

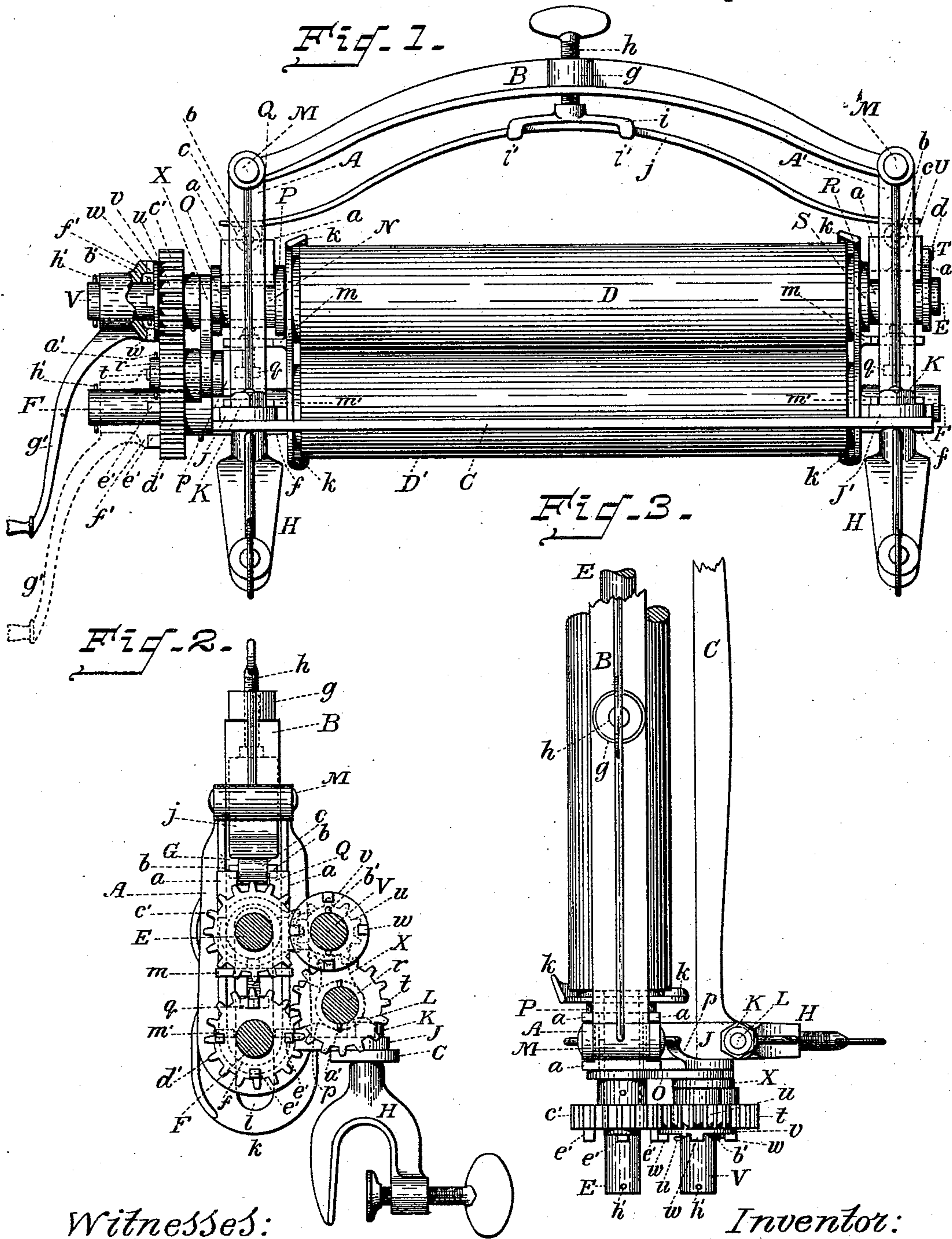
(No Model.)

4 Sheets—Sheet 1

C. WHEELER, Jr.
CLOTHES WRINGER.

No. 459,339.

Patented Sept. 8, 1891.



Witnesses:
Frank R. Bathum,
Mary C. Morris.

Inventor:
Cyrus Wheeler

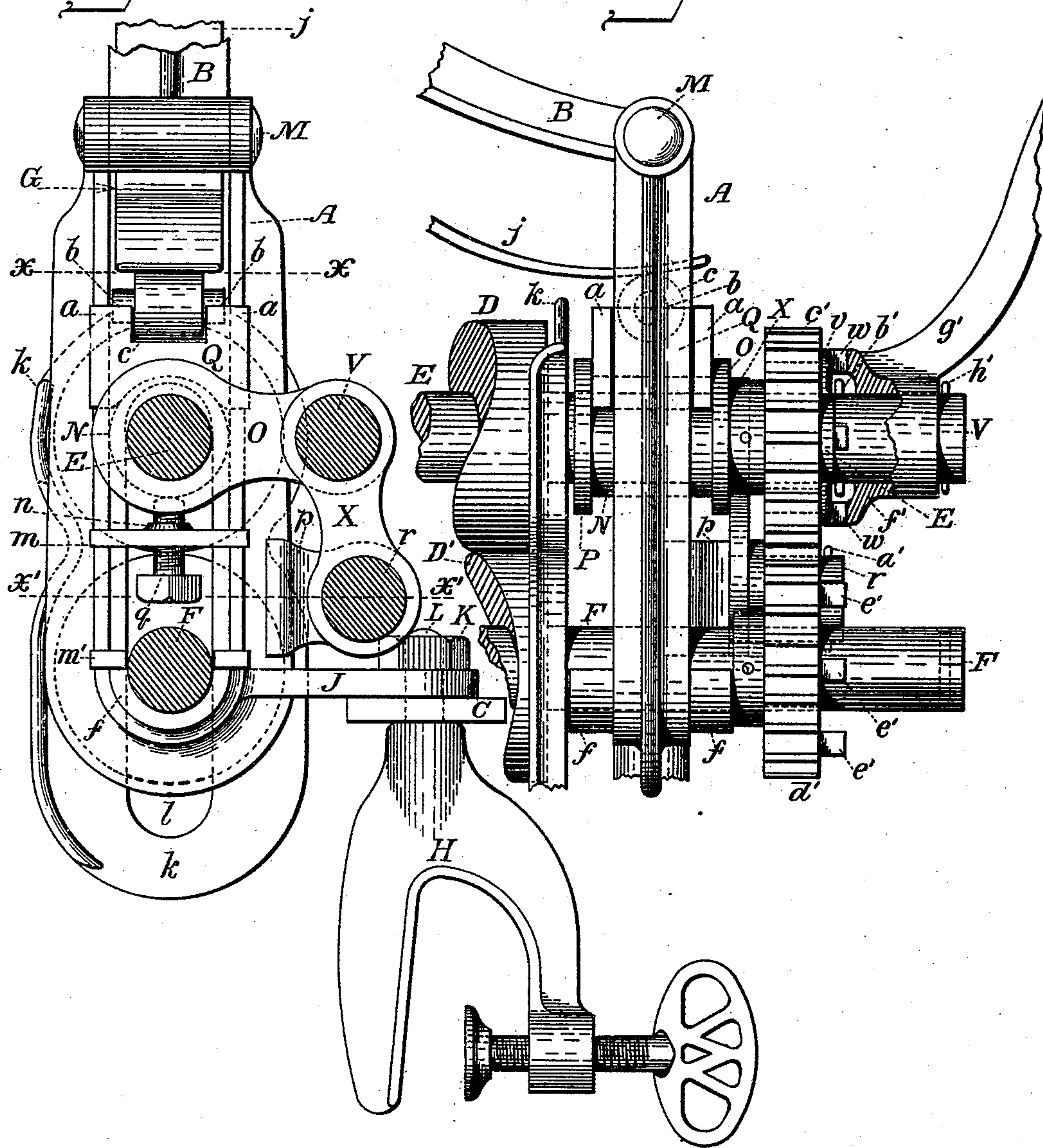
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Fig. 4.

