

(No Model.)

2 Sheets—Sheet 1.

E. HUGHES & B. F. WILLIAMS.

FENCE MACHINE.

No. 406,912.

Patented July 16, 1889.

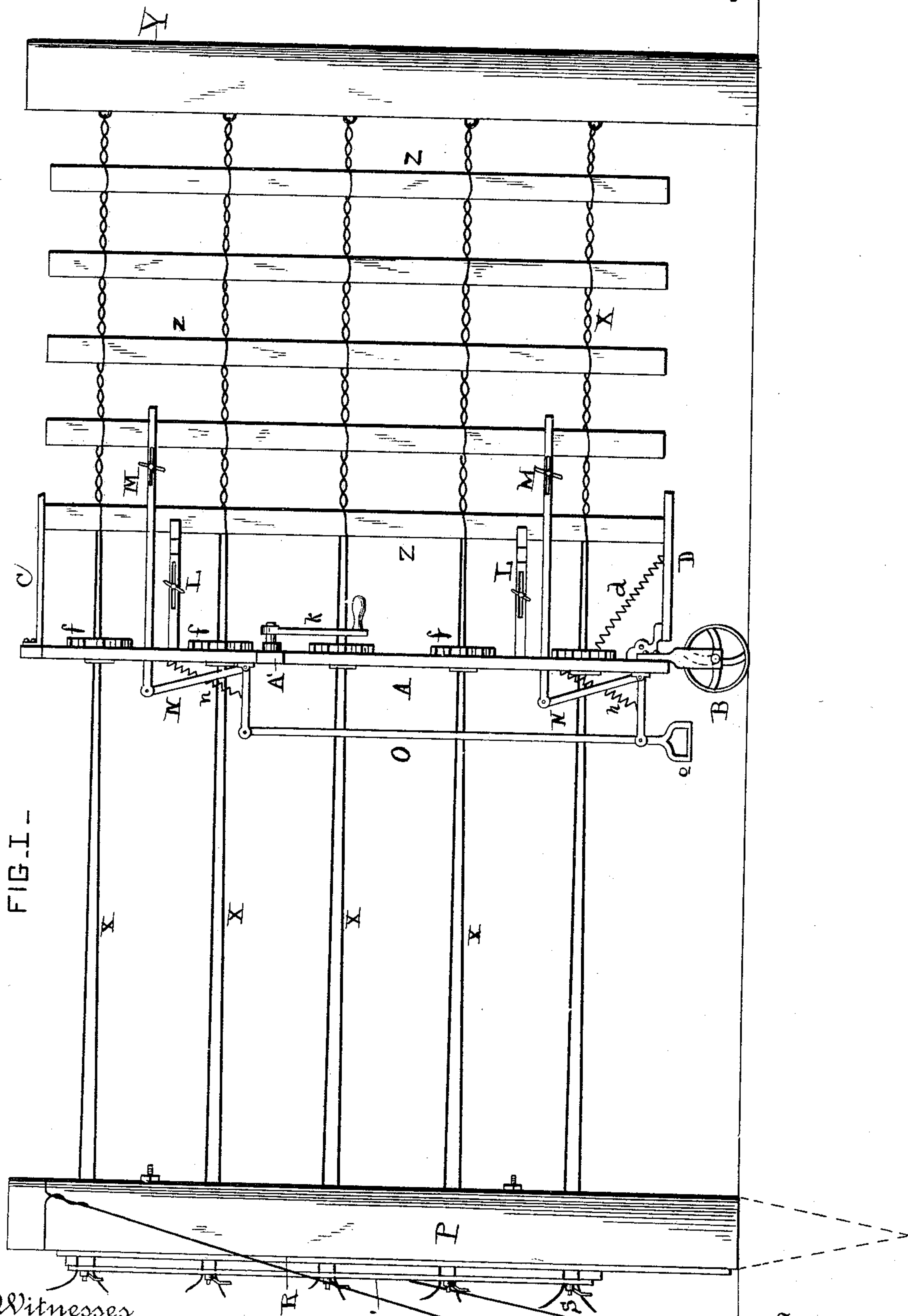


FIG. I.—

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By their Attorneys

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FIG II.

