

(No Model.)

2 Sheets—Sheet 1.

N. J. TUBBS.
FENCE MACHINE.

No. 549,946.

Patented Nov. 19, 1895.

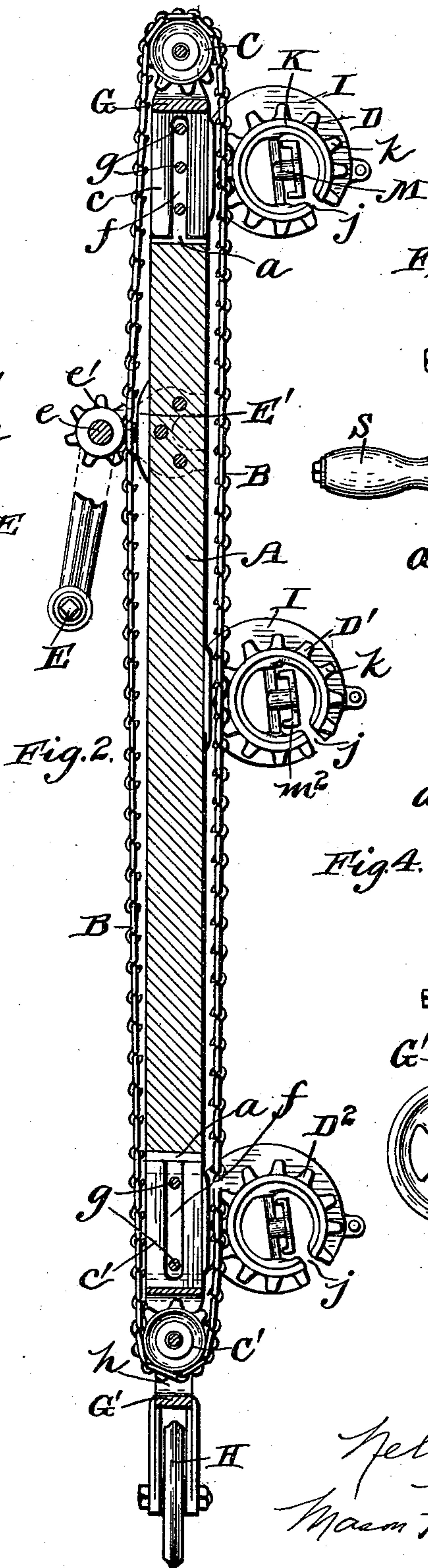
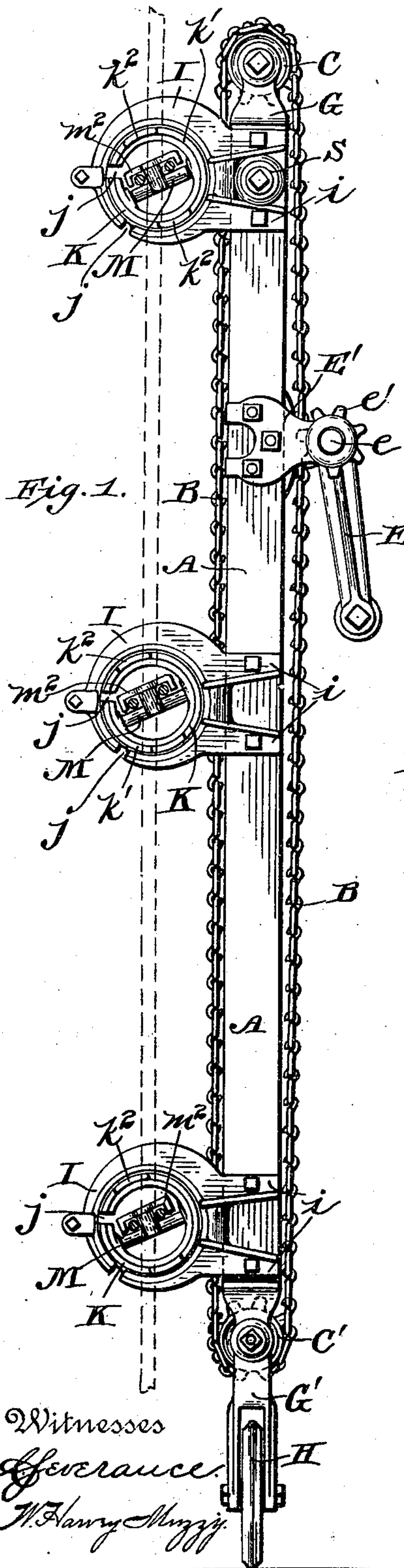


Fig. 3.

