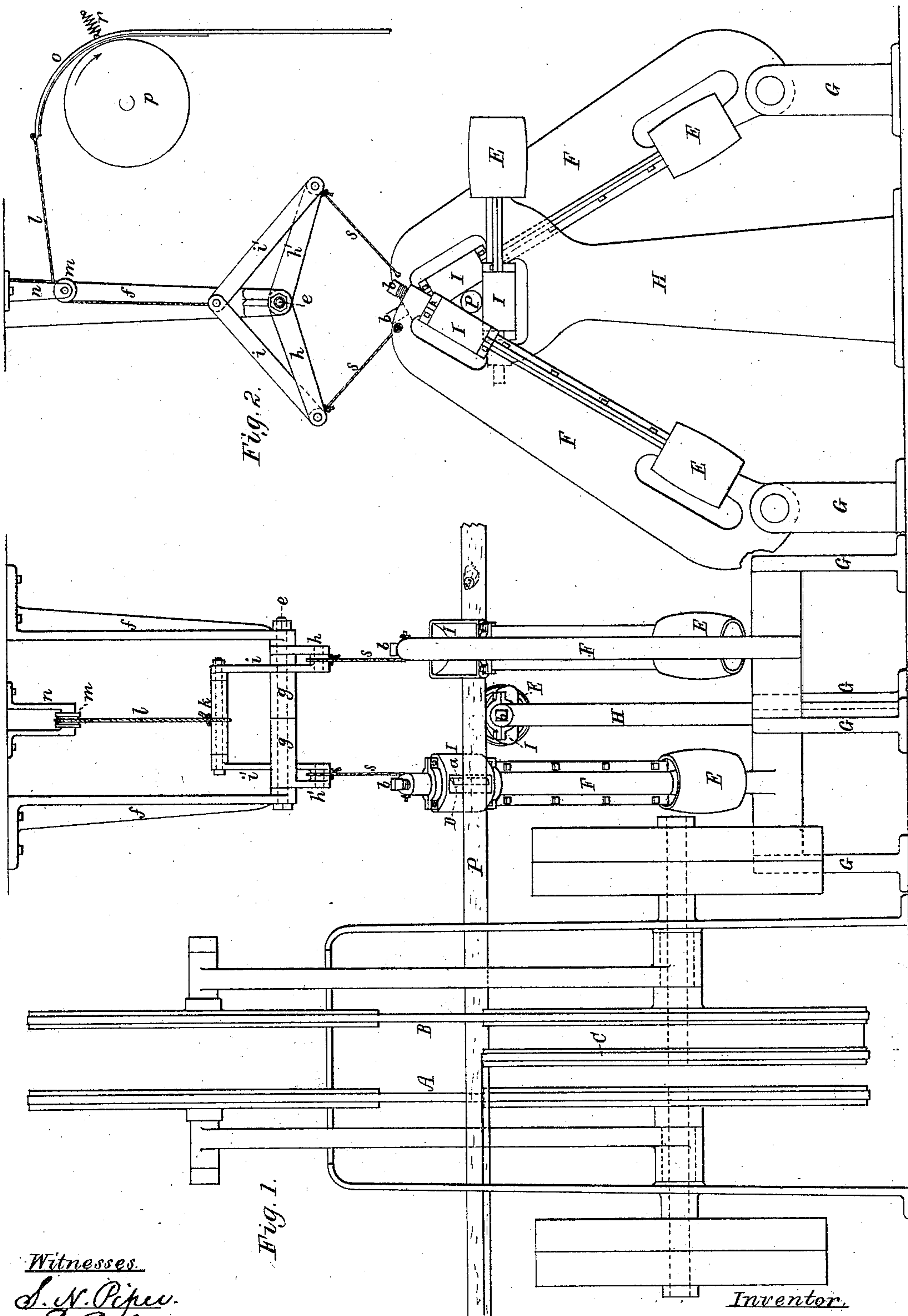


(No Model.)

3 Sheets—Sheet 1.

W. BOWKER.
MACHINE FOR SAWING HOOPS FROM POLES.
No. 286,173. Patented Oct. 9, 1883.



Witnesses.
S. N. Piper.
E. D. Pratt.

Inventor.
William Bowker.
by R. H. Eddy atty

(No Model.)

