

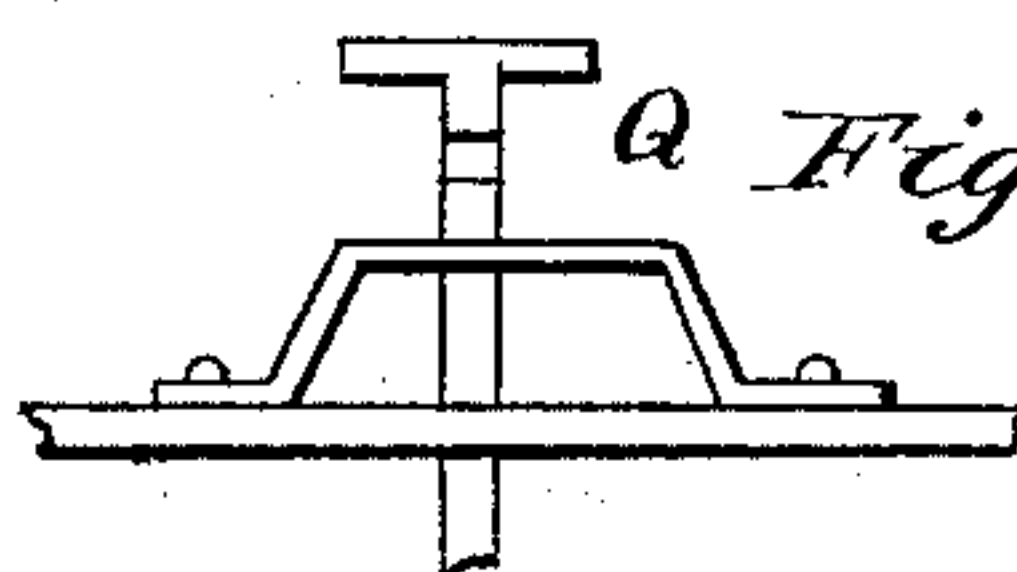