Fig. 5.



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Fig. 6.

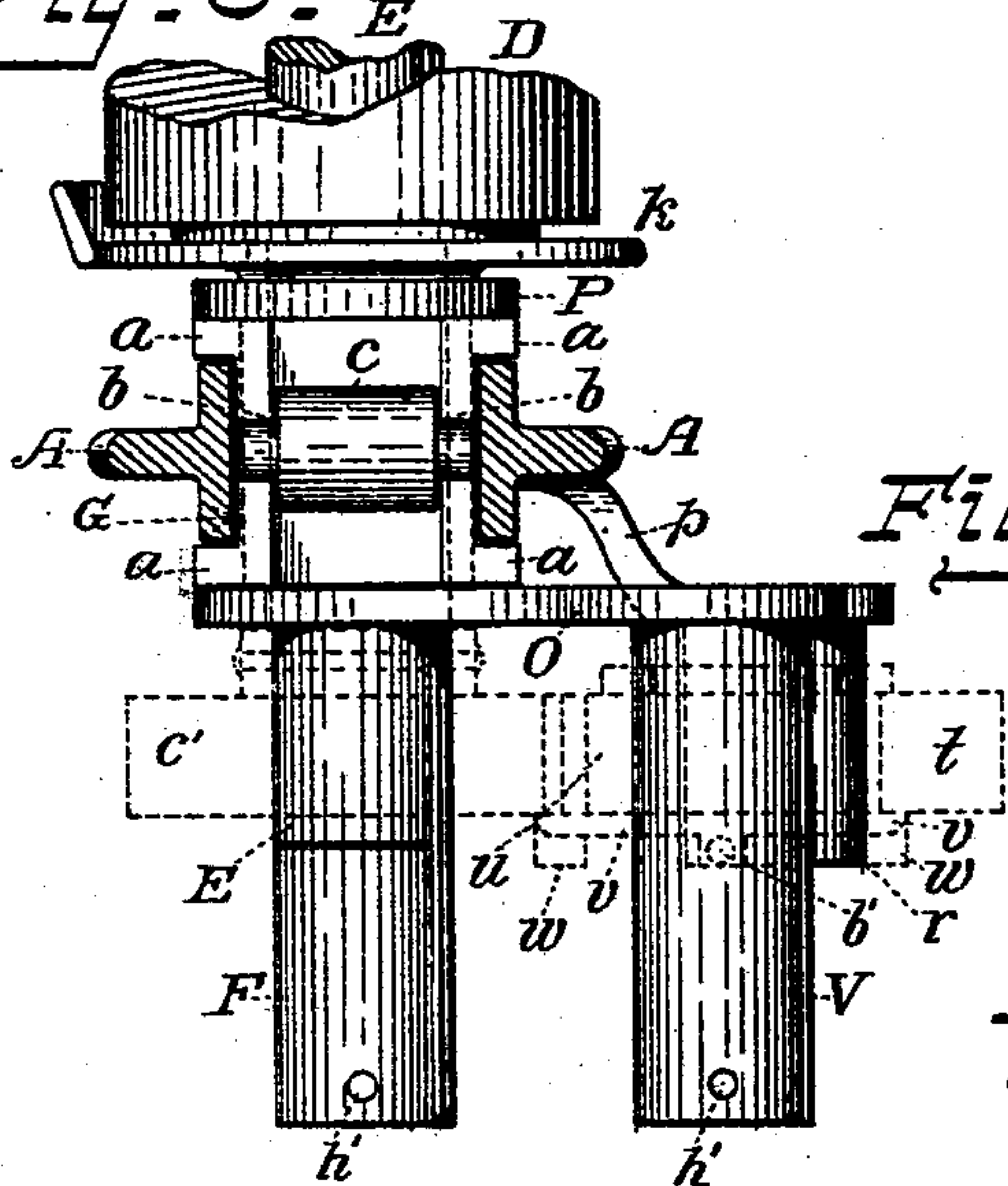


Fig. 10.

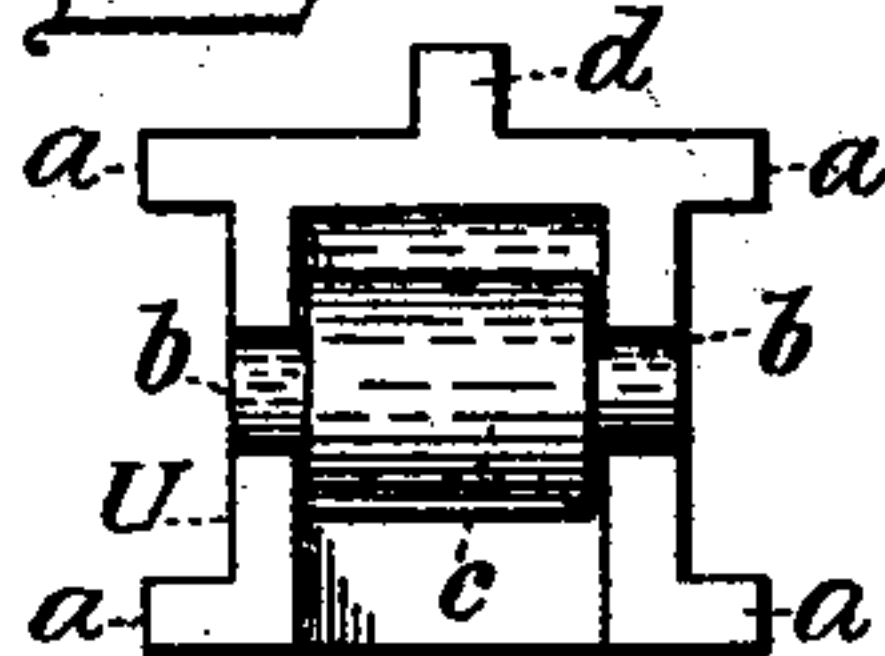


Fig. 12.