3 Sheets—Sheet 2.

W. BOWKER.

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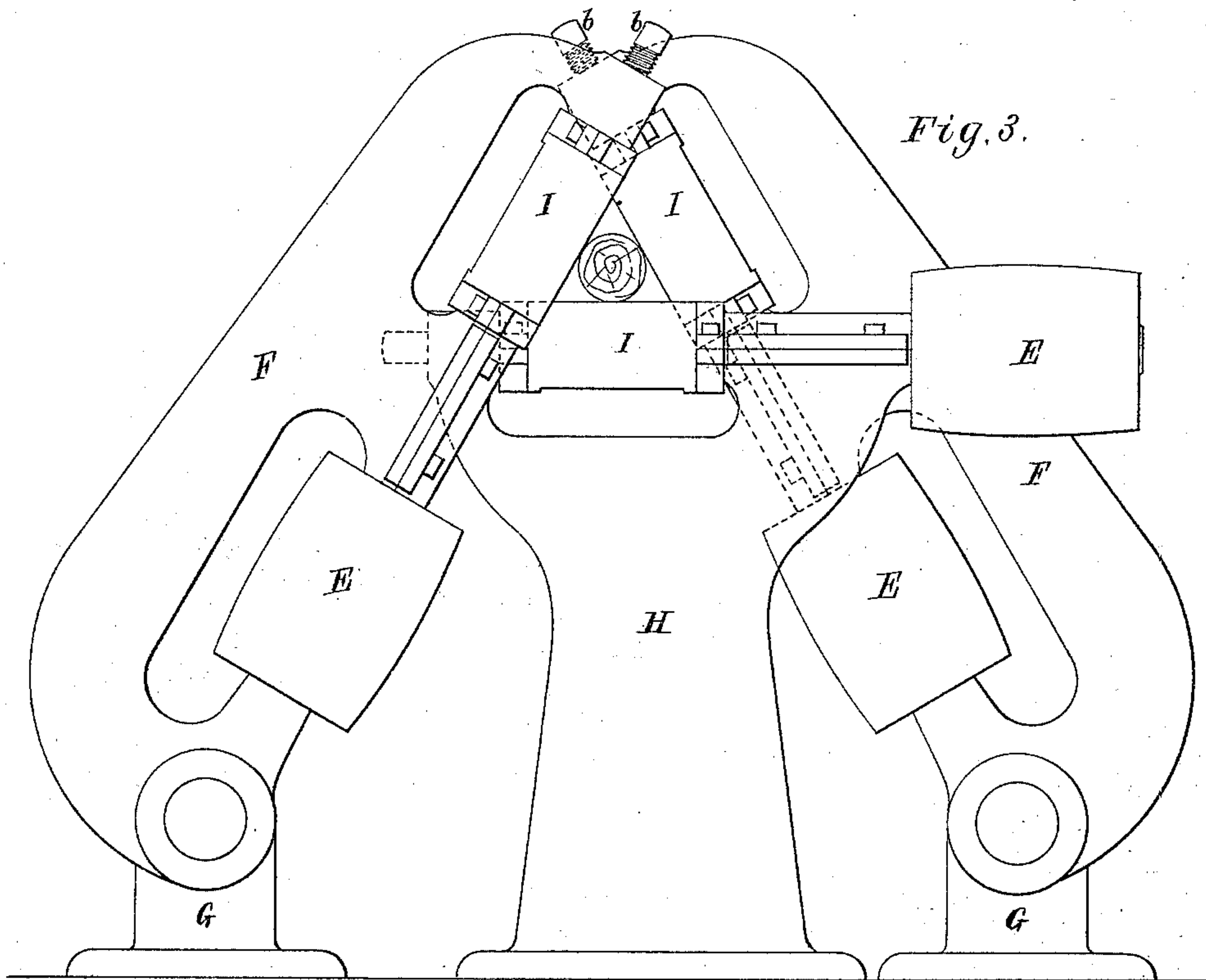


Fig. 4.

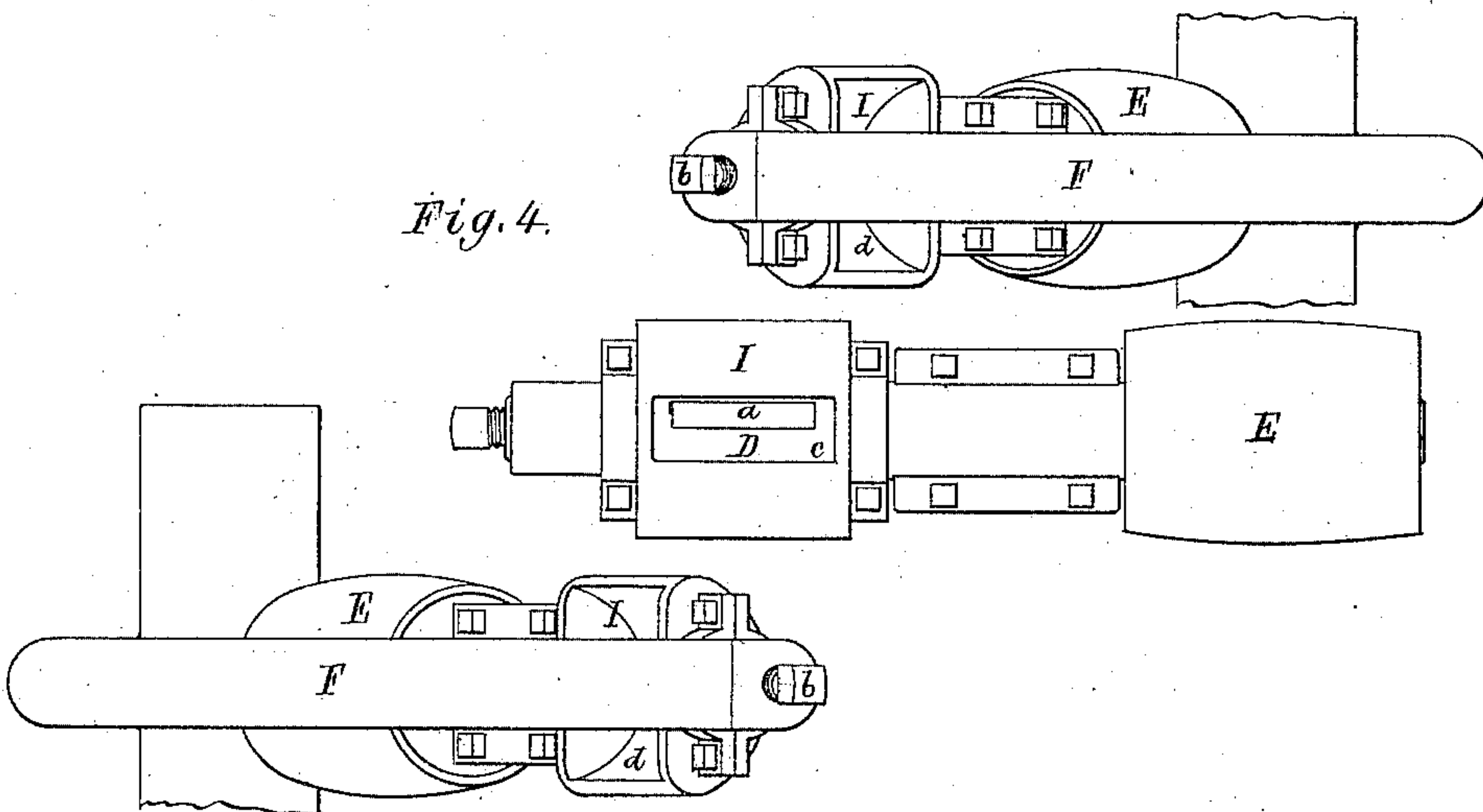
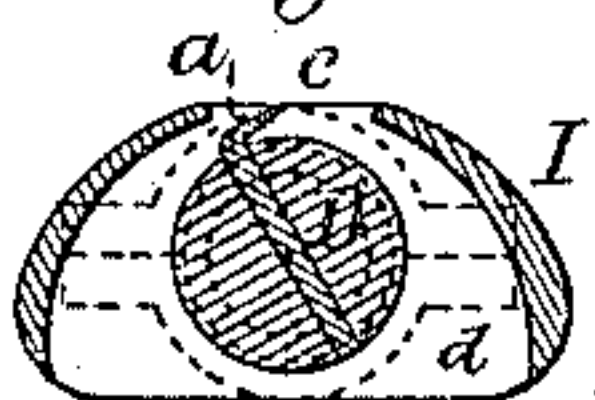


