

No. 689,357.

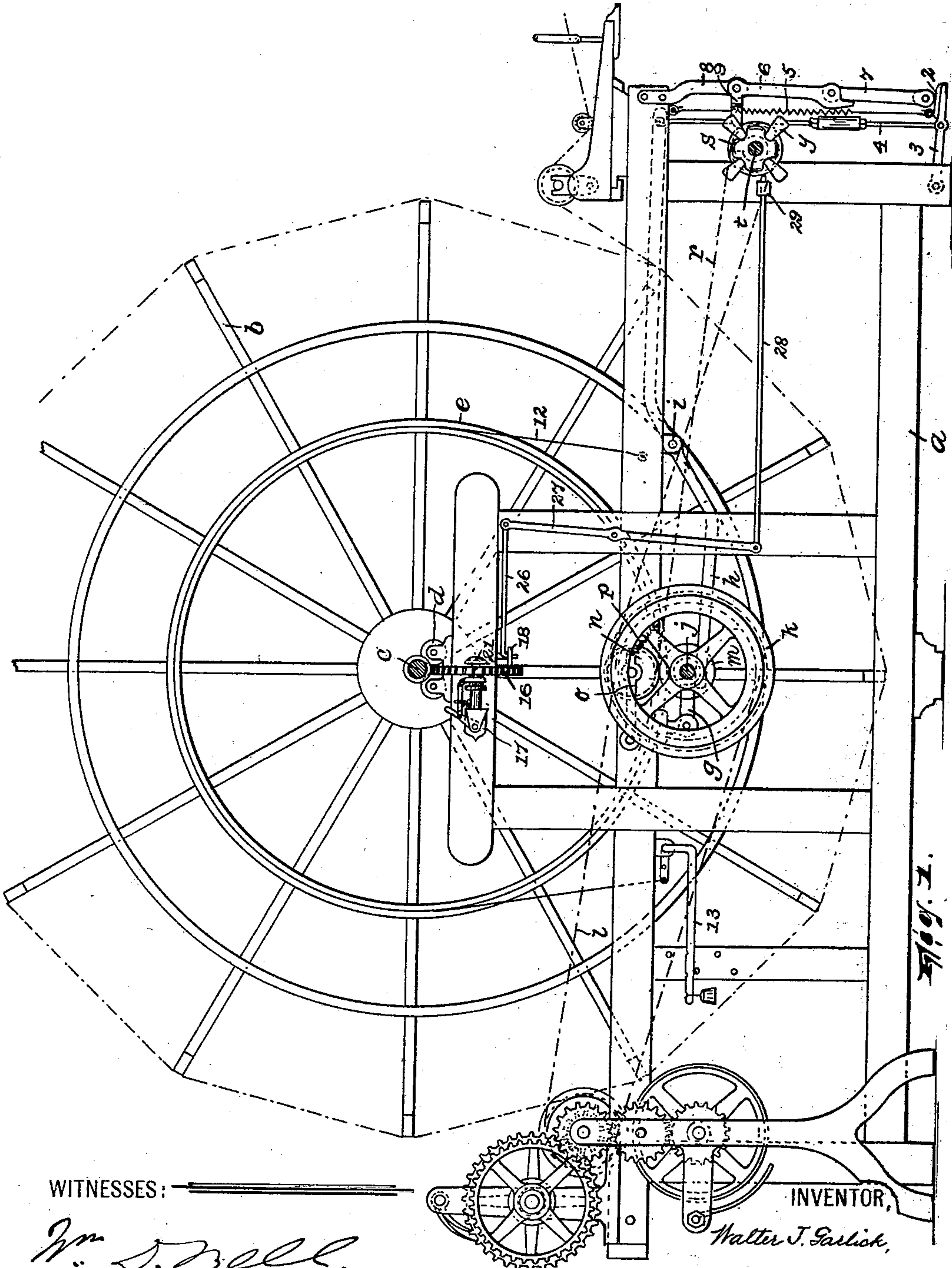
Patented Dec. 17, 1901.