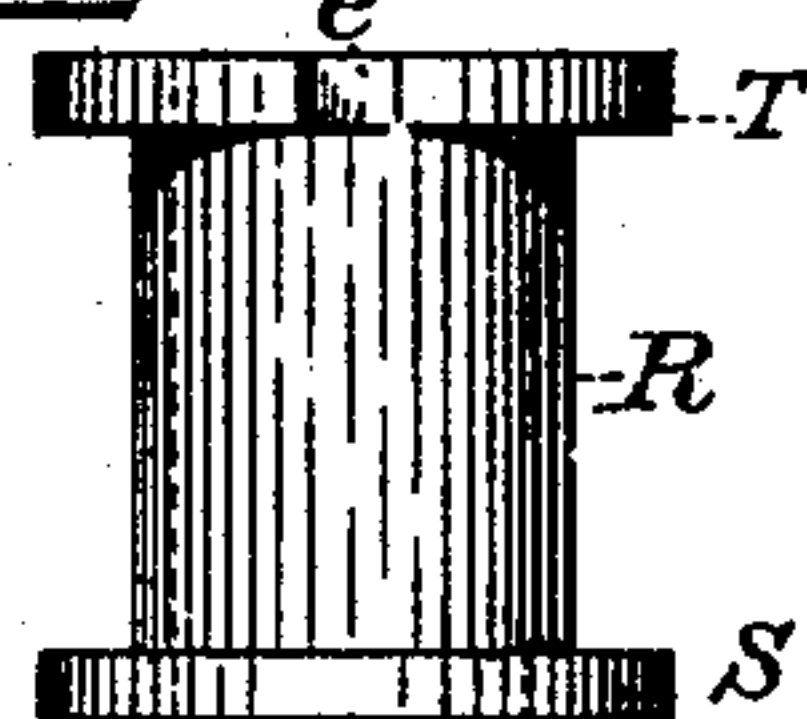


Fig. 11.

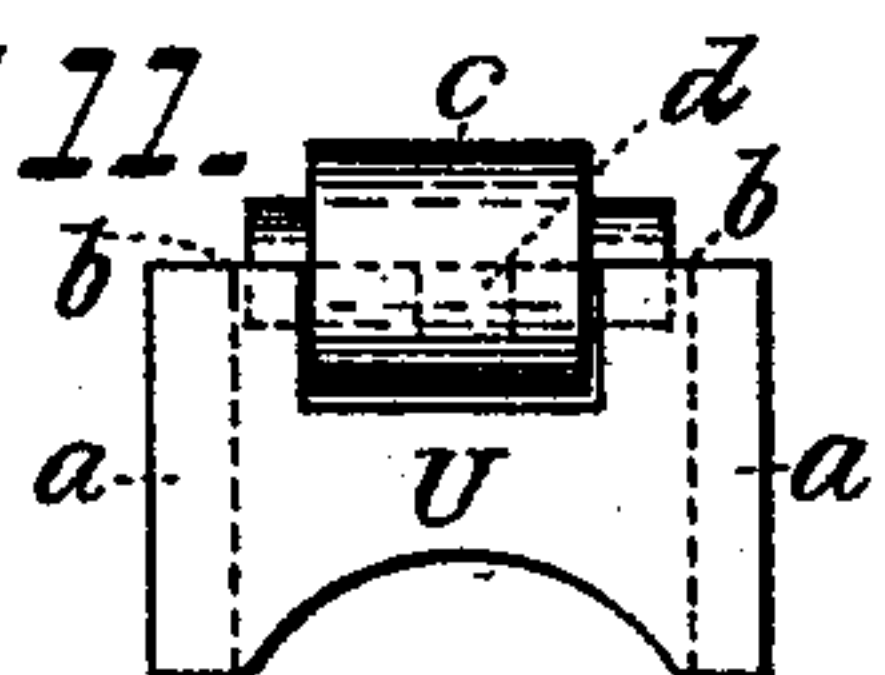


Fig. 13.

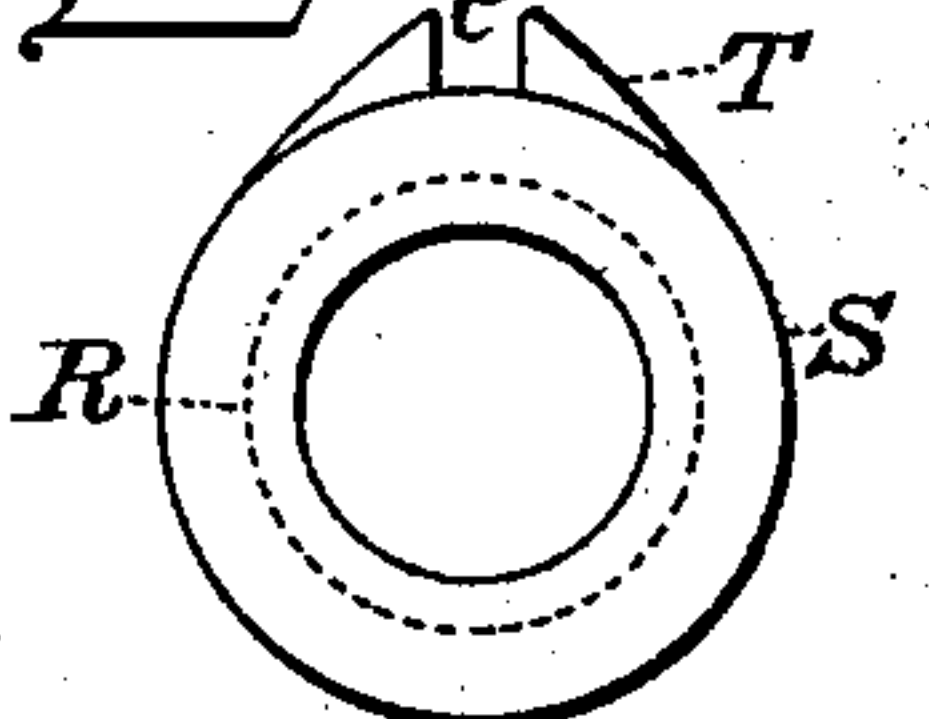


Fig. 8.

