

(No Model.)

3 Sheets—Sheet 1.

W. RYLEY.
SHEEP SHEARING MACHINE.

No. 442,239.

Patented Dec. 9, 1890.

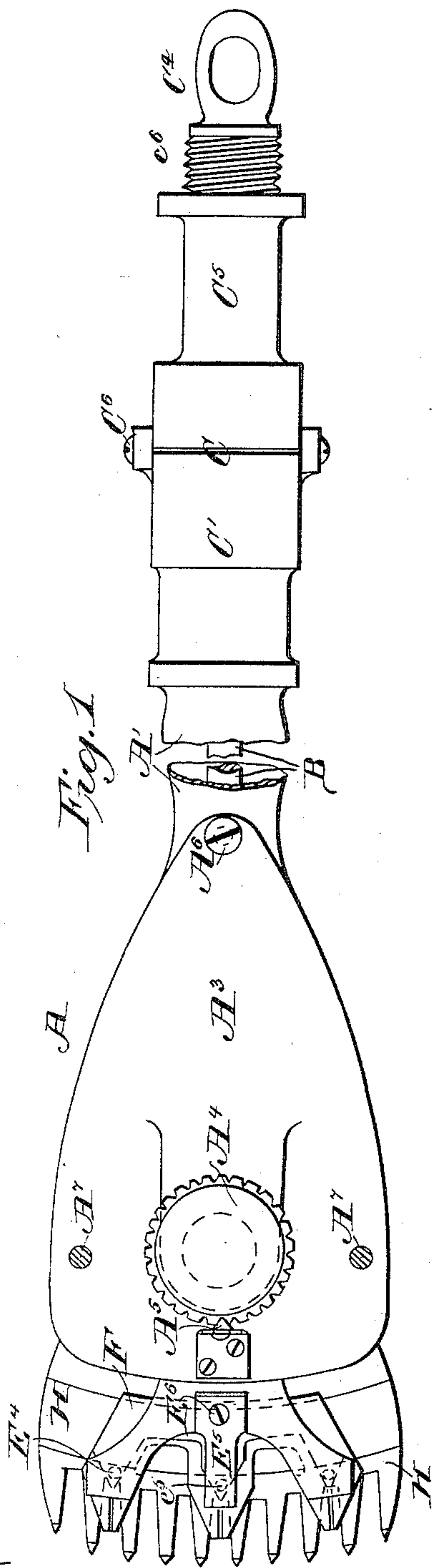


Fig. 1

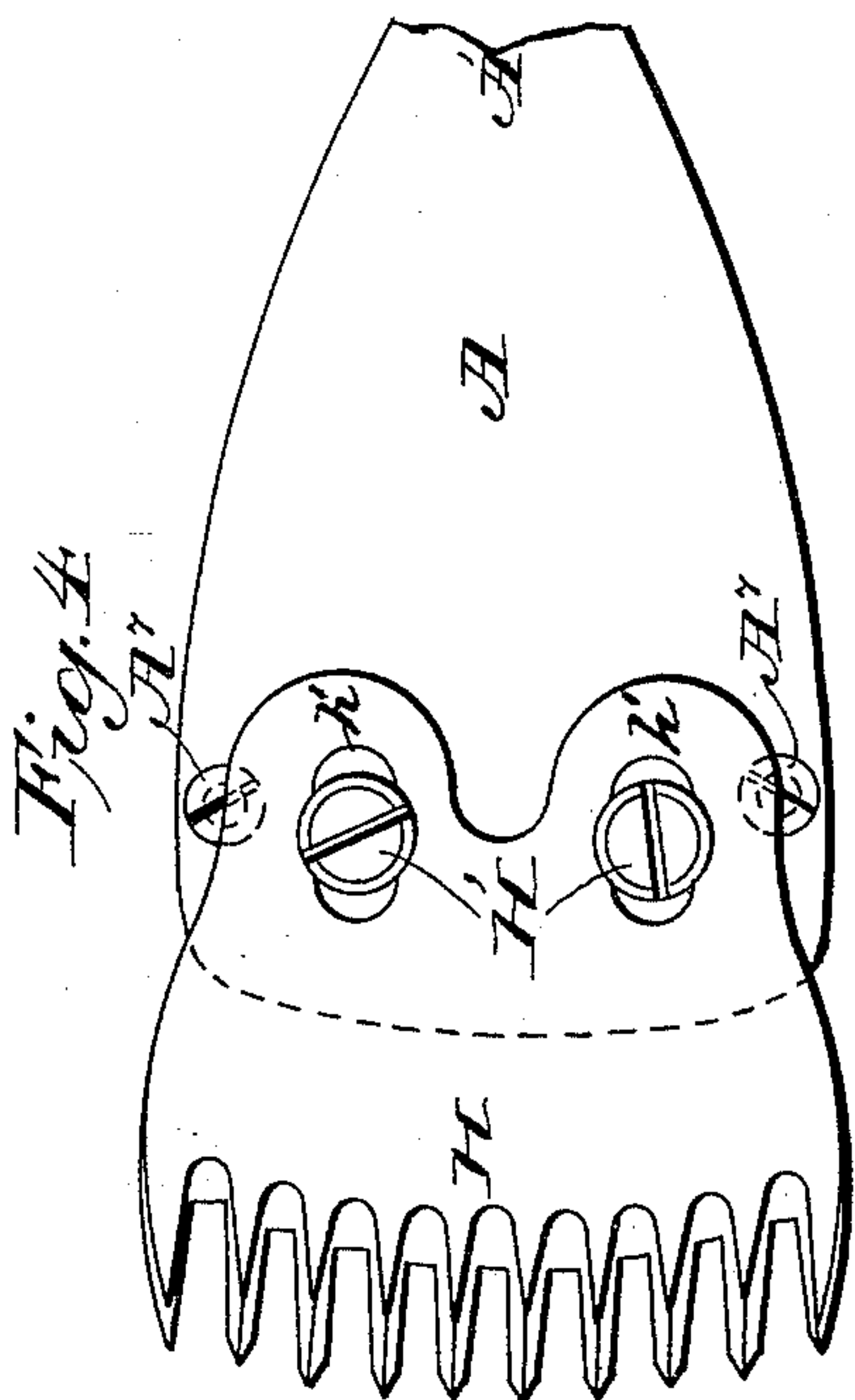


Fig. 4