W. J. GARLICK.
WARPING MACHINE.

(Application filed Mar. 5, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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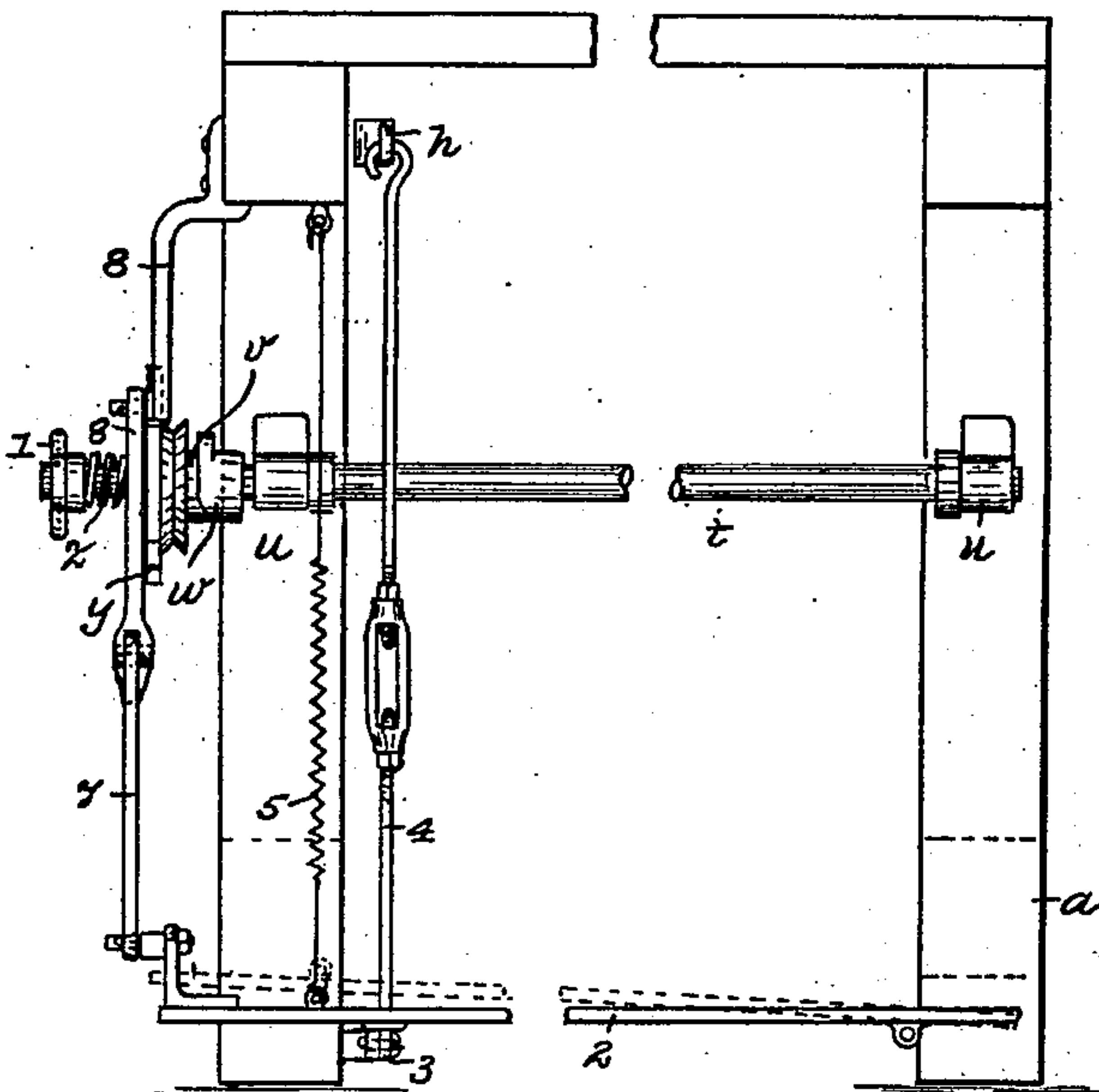


Fig. 2.

