

No. 628,545.

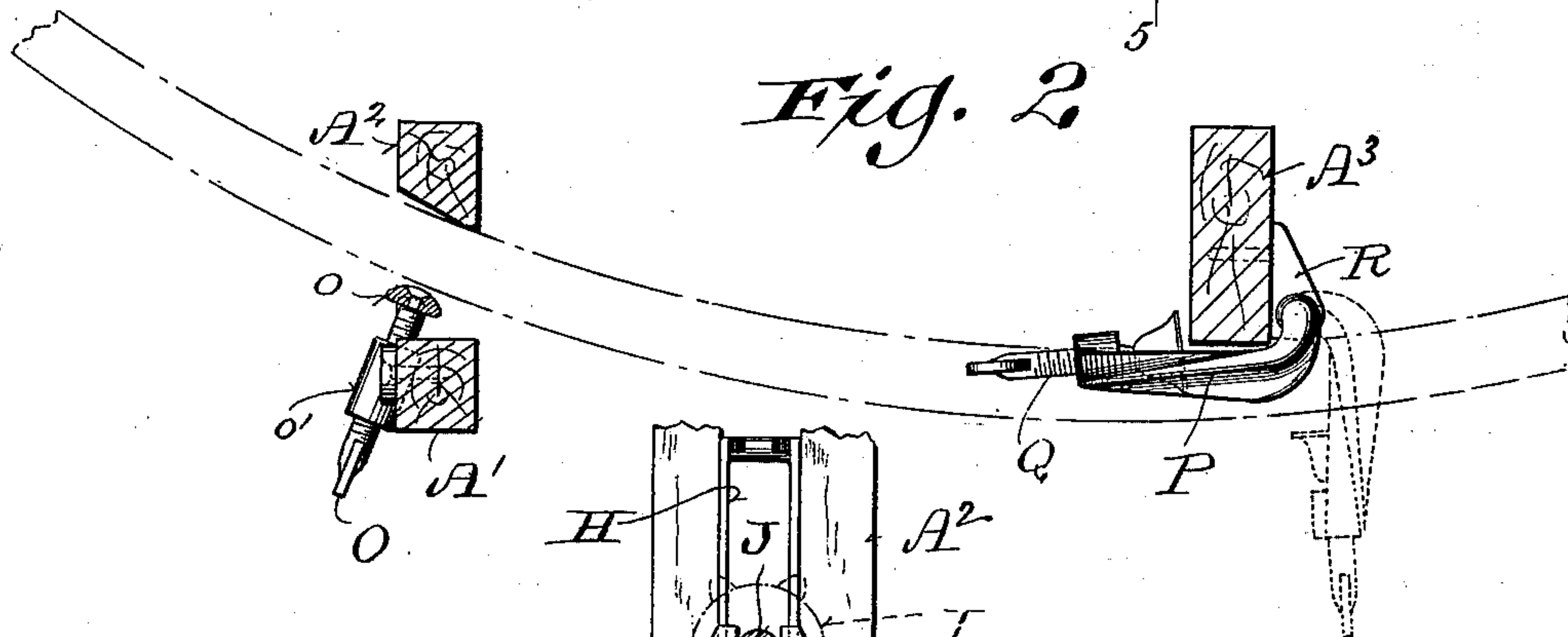