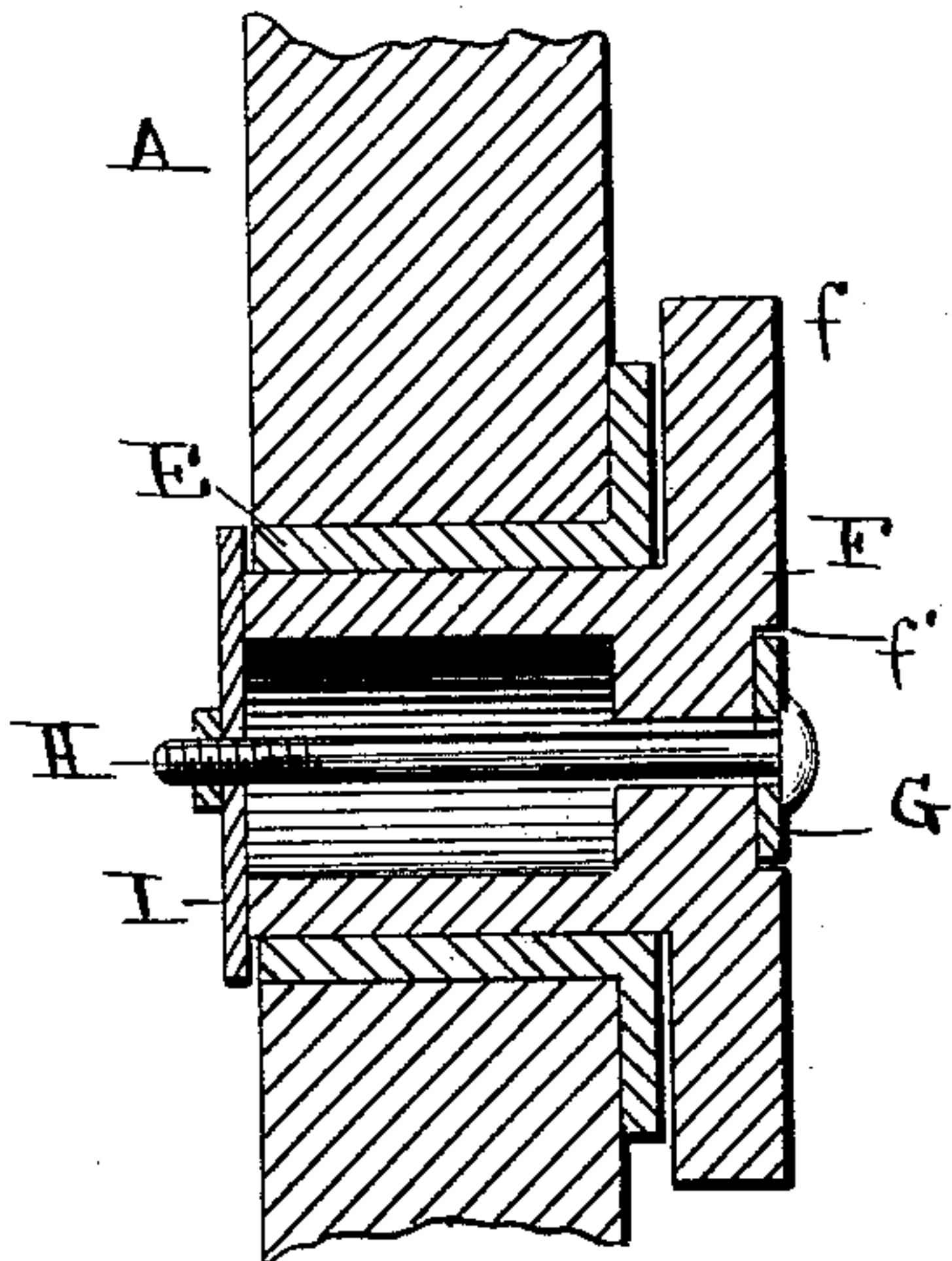


FIG III.