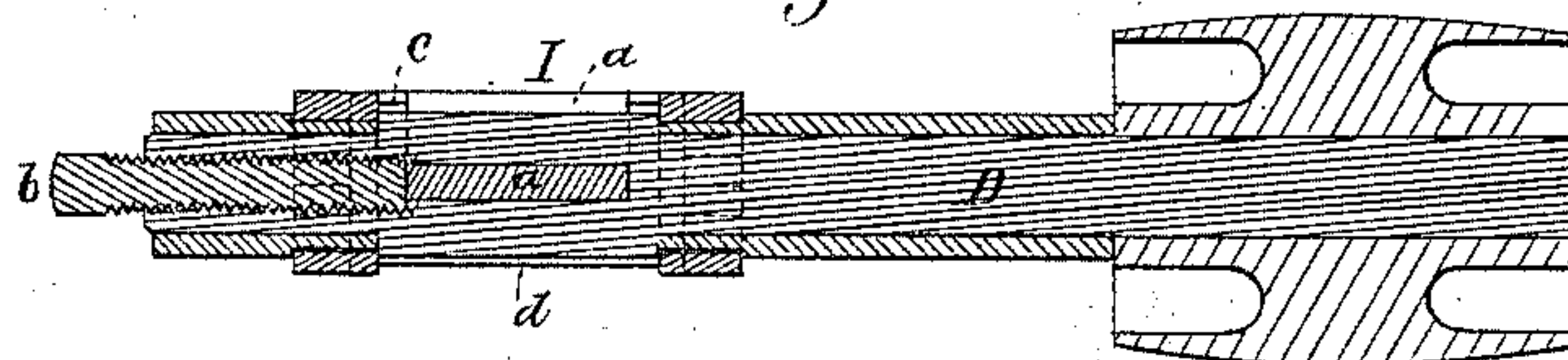
Fig. 6.



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Fig. 5.