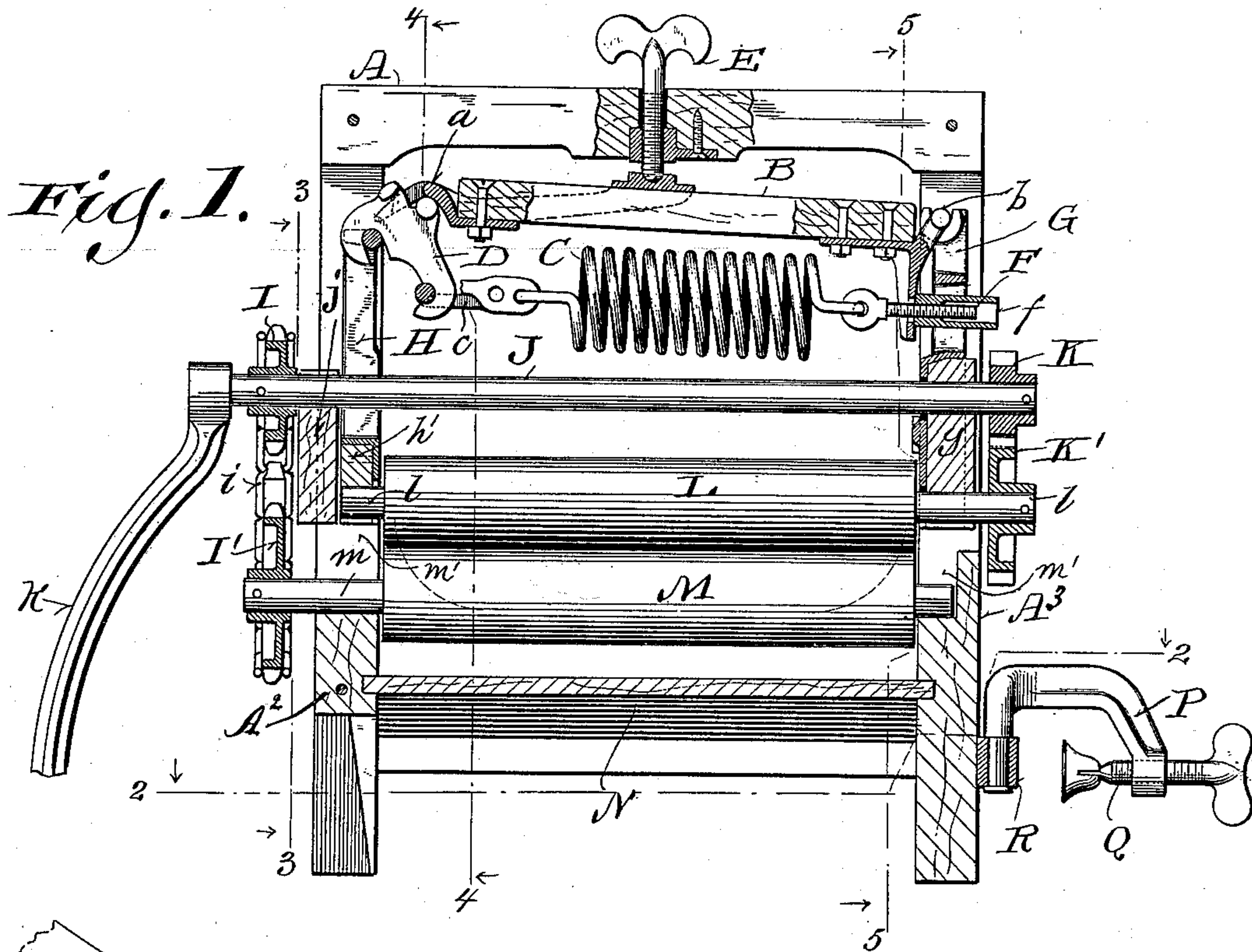
Patented July 11, 1899.