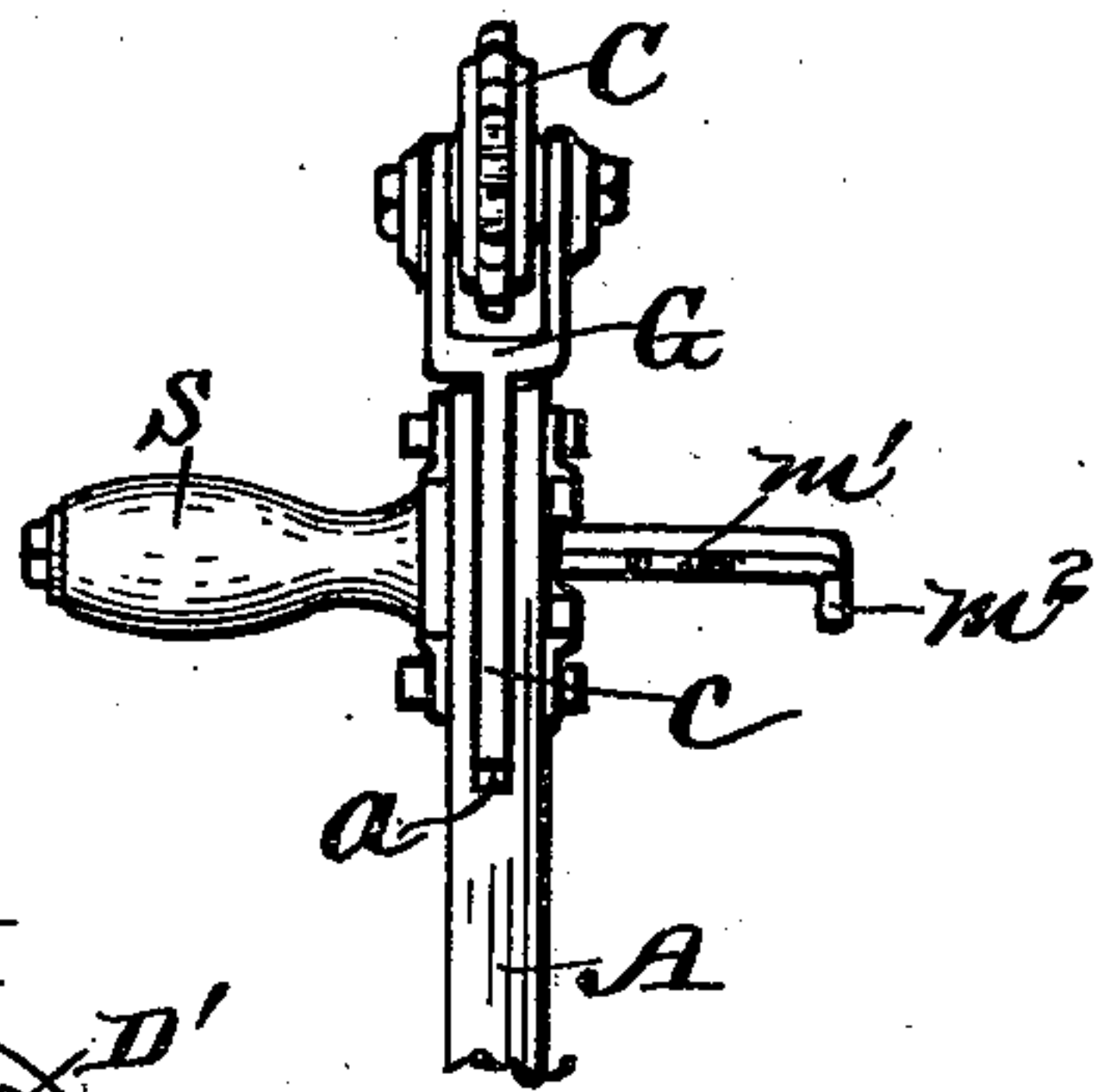
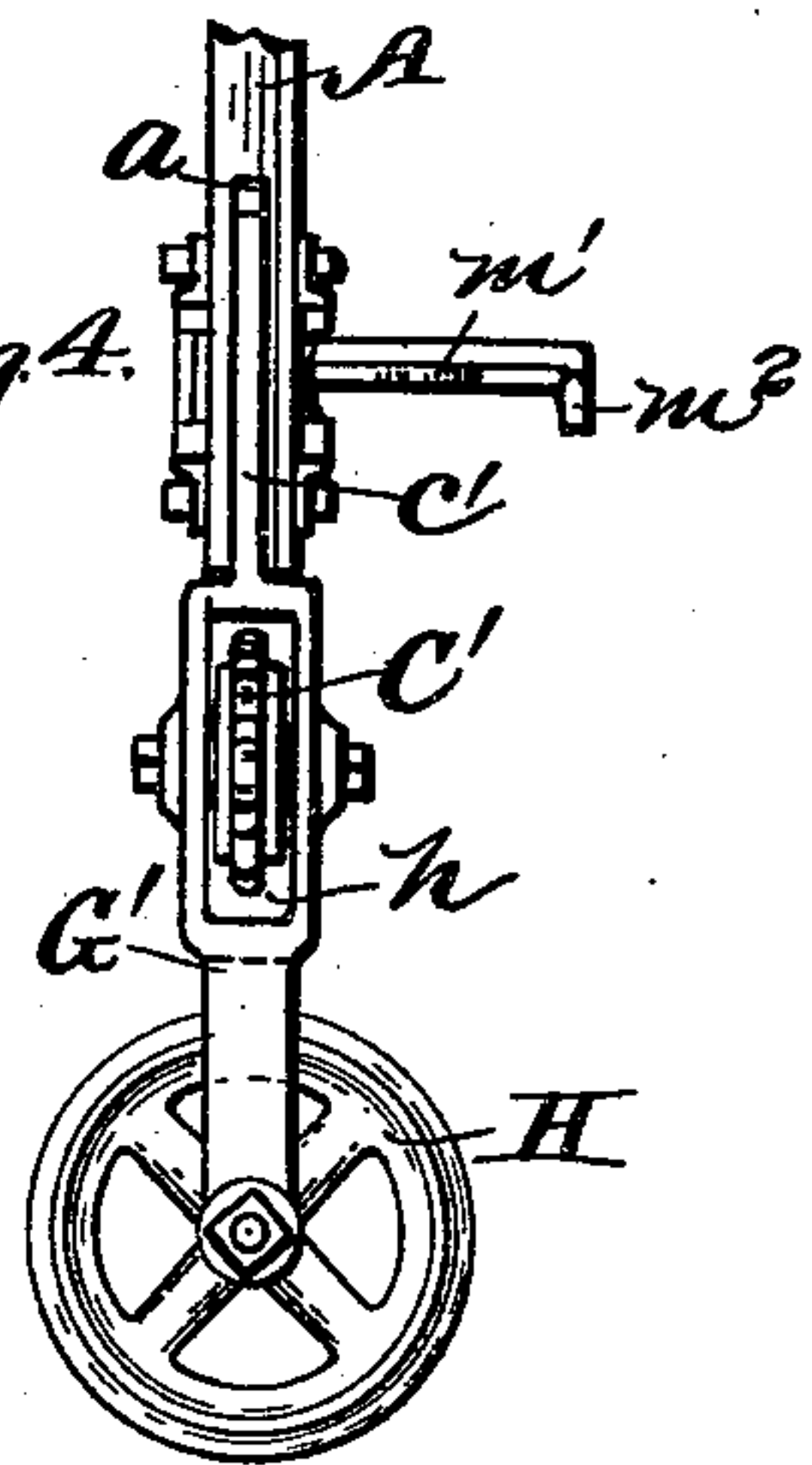