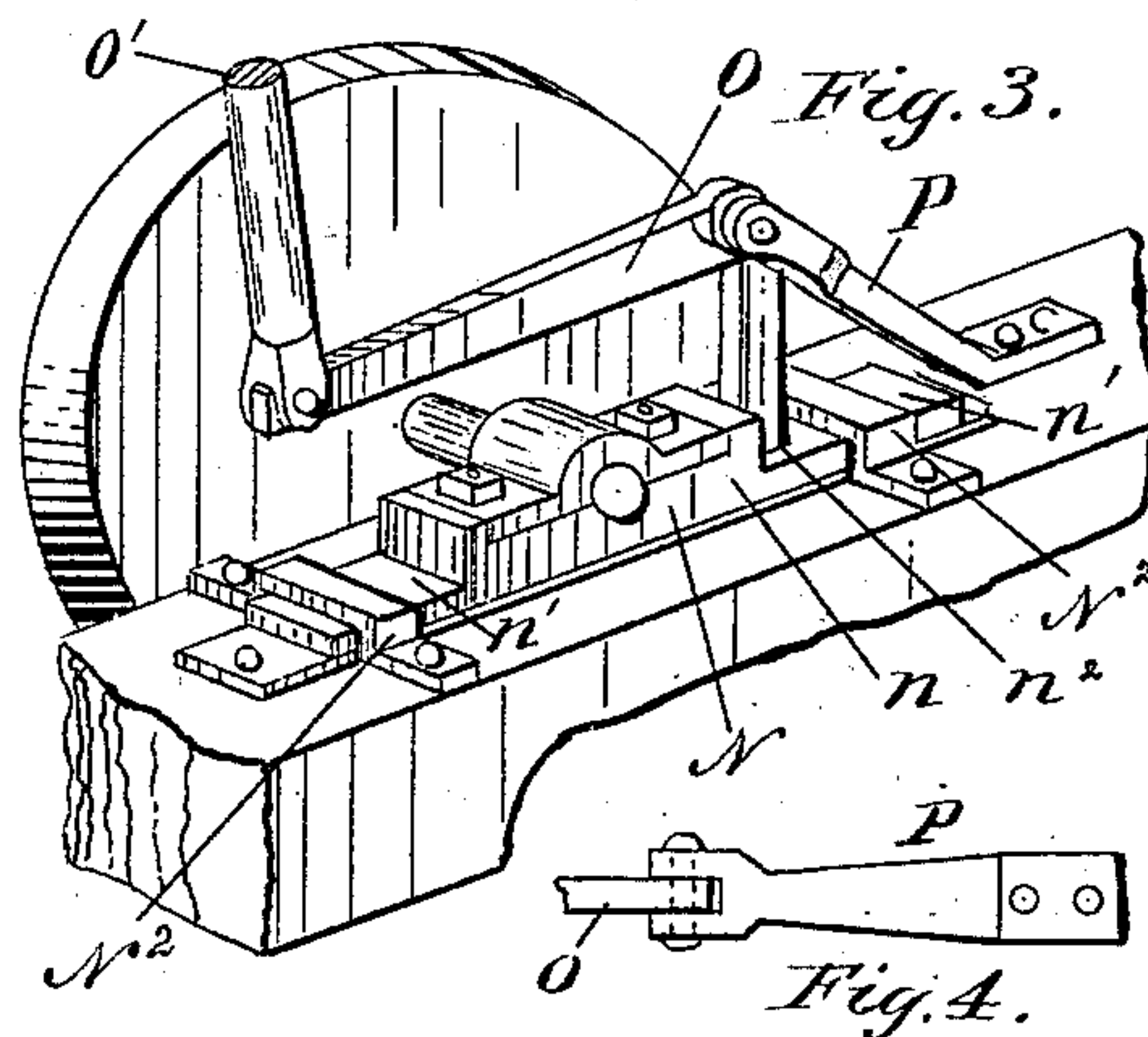
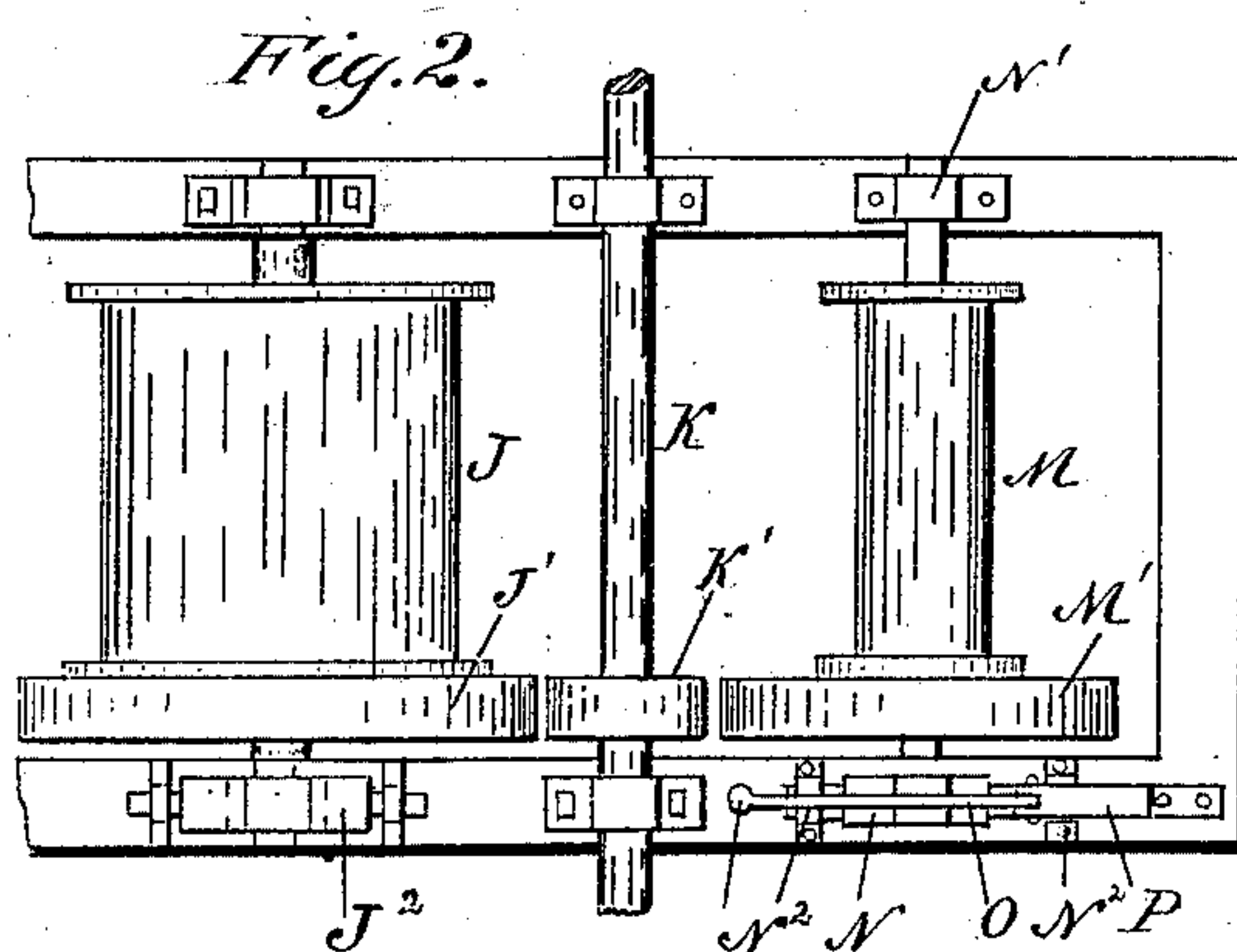