G. A. PADDOCK.
CLOTHES WRINGER.

(Application filed Aug. 29, 1896.)

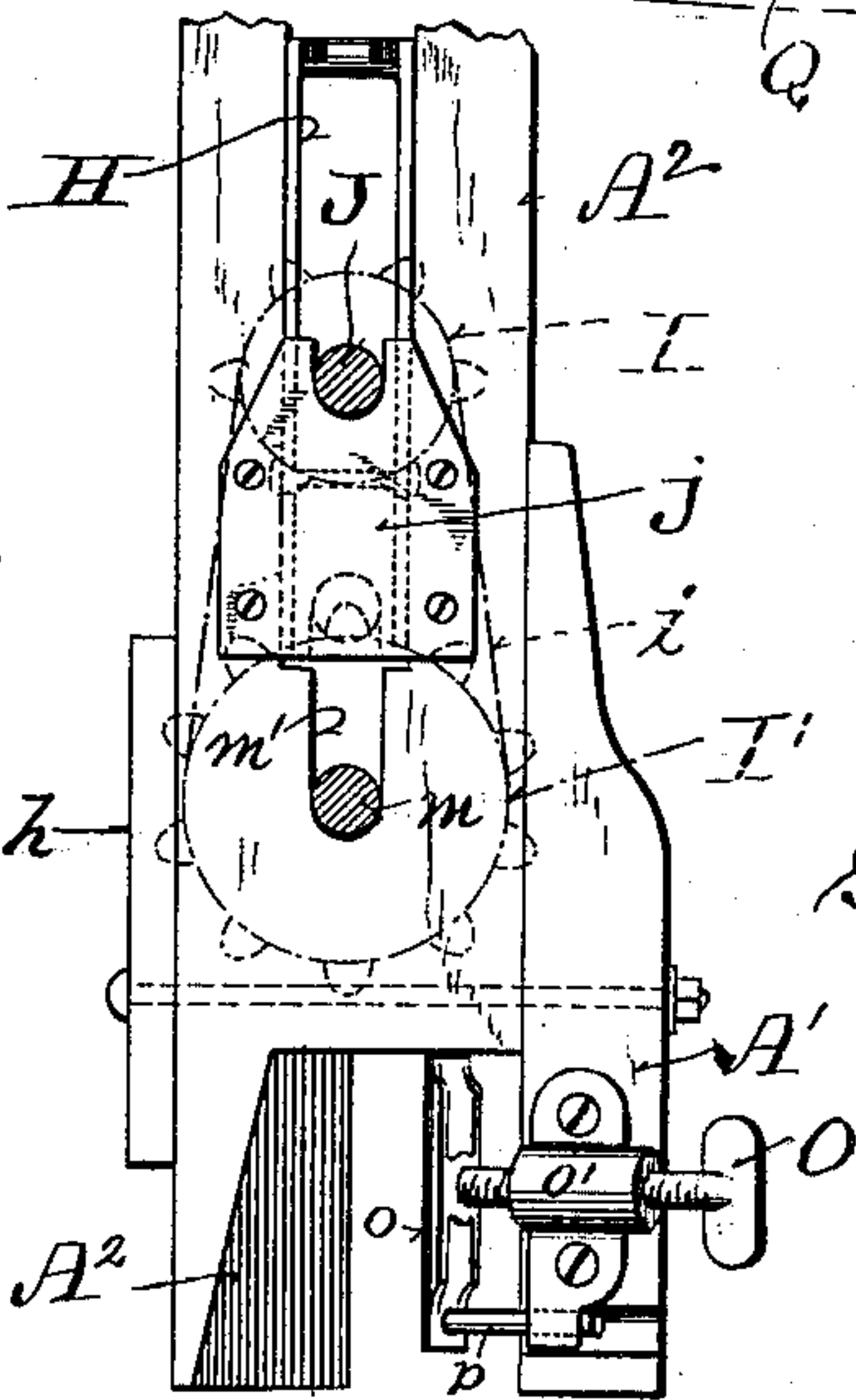
(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Geo. W. Young.
B. C. Roloff.