Fig. 4.



Witnesses
C. E. Cavanaugh
W. Harry Muzzey

Inventor
Nelson J. Tubbs
By
Mason & Co. Attorneys

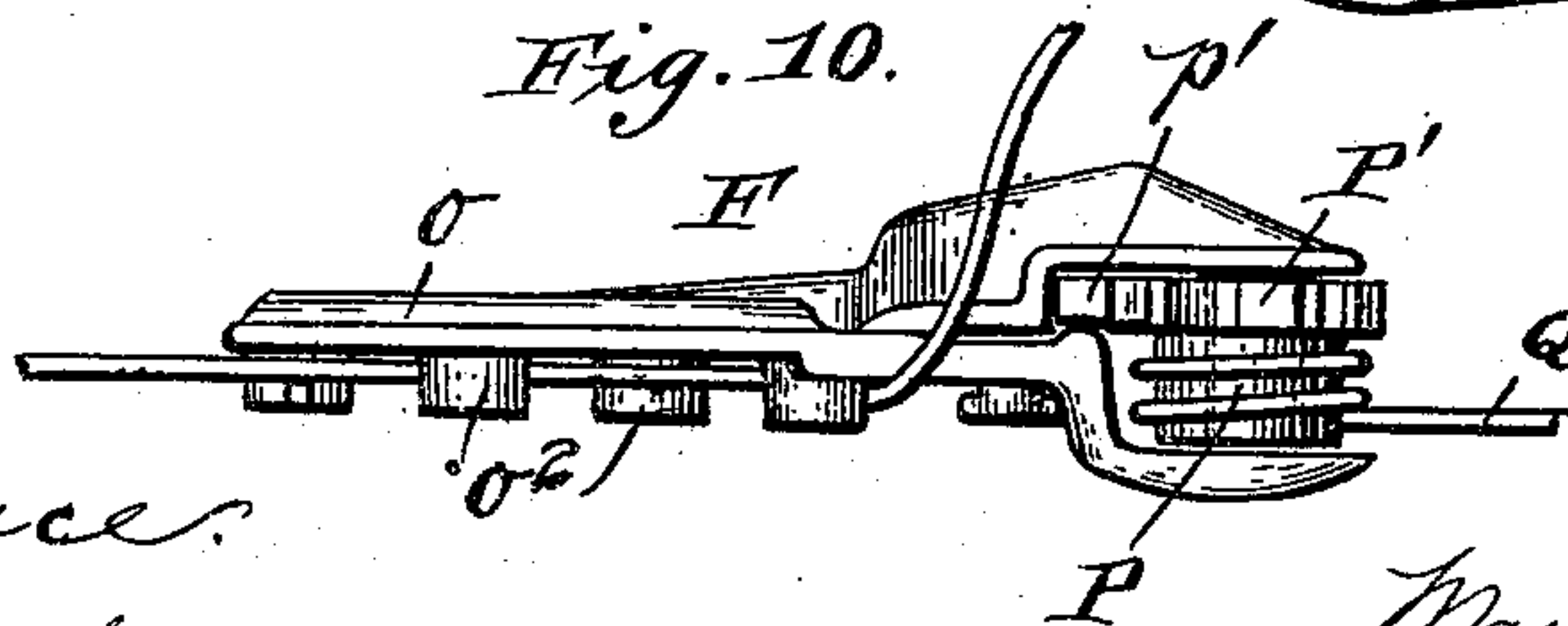
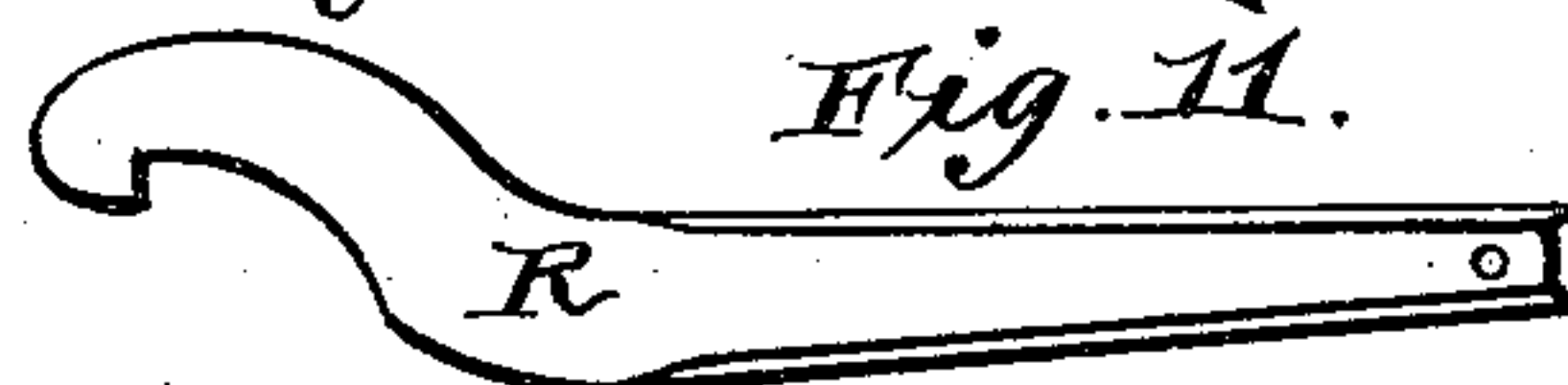