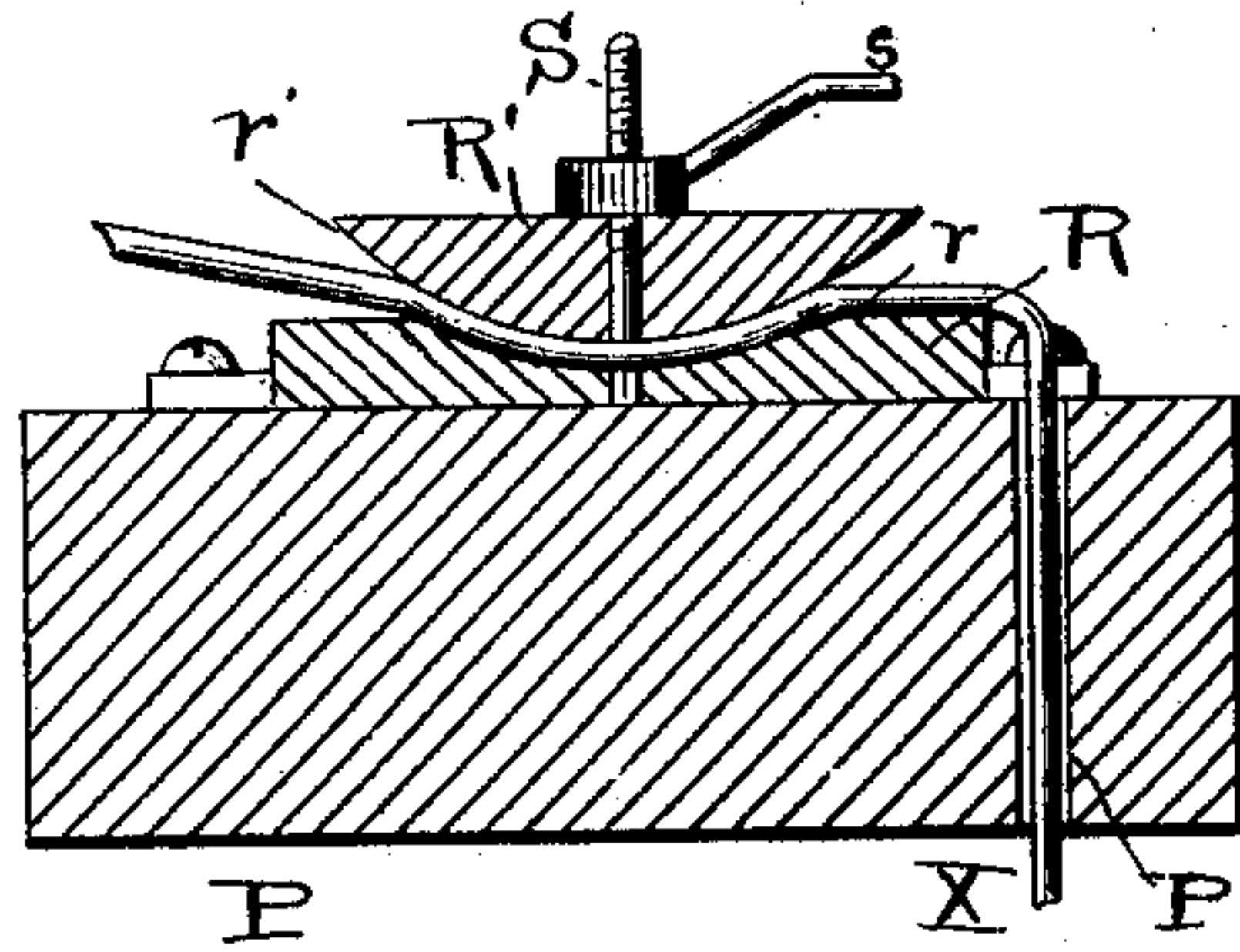


FIG V.