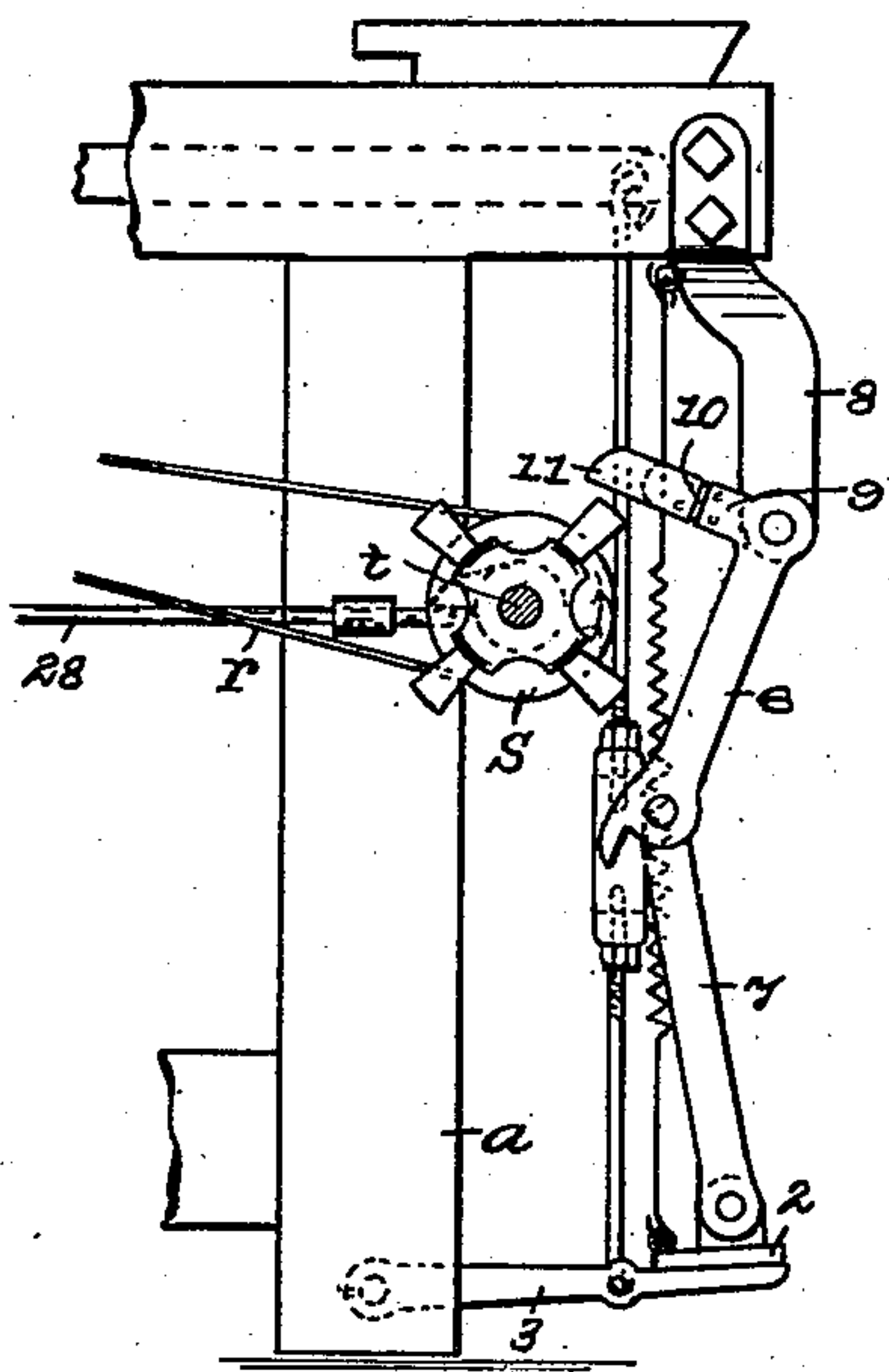


Fig. 4.