Inventor:
Gustavus A Paddock



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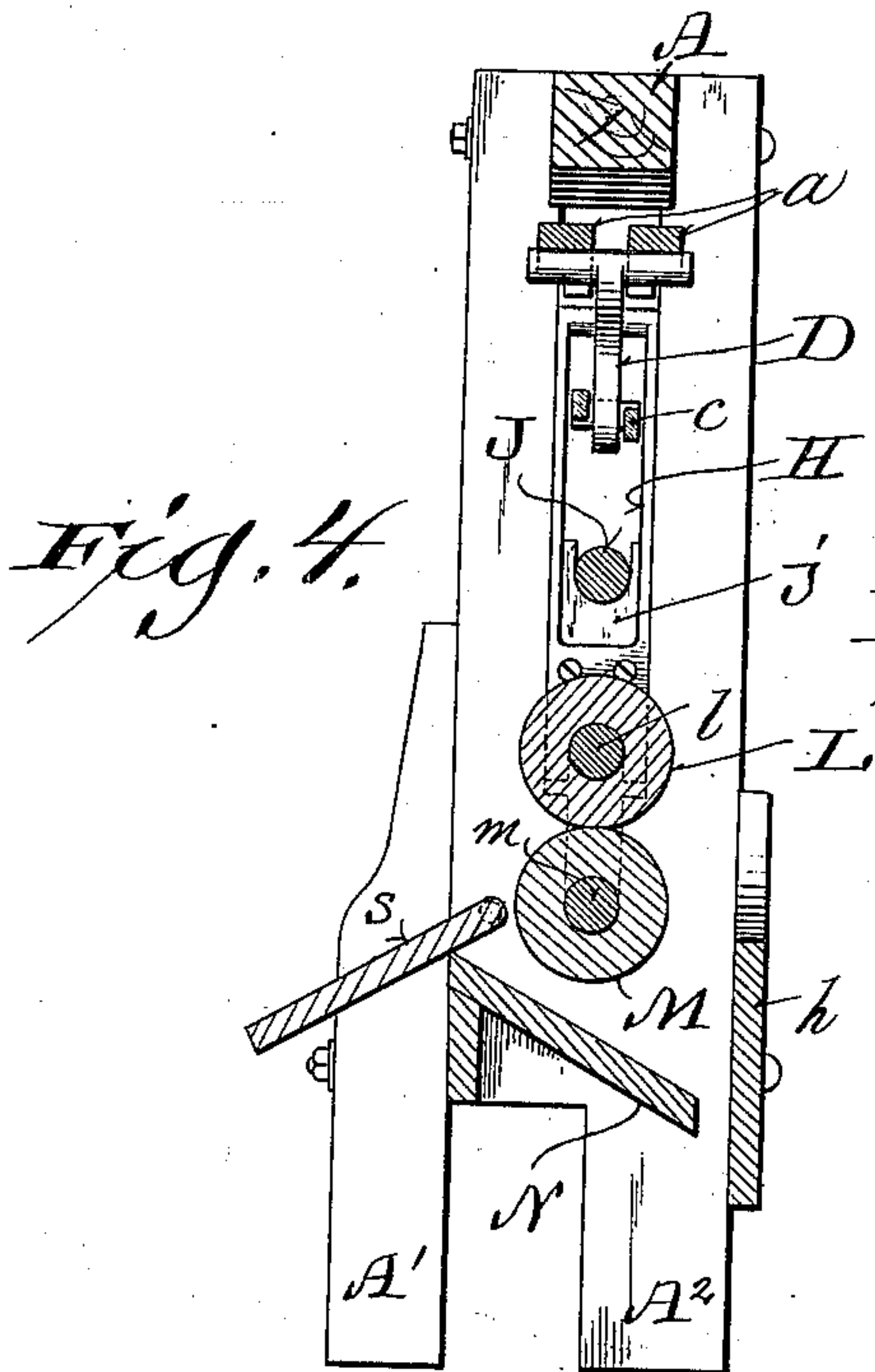


Fig. 5.