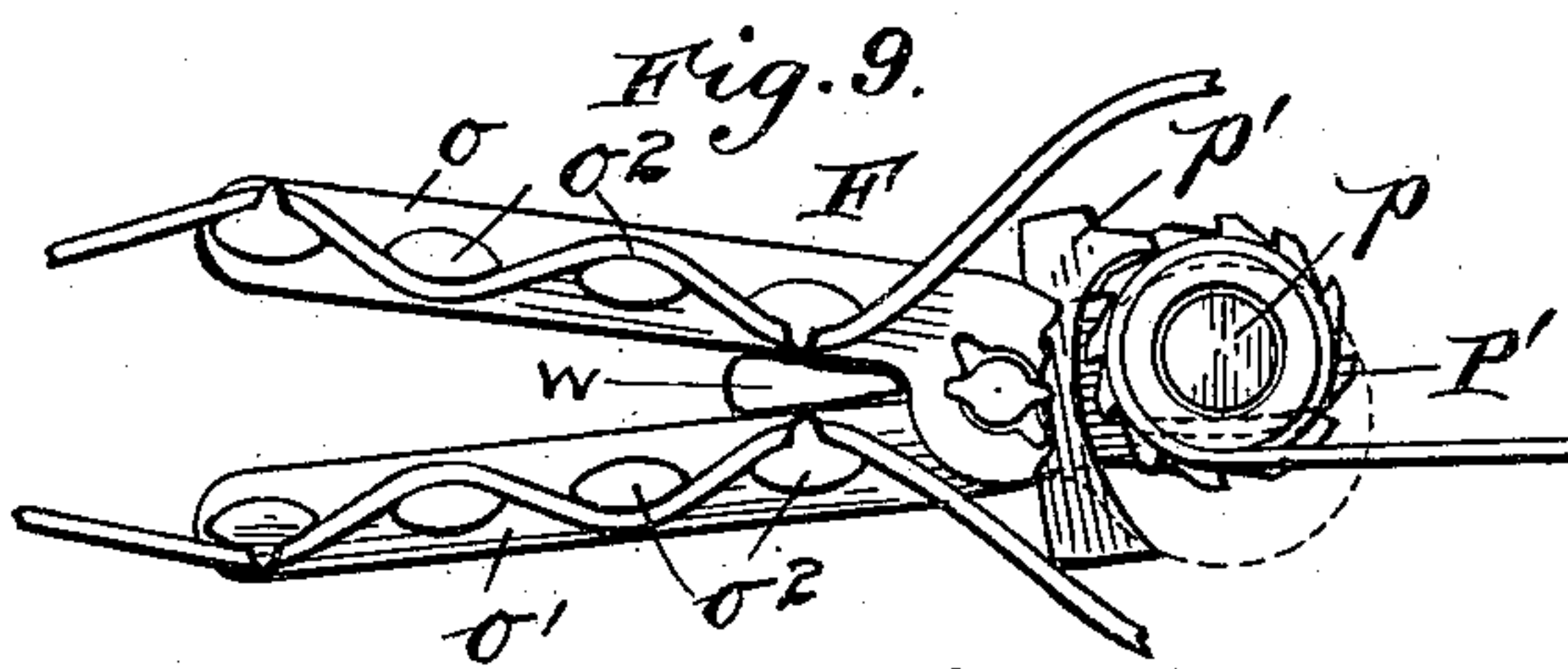
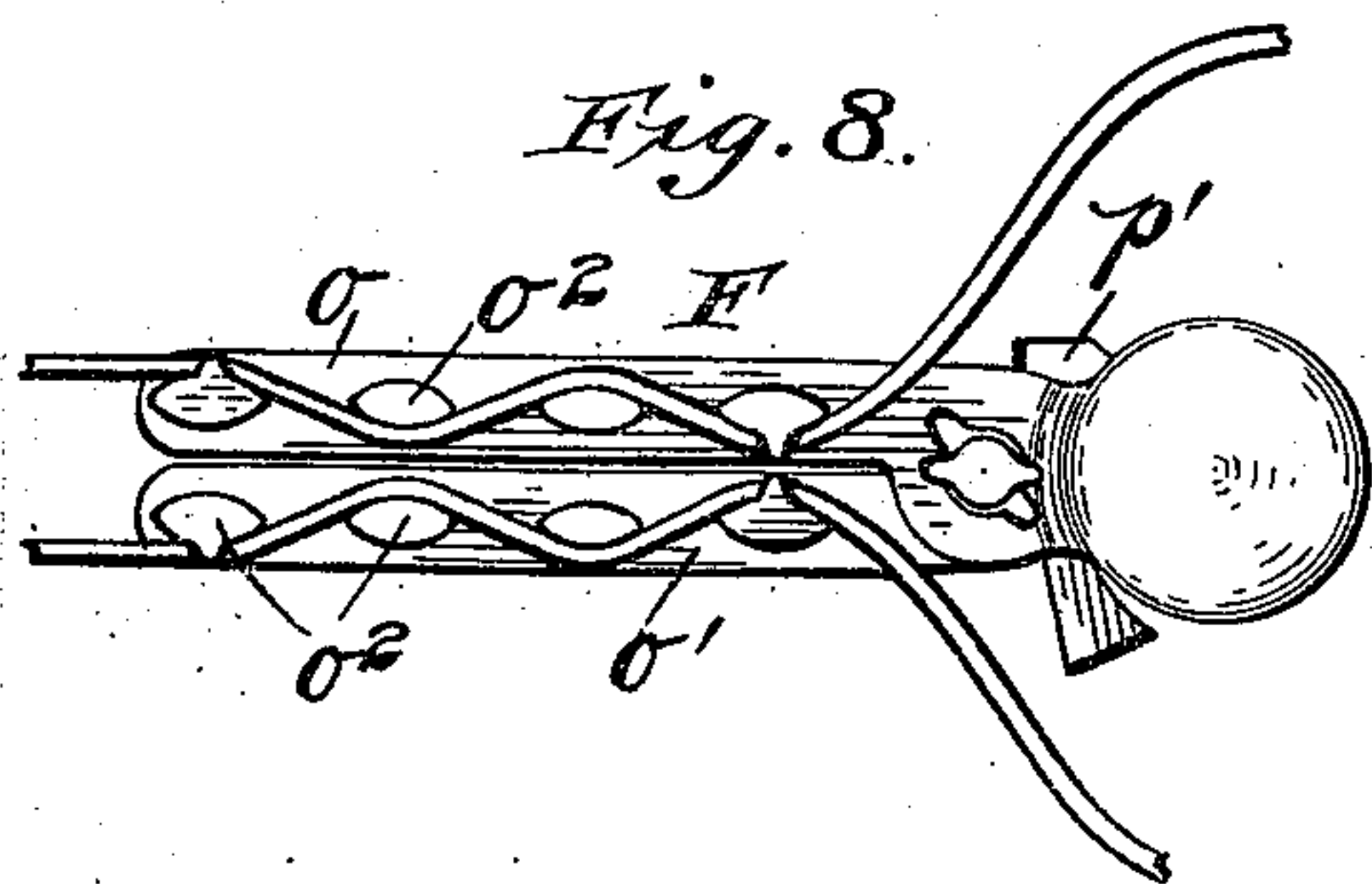
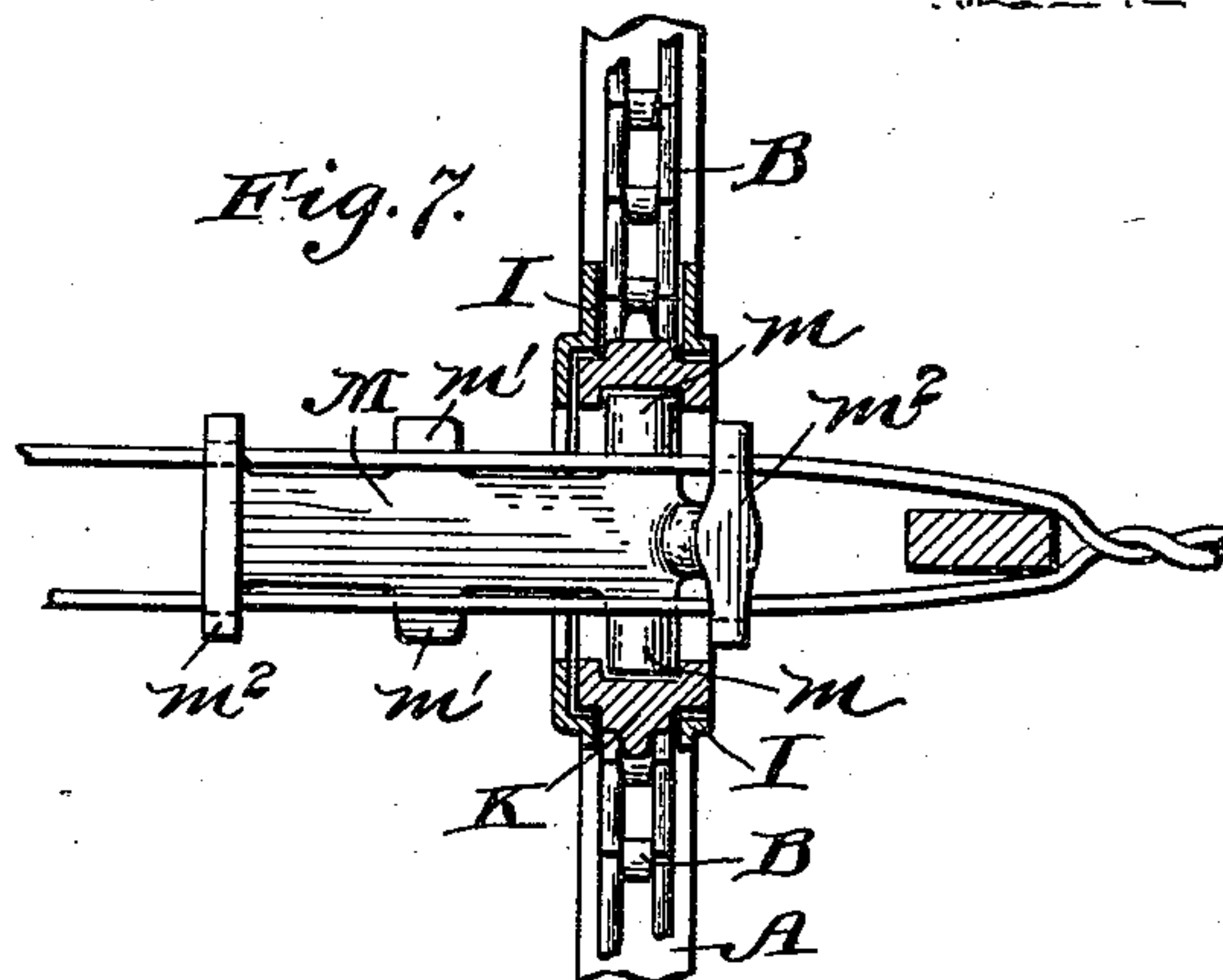