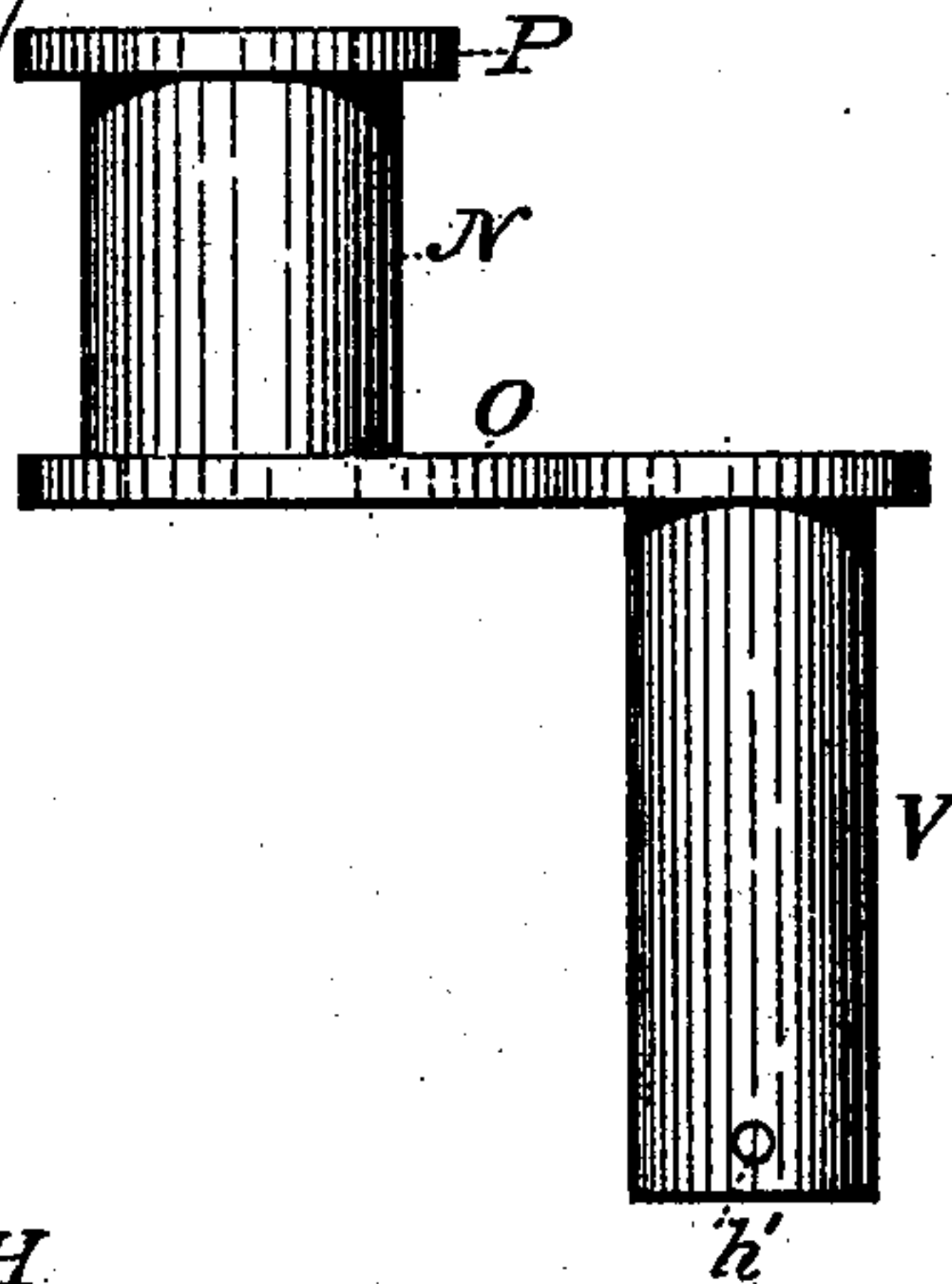


Fig. 7.

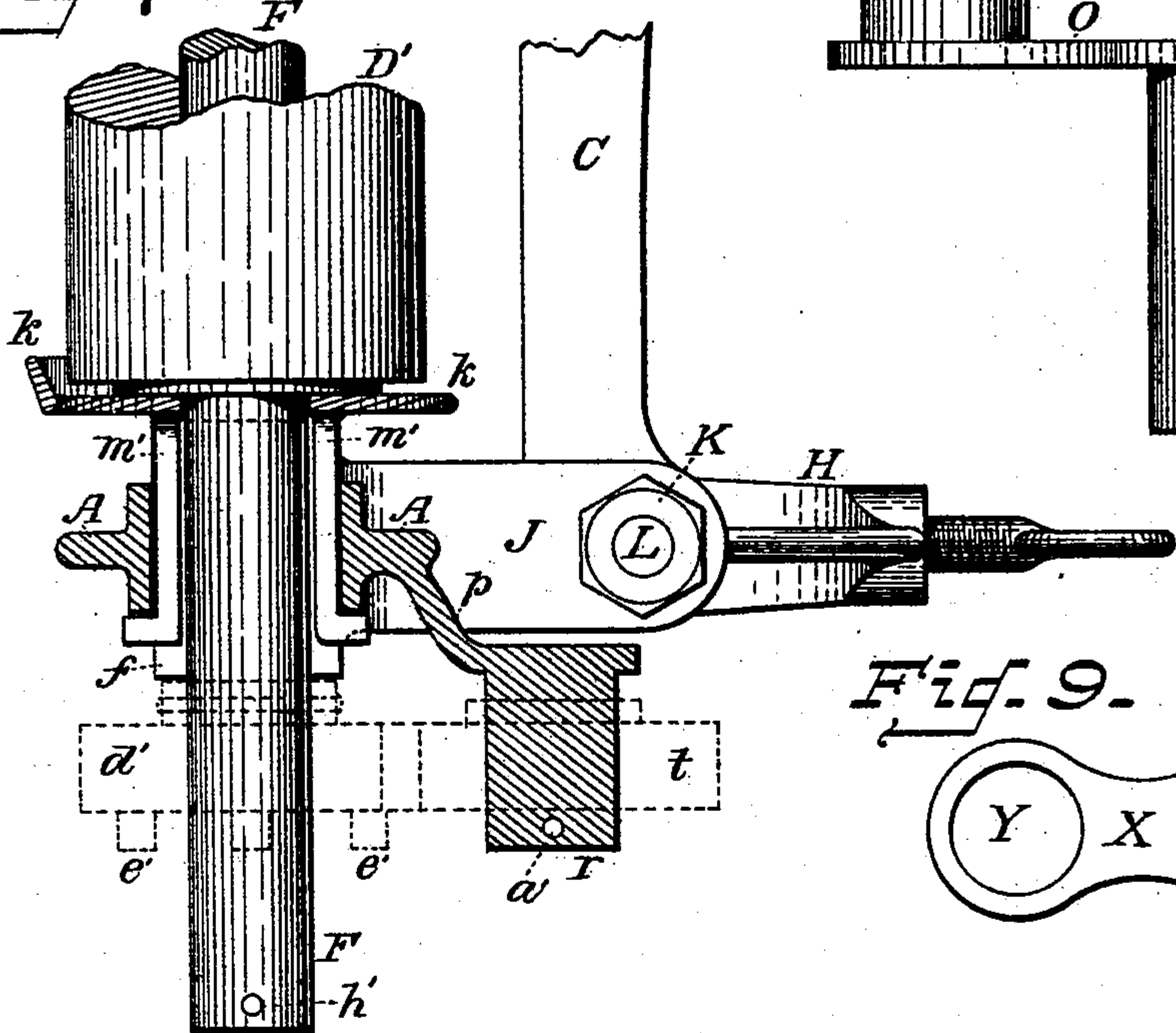
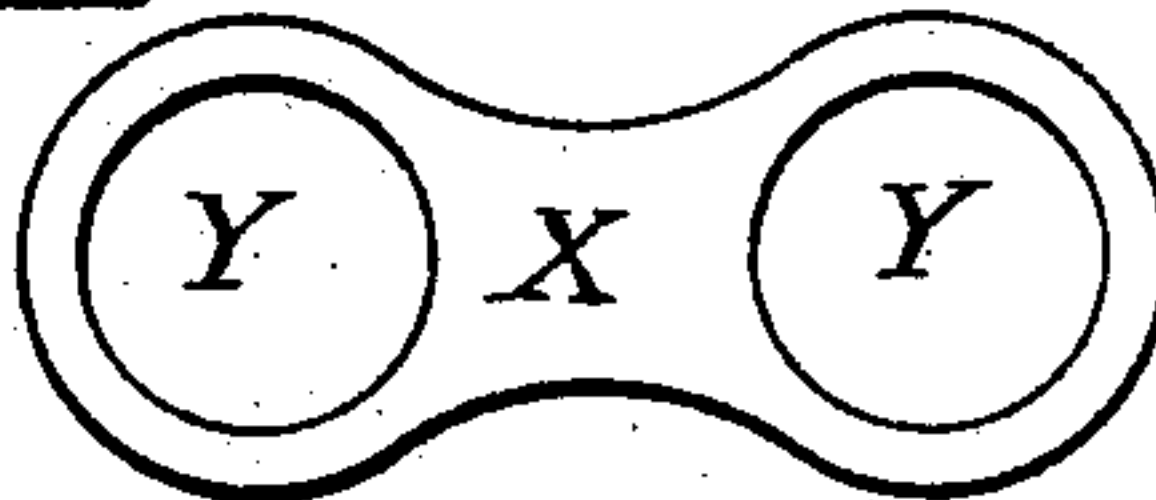