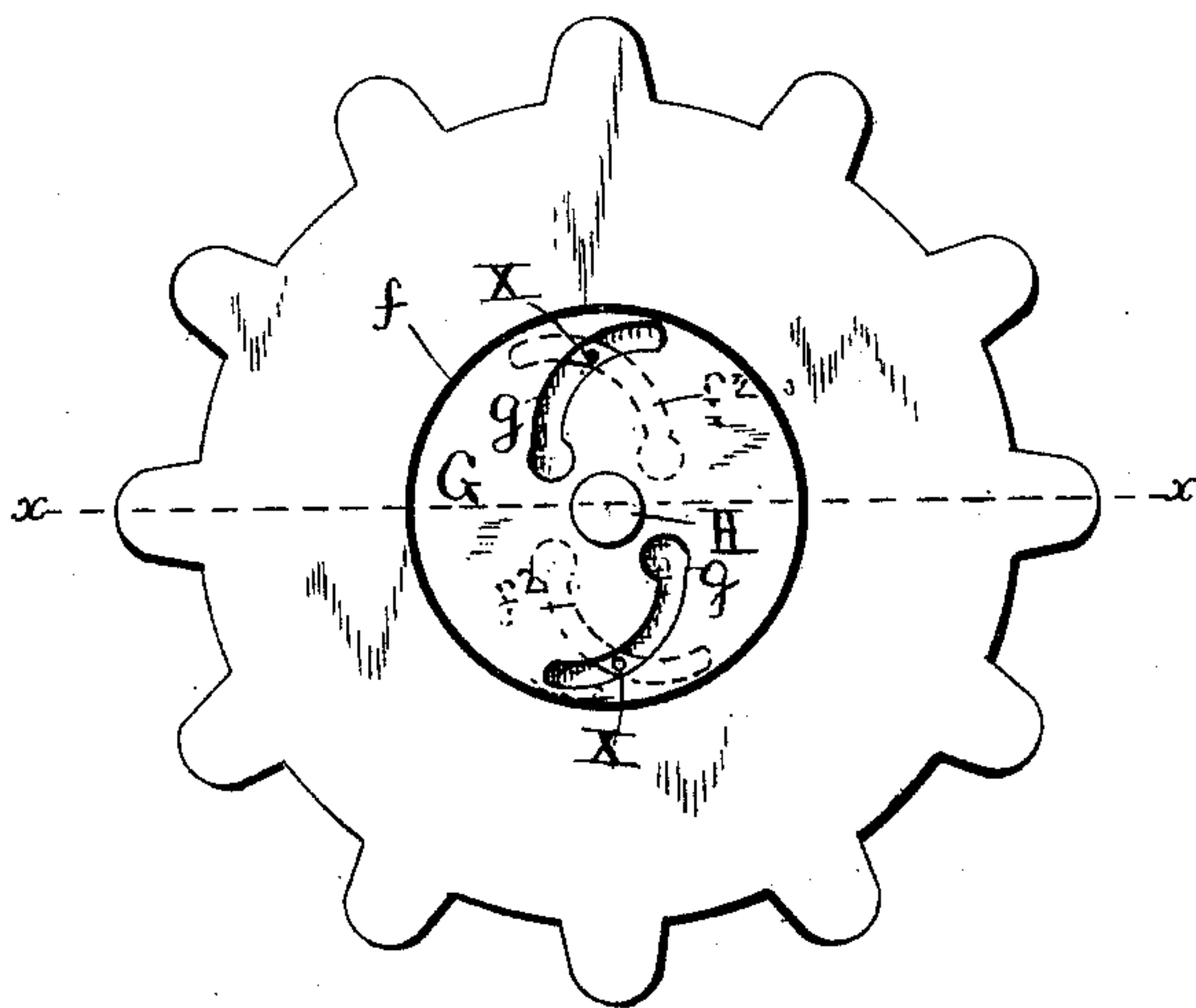


FIG IV.