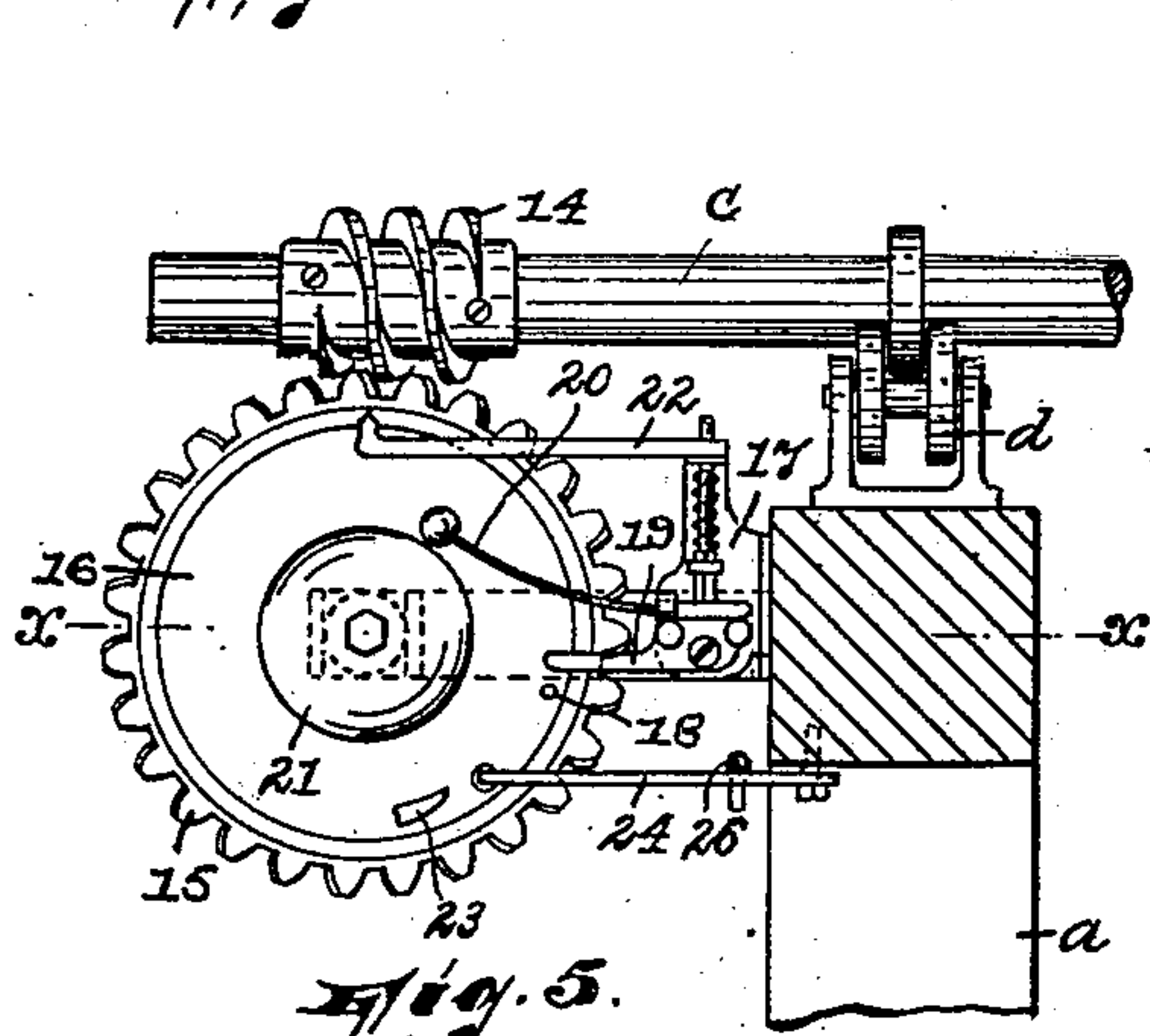


Fig. 5.