Fig. 9.



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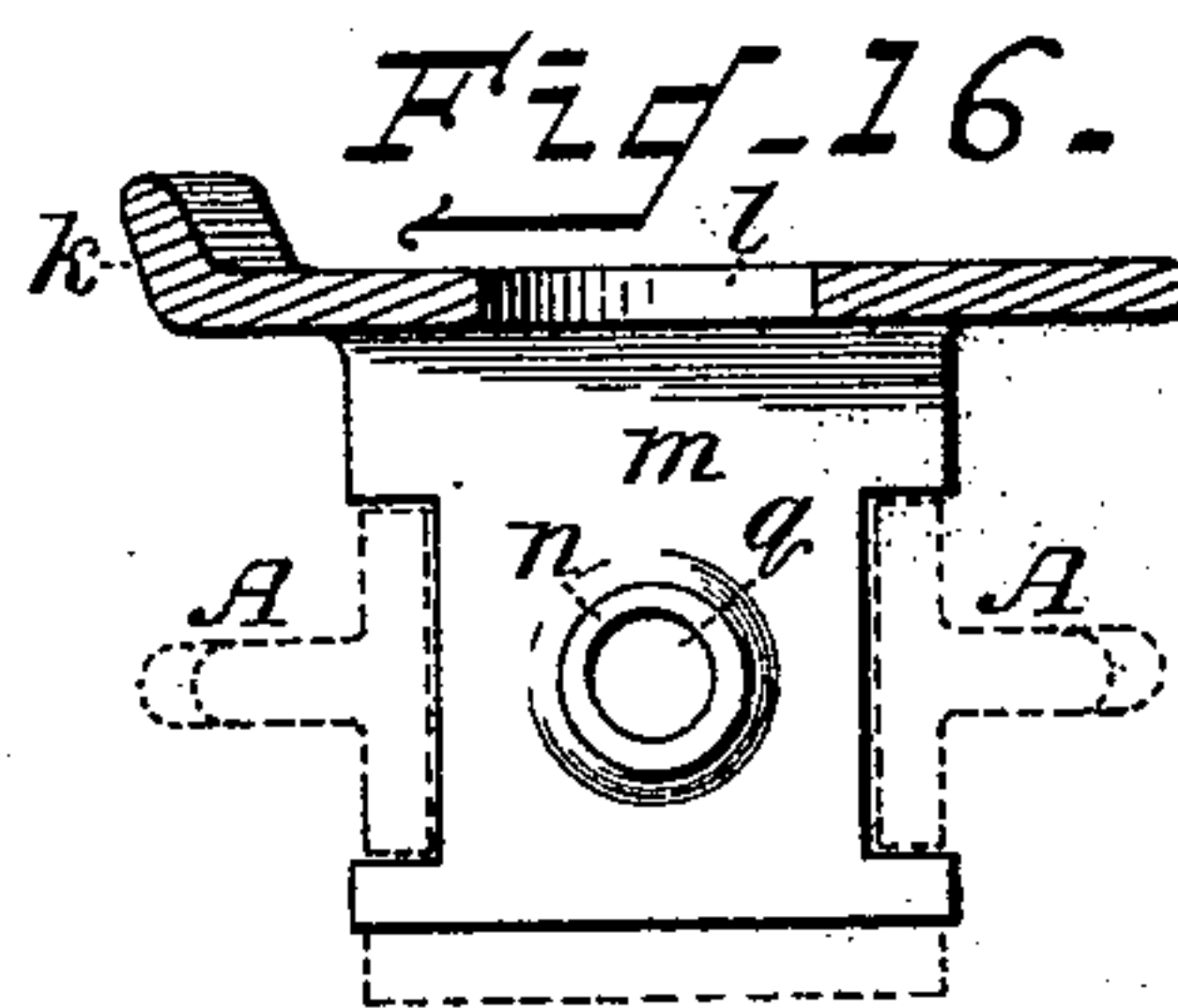