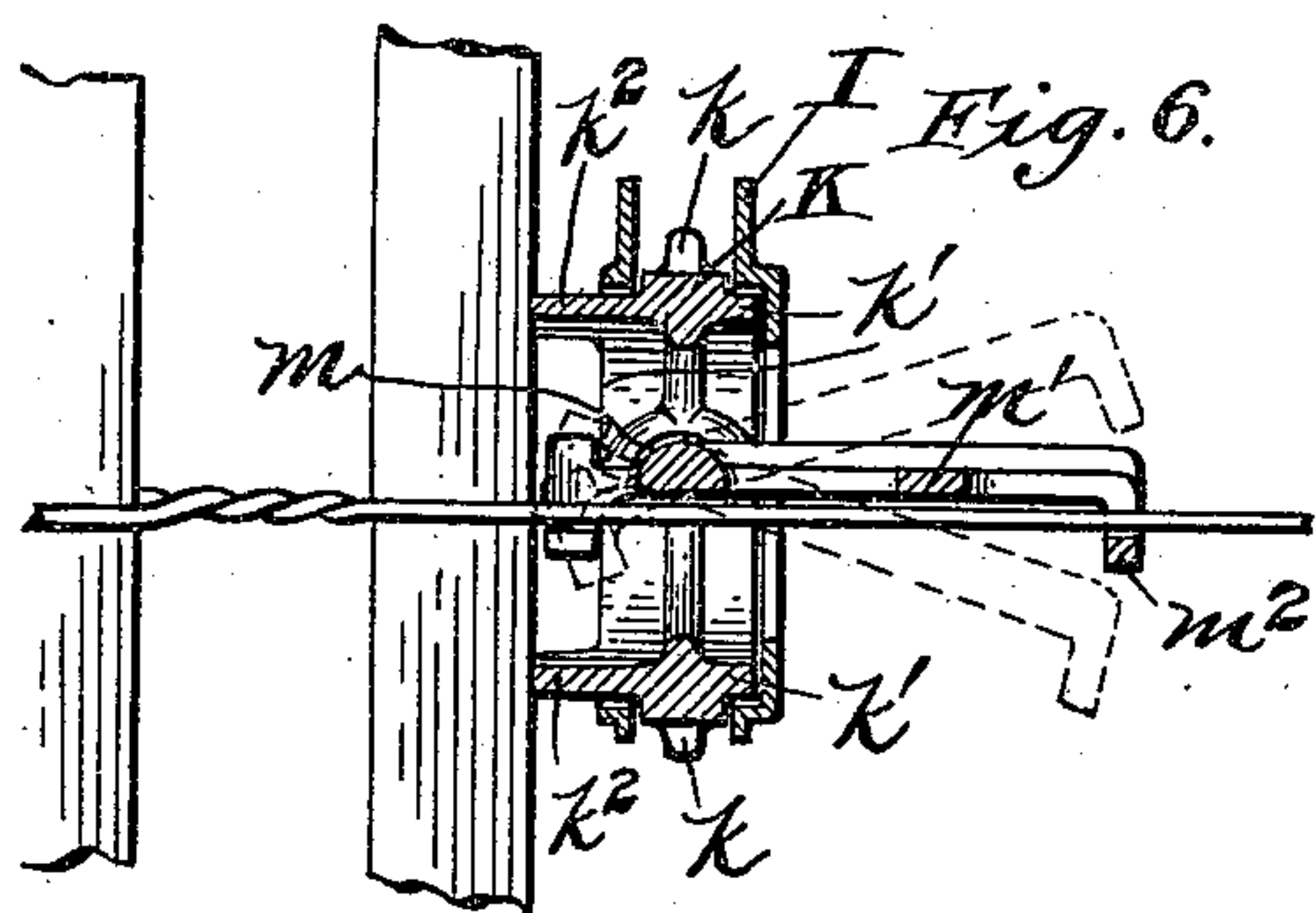
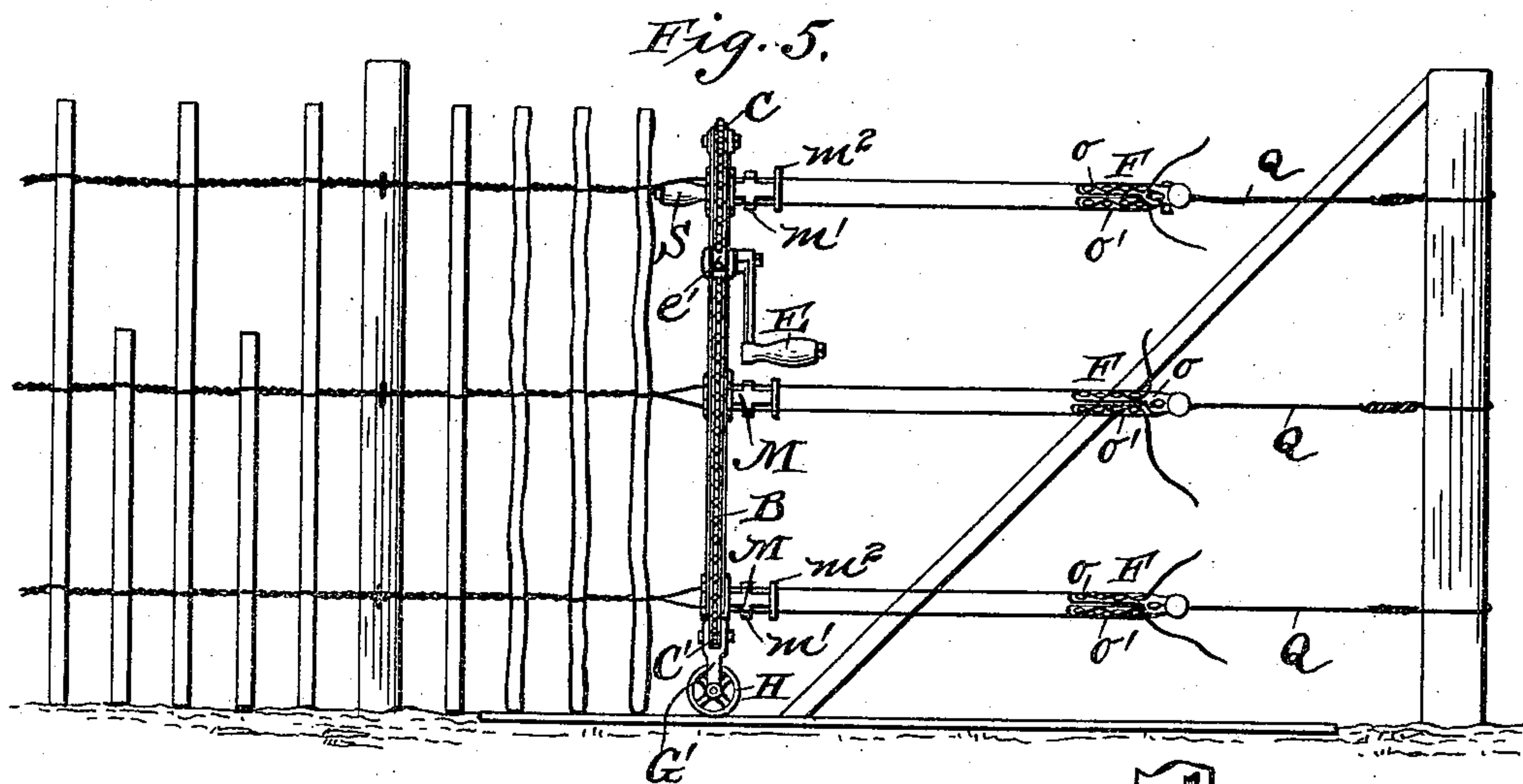
(No Model.)

