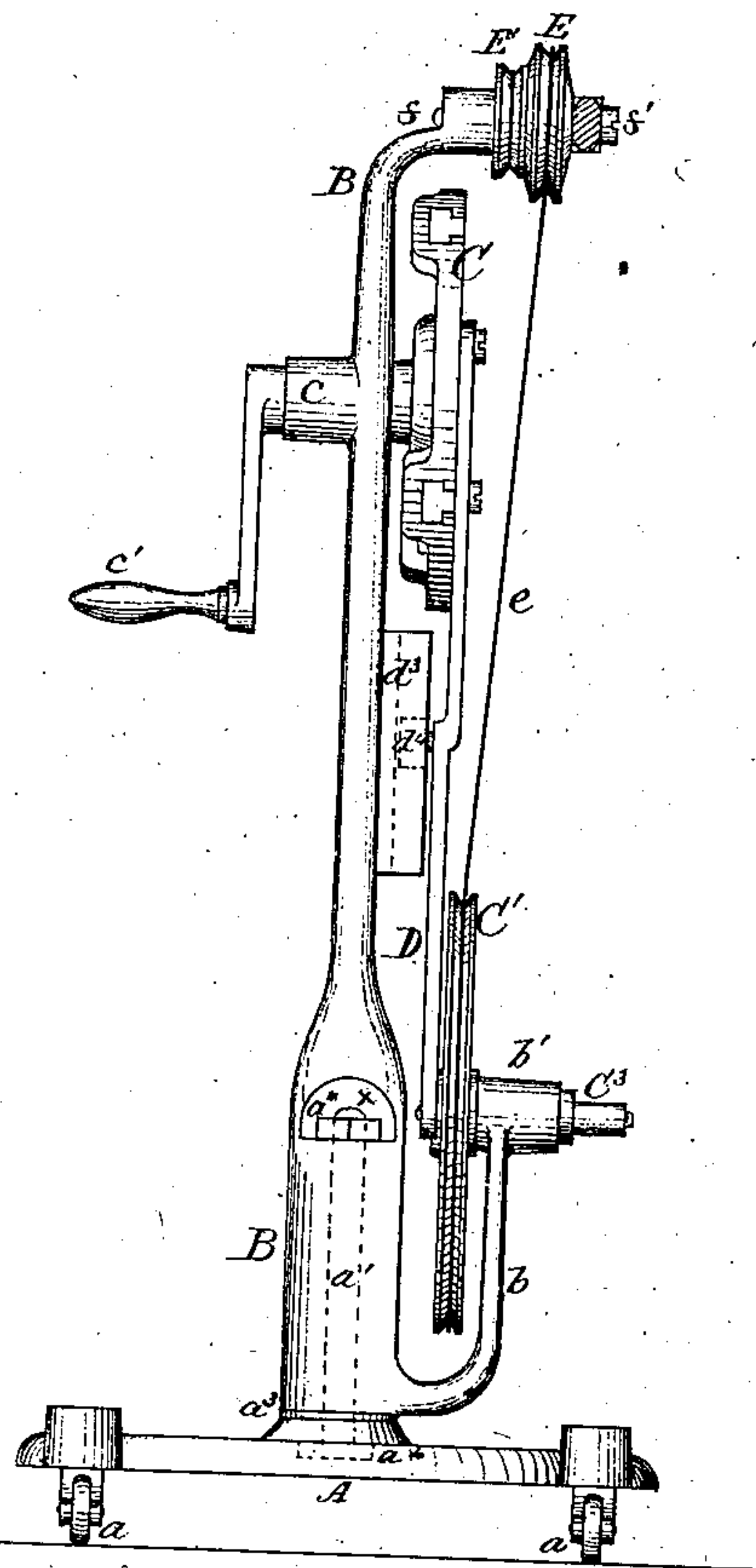
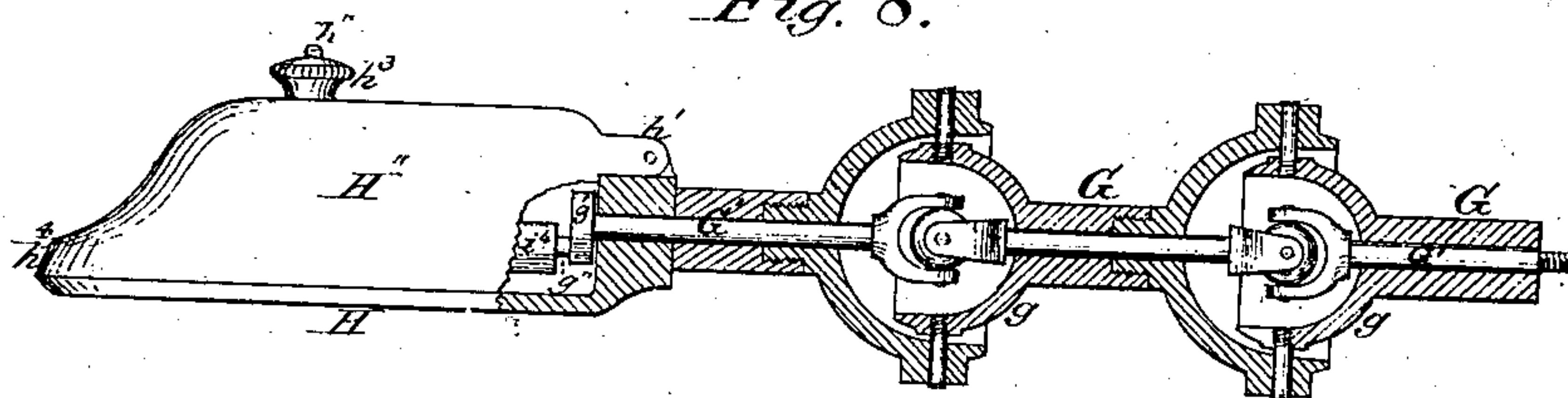