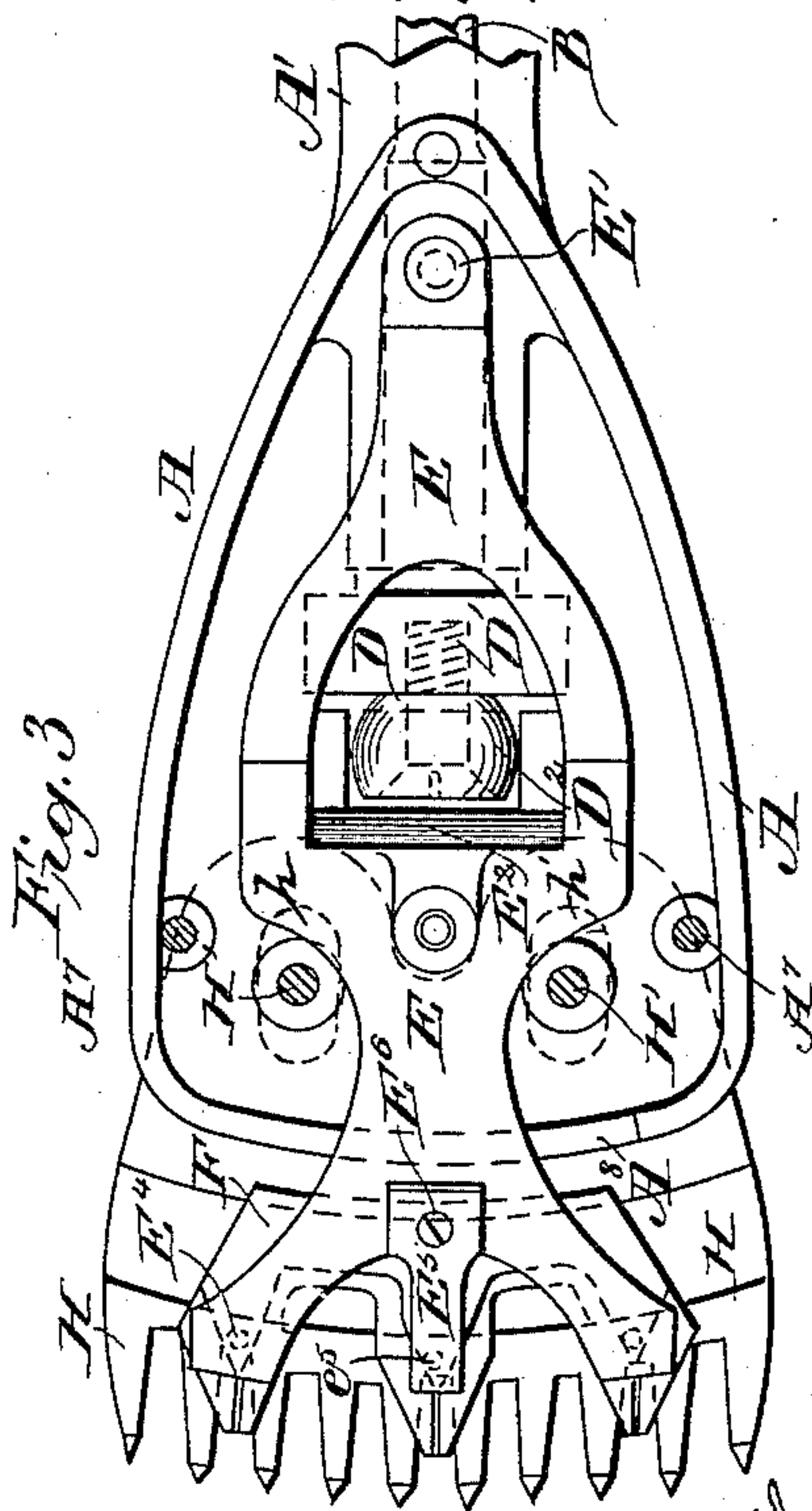


Fig. 3

Witnesses
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Thompson Cross

Inventor
William Ryley
per J. W. Ryley
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