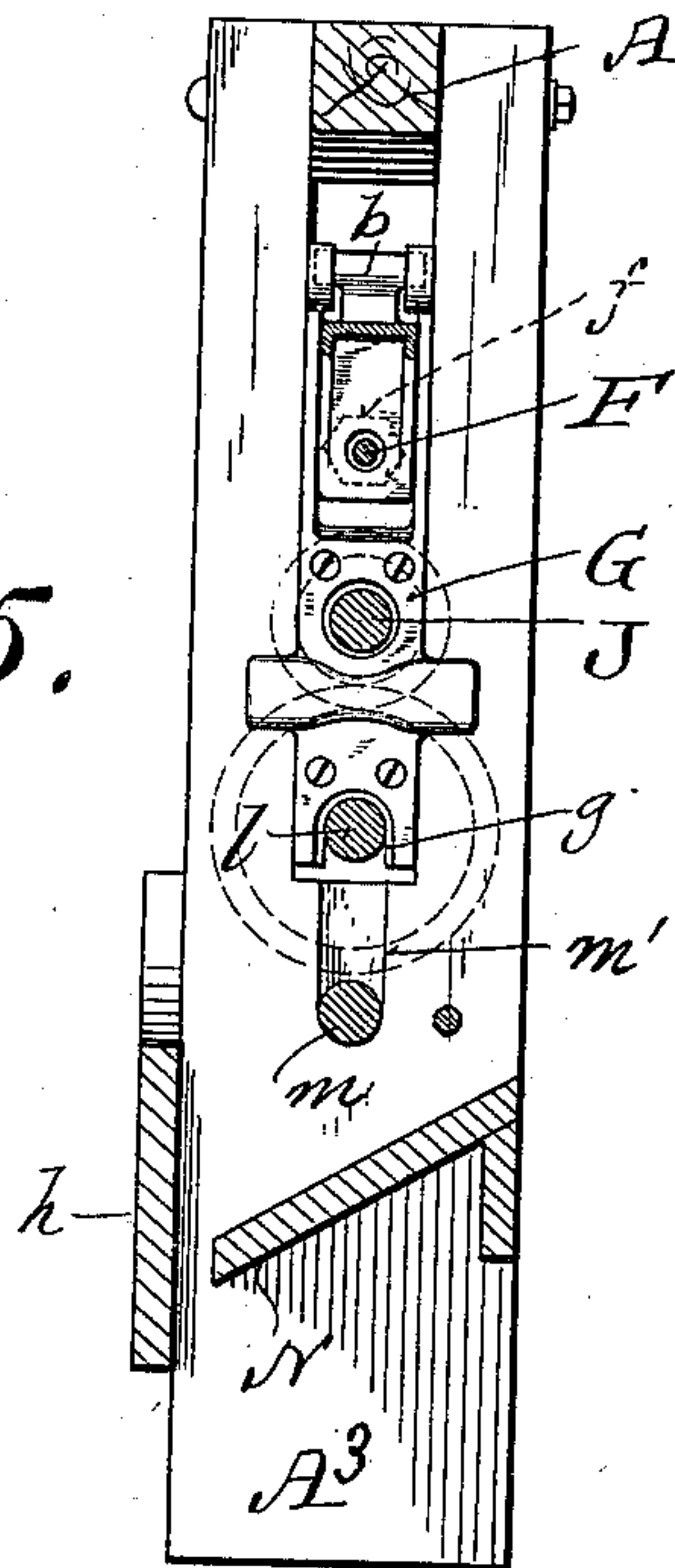
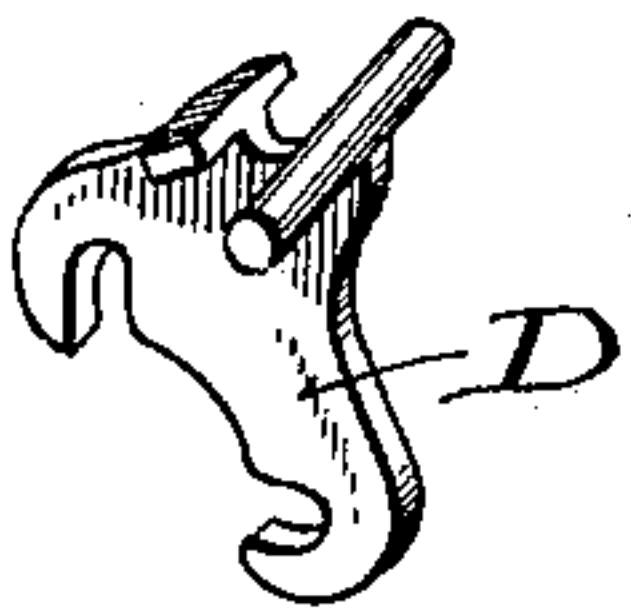