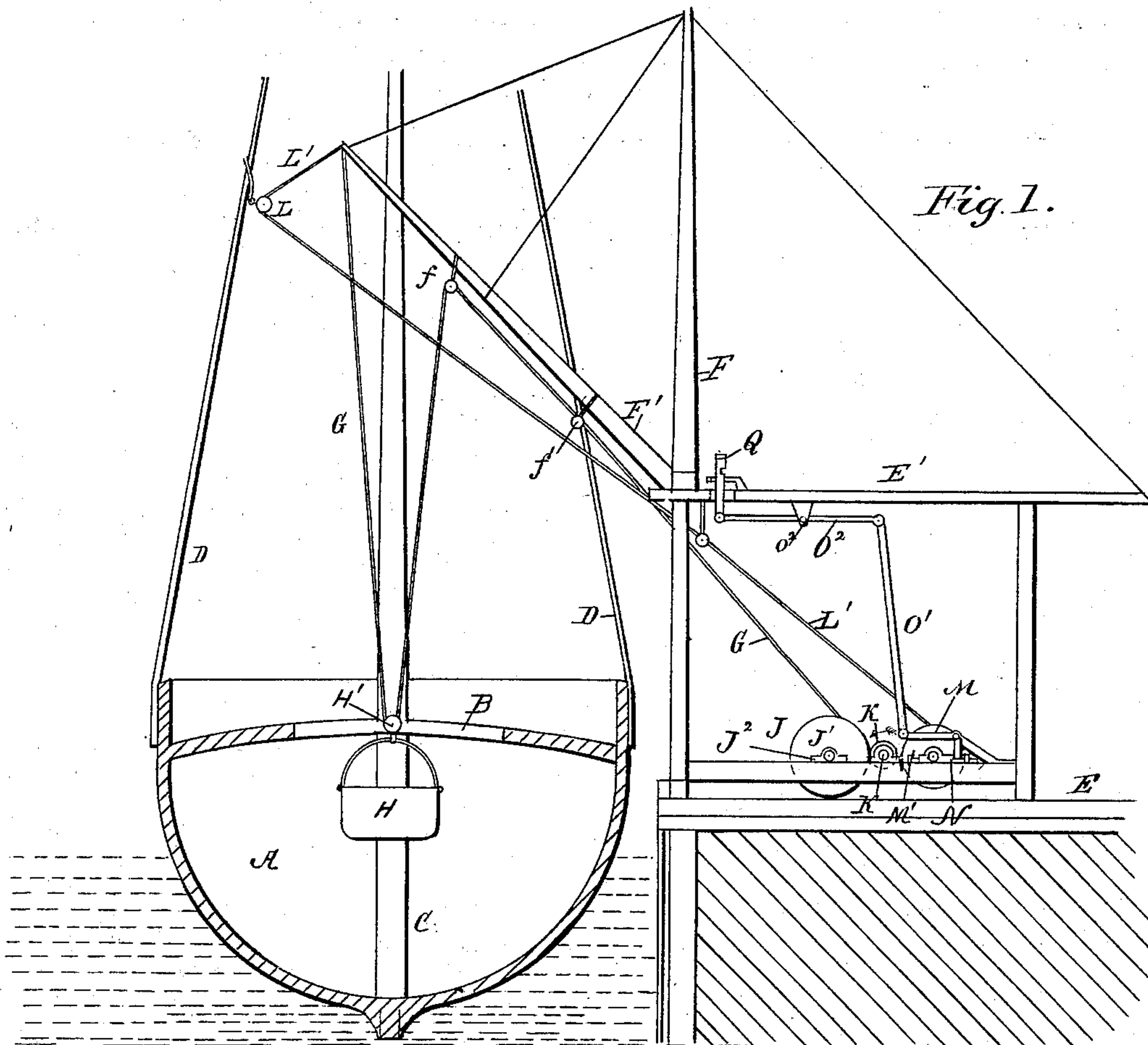
(No Model.)