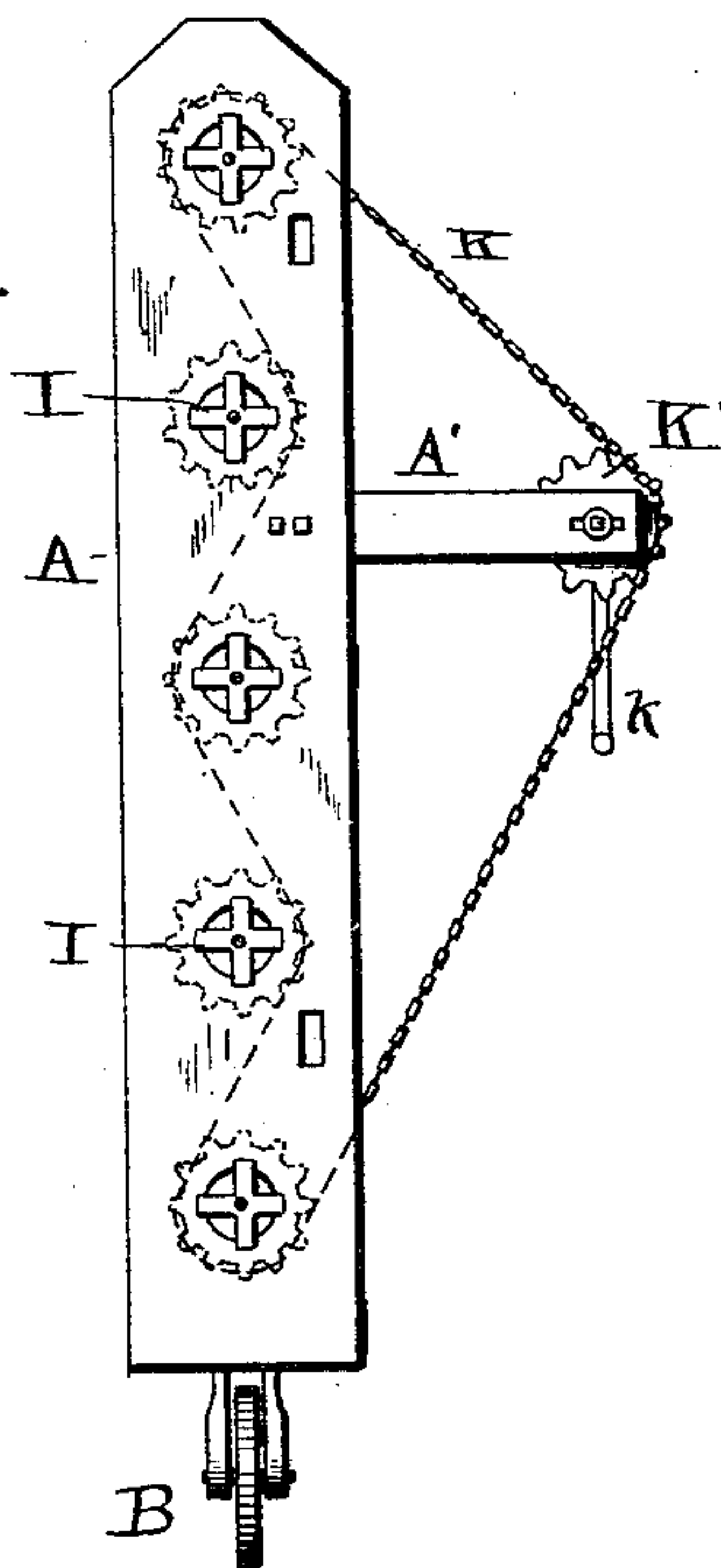


FIG VI.



FIG VII.