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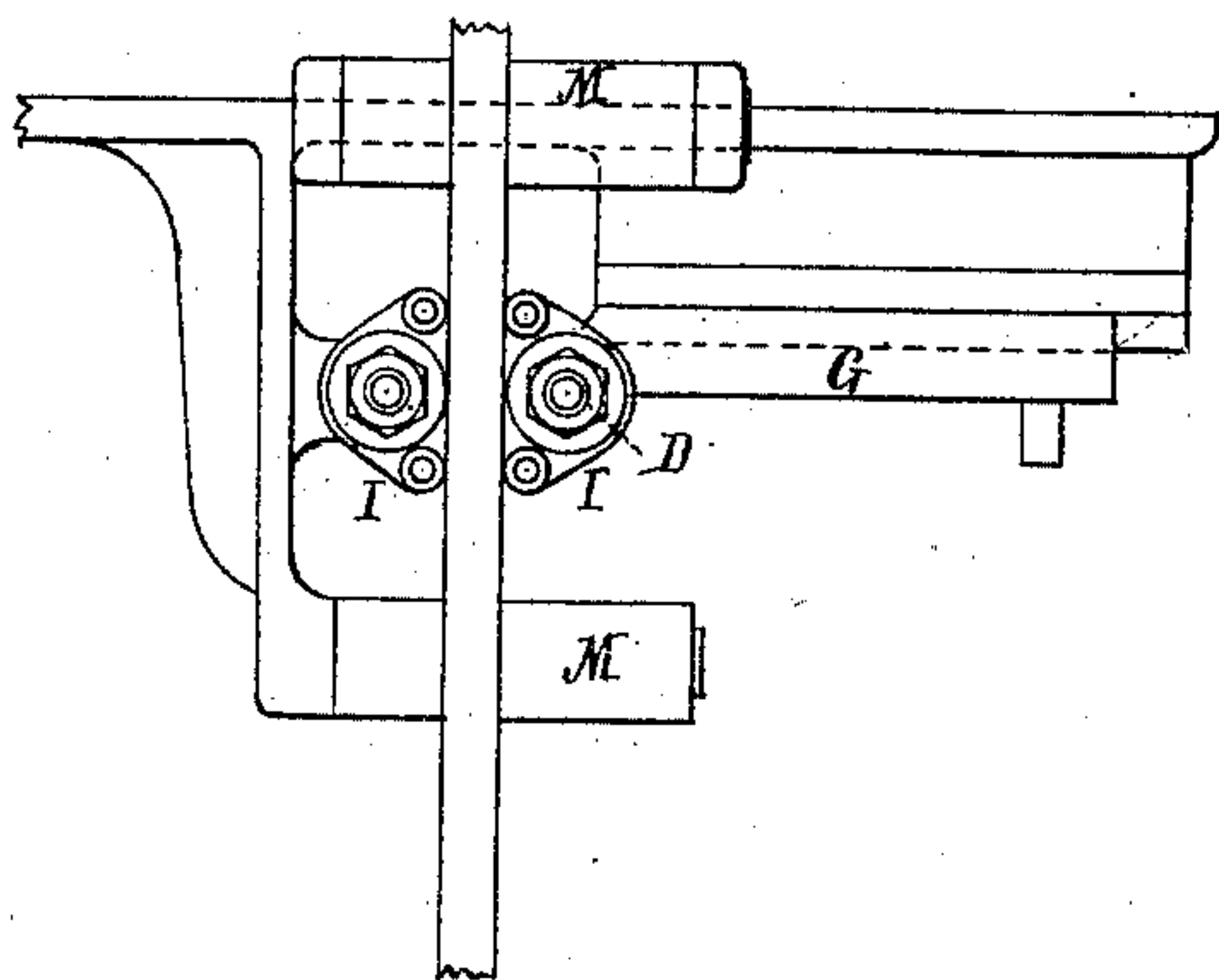


Fig. 7.

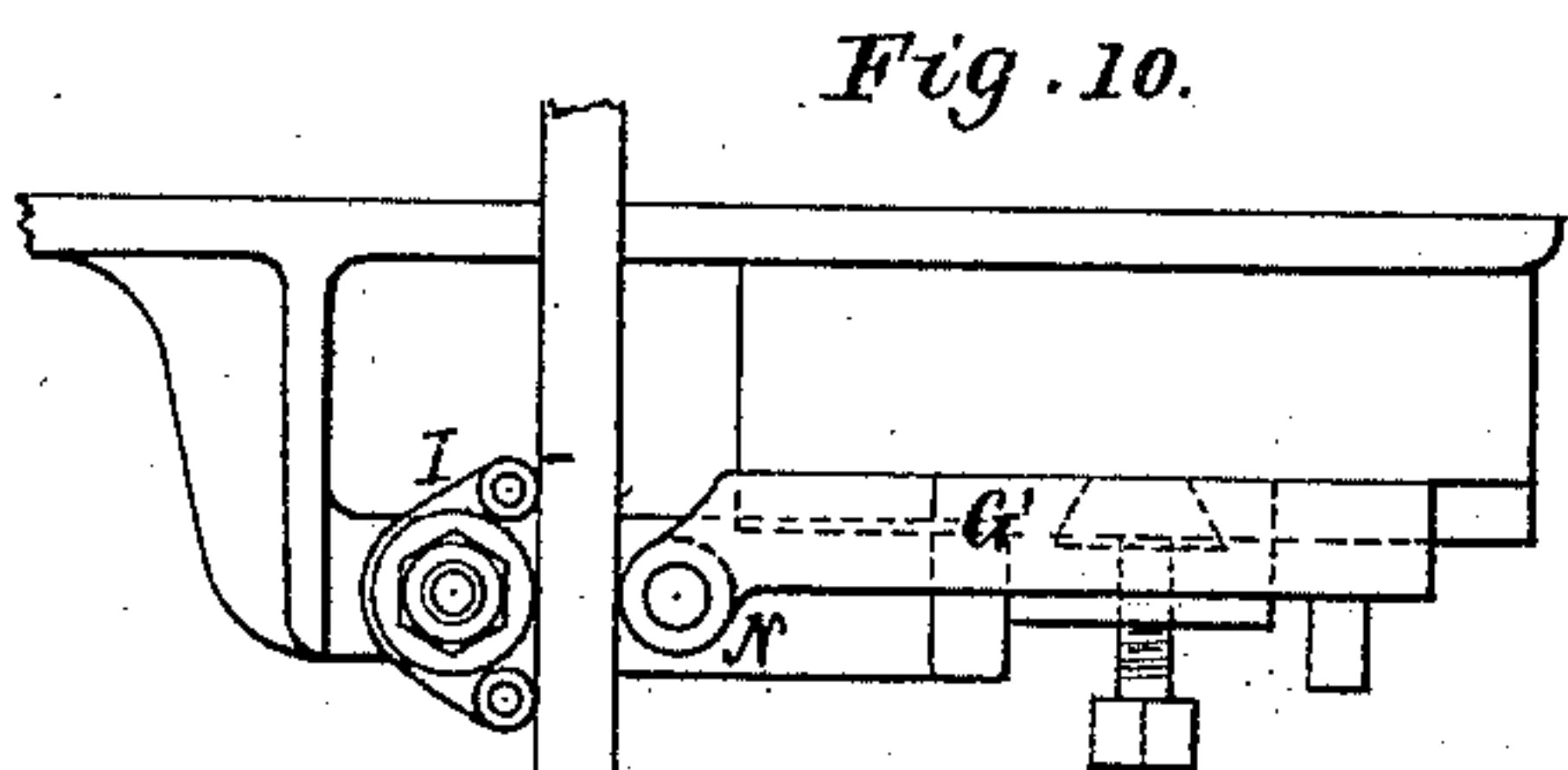


Fig. 10.