Fig. 8.



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# UNITED STATES PATENT OFFICE.

FELIX W. TALLY AND MICHAEL RYAN, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN SHEARING-MACHINES.

Specification forming part of Letters Patent No. 116,885, dated July 11, 1871.

*To all whom it may concern:*

Be it known that we, FELIX W. TALLY and MICHAEL RYAN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Machines for Shearing Animals, of which the following is a specification:

The invention consists in the construction of some of the parts and the arrangement of the several parts to form a complete machine.

In the drawing, Figure 1 is an upright side view of the machine. Fig. 2 is a top view, and Fig. 3 is a back view of the same. Fig. 4 is a side view of the cutter-case. Fig. 5 is a top view of the same. Fig. 6 is a top view of the vibrating cutter and top side of the bottom plate of the case containing the cutter. Fig. 7 is a side view of the same; and Fig. 8 is a sectional view of a portion of the revolving tumbling-rod, its joints, and connection with the sectional jointed and protecting-cylinders.

A is the platform on which all the operating parts of the machine are supported. This platform stands upon caster-wheels *a* that freely turn in any direction to which the machine is moved, and has a hole centrally located in it to admit bolt *a'* up through and into the mast or post that stands and revolves upon it. B is a mast or post standing upon platform A, and is attached to the platform by a headed screw-bolt, *a'*, which passes up through a hole in the center of said platform, and into a hole in the center of the bottom of the mast or post, which extends upward in the mast to a transverse opening, *x*, when nut *a''* is turned onto the upper end of the screw-bolt, bringing the head *a'* of the screw-bolt to bear against the under side of the platform A, as seen in Fig. 3. The foot of the mast or post rests upon a washer, *a<sup>3</sup>*, interposed between the raised part of the platform and the foot of the mast, and the nut *a''* will not be turned down hard enough to prevent the mast from freely turning on washer *a<sup>3</sup>*. The mast may be of metal, wood, or other suitable material, but metal is preferable. Upon one side, and near the bottom of the mast or post B, extends horizontally arm *b* for a proper distance, then curves upward to a perpendicular position, terminating at its upper end in a thimble, *b'*, to receive the axle of a revolving wheel. At the proper height above the platform, and on the opposite side of the mast from

arm *b*, projects a thimble or support, *c*, through which revolves the axle of the driving-wheel. Near its top end the mast bends over to the side from which arm *b* starts, so that the part so bent over will be in a horizontal position at its extreme end, and will receive the axle of revolving pulleys. C is a disk-wheel fast on an axle, which passes through thimble *c* on mast B and revolves freely therein, and has two slots, *c'' c''*, crossing each other at a right angle in the center of the face of the wheel. D is a connecting-rod or pitman, attached to two pivoted slide-blocks, *d' d'*, at *d'' d''*, toward and at its top end, and at its lower end it is attached to crank-pin *d* on band-pulley C'. In the center of this connecting-rod D is an axle-pin, on which a guide friction-roller, *d<sup>4</sup>*, revolves between guide-ways *d<sup>3</sup> d<sup>3</sup>*, by which construction and arrangement of parts two reciprocations of pitman D and two revolutions of pulley C' are obtained to one revolution of disk-wheel C. C' is a band-pulley on axle *c<sup>3</sup>*, revolving in a bearing in thimble *b'* at the upper end of arm *b*. E and E' are band-pulleys on axle *f*, which goes through the bent top of mast B in a horizontal direction. *e* is a crossed band around pulley C', and giving motion to pulley E. *e'* is a band giving motion to pulley E''' from pulley E'. F is a balance-beam or rod, freely vibrating upon axle *f*, and is held in place by screw *f'*. At a proper distance from axle *f*, and projecting from the side of beam F, is a horizontal projecting stud or support, *e''*. Beam F curves to the mast side at its forward end, and terminates in a short hollow standing cylinder, F'. F'' is a weight to be adjusted on bar F at any point, to counterbalance the weight of the actuating parts of the machine, and slides on and is adjusted by means of the mortised stud *f''* and screw *f'''*. E'' E'' are two guide-pulleys, one vertically over the other, and both revolving on an axle that is supported in stud *e''* on beam F, and are held to their position by holding-screws *e'''*, and give direction to band *e'* to go around pulley E'''. E''' is a band-pulley attached to a tumbling-rod, G', that freely revolves within the standing cylinder F'. G G are short sectional and flexible cylinders, connected together and to F' by universal or flexible joints *g g g g*. G' is a revolving tumbling-rod which freely revolves within the cylinders F' and G, and has universal joints to allow it to be placed in different positions, and be free to