W. S. BOGLE.

APPARATUS FOR UNLOADING COAL FROM VESSELS.

No. 280,284.

Patented June 26, 1883.



Witnesses
W. C. Corlies
A. M. Best

Inventor
Walter S. Bogle
By *Corbitt & Thacher*
Attorneys

UNITED STATES PATENT OFFICE.

WALTER S. BOGLE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
WENDELL R. KING, OF SAME PLACE.

APPARATUS FOR UNLOADING COAL FROM VESSELS.

SPECIFICATION forming part of Letters Patent No. 280,284, dated June 26, 1883.

Application filed February 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. BOGLE, a citizen of the United States, residing at Chicago, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Apparatus for Unloading Coal from Vessels, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—
Figure 1 is a transverse vertical section of a vessel, wharf, and hoisting apparatus provided with my improvement. Fig. 2 is a detailed and enlarged plan view of the driving-shaft, hoisting-drum, and auxiliary drum and their bearings. Fig. 3 is a detailed and further enlarged perspective view of the bearing of the auxiliary drum and the immediate means for moving it. Fig. 4 is a detailed plan view, showing the brace for giving a fulcrum to the bell-crank shown in Fig. 3. Fig. 5 is detailed and enlarged elevation of the treadle shown in Fig. 1.

The same letters denote the same parts in all the figures.

My invention relates to the apparatus ordinarily used for transferring coal or analogous freight from the hold of a vessel to a wharf. This apparatus consists of a mast set on a wharf and carrying a horizontally-swinging gaff, and a rope fastened at one end to the end of the gaff, passing around a hoisting-drum at the other end, and over intermediate pulleys attached to the hoisting-bucket and the gaff, respectively.

The object of my invention is to dispense with the labor of the man who is now stationed near the hatchway to draw back the bucket to the hatchway after it has been drawn to the point of unloading; and to this end the invention consists in the mechanism which will be hereinafter fully described, and definitely claimed.

In the drawings, A denotes the hold of the vessel to be unloaded; B, the hatchway, C the mast, and D the shrouds, of the vessel. E denotes the flooring of the wharf; F, a mast set on the wharf; F', a gaff set on the mast, so as to turn horizontally, and G a rope fastened at one end to the outer end of the gaff F', passing under a pulley-block, H', from which the hoisting-bucket H is suspended, and over pul-

leys *f* and *f'*, supported on the gaff, to the hoisting-drum J, around which it is wound, and where its other end is secured. K denotes the driving-shaft of the mechanism. It carries a friction-wheel, K', which comes in contact with a corresponding wheel, J', on the hoisting-drum when the sliding boxes J² of the latter are brought near enough to the driving-shaft. E' denotes a platform over the wharf for the operator to stand on. All these parts are already in familiar use.

In operation, the contact of the friction-wheels causes the hoisting-drum to revolve, winding the rope G on it, and thereby raising the bucket H from the hold. When it has been brought to the requisite height, the bearings of the hoisting-drum are shifted, so that its friction-wheel will no longer be in contact with that of the driving-shaft, and then, unless— what seldom happens—the place where the bucket is to be emptied, the mast F, and the hatchway are all in the same vertical plane, the gaff is turned horizontally by familiar means, which I do not show, so as to bring the bucket over the place of discharge. It must then (as the apparatus is now used) be turned back by a man stationed on the deck of the vessel, so as to bring the bucket over the hatchway again. I will now proceed to describe the means by which I dispense with the labor of this man.