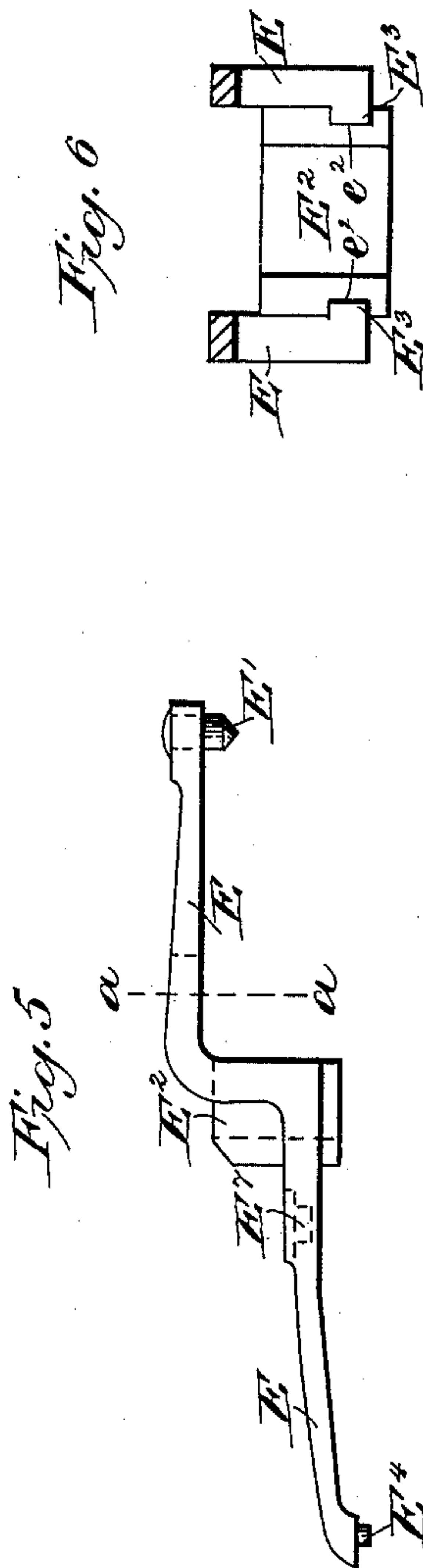
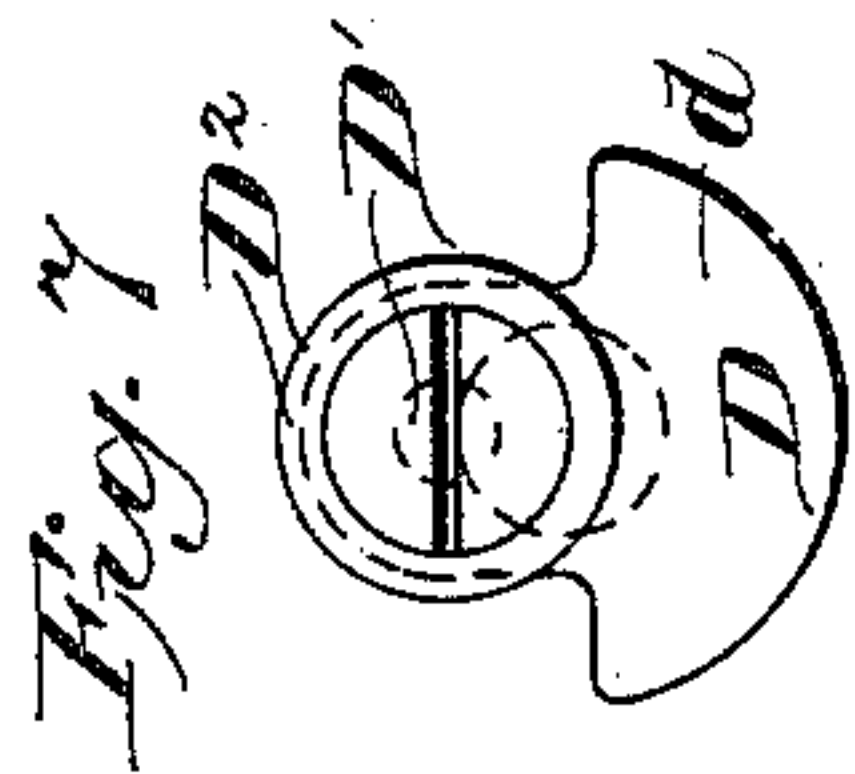
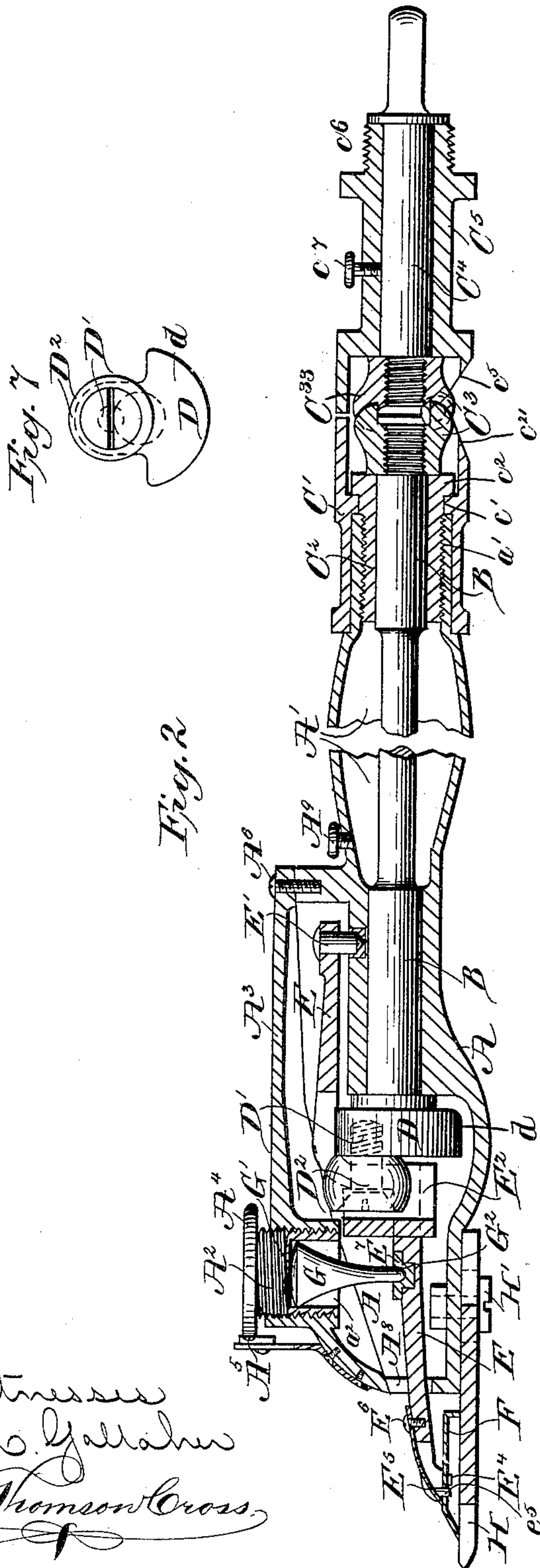
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No. 442,239

Patented Dec. 9, 1890.