revolve while in any position, whether in direct or crooked line. The joint-connections of the rod  $G'$  are contained within the joints  $g$  of cylinder  $G$ , and are not represented in the drawing. Rod  $G'$  terminates within the cutter-case, where there is a crank-connection giving a vibratory motion to the cutter or shears.  $H$  is the bottom plate to the cutter-case or shoe containing the cutter or shears, and receives the tumbling-rod  $G'$  through a hole in the heel part  $H'$ ; is flat or nearly so on its sides, rounded at its toe or forward end, deeply slotted on the toe forming a comb to receive and hold the hair in position to be cut evenly and clean.  $H''$  is a hinged cover or top to the case or shoe, formed in such manner that it and plate  $H$  form a complete box to contain the vibrating cutter  $I'$  and its actuating devices, is hinged to plate  $H$  at  $h'$ , has a hole,  $i'$ , through its top to admit a stud therein, is deeply slotted on its forward end to correspond with the slots in the bottom  $H$ , and to act with them in holding the hair while being cut.  $I$  is a vibrating cutter-hub, having an upright hole,  $i$ , through it, and rests and turns upon an upright screw-stud,  $h''$ , having its lower end  $h^5$  enlarged so as to give good support to said cutter-hub. From hub  $I$  cutter-arm  $I'$  projects forward from the lower side, and is divided at its forward end into two or more cutting-edges,  $j, j$ , which are made to be very sharp, and run close to the top side of the comb or slotted toe  $h^4$  of plate  $H$ . From the top of hub  $I$  of the vibrating cutter, and on the opposite side from the cutter-arm and cutters, projects a horizontal arm,  $i''$ , near the extreme end of which depends arm  $i^3$ , its lower end passing through a hole in the forward end of a horizontal intermediate connecting-link,  $i^4$ . In the back end of, and extending horizontally therein for a considerable distance into the connecting-link, is a hole into which goes the crank or wrist-pin  $g''$ , which is fast in a projecting collar on the end of the tumbling-rod  $G'$  and inside of the shoe or case. On the top end of stud  $h''$  is cut a screw-thread, so that, when the top or cover  $H''$  is turned on hinge  $h'$  to close the case, nut  $h^3$  is turned down upon the cover and holds it fast in place, the teeth of which are in close contact with the teeth on the forward end of the bottom plate  $H$ , thus securing the operating parts within the case from dust, hairs, or other things that would obstruct the action of the cutter, and makes it impossible to cut anything about or on the animal but the hair. As the comb  $h^4$  projects in front, and is above and below the cutter, nothing can come in contact with the cutter except that which can go into the slots between the teeth; hence there is no danger, as in revolving knives where a portion of the case is open, for the knife or cutter to come in contact with the skin of the animal.

By this construction and arrangement of parts a machine is introduced that is light, strong, easily worked, its position quickly changed so that it may have any desired relative position to the animal being operated upon. It is, also, so balanced that no considerable weight need rest in the hands of the conductor of the shears, as the counterpoise can be adjusted to any desired point on the beam that sustains the actuating parts. The turning of the entire operating parts around on the supporting-platform by means of the revolving mast is a great improvement in this kind of machine, as it affords a ready means of allowing the conductor to change the position of the operating parts to different parts of the animal, and to different directions without changing the location of the supporting-platform. The machine is much better adapted to its use by its having the means to move it from one locality or place to another, whether to accommodate the change in position of the animal or for the purpose of moving it to or from where it is to be used.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In an animal-shearing or clipping-machine, the hinged cutter-case, composed of bottom plate  $H$ , top or cover  $H''$ , both deeply slotted or toothed at their forward ends, the points of the teeth in the two parts projecting alike, held in close contact, and fitted to receive and have work within it the vibrating cutter  $I'$ , in the manner and for the purpose herein described.

2. The vibrating cutter  $I'$ , pivoted upon stud  $h''$  and having arms  $i''$  and  $i^3$ , connecting-link  $i^4$ , crank-pin  $g''$ , collar  $g'$ , and tumbling-rod  $G'$ , in combination with the plate  $H$  having teeth  $h^4$  at its forward end, in the manner and for the purpose described.

3. The combination of the standing cylinder  $F'$ , cylinders  $G, G$  made flexible by joints  $g$ , with the tumbling-rod  $G'$  revolving within and protected by said cylinders, in the manner and for the purpose herein described.

4. The combination of the slotted driving-wheel  $C$ , connecting-rod  $D$  and its guide-blocks, wheel  $C'$ , and band  $e$ , with the band  $e'$ , pulleys  $E, E', E''$ , and  $E'''$ , standing cylinder  $F'$ , jointed protecting-cylinders  $G$ , jointed tumbling-rod  $G'$ , and vibrating cutter  $I'$  with its intermediate connecting parts, the latter devices supported by and attached to the balanced and revolving beam  $F$ , in the manner shown and described.

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Witnesses:

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