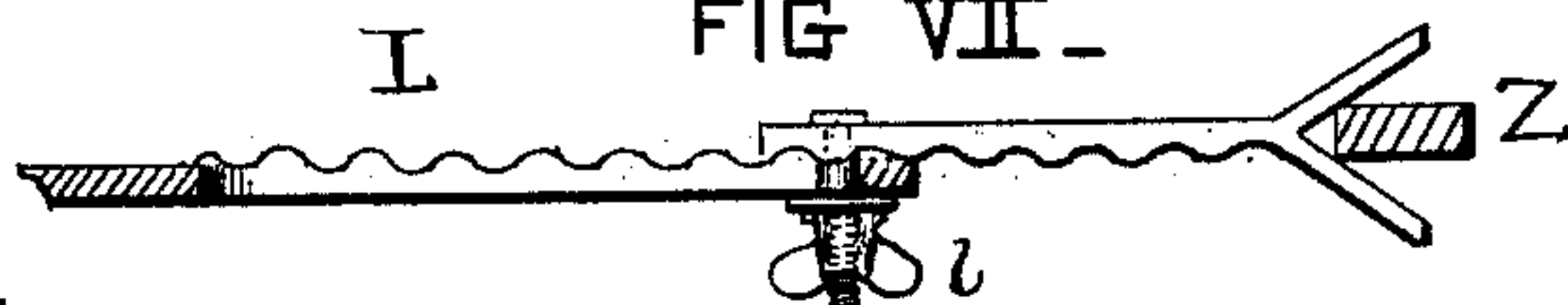
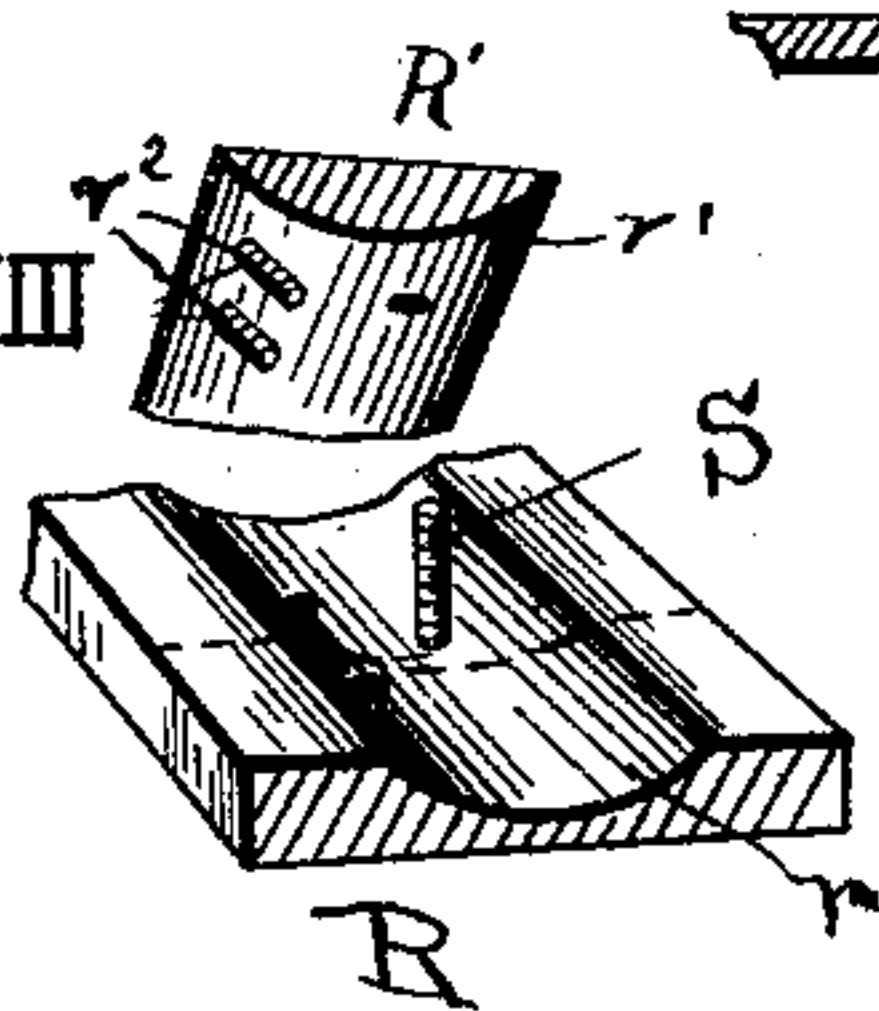


FIG VIII.



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UNITED STATES PATENT OFFICE.

EDMUND HUGHES AND BENJAMIN F. WILLIAMS, OF COOKPORT,
PENNSYLVANIA.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 406,912, dated July 16, 1889.