2 Sheets—Sheet 2.

N. J. TUBBS.
FENCE MACHINE.

No. 549,946.

Patented Nov. 19, 1895.



Witnesses

E. J. Leverance
W. Harvey Muzzey

Inventor

Nelson J. Tubbs
Wm. T. Munnick
Attorneys

UNITED STATES PATENT OFFICE.

NELSON J. TUBBS, OF KNOXVILLE, TENNESSEE.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,946, dated November 19, 1895.

Application filed February 25, 1895. Serial No. 539,662. (No model.)

To all whom it may concern:

Be it known that I, NELSON J. TUBBS, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Fence-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in fence-machines; and the invention consists in the combination of a frame carrying an endless chain, sprocket-wheels operated by said chain, wire-twisters pivoted in said sprocket-wheels so as to allow the machine to remain perpendicular no matter what inclination the wires may assume, and means for operating the endless chain.

It also consists in the combination of a bar, sprocket-wheels adjustably mounted at each end of the same, an endless chain passed about said wheels and bar, wire-twisters operated by said chain and being capable of being slipped off the wires at will, means for operating said chain, and a wheel attached to the lower end of said bar.

It also consists in the combination of a frame carrying an endless chain, sprocket-wheels operated thereby, wire-twisters mounted in said sprocket-wheels, means for operating the sprocket-chain, and a wire-stretcher and tension-varying device connected to said wires.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of my wire-twisting device. Fig. 2 represents a central vertical section of the same. Fig. 3 represents a detail end elevation of the upper end of the frame carrying the adjustable sprocket-wheel. Fig. 4 represents a detail side elevation of the lower end of the frame carrying the traction and sprocket wheels. Fig. 5 represents a side elevation of the devices embodying my invention as they appear during the construction of a fence. Fig. 6 is a detail central vertical section through one of the sprocket-wheels carrying the pivoted

wire-twister, also showing the sprocket-casting and fence-pickets. Fig. 7 represents a top plan view of the same. Fig. 8 represents a side elevation of the wire-stretcher and tension device. Fig. 9 represents the same with the end of one of the pivoted arms broken away to expose the winding-drum and its ratchet-wheel and ratchet. Fig. 10 represents a top plan view of said wire-stretcher and tension device, and Fig. 11 represents a side elevation of the key for operating the ratchet-wheel of the combined wire-stretcher and tension device.

A in the drawings represents the bar forming the frame of my machine; B, the endless sprocket-chain; C C', the sprocket-wheels supporting said chain; D D' D², the sprocket-wheels carrying the pivoted twisters; E, the operating-handle for actuating the endless chain, and F the wire-stretching and tension device.

The bar A is preferably made of wood and is provided at each end with a longitudinal slot *a*, said slots being adapted to receive the respective shanks *c c'* of the castings G G' that support the sprocket-wheels C C'.

The casting G is provided with a yoke, within which the wheel C is mounted, and the shank *c* of said casting is slotted at *f*, so that the bolts *g*, that confine the shank in the slot *a*, will not prevent the casting G from being adjusted either up or down. The casting G' is similar to casting G, except that its yoke is at right angles to the yoke in the casting G and has a traction-wheel H mounted therein, the sprocket-wheel C' being mounted in a slot *h* intermediate of said yoke and the shank *c'*. The endless chain is passed about the sprockets C C', thus causing it to lie about said bar on opposite sides thereof.

The sprocket-wheels D D' D² are respectively mounted in castings I, which are each composed of two circular parts provided with attaching-arms *i*, said parts being adapted to be attached to the opposite sides of the bar A and be bolted together at their outer edges, and thus inclose their respective sprocket-wheels between them.