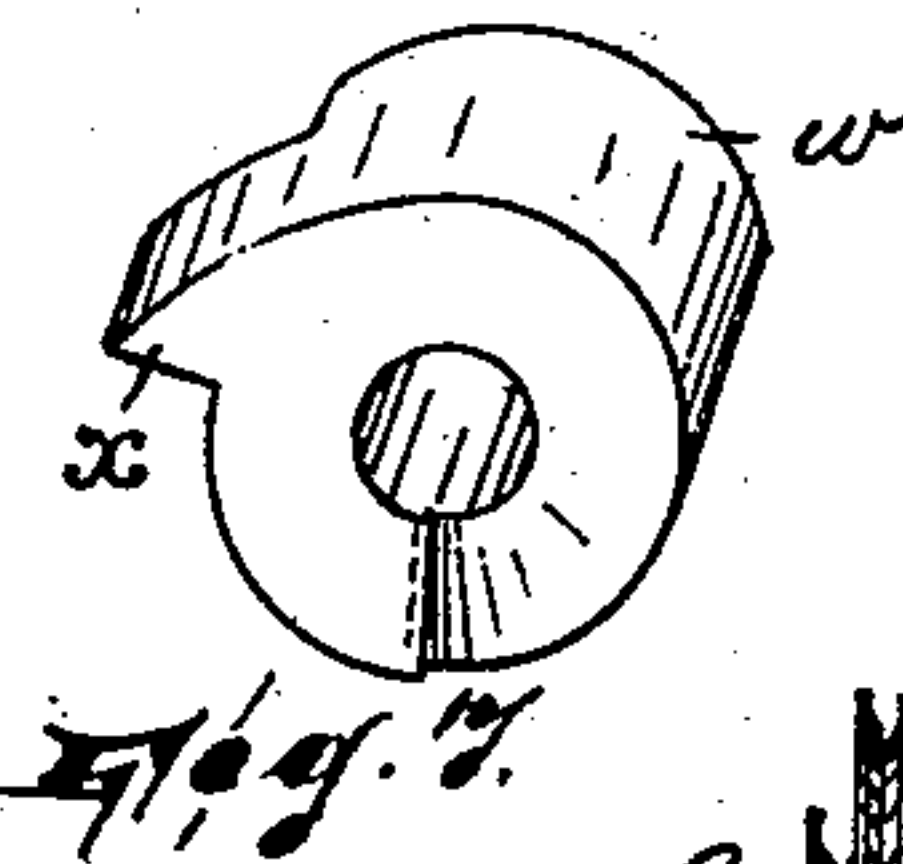


Fig. 7.