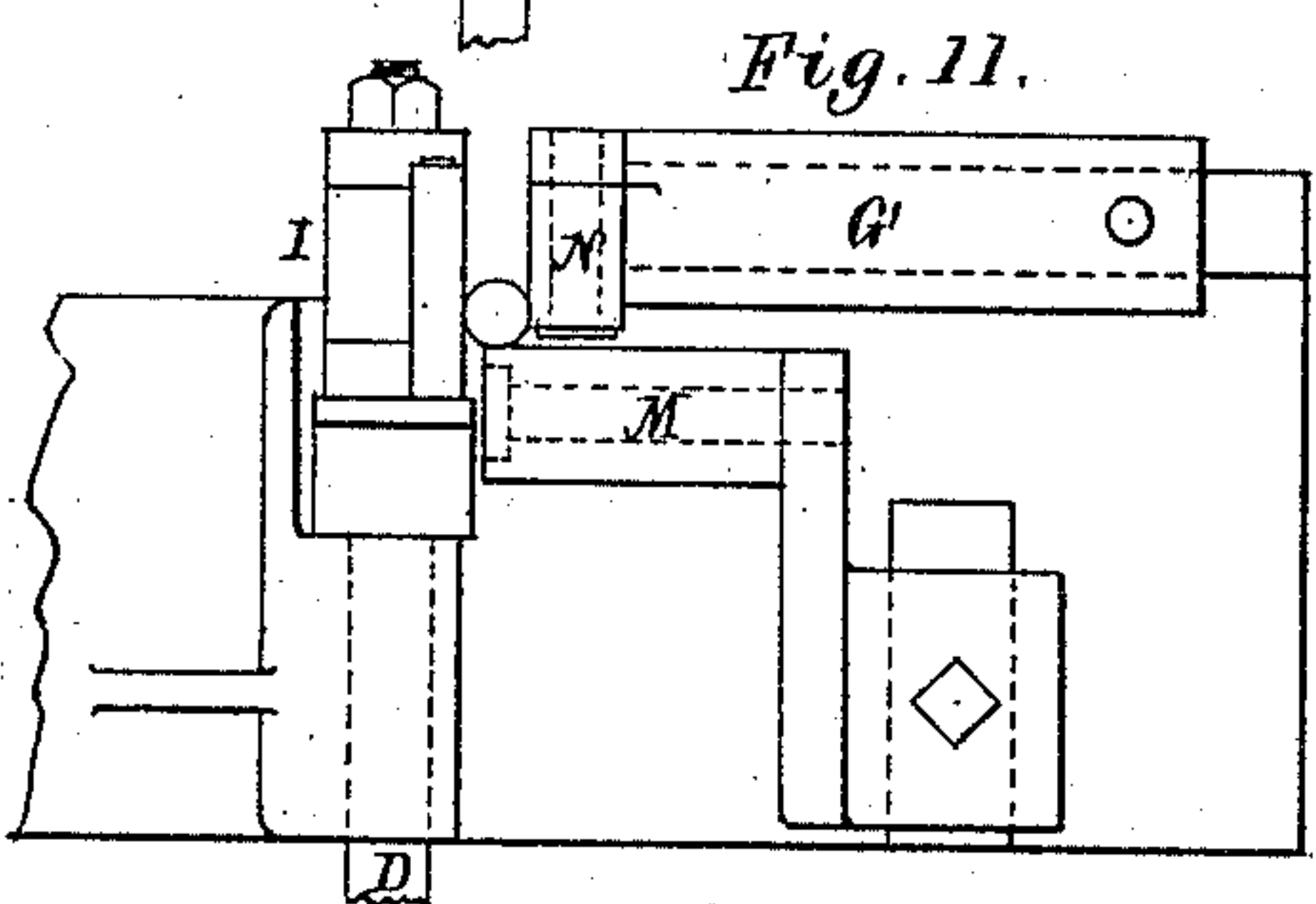


Fig. 11.