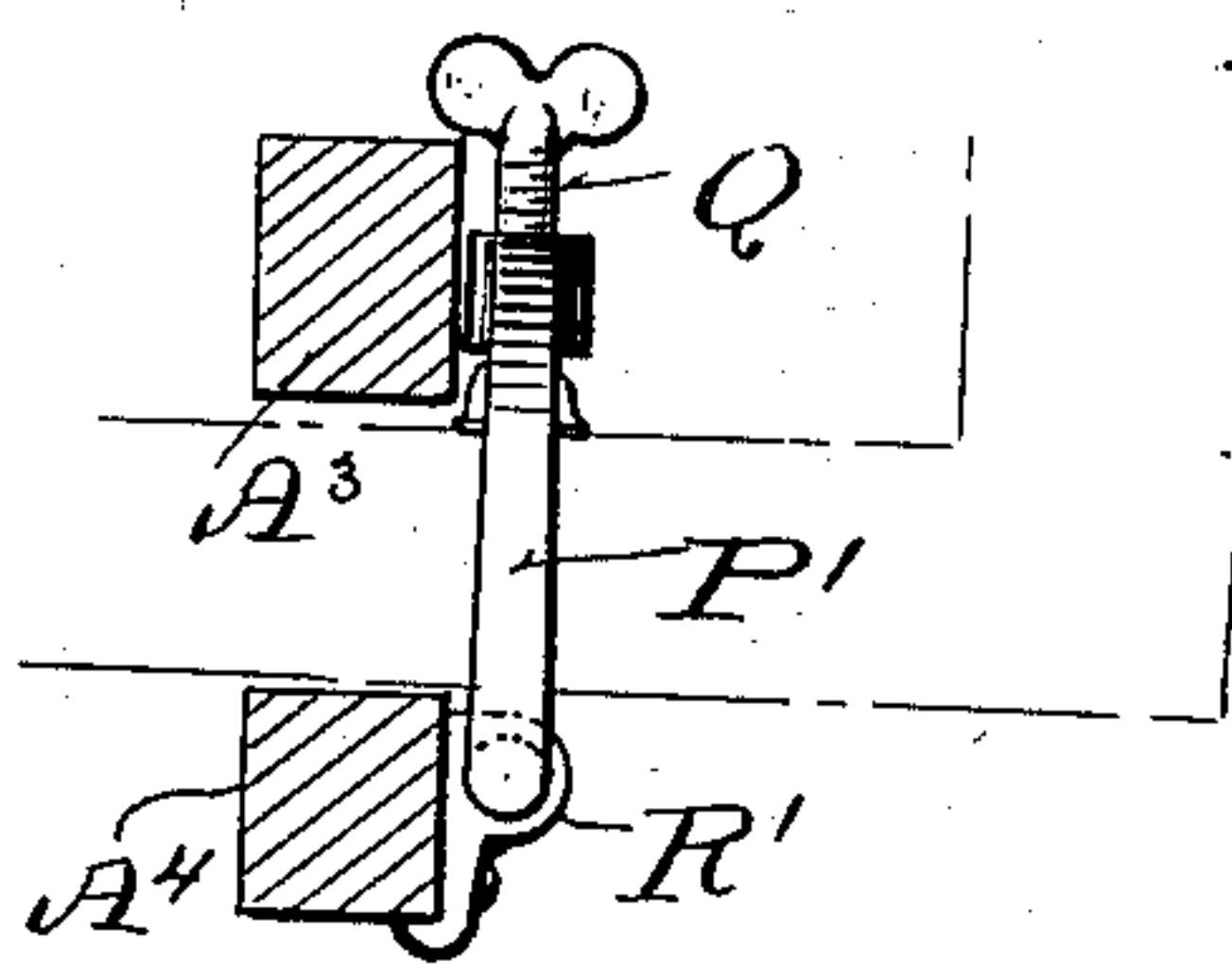
Fig. 6.



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Fig. 7.



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UNITED STATES PATENT OFFICE.

GUSTAVUS A. PADDOCK, OF BEAVER DAM, WISCONSIN.

CLOTHES-WRINGER.

SPECIFICATION forming part of Letters Patent No. 628,545, dated July 11, 1899.

Application filed August 29, 1896. Serial No. 604,339. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS A. PADDOCK, a citizen of the United States, residing at Beaver Dam, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Clothes-Wringers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has for its object to provide simple, economical, and easily-operating clothes-wringers in which the rolls may have ready wide separation without detriment to the driving mechanism and also to insure the proper pressure at all times without disturbing the adjustment of the regulating device.

Therefore said invention consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a partly-sectioned tub-side view of a clothes-wringer constructed in accordance with my invention, certain parts of the same being broken; Figs. 2, 3, 4, and 5, sectional views respectively indicated by lines 2 2, 3 3, 4 4, and 5 5 in the first figure; Fig. 6, a detail perspective view of a bell-crank lever embodied in the wringer; and Fig. 7, a detail plan view, partly in horizontal section, illustrating the swing-clamp similar to one of those shown in preceding figures applied to a notched-end frame-standard.