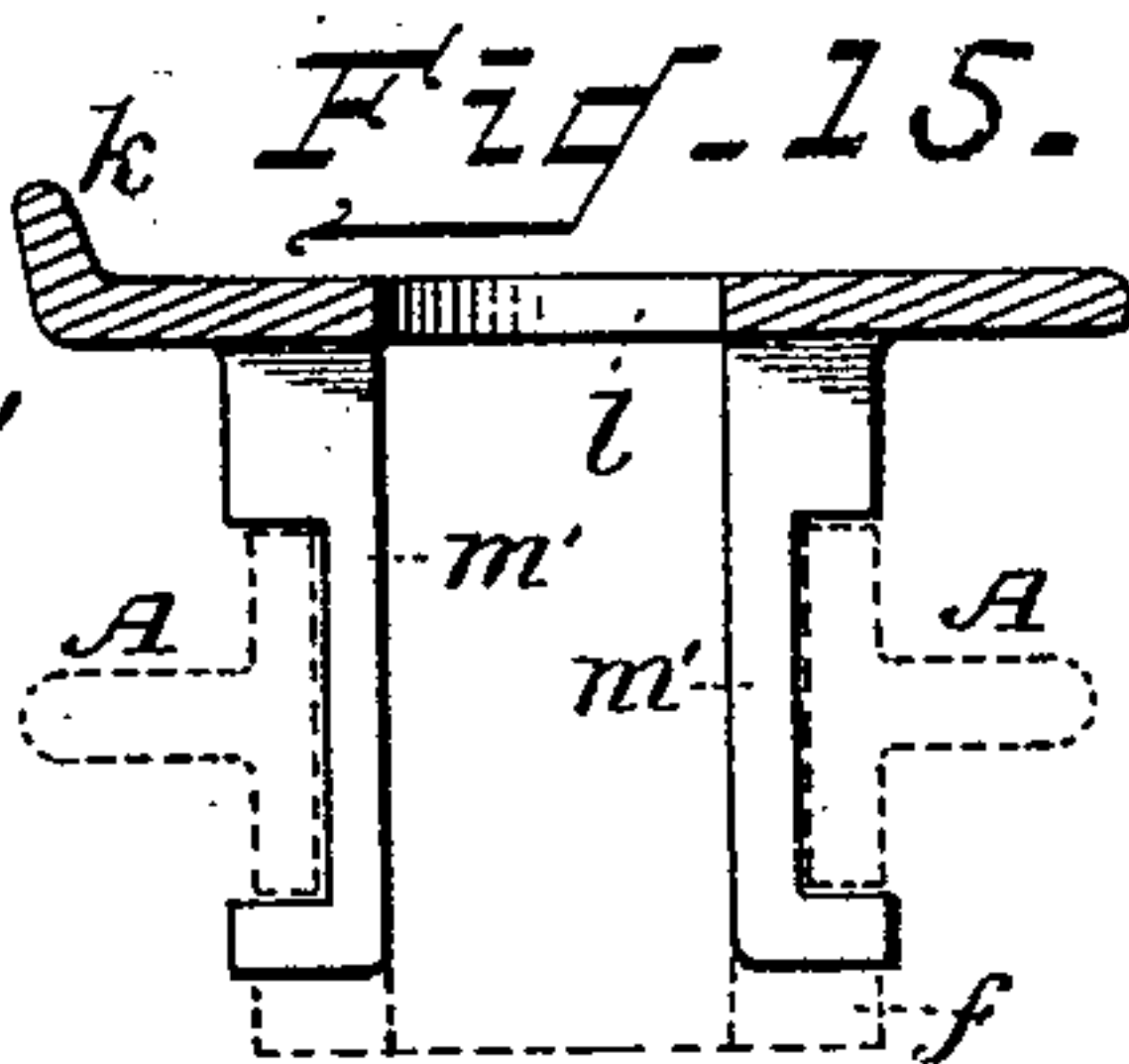
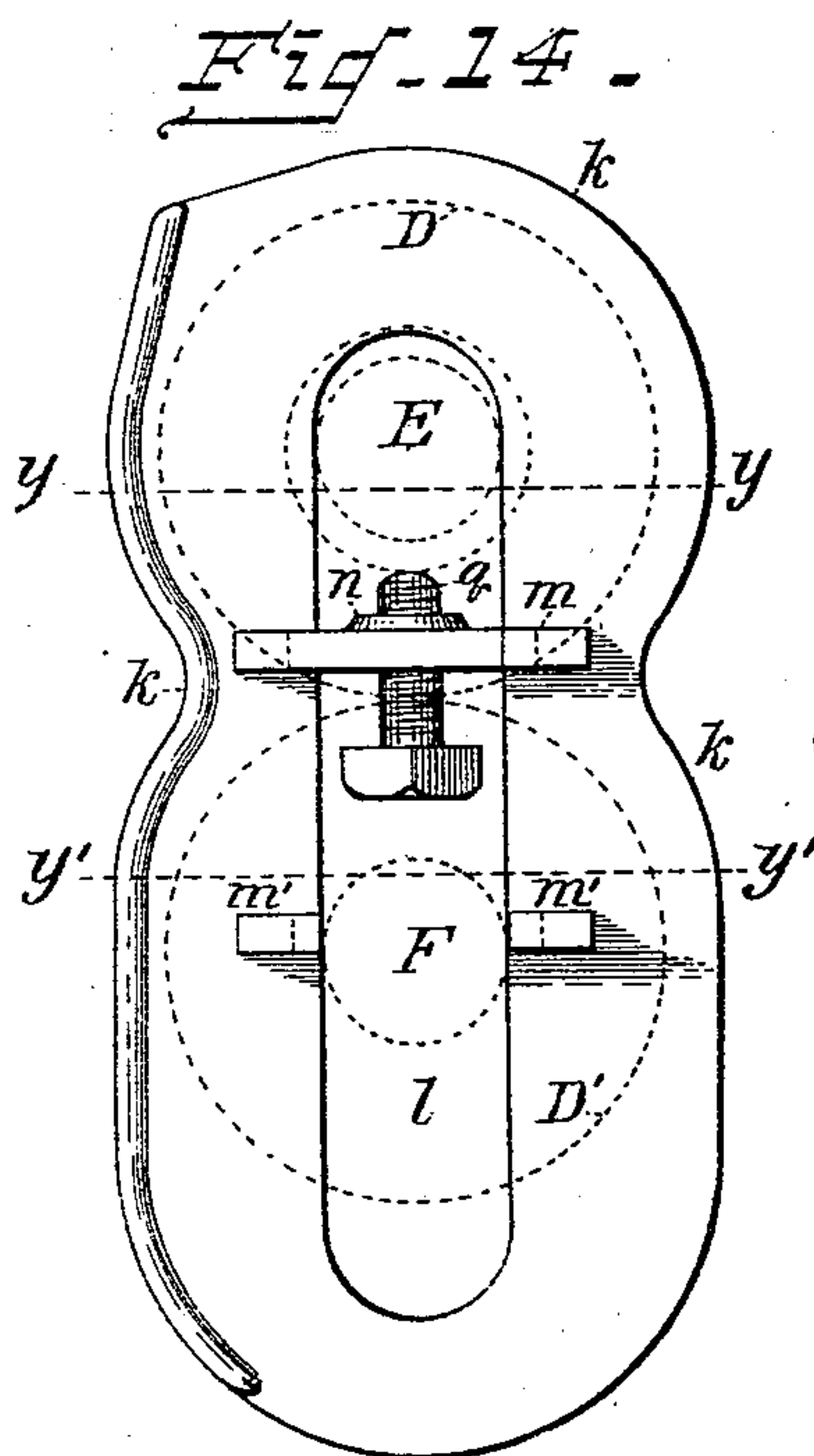
(No Model.)