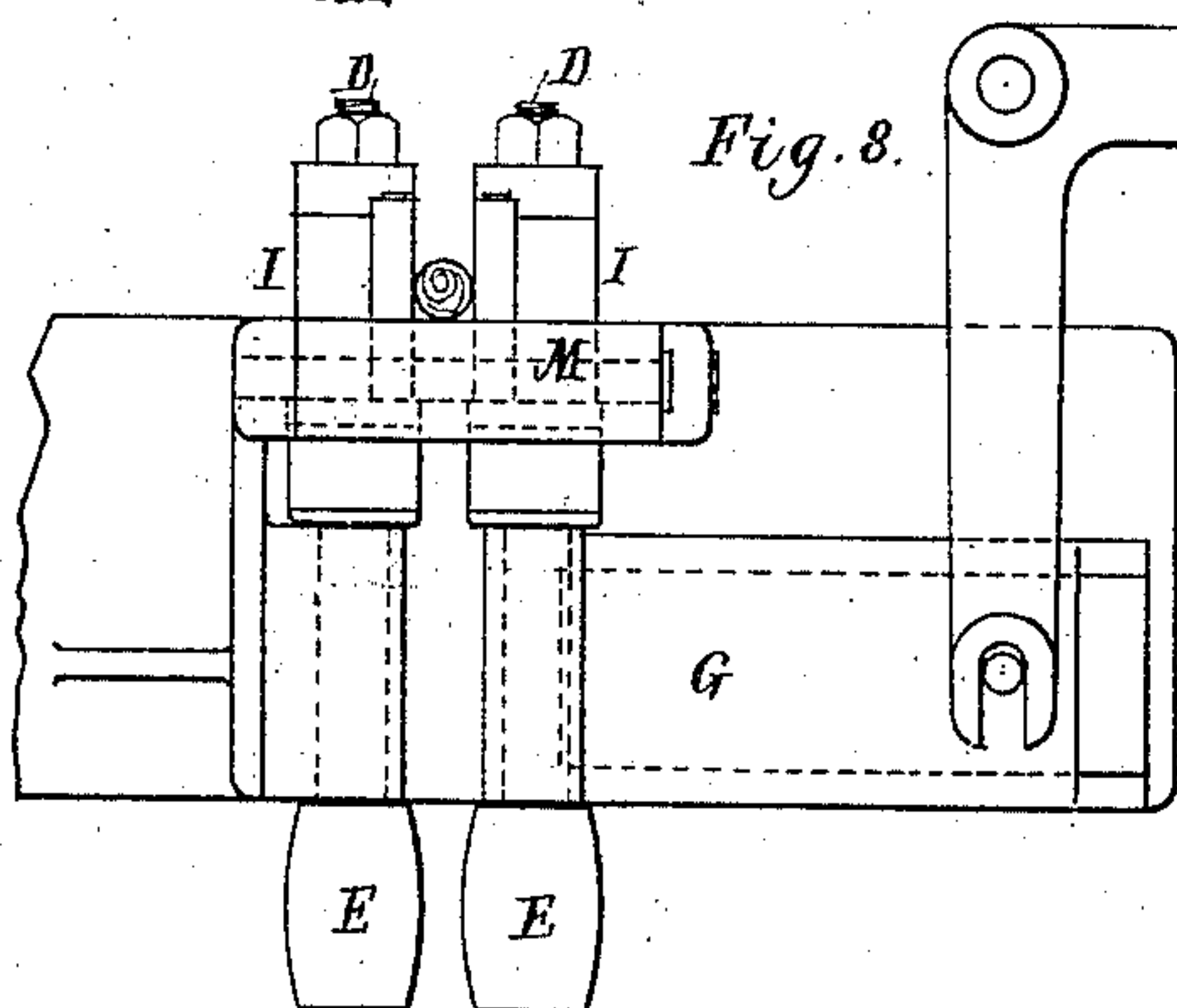


Fig. 8.