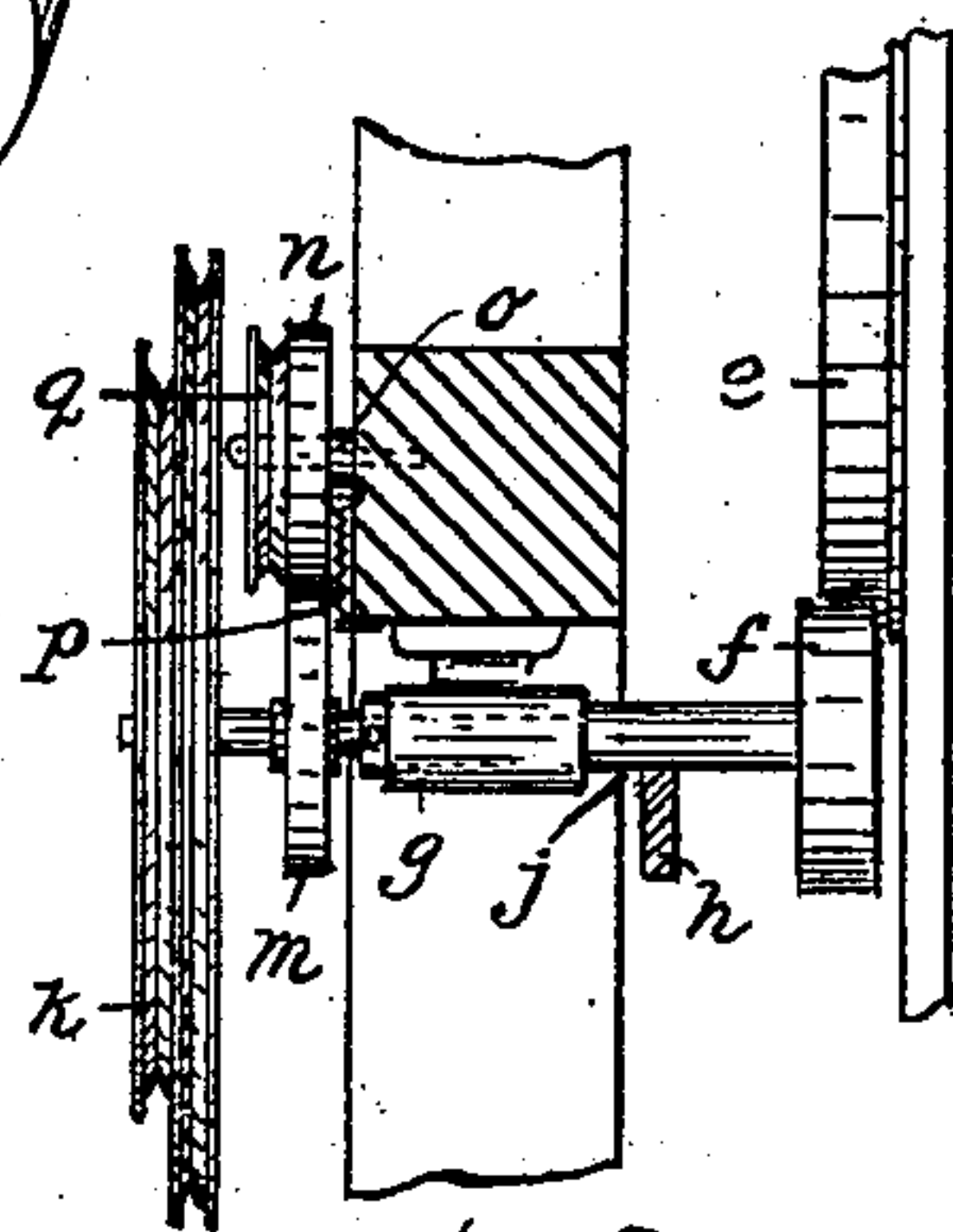


Fig. 3.

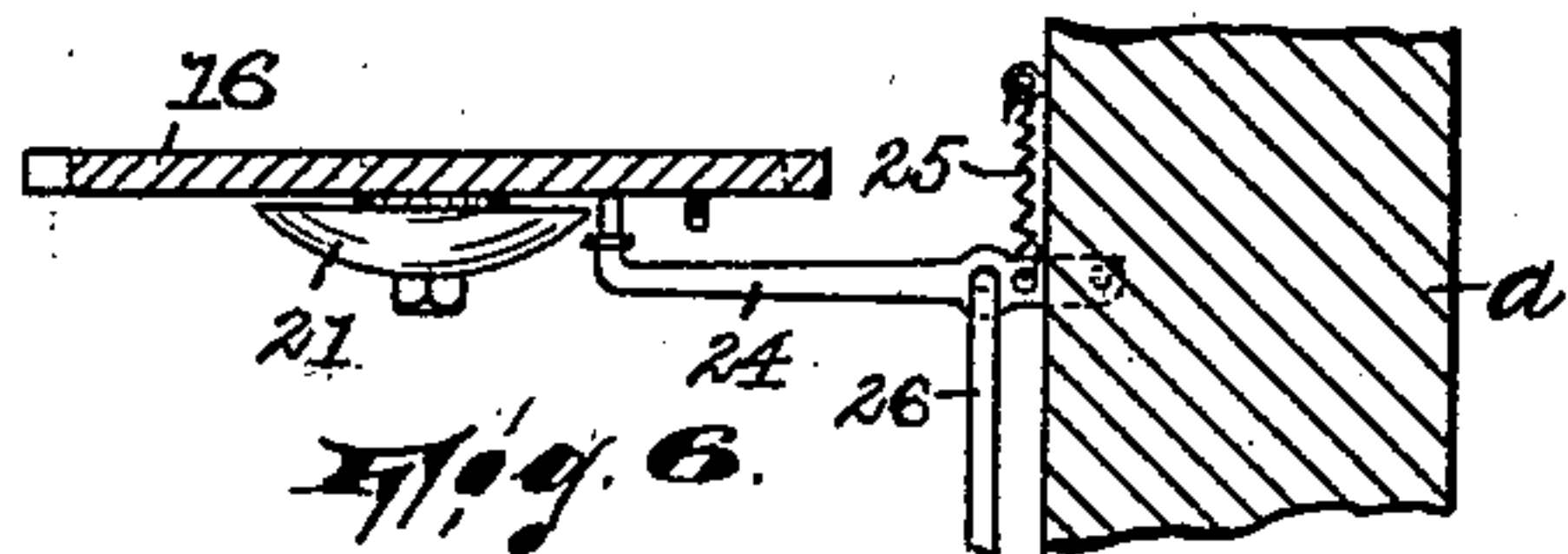


Fig. 6.

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UNITED STATES PATENT OFFICE.

WALTER J. GARLICK, OF PATERSON, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO BERTHA GARLICK, OF PATERSON, NEW JERSEY.

WARPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 689,357, dated December 17, 1901.

Original application filed October 4, 1900, Serial No. 31,967. Divided and this application filed March 5, 1901. Serial No. 49,753. (No model.)

To all whom it may concern:

Be it known that I, WALTER J. GARLICK, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Warping-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, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to warping-machines; and it has reference to that portion of a machine of this nature which is comprised in the mechanism whereby the machine is driven.

The object of the invention is to provide the mechanism whereby the warping-machine is driven with an improved form of throw-out apparatus of that construction whereby when a predetermined amount of material has been wound upon the reel of the machine said apparatus operates to disconnect the power instantaneously, thus permitting the reel to stop.

The present application is a division of an application for United States Letters Patent for warping-machines, filed by me October 4, 1900, Serial No. 31,967.

My invention is fully illustrated in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of a warping-machine of the usual pattern provided with my improvements. Fig. 2 is a view in front elevation of my improved machine. Fig. 3 is a sectional view of a portion of the machine, taken on a vertical line just forward of the axis of the reel. Fig. 4 is a view in side elevation of a portion of what is shown in Fig. 1, the various parts being enlarged. Figs. 5 and 6 are respectively a front view and a view on the line $x-x$ in Fig. 5 of the measuring mechanism constituting the automatic means whereby the power is controlled, and Fig. 7 is a perspective view of a certain clutch member.

In said drawings, a designates the frame

of the warping-machine, and b denotes the reel, the axis c of which in the usual manner is journaled in antifriction-bearings d , suitably arranged on said frame. To one side of the reel is secured the usual circular flange e , against which is adapted to bear a friction-roller f , carried in a pivoted bracket g and rendered controllable by a lever h , fulcrumed at i in such manner that by raising or lowering the lever the contact between the roller and flange may be made or broken. The roller f is secured upon one end of a short shaft j , journaled in the bracket g , and at the other end of this shaft is secured a pair of pulleys k , over either of which may extend the belt l , whereby power is taken into the machine. The free end of lever h takes under this shaft. Upon the shaft j I also mount another friction-roller m , against which bears still another friction-roller n , carried by a bracket o , said bracket being pivoted in the frame and being controlled by a spring p , which normally acts to hold the two friction-rollers in contact with each other.

q is a pulley formed with the roller n , and r is a crossed belt which extends around said pulley and also around another pulley s , which is so journaled on a horizontal revoluble shaft t , having bearings in brackets u , projecting from the front of the frame a , that it may be revolved freely on said shaft.

v and w designate normally-engaging clutch members, the former of which forms a part of the pulley s and the latter of which is secured upon the shaft t and is adapted to rotate therewith. The clutch member w , it should be remarked, has a peripheral projection x , which will be hereinafter referred to. y denotes radial arms which project from the pulley, forming tappets.

The clutch members are normally held in contact with each other by a spiral spring z , which is coiled between the pulley s and a hand-wheel 1 , which is secured rigidly on the end of the shaft t , so that, if desired, the latter may be manually rotated. (The hand-wheel is not shown in Figs. 1 and 4.)

At the front of the machine is pivoted to the lower portion of the frame a treadle-lever 2 , the free end of which rests upon a lever 3 ,

also fulcrumed in the frame, and is connected with that end of the lever *h* which is remote from the shaft *j*, which it supports by a coupling 4. The treadle is normally lifted by a spring 5, connecting it with the upper portion of the frame. The treadle is also connected with the upper portion of the frame by toggle-levers 6 and 7 of such construction that so long as they are alined (the former being pivoted in a bracket 8, projecting downwardly from the frame, while the latter is pivotally connected to the treadle) the spring 5 cannot act to raise the treadle-lever, whereas as soon as their alinement is disturbed said lever may be raised by the spring. From the lever 6 projects an arm 9, and to this arm through the medium of a plate-spring 10 is secured a block 11, the arrangement being such that the parts together constitute a flexible extension of the lever 6, which will bend laterally but not vertically. The block normally extends in a plane immediately at the side of the tappets *y*; but should something stop the rotation of the shaft *t*, which, be it observed, is normally driven by the belt *r* through the medium of the clutch members, the tappets will be brought into alinement with it, this being, of course, due to the fact that though the shaft ceases to rotate the pulley *s* continues to rotate, and so upon the consequent disconnection of the clutch members the member is forced laterally, moving the tappets with it.