4 Sheets—Sheet 4.

C. WHEELER, Jr.
CLOTHES WRINGER.

No. 459,339.

Patented Sept. 8, 1891.



Witnesses.

Frank B. Rathbun,
Wm. A. Morris.

Inventor:

Cyrus Wheeler

UNITED STATES PATENT OFFICE.

CYRENUS WHEELER, JR., OF AUBURN, NEW YORK.

CLOTHES-WRINGER.

SPECIFICATION forming part of Letters Patent No. 459,339, dated September 8, 1891.

Application filed August 16, 1888. Serial No. 282,946. (No model.)

To all whom it may concern:

Be it known that I, CYRENUS WHEELER, Jr., a citizen of the United States, residing at the city of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Clothes-Wringers, of which the following is a specification.

My invention relates to that class of clothes-wringers in which the rolls are supported in a vertically-slotted frame-work and geared together so as to revolve in unison, and are held in contact by the pressure of a spring, the force of which may be increased or diminished by a thumb set-screw; and it consists of the improvements to be hereinafter pointed out in a wringer of this kind. I attain these objects by means of the mechanism illustrated in the accompanying drawings on four sheets, in which—

Figure 1 is a rear elevation of the entire wringer. Fig. 2 is a front or crank end elevation of the same. Fig. 3 is a plan view of the front or crank end of the same. Fig. 4 is an elevation of the front or crank end of the wringer with the gearing parts removed and drawn to a full-sized scale. Fig. 5 is a front elevation of Fig. 4, showing the gearing parts in position. Fig. 6 is a horizontal cross-section of Fig. 4 through the line $x x$. Fig. 7 is a horizontal cross-section of Fig. 4 through the line $x' x'$. Fig. 8 is a plan view of the link and thimble-bearing of the front end of the upper-roller shaft. Fig. 9 is a plan view of the intermediate link-piece. Fig. 10 is a plan view of the half-box at the rear end of the upper-roller shaft. Fig. 11 is a front elevation of Fig. 10. Fig. 12 is a plan view of the thimble-bearing at the rear end of the upper-roller shaft. Fig. 13 is an end view of Fig. 12. Fig. 14 is an elevation taken from the front end of the wringer of one of the guide-plates which prevent the fabric being operated upon from passing over the ends of the roller. Fig. 15 is a horizontal cross-section of Fig. 14, taken on the line $y' y'$. Fig. 16 is a horizontal cross-section of the same view, taken on the line $y y$.

Similar letters refer to similar parts throughout the several views.

A A' are the end supports of the frame-work, provided with vertical slots G and rear-

wardly-extended foot-pieces J J'. The said end supports A A' are connected with each other at their upper ends by the arched cross-piece B by means of bolts M M or other suitable fastenings. A rear cross-piece C passes from the foot-piece J to the foot-piece J' of the end supports A A'. Through suitable holes provided in the ends of the rear cross-piece C and also in the ends of the foot-pieces J J' pass the threaded spindles L L of the clamping-pieces H H, the several parts mentioned being substantially held in working place by means of the nuts K K. The end supports A A', the arched cross-piece B, and the rear cross-piece C, it will thus be seen, constitute the supporting frame-work of the wringer, said supporting frame-work being held in the desired position on the tub or other vessel used by the clamping-pieces H H.

The upper-roller shaft E carries the roller D and the lower-roller shaft F carries the roller D'. Upon the front end of the upper-roller shaft E is passed the thimble-bearing N of the vibrating link O, said thimble-bearing N being provided on its inner end with a flange P and on its outer end with an extension of the link O into a like flange. A seat is thus provided on the thimble-bearing N for the half-box or bearing-piece Q. At the rear end of the upper-roller shaft E a thimble-bearing R is also provided, having flanges S T, which afford a seat on the said thimble-bearing R for the half-box or bearing-piece U.

The rear end of the link O is provided with a stud V, the object of which will be presently described. The half-boxes Q U are severally provided at their ends with lips $a a$, which said lips serve to assure the position of the said half-boxes Q U within the slots G of the end supports A A' and in which they are free to move vertically. The half-boxes Q U are provided on their upper sides with bearings $b b$, in which are carried the shafts of the anti-friction rollers $c c$, the object of which latter will be presently described. The half-box U is provided on its outer end with a spur d , which engages in a notch e , provided in the flange T of the thimble-bearing R, thus preventing the said thimble-bearing R from rotating with the upper-roller shaft E. For these several parts reference is had to Figs.

10, 11, 12, and 13. The bottoms of the slots G of the end supports A A' are formed into half-boxes *f f*, (see Figs. 4 and 5,) which serve as bearing-points for the ends of the lower-roller shaft F of the roller D'.

The arched cross-piece B is centrally provided with a threaded boss *g*, through which screws the thumb-screw *h*, the bottom end of which is stepped upon the lipped spring-piece *i*, the office of said lipped spring-piece *i* being to receive the end of the thumb-screw, the piece *i* being connected with the spring *j* preferably by having its lips *i'* bent over the edges of the spring. The ends of the semi-elliptic spring *j* rest on the anti-friction rollers *c c*, which are carried in the half-boxes Q U, thus serving to reduce to the greatest possible extent the friction of the ends of the semi-elliptic spring *j* upon the said half-boxes Q and U.

Right and left hand guide-plates *k k* are provided and adjusted between the ends of the rollers D D' and the inner sides of the end supports A A', the office of which said guide-plates is to prevent the manipulated fabrics from passing over the ends of the rollers. Referring to Fig. 14, which is an elevation of the side of the front guide-plate *k*, their general form will be seen, a description of one answering equally well for both. A slot *l* is centrally provided, through which pass the several ends of the roller-shafts E and F, said slot *l* being continued sufficiently below the line of the lower-roller shaft F to admit of the lifting or raising of the guide-plates by the upper-roller shaft E as the rollers are forced apart by the passage of the manipulated fabrics between them. Way-pieces *m m'* are provided on the outer faces of the said guide-plates *k k*, which said way-pieces are placed in the slots G of the end supports A A' and in which they are free to move. This arrangement, it will be seen, serves to assure the vertical position of the guide-plates *k k*. The way-pieces *m* are provided with threaded bosses *n*, which are centrally located thereon, and through which pass the screw-bolts *q*, the upper ends of which are uniformly brought to bear against the lower surfaces of the thimble-bearings N R of the roller-shaft E. By this arrangement of parts it will be seen that means are provided as a stop for limiting the pressure-contact of the rollers D D' when the wringer is not in use. It will also be seen that the downward descent of the guide-plates is limited through the contact of the way-pieces *m'* formed thereon with the half-boxes *f* formed at the bottom of the slots G of the end supports A A'.