Witnesses
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Inventor
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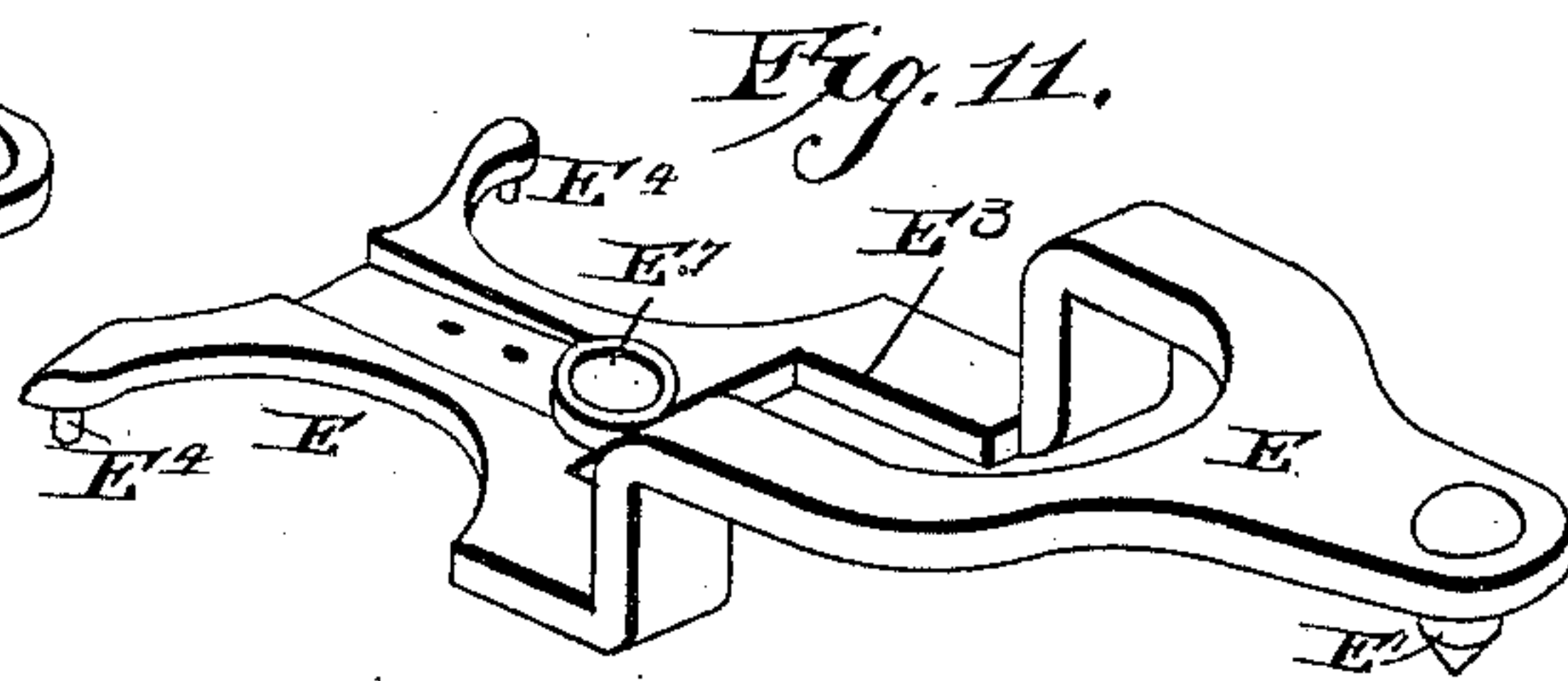
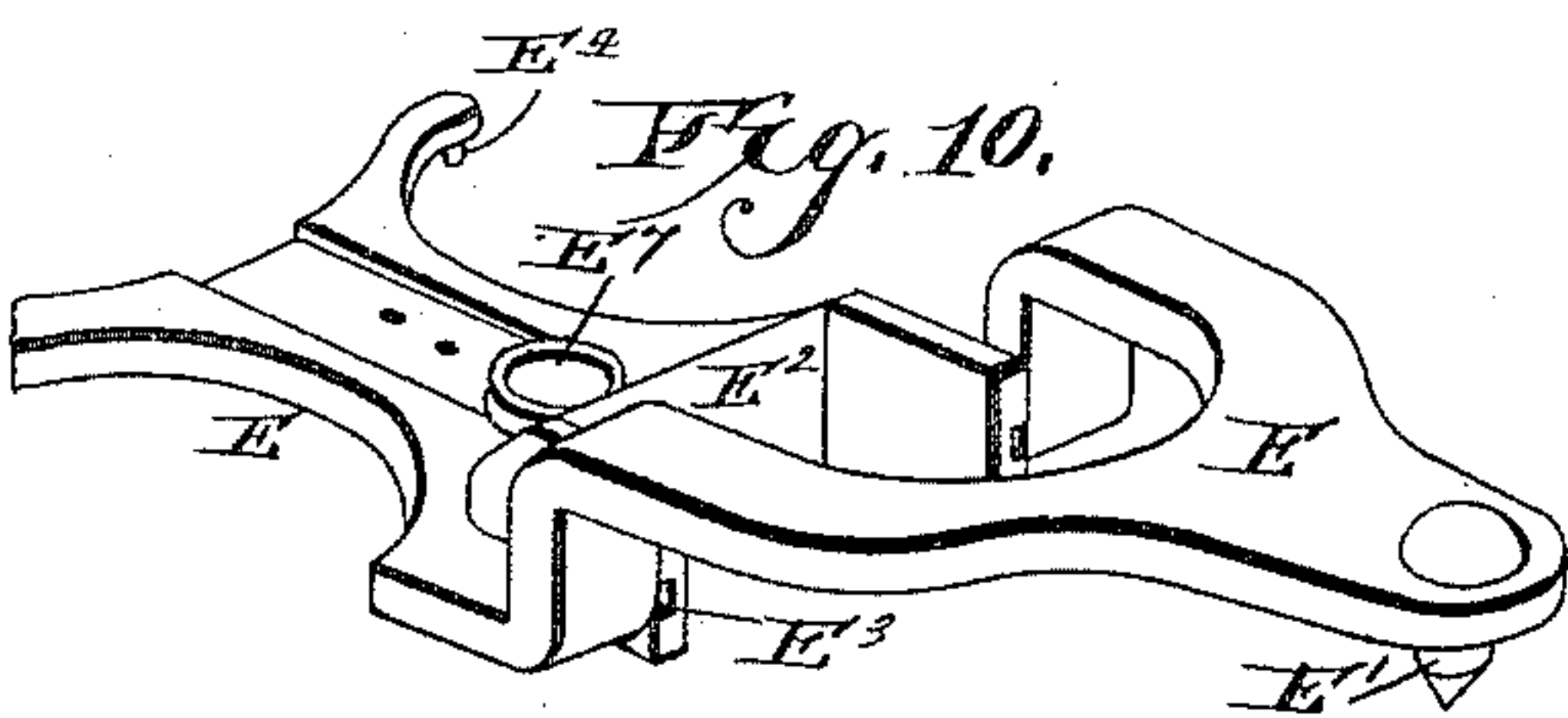
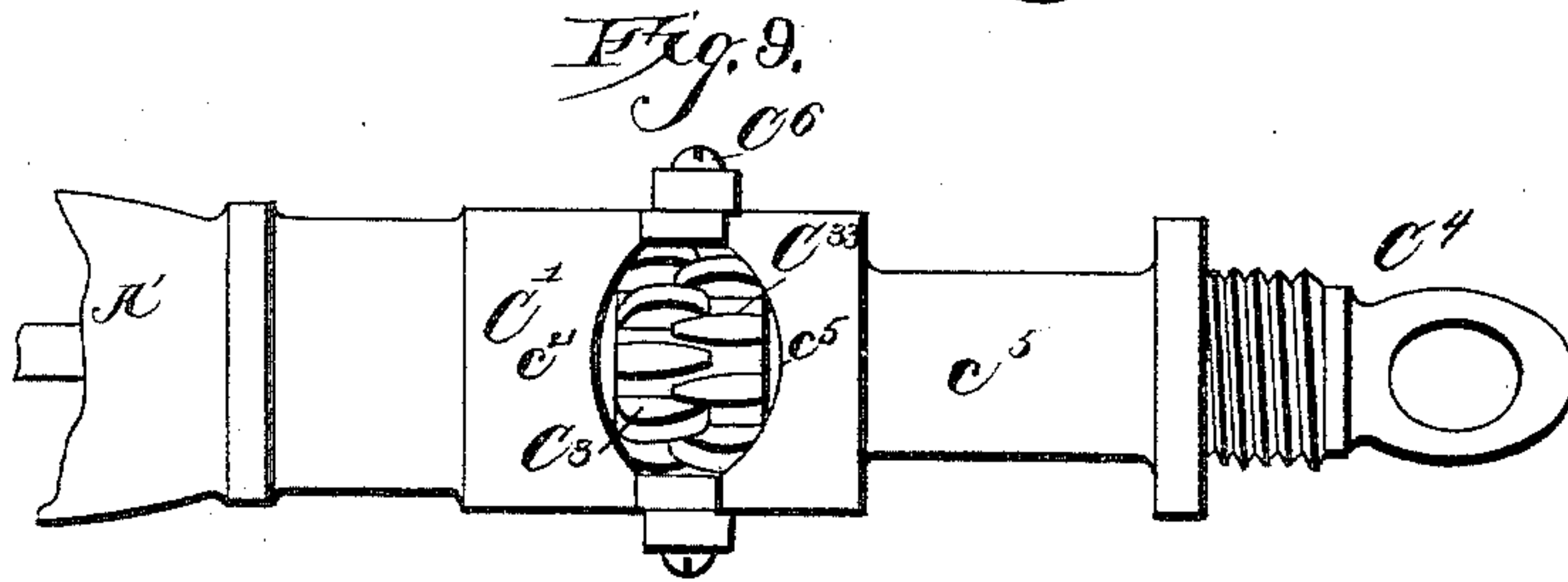