It will be observed that should at any time the tappets be moved laterally when one of them is at the side of the block 11 the flexible mounting of said block, already described, will duly permit the movement. When the tappets *y* have been brought into such position that the block 11 lies in their path of movement, one of them will engage it, causing the toggle-levers to buckle, and thus permitting the spring 5 to raise the treadle-lever 2, which action will lift the adjacent end of the lever *h* and lower its other end. The result will of course be the disconnection of the friction-roller *f* and the flange *e*, thus throwing off the power from the reel, and also the disconnection of the rollers *m* and *n*, throwing off the power to the pulley *s*. It should be remarked that the reel is provided with the usual belt-brake 12, which is secured at one end to the frame, extends around the flange *e*, and at its other end is secured to a weighted lever 13.

Upon the axis *c* of the reel is mounted a worm 14, which is adapted to engage with the teeth 15 of an indicating-wheel 16, said indicating-wheel being journaled in a bracket 17, projecting from the frame, and carrying a pin 18, which is adapted to be engaged by a pivoted pawl 19, carrying a hammer 20, which whenever the pin slips past the pawl 19 strikes against a gong 21.

22 designates a pointer carried by the bracket 17 and coöperating with the indicat-

ing-wheel to register the amount of material wound on the reel.

In the wheel is formed a recess 23, and bearing against the face of said wheel in the path of the recess is the free end of a pawl 24, controlled by a spring 25 and connected to a rod 26, which is in turn pivotally connected to a lever 27, that is fulcrumed in the frame. To this lever is also connected another rod 28, movable in a guide 29 and adapted to have its free end projected into the path of the projection *x* of the clutch member *w*. Thus the indicating-wheel being set back (by virtue of an arrangement of parts which is old and unnecessary of description here) so that the pointer registers thereon the number of yards which it is intended the reel should contain when the machine is put in operation and has continued to operate until the indicating-wheel has been brought back to its initial position, the pawl 19 will move into the recess 23 and through the rod 26 and lever 27 move the rod 28 into the path of the projection *x*, so as to stop the rotation of the shaft *t*.

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

1. In a warping-machine, the combination, with the frame and a reel journaled in said frame, of a movable driving device adapted to engage said reel, means for rotating said device, a lever fulcrumed in said frame and adapted to engage said device to move the same, toggle-levers, a coupling pivotally connected to said lever at one end, operative connection between the other end of said coupling and one of said toggle-levers, a revoluble tappet device adapted to engage one of said toggle-levers to buckle the latter, a warp-registering mechanism controlled by said reel, and mechanism, operatively connecting said warp-registering mechanism and the tappet device, for actuating the latter, substantially as described.

2. In a warping-machine, the combination, with the frame and a reel journaled in said frame, of a movable driving device adapted to engage said reel, means for rotating said device, a lever fulcrumed in said frame and adapted to engage said device to move the same, toggle-levers, a coupling pivotally connected to said lever at one end, operative connection between the other end of said coupling and one of said toggle-levers, a pair of revoluble coacting clutch members, one of said members being movable into engagement with one of said toggle-levers to buckle the latter, a warp-registering mechanism controlled by said reel, and mechanism, operatively connecting said registering mechanism and the other clutch member to stop the rotation of the latter and effect the movement of said first-named clutch member, substantially as described.

3. In a warping-machine, the combination,

with the frame and a reel journaled in said frame, of a movable driving device adapted to engage said reel, means for rotating said device, a lever fulcrumed in said frame and
5 adapted to engage said device to move the same, toggle-levers, a coupling pivotally connected to said lever at one end, operative connection between the other end of said coupling and one of said toggle-levers, a pair
10 of revoluble coacting clutch members, one of said members being movable into engagement with one of said toggle-levers to buckle the latter, an indicating-wheel controlled by said reel and having a recess, a pawl mov-

able into said recess, and a train of levers 15 operatively connected to said pawl at one end and adapted, at the other end, to engage the other clutch member to stop the rotation of the latter and effect the movement of said first-named clutch member, substantially as 20 described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of January, 1901.

WALTER J. GARLICK.

Witnesses:

JOHN W. STEWARD,
ROBERT J. POLLITT.