Application filed May 20, 1889. Serial No. 311,366. (No model.)

To all whom it may concern:

Be it known that we, EDMUND HUGHES and BENJAMIN F. WILLIAMS, both citizens of the United States, residing at Cookport, in the
5 county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Fence-Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will
10 enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specifica-
15 tion.

Our invention relates to machines for constructing wire and wood fences, especially those that build the fence in the field along the line it is to occupy when completed.

20 The novel features are hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of the machine with the driving-chain removed.
25 Fig. 2 is a longitudinal section of one of the twisters. Fig. 3 is a cross-section of the tension device or clamp, certain parts removed. Fig. 4 is an elevation of the twister-frame. Fig. 5 is a front view of one of the twisters
30 on an enlarged scale. Fig. 6 is a plan of the spacer; Fig. 7, a plan, partly in section, of the adjustable picket guide and holder; and Fig. 8 is a detail of the tension device.

The same reference-letters are used in all
35 the figures.

The frame of the machine consists of a plank A, having an arm or bracket A', projecting from one side. The frame is supported by a wheel B, arranged with its axis
40 transverse of the fence, so that the machine can be easily moved back and forth along the line of the fence. At the top of the frame is attached a fixed gage or stop C, to insure the tops of the pickets being all on the same line.
45 At the bottom of the frame, under the stop C, is a hinged foot-rest D. A spring *d* is connected with the rest in any convenient manner, and tends to lift it, so that a picket

placed thereon will be forced up against the stop C. 50

In the frame A are a number of holes, in each of which is inserted a sleeve E, provided with flanges through which screws may be passed to secure it to the frame. In the sleeve
55 revolves the tubular shank of the twister F, which is formed with or attached to a sprocket-wheel *f*. In the face of the twister is a circular recess *f'*, through the bottom of which are cut two or more curved slots *f*², eccentrically but symmetrically arranged with reference to the axis of the twister. The inner
60 end of each slot is enlarged, as shown, to permit knots and splices in the fence-wire to pass through.

The recess *f'* is filled by a disk G, the outer
65 face of which is preferably flush with the face of the sprocket-wheel *f*. In the disk are formed two curved slots *g*, similar to those in the twister, but turned in the opposite direction, so as to cross them. The disk G is held in
70 place by a bolt II, which passes through the center of the disk and twister, and through the center of a cross-bar I, placed against the rear end of the tubular shank and overlapping the end of the sleeve E, as shown in Fig. 2, where-
75 by the twister is held in place in the sleeve. Upon loosening the bolt the disk G can be turned in its recess until the enlarged inner ends of the slots *g* coincide with the similar
80 ends of the slots *f*² in the twister. The fence-wires X can then be passed through, having been previously attached to the fence-post Y. By then rotating the disk on the bolt II the
85 points of intersection of the slots *f*² and *g* will be carried toward the ends of said slots until the wires are separated enough to allow a picket to be readily put down through them. The disk can then be clamped in place by
90 tightening the bolt II. In this way the space between the wires can be adjusted with great nicety to suit various thicknesses of pickets Z.

The twisters are all rotated simultaneously and to a similar extent by means of an endless chain K, passing around them in a zigzag
95 line, as shown in Fig. 4, in order to rotate

them alternately in opposite directions. The chain is driven by a sprocket K' , mounted on the arm A' , and provided with a crank-handle k . The bearing of the sprocket is adjustable on the arm, in order to take up slack in the chain.

From one face of the frame A project two or more guides and holders L , preferably made in two pieces having serrated surfaces, clamped together by a thumb-screw l , in order to be adjustable as to length. The end of the holder is forked to engage the edge of the picket. The holders are caused to crowd the pickets up into the fork between the wires by means of spacers M , preferably two in number, which consist of rods provided with a hook m at the end and an adjustable abutment m' , adapted to engage with the edges of a picket already secured in place, as shown. Each rod preferably passes through a slot a in the frame A , and is connected to one arm of a bell-crank lever N . The other arm of each lever N is hinged to a rod O , which has a stirrup o conveniently near the ground. A spring n holds up the stirrup and keeps the spacers normally thrust out through the frame A . When a picket has been passed down between the wires and stands on the rest D , the hooks m are engaged with the edge of a picket Z and the foot of the operator placed in the stirrup o . A downward pressure thereon pulls the spacers M back through the slots a , thereby dragging the machine up toward the finished portion of the fence and forcing the newly-inserted picket well into the fork between the fence-wires. The twist-ers are then rotated to secure the picket in place.