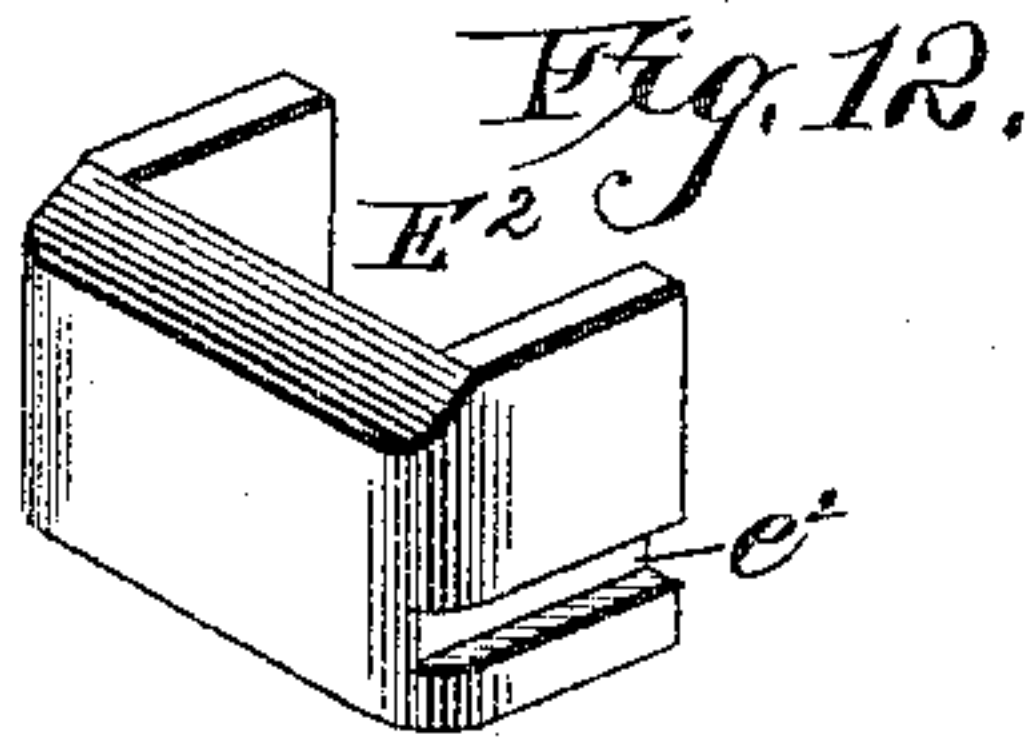
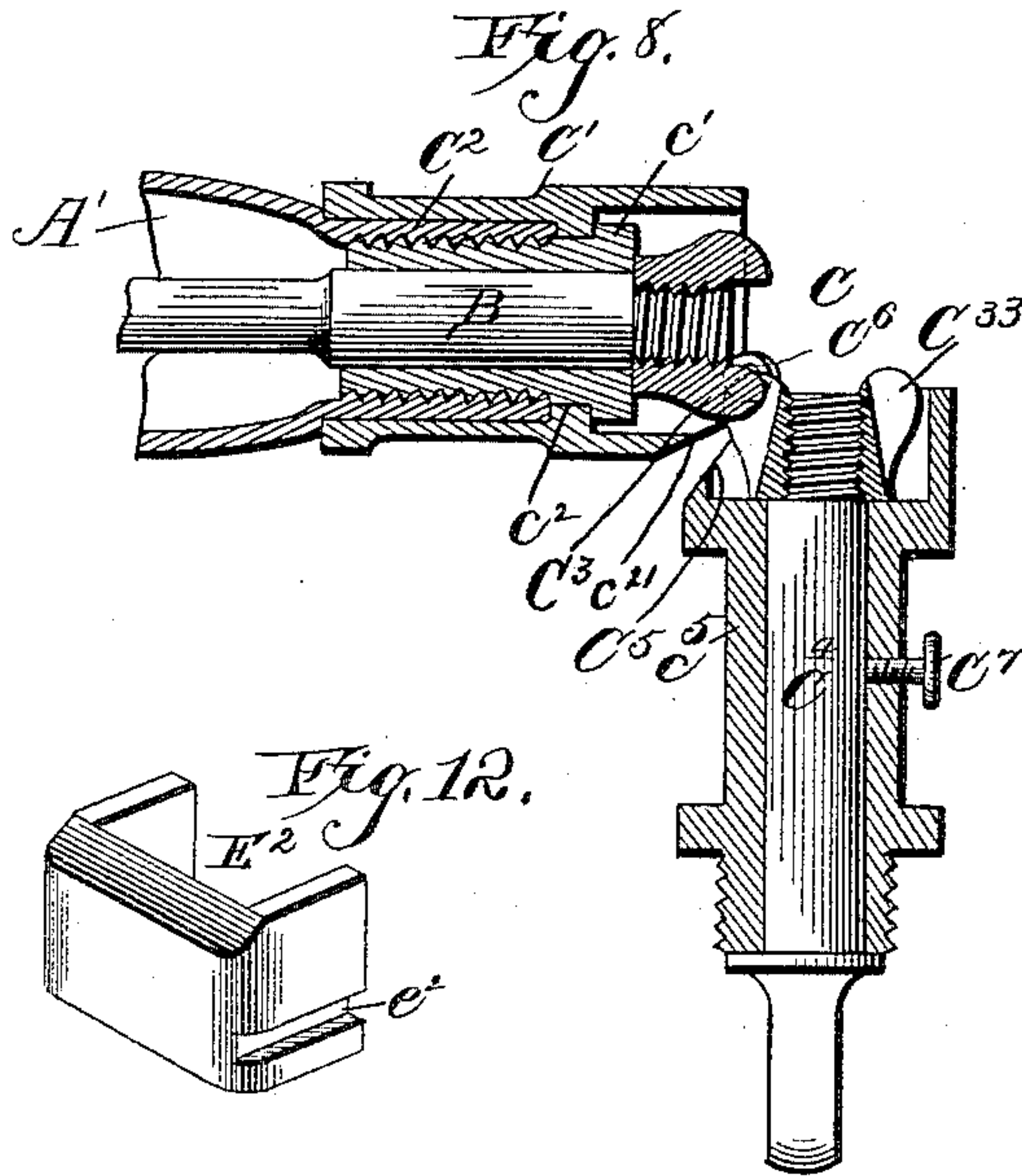
(No Model.)