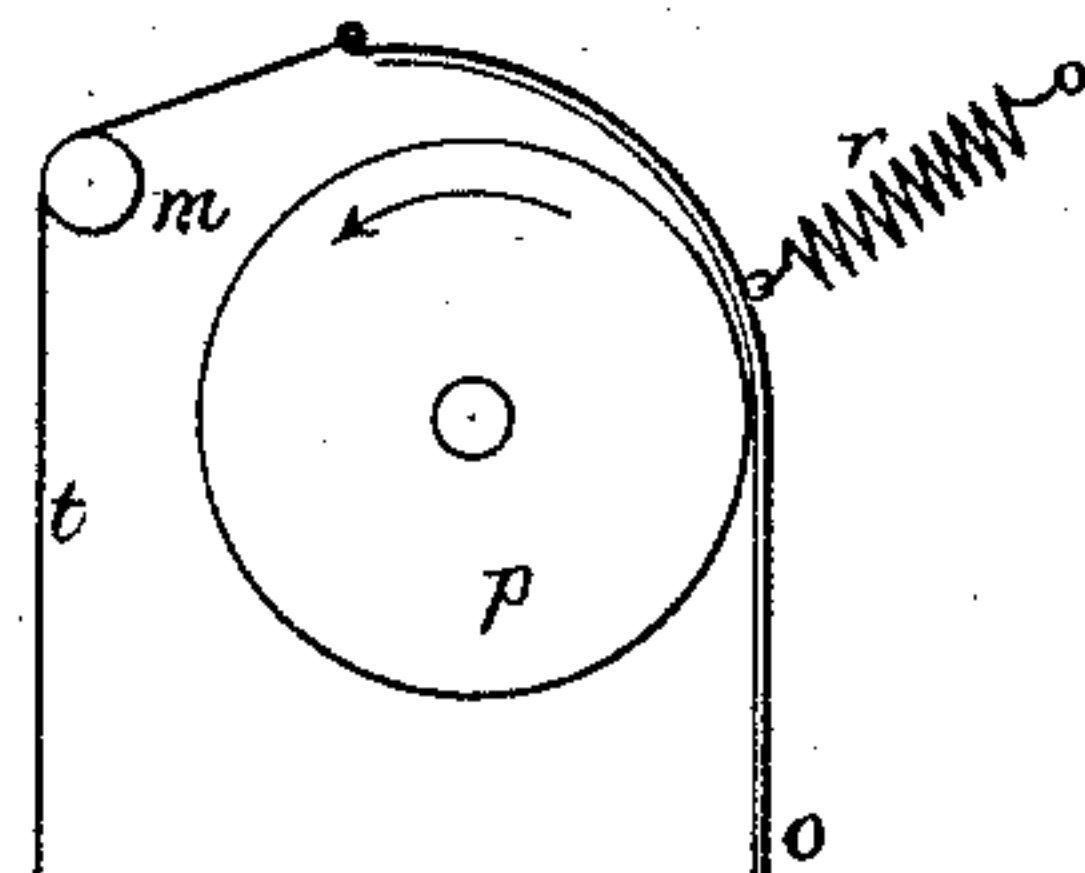
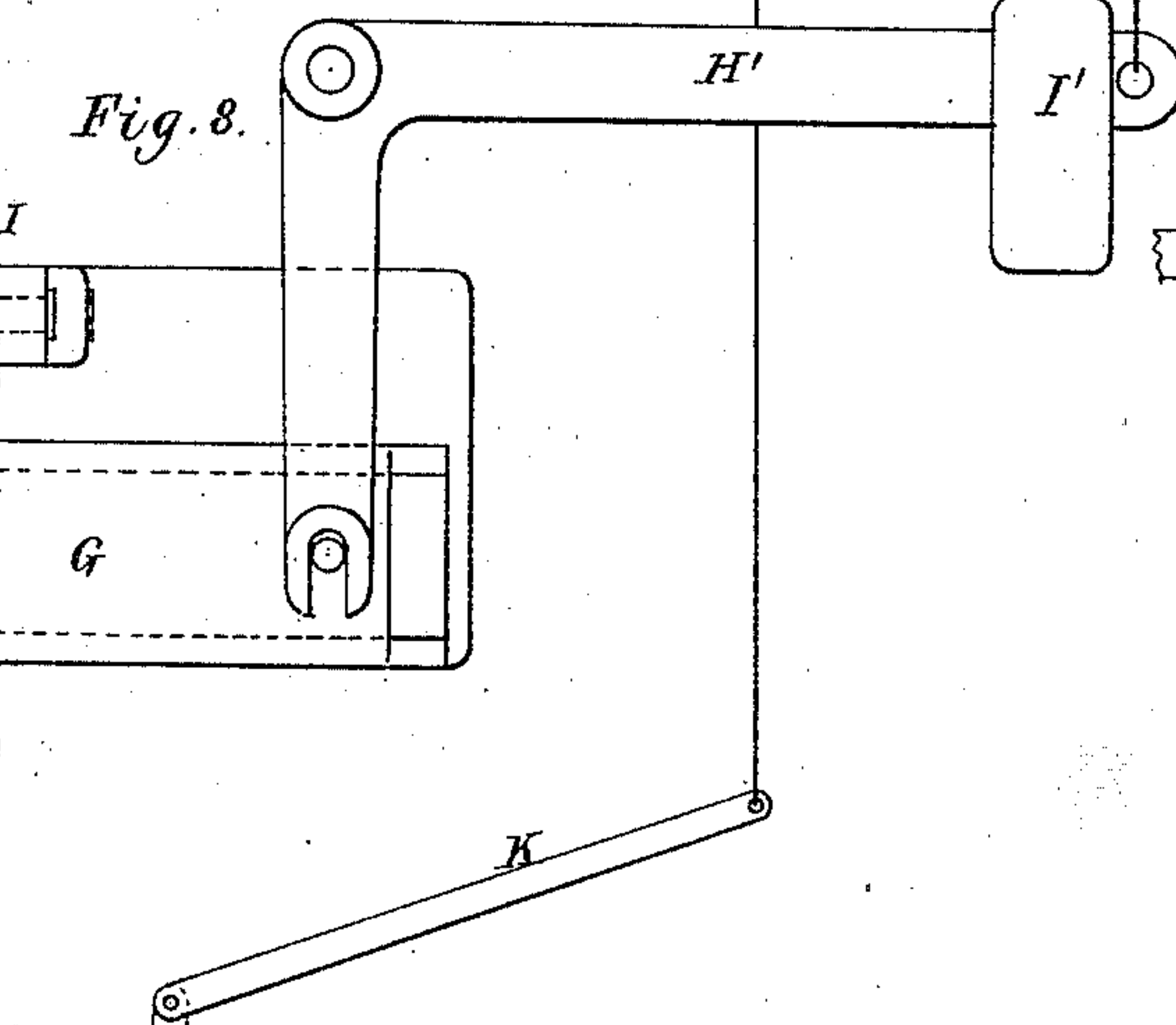


Fig. 9.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM BOWKER, OF SOMERVILLE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF AND ROBERT WILLIAMS, OF BOSTON, MASSACHUSETTS.

MACHINE FOR SAWING HOOPS FROM POLES.

SPECIFICATION forming part of Letters Patent No. 286,173, dated October 9, 1883.

Application filed June 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BOWKER, a subject of the Queen of Great Britain, and a resident of Somerville, in the county of Middlesex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Machinery for Sawing Hoops from Poles and Reducing the Knots thereof; and I do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a side elevation of a machine provided with three endless band-saws for removing three hoops at once from a pole, it also having mechanism for reducing the knots of such pole. Fig. 2 is a front elevation of the mechanism for reducing the knots of the pole, such figure showing the mechanism for moving laterally the cutter-arbors to facilitate the introduction of a pole between them. Fig. 3 is a front elevation of the knot-reducing mechanism, with Fig. 4 below it, representing a top view of such mechanism. Fig. 5 is a longitudinal section; and Fig. 6, a transverse section of one of the knot-cutter arbors, such figure showing the cutter thereof and its vibratory mouth-piece, to be described. Fig. 7 is a top view; and Fig. 8, a front elevation, and Fig. 9 a transverse section, of knot-reducing machinery provided with two cutters and their vibratory mouth-pieces. Fig. 10 is a top view, and Fig. 11 a front elevation, of knot-dressing machinery having but one cutter and its vibratory mouth-piece.