Referring by letter to the drawings, A indicates the top bar of the wringer-frame, A' a leg made fast to the lower notched portion of a longitudinally-slotted frame-standard A², and A³ indicates the other longitudinally-slotted frame-standard of the machine. The top bar is bolted in the slots of the frame-standards, at the upper ends of the same, and fast to said standards, near their lower ends, is a watershed N and backboard h, a clothes-board s being trunnioned to the aforesaid standards above said watershed. The general construction and arrangement of parts thus far specified are common in the art of clothes-wringers, hard-wood being the material employed in the manufacture of said parts.

Made fast to the leg A' of frame-standard A² is a bracket o', that constitutes a bearing

for a set-screw O, one end of which is swiveled in a plate o, having a lower right-angled prong p, that moves in space between said leg and bracket to keep said plate in vertical position when said screw is adjusted. The parts in the last-described assemblage, with the exception of the wringer-frame, are made of metal and constitute one of the clamps by which the wringer is held on a tub or other support.

In pivotal connection with a bracket R, fast to frame-standard A³, is a yoke P, and a set-screw Q, having bearing in one end of the yoke, is provided with a swivel-button designed to come against a tub or other support, the last-described assemblage of parts being metallic and constituting the other clamp for holding the wringer on a tub or other support. In Fig. 7 the frame-standard A³ is shown as having a notched lower end provided with a swing-clamp comprising a bracket R', yoke P' in pivotal connection with the bracket, and a set-screw Q', having its bearing in one end of the yoke, said screw being provided with a swivel-button, this clamp being similar to one of the others above specified. While I have shown the clamps as part of a complete clothes-wringer, said clamps are similar to what is already common in the art, and therefore they are not specifically claimed herein.

The vertical slots in the frame-standards are shaped at their lower ends to provide bearing-spaces m' for the shaft m of the lower wringer-roll M, and in sliding engagement with said slots are the bearing-frames H G for the shaft l of the upper wringer-roll L, these bearing-frames being for the most part above the latter shaft. As herein shown, the bearing-frames that slide in the vertical slots of the frame-standards may be cast metal and have hard-wood blocks h' g arranged therein for contact with shaft l of the upper wringer-roll. The block g is made to serve as a bearing for the drive-shaft J, herein shown provided with a crank k, and the other bearing for the drive-shaft is herein shown as a notched block j, made fast to the frame-standard A².

A sprocket-pinion I is made fast to one end of the drive-shaft, and the other end of said shaft is fast in a spur-pinion K. The sprocket-pinion is connected by a link belt i with

sprocket-wheel I', fast on the shaft of the lower wringer-roll M, and the shaft of the upper wringer-roll L is fast in a spur-wheel K' in mesh with the spur-pinion K, aforesaid.

5 The bearing-frame H is shown in the form of parallel arms above the block *h'*, and the upper ends of these arms are connected by a cross-bar that constitutes a fulcrum for one hook-end arm of bell-crank lever D, the other
10 arm of this lever being in the form of a hook for a link *c*, with which one end of a spiral spring C is connected, the other end of the spring being in connection with the eye end of a screw F, that extends through one arm of
15 an angular casting *b*, herein shown as having lateral trunnions that bear in recesses at the upper ends of side arms constituting part of the bearing-frame G. Another casting *a* has hook branches that bear on trunnions extend-
20 ing laterally from the upper inner corner of the bell-crank lever D, and the latter casting and the one *b* are shown connected to ends of a wooden bar B, that is approximately parallel to the wringer-rolls.

25 A tension-nut *f* is run on screw F between side bars of bearing-frame G to oppose the depending arm of casting *b*, and the wooden bar B is shown provided with a recessed metal block constituting a socket for the point
30 end of a pressure-regulating screw E, for which a bearing is provided in the top bar A of the machine.

The bell-crank lever D is provided with lateral lugs in opposition to the hook branches of
35 casting *a* to prevent pressure on the wringer-rolls, except the regulating device be adjusted, these lugs being well illustrated in Fig. 6.

In practice rotary motion of the drive-shaft is communicated to the lower wringer-roll by
40 the sprocket and link-belt gear above specified. Like motion is also communicated from the drive-shaft to the upper wringer-roll by means of the spur-gear set forth in the foregoing. When material is run between the rolls,
45 the upper one of the same is lifted against a predetermined degree of yielding pressure that is regulated at will, as by adjustment of the screw E herein shown. The spur-gear above specified moves upward with roll L,
50 but there is no bind or increase of friction in the gearing, no matter what thickness of material is passed between the rolls.