Each one of the sprocket-wheels is composed of a rim K, provided with sprocket-teeth *k*, annular lateral flanges *k'*, and laterally-extending buffers *k²*. The rim K is adapted

to be confined between the parts of the casting I, and thus prevent lateral motion of said wheels, while the annular flanges k' prevent vertical movement of said wheels.

5 Within each sprocket is pivotally mounted a wire-twisting device M, which consists of a bar provided with journals m and with lateral projections m' m^2 , the latter being mounted on the bar so as to lie to one side of the surface of the same, so that when the wires are 10 passed along on the outer surface of the projection m' they will be behind the inner surfaces of the projections m^2 , and said wires are thus held firmly on the bar. The sprocket- 15 wheels are so mounted in their castings that their inner peripheries always engage the endless chain, and they are thereby operated in either one direction or the other, according to the movement of the chain, and as said 20 sprocket-wheels revolve the wires are twisted together by means of the pivoted bars.

The rims of each of the sprocket-wheels D D' D², as well as the circular castings I, are provided with a narrow slit or passage j , and 25 when said passages of the wheel and casting are in coincidence, as shown in Fig. 2, the machine can be readily slipped on or off the fence-wires.

The operating-handle E is mounted on a 30 shaft e , which carries a sprocket-wheel e' , that meshes with the chain B, said shaft being mounted in a casing E', attached to the bar A.

The wire-stretching and tension device, as 35 shown in Figs. 8, 9, and 10, is composed of two pivoted arms o and o' , the forward or longer portions of these arms being provided with projecting studs o^2 , between which the wire is strung in a zigzag manner, so as to cause considerable friction in moving, and thus the 40 wires are pulled between said studs under tension. The inner and outer stud on each arm is provided with a small lateral projection that guides the wire fairly onto the stud and 45 keeps it from slipping therefrom. If it is desired to increase the tension on the wires, the arms o o' are spread apart and held so by a wedge w or other similar device.

The shorter end of the arm o is provided 50 with a stud p , on which is mounted a wire-stretching drum P, provided with a ratchet-wheel P', adapted to be engaged by a gravity-pawl p' .

A wire Q, attached to any stationary object, 55 is passed once or twice about the drum and then is wound thereon, as occasion requires, by means of a key R, as shown in Fig. 11, which key is applied to the ratchet-wheel to turn the same.

60 A handle S is provided upon the upper part of the bar A, by which the machine may be held firmly in position when being operated.

The operation of the machine is as follows: The machine is set up in position, as shown 65 in Fig. 5, with the traction-wheel H upon a board or other suitable base, the pairs of wires in their respective twistings and the tension

devices adjusted to give the desired tension. The machine is run back a short distance and a picket inserted between the wires. The 70 machine is then run forward until the buffers k^2 strike the picket and force it up snugly to the last twist in the wire. The handle E is then rotated to the right, and the desired distance thus twisted behind the picket, the wires in 75 the meantime feeding through the tension device, but under tension, so that the wire is always kept taut. The next picket is inserted and the operation repeated as before, with the exception that the handle in this instance is 80 rotated toward the left, and so on alternately from right to left, as each successive picket is inserted.

It will be seen that as the chain B becomes loose the bolts g at either the top or the bot- 85 tom can be loosened and the sprocket-wheels C C' adjusted away from each other, and thus tighten the chain.

It will also be observed that by having the twistings M pivoted in the sprocket-wheels D 90 D' D² the machine, and consequently the pickets, can always be kept perpendicular, even though the wires be inclined one way or the other because of a hill or the like. This I consider a very important feature of my in- 95 vention, as by it hills can be fenced with vertical pickets with as much ease as the fencing of level ground.

Any size or shape pickets can be inserted in my fence, either half or whole pickets. In 100 fact, even brushwood or the like could be woven into the wires, if so desired.

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

1. In a fence machine, the combination of 105 a frame carrying an endless chain, sprocket wheels mounted on said frame and operated by said chain, wire twistings adapted to positively engage or grip the wires, and pivoted in said sprocket wheels so as to revolve there- 110 with but always on an axis parallel with the wires no matter what the inclination of said sprocket wheels may be, and means for operating the endless chain, substantially as described. 115

2. In a fence machine, the combination of a frame carrying an endless chain, sprocket wheels mounted on said frame and operated by said chain, wire twistings adapted to positively engage or grip the wires and pivoted 120 in said sprocket wheels so as to revolve therewith but always on an axis parallel with the wires no matter what the inclination of said sprocket wheels may be, means for operating the endless chain, and an adjustable wire 125 stretcher and tension device, substantially as described.

3. In a fence machine, the combination of a frame carrying an endless chain, sprocket wheels formed of split rings, suitable mount- 130 ings connecting said wheels with said frame, wire engaging and gripping devices pivotally mounted in said split rings so as to revolve therewith but always on an axis parallel with

the wires no matter what the inclination of said rings may be, and means for operating the endless chain, substantially as described.

4. In a fence machine, the combination with
5 wire twisting devices, of a wire stretcher and tension device consisting of two pivoted arms provided with studs adapted to allow the wires to pass between them under tension and means for increasing or decreasing the distance between said arms whereby the tension
10 on the wires is increased or decreased.

5. A wire stretcher and tension device for a fence machine, comprising in its construction two pivoted arms provided with studs

adapted to allow the wires to pass between 15 them under tension, and with a winding drum restrained by a ratchet wheel and pawl, and means for increasing or decreasing the distance between said arms whereby the tension on the wires is increased or decreased, 20 substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

NELSON J. TUBBS.

Witnesses:

RICHARD C. EDWARDS,
M. F. CALDWELL.