Near the foot of the end support A, in proper relative position at the rear side and from the front thereof, is projected the piece *p*, upon the rear end of which is carried the stud *r*, which serves as a support for the larger intermediate gear *t* and upon which it is free to rotate, being held in working position by

the pin *a'*, which is passed through the end of the said stud *r*.

Freely rotating on the stud V is placed the small intermediate gear *u*, which is furnished on its outer side with a disk *v*, from the side of which is projected the spurs *w*, the object of which will be presently described. (See Fig. 2.)

On the front end of the upper-roller shaft E is properly secured the spur-gear *c'*, which engages with the small intermediate gear *u*. On the front end of the lower-roller shaft F is properly secured the spur-gear *d'*, which is of similar size to the spur-gear *c'* and which engages with the larger intermediate gear *t*, carried on the stud *r*, already described. This spur-gear *d'* has projected from its outer side a series of spurs *e'*, which are arranged uniformly with those provided on the outer side of the disk *v* of the small intermediate gear *u*. The office of said spurs *e'* will be presently described. (See Fig. 2.) The lower-roller shaft F of the lower roller D' and the stud V of the link O are sufficiently extended to accommodate the passing on either of the hub *f'* of the operating hand-crank *g'*, and which is thus interchangeable between the said lower-roller shaft F and the stud V. The hub *f'* of the operating hand-crank *g'* is furnished with proper notches for engaging with the spurs *w* of the disk *v* of the small intermediate gear *u* or with the spurs *e'* of the spur-gear *d'* of the lower-roller shaft F, as the operator may elect. The small intermediate gear *u* is held in place on the stud V by the pin *b'*. The operating hand-crank *g'* is held in working place on the stud V or on the lower-roller shaft F by means of a pin *h'*, which may be passed through the end of either the said stud or shaft on the outer side of the hub of the operating hand-crank. That the engagement between the larger and the small intermediate gears may be maintained unbroken during the separation of the rollers D D' when the wringer is being worked, I provide a link connection X, Fig. 4, having holes formed at either end, as shown at Y Y, Fig. 9, through which said holes Y Y pass, respectively, the stud V of the link O and the stud *r* of the piece *p* at the rear of the end support A. It will readily be seen that when the upper roller D is raised during the passage of the fabrics between it and the lower roller D' the larger intermediate gear *t* and the smaller intermediate gear *u* would disengage, and were it not for the provision of the link connection X between their carrying-studs the communication between the two rollers would be broken. It will be observed that the whole train of gearing being arranged in line (the spur-gear *d'* of the lower-roller shaft F engaging with the larger intermediate gear *t*, and the spur-gear *c'* of the upper-roller shaft E engaging with the small intermediate gear *u*, and the said small intermediate gear *u* engaging with the larger intermediate gear *t*) a greater or

lesser speed relatively to the speed of the operating-crank may be imparted to the rollers $D D'$ of the wringer by an engagement respectively of the hub f' of the operating hand-crank g' with either the spurs e' of the outer side of the spur-gear d' or with the spurs w of the outer side of the disk v of the small intermediate gear u , as the operator may elect or the exigencies of the case may require.

Having thus described the several parts of my improvements, together with their operations, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a clothes-wringer, the combination of the slotted end pieces, the rollers, one of which is mounted in movable bearings which slide in the slots of the end pieces and the other in fixed bearings also mounted in the slots of the end pieces, the gear-wheels of the same size, but smaller than the rollers, affixed to the shafts of the rollers, the lower gear-wheel being adapted to receive a hand-crank, the larger intermediate gear-wheel meshing with one of the gear-wheels on the roller-shafts, the smaller intermediate gear-wheel meshing with the larger intermediate gear-wheel and with the gear-wheel on the shaft of the other roller, it also being adapted to receive a hand-crank, the link connecting the shaft of the movable roller with the axle or support of one of the intermediate gears, and the hand-crank, these parts being combined and arranged substantially as described, whereby the two rollers may be both positively driven at either of two different speeds, according as the hand-crank is connected with the gear of the lower roller or with the smaller intermediate gear.

2. In a clothes-wringer, the combination, with the slotted end frame-pieces, the bottoms of the slots being formed into bearings for the lower-roller shaft, and the rollers with their shafts mounted in the slots of the end pieces, of the gear-wheels of the same size, affixed to the shafts of the rollers, the lower gear-wheel being provided with the spurs e' , the larger intermediate gear-wheel t , meshing with the gear-wheel of the lower roller and mounted upon an axle r integral with the end piece of the frame, the vibrating link O , journaled by a thimble to the upper-roller shaft and at its rear end provided with a stud-axle V , the smaller intermediate gear-wheel mounted upon the stud-axle V and meshing with the gear on the upper-roller

shaft and also with the lower intermediate gear, it being provided with the spurs w , the link X , connecting the axles of the intermediate gear-wheels, and the hand-crank provided with the locking-hub adapted to engage with the spurs on the gear on the lower-roller shaft or with those on the smaller intermediate gear-wheel, substantially as set forth.

3. In a clothes-wringer, the combination, with the slotted end pieces and the rollers, of the guide-plates k , having the slots l , through which the roller-shafts pass, and the way-pieces $m m'$, projecting outward from the plates, whereby they are adapted to enter the slots of the frame-pieces and to guide the plates, substantially as set forth.

4. In a clothes-wringer, the combination, with the slotted end pieces and the rollers, of the guide-plates arranged between the ends of the rollers and the end frame-pieces and having a downward bearing upon the end frame-pieces, and the screws seated in bearings in the said guide-plates for raising the upper roller away from the lower one, substantially as set forth.

5. In a clothes-wringer having slotted end supports, provided at the bottoms of the slots with half-boxes and having rearward-extending feet, the said slotted supports being connected at their tops by an arched cross-piece and at the ends of their rearward-extending feet by a lateral cross-piece, the combination of the guide-plates $k k$, provided with the slots l , and the way-pieces $m m'$, said way-pieces m having screw-bolts for limiting the pressure-contact between the rollers, substantially as described and set forth.

6. In a clothes-wringer, the combination, with the frame having the slotted end pieces, and the rollers, the upper roller being movable, of a thimble-bearing in which is mounted one end of the shaft of the movable roller, having end flanges, one of which is notched, as at e , the half-box bearing resting upon the said thimble-bearing between its flanges, provided with a spur d , which enters the notch e , the roller c , mounted in the said half-box, and the spring j , resting upon the roller c , substantially as set forth.

In testimony whereof I have hereunto set my hand this 11th day of August, A. D. 1888.

CYRENUS WHEELER, JR.

Witnesses:

FRANK R. RATHBURN,
MARY A. MORRIS.