3 Sheets—Sheet 3.

W. RYLEY.
SHEEP SHEARING MACHINE.

No. 442,239.

Patented Dec. 9, 1890.



Witnesses
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Thomson Cross

Inventor
William Ryley
per Harry M. Atty

UNITED STATES PATENT OFFICE.

WILLIAM RYLEY, OF SOUTH YARRA, VICTORIA, ASSIGNOR TO THE WOLSELEY SHEEP-SHEARING MACHINE COMPANY, LIMITED, OF SYDNEY, NEW SOUTH WALES.

SHEEP-SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,239, dated December 9, 1890.

Application filed January 31, 1888. Serial No. 262,583. (No model.) Patented in Victoria June 8, 1887, No. 5,115; in South Australia June 13, 1887; in New Zealand June 27, 1887, No. 2,395; in England July 26, 1887, No. 10,422; in New South Wales August 2, 1887, No. 13, and in Queensland September 26, 1887, No. 290.

To all whom it may concern:

Be it known that I, WILLIAM RYLEY, engineer, a subject of the Queen of Great Britain, residing at No. 6 Wilson Street, South Yarra, in the British Colony of Victoria, have invented certain new and useful Improvements in Sheep-Shearing Machines, (for which I have obtained a patent in the British Colony of New Zealand, No. 2,395, dated June 27, 1887, and for which my assignees, The Australian Electric Company, Limited, whose registered office is at Sandridge Road, South Melbourne, in the said British colony, have obtained Letters Patent in the following British colonies, viz: Victoria, patent dated June 8, 1887, No. 5,115; New South Wales, patent dated August 2, 1887, No. 13; Queensland, patent dated September 26, 1887, No. 290, and for which the said company filed an application for patent in the British Province of South Australia June 13, 1887; that under the laws governing the grant of patents in said Province the Letters Patent will bear date as of the day of filing, and that up to the present time the patent on said application filed in said Province has not been granted, therefore the number thereof cannot be given, and for which my agent, H. E. Newton, of 6 Bream's Buildings, Chancery Lane, London, England, patent agent, filed an application for Letters Patent in his name as a communication from my assignees, the said The Australian Electric Company, Limited, in Great Britain, July 26, 1887, No. 10,422; that under the laws governing the grant of patents in Great Britain the Letters Patent will bear date as of the day of filing, and that up to the present time the patent on said application filed as aforesaid has not been granted,) of which the following is a specification.

Referring to the accompanying drawings, Figure 1 is a top plan view, and Fig. 2 a longitudinal axial section, of a sheep-shearing machine constructed according to this invention. Fig. 3 is a top plan view of the forward end of the apparatus, the top plate of the casing being removed. Fig. 4 is a bottom plan view of Fig. 3. Fig. 5 is a side elevation

of the actuating-lever for the reciprocating comb or cutter. Fig. 6 is a section taken on line *a a* of Fig. 5. Fig. 7 is an end view of the balanced crank on the operating or driven shaft. Fig. 8 is a view similar to Fig. 1 of the handle end of the apparatus, showing the swiveled gear and driving-shaft turned at right angles to the driven shaft. Fig. 9 is an under side view of the handle end and driving-shaft. Figs. 10 and 11 are isometric views of the lever shown in Fig. 5; and Fig. 12 is a like view of the bearing in which works the crank-roller of the operating-shaft.

The invention relates to sheep-shears, and more especially to the class of shears adapted to be operated by power through the medium of a revolving power-shaft.

The invention consists in mechanism for converting the rotary motion of the driven shaft into a reciprocating motion and for imparting such motion to the movable cutter or comb, in means for regulating the pressure of said movable cutter or comb upon the stationary cutter or comb, and in details of construction and combinations of parts substantially as hereinafter fully described, and as set forth in the claims.

In the drawings, A indicates the casing of a suitable construction to contain the operating mechanism, said casing being provided with a removable cover A^3 , secured thereto by means of screws A^6 and A^7 , the screws A^7 being screwed up from the bottom of said casing, as shown in Figs. 3 and 4, while the screw A^6 is screwed in from the top and takes into a rear vertical wall of such casing, as shown in Fig. 2.

The casing A has a bearing for the front end of the operating shaft or spindle and a handle A' extending from said bearing, the rear end of which is cylindrical and screw-threaded interiorly for the reception of a bushing C^2 , that forms the bearing for the rear end of said shaft B. Upon the cylindrical portion a' of the handle A' is loosely mounted a sleeve C' , that has an annular rib formed within its bore, that fits against the outer face of the cylindrical portion a' of handle A' , and the bushing C^2 has at its rear end

an annular flange c^2 , that bears against the rear face of rib c' on sleeve C' to hold the latter against endwise motion, without, however, interfering with the rotation of said sleeve on the handle end. The rear end of the sleeve C' is partly cut away, as shown at c^{21} , Figs. 2, 8, and 9, for purposes presently explained. The rear end of the operating-shaft B is screw-threaded for the reception of a pinion C^3 , whose teeth are rounded, as shown in Figs. 2 and 8, and with said pinion meshes a pinion C^{38} on the end of a short driving-shaft, to which the flexible shaft is connected in any usual or preferred manner, and which I have deemed unnecessary to show. The short shaft C^4 carries a sleeve C^5 , the said sleeve C^5 having, like sleeve C' , a portion cut away at its front end, as shown at c^5 . The two sleeves are hinged or pivoted together, as shown at C^6 , Figs. 1 and 9, so that the sleeve C^5 and shaft C^4 may assume any inclination relatively to shaft B, from a horizontal to a right angle, without throwing the pinions out of gear. By means of this arrangement the core of the flexible driving-shaft may be connected with the short shaft, while the outer flexible covering for said shaft is or may be attached to the outer screw-threaded end c^6 of the sleeve C^5 . The shaft C^4 is lubricated through a hole closed by a screw-plug c^7 . The hollow handle has a screw-threaded opening, also closed by a screw-plug A^9 , for the introduction of a lubricant.