The nature of my invention is duly defined in the claims hereinafter presented, a distinctive feature of it being the vibratory mouth-piece adapted to each cutter-arbor.

In Fig. 1 of the drawings the three band-saws of a hoop-pole sawing-machine are shown at A, B, and C, such mechanism being of the kind described and represented in the United States Patent No. 257,918, granted to me on May 16, 1882. The hoop-pole is exhibited at P.

In front of the sawing-machine are the three cutter-arbors D, each of which is provided with a driving-pulley, E, duly fixed on it. One of these arbors is horizontal and between the others, each of which is inclined at an angle of sixty degrees to the first one, and is sup-

ported in and by one of two arms, F, such arm being at its lower part pivoted to one of two stationary standards, G. The horizontal arbor is supported by a standard, H. Each arbor has extended through and beyond it, transversely of it, a cutter, *a*, (see Figs. 5 and 6,) such cutter being held in place by a set-screw, *b*, screwed into the arbor endwise thereof, and against one edge of the cutter. There is to each arbor and its cutter a chambered vibratory mouth-piece, I, within the chamber *d* of which the cutter, while in operation, revolves, and in revolving projects through the rectangular mouth or slot *c* of such mouth-piece. This mouth-piece, formed in its transverse section as shown in Fig. 6, is pivoted at its ends upon the cutter-arbor, so as to be able to turn or vibrate freely thereon. The hoop-pole in being cut passes against the curved outer surface of the mouth-piece, and at the same time crosses the mouth *c*. In so doing any knot projecting from the pole and carried across the mouth *c* will enter such mouth more or less and be trimmed or cut down or reduced by the cutter, the mouth-piece vibrating or adapting itself to the irregularities in the surface of the pole as the pole may pass along by it to the saws. From the mouth-piece the pole passes endwise to the saws, and by them will be slit, so as to remove three hoops from it, the remaining or central part of the pole being reduced to a long triangular prism, or what is substantially such.

For moving the arms F laterally to facilitate introduction of a pole between the cutters, there is employed with such arms a mechanism which may be thus described: Upon a rod, *e*, sustained by two stationary hangers, *f f*, (see Figs. 1 and 2,) are two tubes, *g g*, the rod going through their bores. From one of these tubes an arm, *h*, extends, as shown, another such arm, *h'*, being extended from the other tube. These arms *h h'* are connected by links *i i'* with a bar, *k*, the links being pivoted to the said bar and arms, and all being as represented. A rope, *l*, passing over a guide-pulley, *m*, supported in a hanger, *n*, is attached at one end to the bar *k* and at the other to the end of an elastic band, *o*, of steel, arranged with reference to a rotative pulley, *p*, in manner as shown. This band,

on its side next the periphery of the pulley, should be faced with leather or some other suitable material, and there should be a spiral spring, *r*, connected with the band, to draw it
 5 out of contact with the pulley, which in revolving will move the band so as to pull upward the links *i i'* and the arms *h h'*, the links at their junctions with the said arms being connected with the arms *F F* by cords *s s*. In rising the arms *h h'* will draw the arms *F F* in
 10 opposite directions relatively to each other, and thereby cause the mouth-pieces *I I* to be so moved.

In Figs. 7 and 8 one of the cutter-arbors *D*
 15 *D* is shown as supported in a slide, *G'*, to which a knee-lever, *H'*, is adapted, as shown. On the longer arm of such lever is a sliding weight, *I'*. Above the said arm of the lever is a rotative pulley, *p*. An elastic band, *o*, extends
 20 up from the arm to the said pulley, as shown. A spiral spring, *r*, serves to draw the band away from the pulley. At its upper end the band has a rope, *t*, extending from it over a pulley, *m*, and to a pedal, *K*, all being arranged
 25 as shown. On depressing the pedal the band *o* will be drawn into contact with the pulley *p*, which, in revolving in the direction denoted by the arrow thereon, will so act on the band as to cause it to move the lever *H'* in a man-
 30 ner to move the slide *G'*, and thereby move its cutter-arbor away from its fellow arbor. The object of having the elastic band movable off the pulley is to prevent the pulley, which is

to be supposed to be in constant revolution, from acting on the band to wear it or move it 35 improperly.

In Figs. 7 and 8 the vibratory mouth-pieces of the cutters of the two arbors are shown at *I I* as having in front, as well as in rear of them, a horizontal guide-roll, *M*, to support 40 the pole while being passed between the said mouth-pieces.

In Figs. 10 and 11 but one arbor *D* is shown as having aside of its vibratory mouth-piece *I* a vertical guide-roll, *N*, and below such a 45 horizontal guide-roll, *M*. The roll *N* is represented as sustained by a slide, *G'*, which is to be supposed to be provided with appliances, as shown in Fig. 8, and lettered *H'*, *I'*, *o*, *r*, *p*,
 50 *m*, *t*, and *K*.

I claim—

1. In a hoop-sawing machine, one or more knot-cutters and their inclosing vibratory mouth-pieces, in combination with one or more 55 saws, the whole being arranged as set forth.

2. The two vibratory arms *F F*, provided with cutter-arbors, and the knot-cutters and their inclosing vibratory mouth-pieces adapted to the arbors, in combination with means, such as described, for moving the arms in opposite 60 ways, as set forth.

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Witnesses:

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 E. B. PRATT.