It will be noticed that the twisting force is applied to the wires in the plane of the sprockets f and drive-chains K , whereby the least strain is exerted on the twist-ers and their friction in the sleeves E is reduced to a minimum. When the twisting has been completed, the stirrup is released, and the springs n raise the levers N , imparting a thrust to the rods M and causing the abutment m' to strike the edge of the picket Z , and thereby force the machine away from the picket last inserted. The extent of this movement may be regulated by the position of the abutment m' on the rods M .

The tension device is supported on a post P , preferably sharpened at its foot, so as to be readily driven into the ground. It is stayed by suitable guys Q . Holes p are bored through it for the passage of the fence-wires. On the back of the post is fastened the clamping device, consisting of a bed R , having a concave longitudinal groove or depression r . A plate R' , having a convex surface r' , fits the groove in the bed. Suitable bolts S project from the bed through the plate R' , and are provided with nuts s , whereby the plate can be clamped upon the bed or upon the wires X passed be-

tween them. At one side of the bed are formed holes for prongs r^2 , which are arranged in pairs, one pair opposite each hole p . The wire X is led between the bed R and the plate R' and between the prongs r^2 , which hold it transversely of the bed R and prevent the weight of the wire beyond, whether coiled up or not, from dragging it out of place.

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

1. The combination, with the frame A , of the rods M , having hooks m and abutments m' , elbow-levers N , fulcrumed on the frame and connected with the rods M , and a stirrup-rod O , connected with the levers, substantially as described.

2. The combination, with the frame A , of the rods M , having hooks m and adjustable abutments m' , elbow-levers N , connected with the rods M , springs n , for retracting the levers, and means for simultaneously actuating the levers against the tension of the springs, substantially as described.

3. The combination, with the spacers M and means for moving them, of the forked picket-holder L , composed of two pieces having serrated surfaces clamped together by a thumb-screw l , substantially as described.

4. The combination, with the frame of a fence-machine, of a twister having a slot for the fence-wire, and an adjustable piece covering said slot and having itself a slot arranged to cross the slot in the twister and adapted to change the point of intersection when adjusted to different positions, substantially as described.

5. A twister for a fence-machine, provided with two curved symmetrically-arranged eccentric slots, and an adjustable plate covering said slots and provided itself with two similar slots turned in opposite directions to those in the twister, substantially as described.

6. The combination, with the twister F , having a tubular shank, a sprocket-wheel f , recess f' , and the curved slots f^2 , having enlarged ends, of the disk G , seated in said recess and having the oppositely-curved slots g , and means for adjustably securing the disk in the recess, substantially as described.

7. The combination, with the frame A , of the sleeve E , the twister F , having a tubular shank inserted through the sleeve and provided with slots f^2 , the adjustable slotted disk G , covering the slots f^2 , the cross-bar I , placed against the end of the shank, and the bolt H , passing through the disk, twister, and cross-bar, substantially as described.

8. A tension device for fence-machines, consisting of the post P , having the bed R , extending from its top to near its bottom and provided with the concave groove r , the plate R' , having a convex surface r' , matching the groove r for substantially its whole length, and the bolts S , provided with nuts s , whereby

the several wires of a fence can be clamped at one and the same time, substantially as described.

5 9. A tension device for fence-machines, consisting of the bed R, having the concave groove *r* and suitable holes, the plate R', having a convex surface *r'* and the prongs *r*², the bolts S, and nuts *s*, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDMUND HUGHES.
B. F. WILLIAMS.

Witnesses:

H. E. RUFFNER,
D. HARTMAN.