As shown in Fig. 2, those portions of the shaft B that revolve in bearings are of increased diameter, the handle tapering from its center to its ends, thus forming a reservoir for a considerable volume of lubricating-oil, thereby avoiding frequent lubrication of the said shaft. At its forward end the shaft carries a balanced crank D, on the pin of which is loosely mounted a roller D^2 of hard steel, the pin D' being screwed to the crank, so that the roller may be readily removed when worn and another substituted. The portion d of crank D, Fig. 7, is of such weight as to counterbalance the crank-pin D' and roller D^2 , thus avoiding any undue wear of the shaft. The roller D^2 works in a rectangular bearing E^2 , Figs. 2, 3, 5, 6, 10, and 12, that is detachably connected with the vibrating lever E by means of a tongue-and-groove joint E^3 and e^2 , respectively. (See Fig. 6.) At its rear end the lever E has a fulcrum-pin E' stepped loosely in a step formed in that portion of the casing in which the front end of the driving-shaft has its bearings. The forward end of the lever is forked, the branches of the fork projecting out of the casing through a slot A^8 , Fig. 2, and each arm is provided on the under side of its outer end with a lug or pin E^4 , that takes into a hole or bearing in the reciprocating cutter or comb F.

Between the arms of the forked portion of the lever E is secured a flat spring E^5 , that projects outwardly from said lever and has

on the under side of its free end a lug or pin e^5 , that also takes into a hole or bearing in the reciprocating cutter or comb F and holds the said comb with a yielding pressure on the stationary comb H, that is secured to the under side of the casing by means of screws H' , that pass through elongated slots h' , formed in said cutter, and shown in dotted lines in Fig. 3, so as to admit of adjustment of the comb H relatively to comb F.

The degree of pressure exerted by the comb F on the comb H may be adjusted with great nicety by means of the following devices: A hard-steel step E^7 is detachably seated in the lever E in front of that portion of said lever to which the bearing E^2 is connected. In the cover A^3 of the casing A is formed a screw-threaded opening for the reception of an adjusting-plug A^2 , that has a socket or recess a^2 and is provided with a milled or toothed head A^4 , and is held against rotation by the toothed end of a spring A^5 , secured to cover A^3 , so that it is necessary to disengage the spring from the milled head before the plug can be screwed in or out. The under face of the screw-plug A^2 is perfectly flat and bears against the head of a hard-steel cone-shaped pin G, the upper face G' of which head is a segment of a sphere, the corresponding lower end G^2 of said pin being stepped in the step E^7 on lever E, heretofore referred to.

It is obvious that by screwing the plug A^2 in or out the pressure of the cone-shaped pin G on the lever E will be greater or less, and consequently the pressure of the reciprocating comb on the stationary comb. In view of the construction of the pin referred to, the lever is free to vibrate without varying the pressure on the lever by reason of the change of position of the pin G as it vibrates. The head and foot of pin G being segments of a sphere, the one bearing against a plane surface and the other against a corresponding concave face, the length of the plane of pressure from the socket to the step through the pin G will not vary with the vibrations or deviations of the pin from a line perpendicular to the lever E, which would necessarily be the case with any other construction of pin and bearing-surfaces.

It will be observed that all the parts liable to speedy wear are not only made of hard steel, but are either loosely or detachably connected, as described in respect of the crank-roller D^2 , the bearing E^2 , in which it works, the pin G, and step E^4 . Finally, the lever E, as set forth, has no fixed fulcrum, nor is the cutter or comb F rigidly connected with said lever, so that on removing the cover A^3 of casing A the lever E, comb F, and pin G can be taken out individually, while by unscrewing pinion C^3 and removing crank-roller D^2 the shaft B can be drawn out through the front of the casing—a great advantage over the usual construction of shears of this class.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In sheep-shears, the means for regulating the pressure between the cutters or combs, consisting of the combination, with a lever connected with the top cutter and adapted to impart a reciprocating motion thereto, and a loose step-fulcrum for the lever, of a cone-shaped pin stepped loosely on the lever, the bearing-surfaces of said pin being segments of spheres, and an adjusting-screw having a flat surface bearing on the head of the pin, substantially as and for the purposes specified.

2. The combination, with the crank-spindle B, provided with a roller on its crank-pin and a weight for counterbalancing said roller, of the lever E, provided with a rectangular bearing E², in which works the crank of said spindle, said bearing being detachably connected with the lever, substantially as and for the purpose specified.

3. The combination, with the crank-spindle B, provided with a roller on its crank-pin, said roller being detachably connected with the spindle, of the lever E, provided with a rectangular bearing E², in which works the crank of said spindle, said bearing being detachably connected with the lever, substantially as and for the purposes specified.

4. The combination, with the crank-spindle B, provided with a roller D² on its crank-pin, and the movable cutter F, of the forked lever E, having a fulcrum stud or journal stepped in a step in rear of the crank of the spindle and in the axial plane thereof, and being provided with a rectangular bearing in which works the crank of the spindle, and lugs or journals E⁴ on said lever fitting into holes or bearings in the movable comb, substantially as and for the purposes specified.

5. The combination, with the casing provided with a screw-threaded opening, an adjusting-screw working in said opening and having a socket formed in its under side, a lever stepped loosely in a bearing of the casing and adapted to be reciprocated, and the top cutter connected with the lever, of the pin G, having its bearings in the socket of the screw and in a step of the lever, substantially as and for the purposes specified.

6. The lever E, provided with the removable bearing E² and the removable step E¹, substantially as and for the purposes specified.

WILLIAM RYLEY.

Witnesses:

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WALTER CHARLES HART.