At a fixed point over the deck of the vessel, at the farther side of the wharf, in the same vertical plane with the hatchway and the wharf-mast F, or farther than such a plane from the point of unloading, I suspend a pulley, L. The point of suspension may be in the shrouds, or, if they are not conveniently arranged with reference to the hatchway, on a rope stretched from the shrouds of one mast to those of another; or it may be located in any other convenient manner. A rope, L', fastened to the outer end of the gaff, passes around this pulley, and is wound on a drum, M, arranged parallel to the driving-shaft, and on the opposite side of it from the hoisting-drum. The shaft of this drum has its bearing at the end nearest to the friction-wheel K' of the driving-shaft, in a sliding box, N, so that it can be set a greater or less distance from the friction-wheel K', and it carries a friction-

wheel, M', of suitable diameter to engage with the wheel K in its nearest but not in its farthest position. The box N' at the other end allows that end of the shaft the play requisite to bring the friction-wheels into and out of contact. The box N consists of a raised middle part, n , in which the bearing is formed, and of low flat wings n' , projecting from each end and passing under keepers N^2 , which hold the box down on the beam which supports it, but do not fit so tightly as to prevent backward or forward motion. In the wing which is farthest from the driving-shaft is a socket, n^2 , in which plays the vertical member of a bell-crank or angular lever, O, pivoted at its angle in a brace, P, which is secured to the same beam that supports the box. The upper and horizontal member of the bell-crank is pivoted at its free end to a nearly upright connecting-rod, O', which is pivoted at its upper end to one end of a horizontal lever, O², which is itself pivoted at o^2 to the lower side of the platform E'. This lever is pivoted at its other end to a treadle, Q, which rises through the platform, so as to be readily depressed by the operator stationed there. Depressing this treadle will obviously raise the free end of the horizontal member of the bell-crank O, and thereby move the lower end of the vertical member forward, thus pushing the box N forward, so that the friction-wheel M' will come in contact with the friction-wheel K' of the driving-shaft. This shaft, turning in the direction indicated by the arrow placed over it in Fig. 1, will turn the wheel M' in the opposite direction, as indicated in like manner on Fig. 1, so that the rope L' will be wound on the drum, and will draw the end of the gaff F' toward the pulley L, thereby bringing the bucket over the hatchway. The bucket being lowered, the pressure may be removed from the treadle, and inasmuch as the connecting-rod O' is made of somewhat heavier material than the bell-crank and horizontal lever its weight will depress the free end of the horizontal member of the bell-crank, and thereby move the lower end of the vertical member backward, so as to push the sliding box N in the same direction. The wheel M' will thus be moved out of contact with the wheel K' of the driving-shaft, and the gaff F' can be turned

back to the proper position for emptying the bucket. The automatic depression of the forward end of the horizontal member of the bell-crank might be promoted by arranging the fulcrum o^2 of the horizontal lever considerably nearer to the end which connects with the treadle than to the other or by weighting the end farthest from the treadle.

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

1. In hoisting apparatus, a mast, a gaff horizontally pivoted thereon, a revolving drum, a hoisting-rope attached to both gaff and drum, and means for turning the gaff horizontally, actuated by the same power which turns the drum, all in combination, substantially as and for the purpose described.

2. In hoisting apparatus, a mast, a gaff horizontally pivoted thereon, a revolving drum, a hoisting-rope attached to both gaff and drum, an auxiliary drum detachably connected with the power which turns the hoisting-drum, a rope attached to both gaff and auxiliary drum, and passing around a fixed intermediate pulley, and means arranged within reach of the operator of the hoisting mechanism for bringing the auxiliary drum into and out of connection with the driving-power, all in combination, substantially as and for the purpose described.

3. The driving-shaft K, carrying the friction-wheel K', drum M, carrying the friction-wheel M', sliding box N, bell-crank O, having a pivotal support independent of the box, and arranged to engage with the box, and mechanism connected with the operating-platform for giving the bell-crank at its point of engagement with the box a motion toward and from the driving-shaft, all in combination, substantially as and for the purpose described.

4. The driving-shaft K and the sliding box N, both arranged substantially as described, and mechanism operating automatically to move the box away from the shaft and operable to move it toward the shaft, all in combination, substantially as and for the purpose described.

WALTER S. BOGLE.

Witnesses:

JNO. C. MACGREGOR,
THOMAS H. PEASE!