Were the drive-shaft connected by spur-gear with both roll-shafts at opposite ends of
55 the machine, as has been heretofore attempted in the art, it is obvious that there would be a double amount of friction, as by the side pressure of the cogs against each other each of the shafts would be pressed sidewise against
60 the bearing-box by the force used in propelling the rolls. At the same time none of the downward pressure on the lower roll-shaft is taken off, but rather added to, as the pressure of the cogs against each other will in-
65 crease the friction on the lower side of said roll-shaft and make a corresponding amount on the upper side of the drive-shaft; but in

my gearing above set forth I overcome the mechanical defect heretofore experienced, for, as will readily be seen, all the pull of the link
70 belt is downward on the drive-shaft and correspondingly upward on the shaft of the lower roll, thus simply transferring part of the roll-pressure from the latter to the former. Therefore instead of having merely substituted one
75 well-known form of gear for another as a means of communicating rotary motion to the lower roll from a drive-shaft in spur gear with the upper roll-shaft I make provision to avoid
80 increase of friction from the adding of another shaft to the wringer.

The degree of spring-pressure is regulated by adjustment of tension-nut *f* independent of the wringer-frame, and this pressure is
85 brought upon the roller by adjustment of the regulating device, herein shown in the form of a set-screw operative upon bar B. The oscillating bell-crank lever D operates to automatically maintain an equal roll-pressure
90 whether the material operated upon be thick or thin, and this function will be best understood by observing that if lines drawn from the center of each lever-hook intercept each other at the axial center of the trunnions per-
95 taining to said lever their intersection will form an acute angle. Now if the bell-crank lever swings down and outward on its fulcrum incidental to spreading apart of the wringer-rolls the distance from the trunnions
100 of said lever to the link *c*, in connection with spring C, will decrease more rapidly than the distance between the trunnions and the parallel arms of the bearing-frame H.

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

1. A clothes-wringer comprising vertically-movable frames provided with bearings for the upper roll-shaft, a bell-crank lever fulcrumed on one of the bearing-frames at the
110 upper end of same, a bar having rocking connection with the upper inner corner of the bell-crank lever and pivotal connection with the bearing-frame farthest from the one aforesaid, a link in pivotal connection with
115 the lower end of said lever, a spring in adjustable tension connection with the link and a depending branch of the bar, and a pressure-regulating device in connection with the top bar of the wringer-frame exertive against
120 the former bar.

2. A clothes-wringer comprising vertically-movable frames provided with bearings for the upper roll-shaft, a bell-crank lever fulcrumed on one of the bearing-frames at the
125 upper end of same and provided with upper lateral trunnions and lugs, a bar having hook branches at rest on the trunnions under the lugs of the lever and having pivotal connection with the bearing-frame farthest from the
130 lever-fulcrum, a spring having one end thereof in pivotal link connection with the lower end of said lever and its other end in adjustable tension connection with a depending

branch of the bar, and a pressure-regulating device in connection with the top bar of the wringer-frame exertive against the former bar.

5 3. A clothes-wringer comprising a pressure-bar approximately parallel to the wringer-rolls one of which is mounted in stationary bearings and the other in vertically-movable bearings, a lever in pivotal connection with
10 the bar, a spring having adjustable tension connection with the bar and lever, and a pressure-regulating device in connection with a cross-bar of said frame.

15 4. A clothes-wringer comprising a drive-shaft having link-belt and sprocket gear connection with one of the roll-shafts and spur-

gear connection with the other roll-shaft, one end of the drive-shaft and a roll-shaft in gear therewith being mounted in stationary bearings, the bearings for the other end of said 20 drive-shaft and the other roll-shaft being vertically movable, a pressure-bar approximately parallel to said rolls, a lever in pivotal connection with the bar, a spring having adjustable tension connection with the bar and le- 25 ver, and a pressure-regulating device in connection with a cross-bar of said frame.

August 19, 1896.

GUSTAVUS A. PADDOCK.

Witnesses:

HENRY E. DAVIS,
JOS. BROWN.