

W. Hill,

2. Sheets, Sheet 1.

Securing Heads to Metallic Negs.

No. 108594.

Patented Oct. 25. 1870.

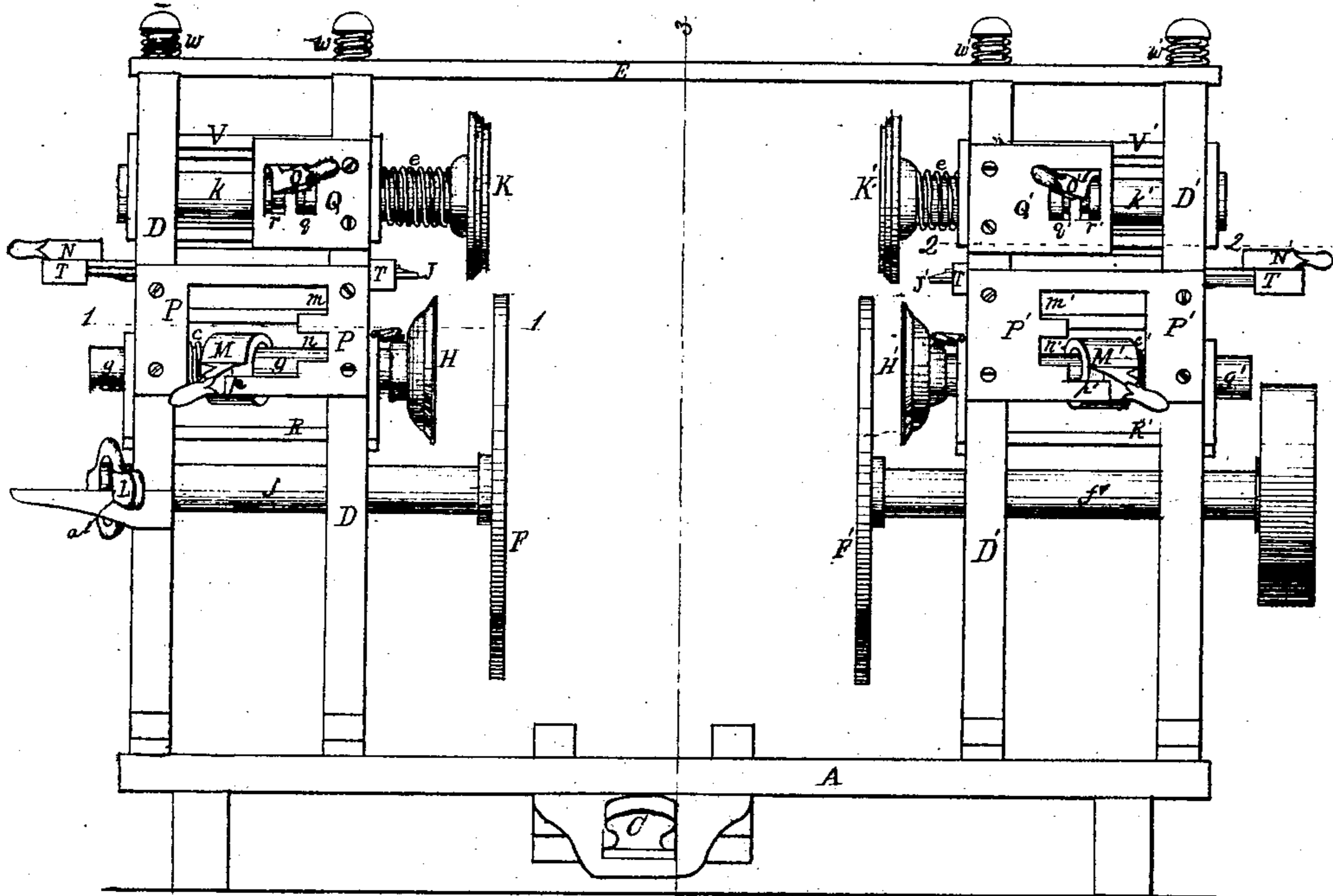


Fig. 1

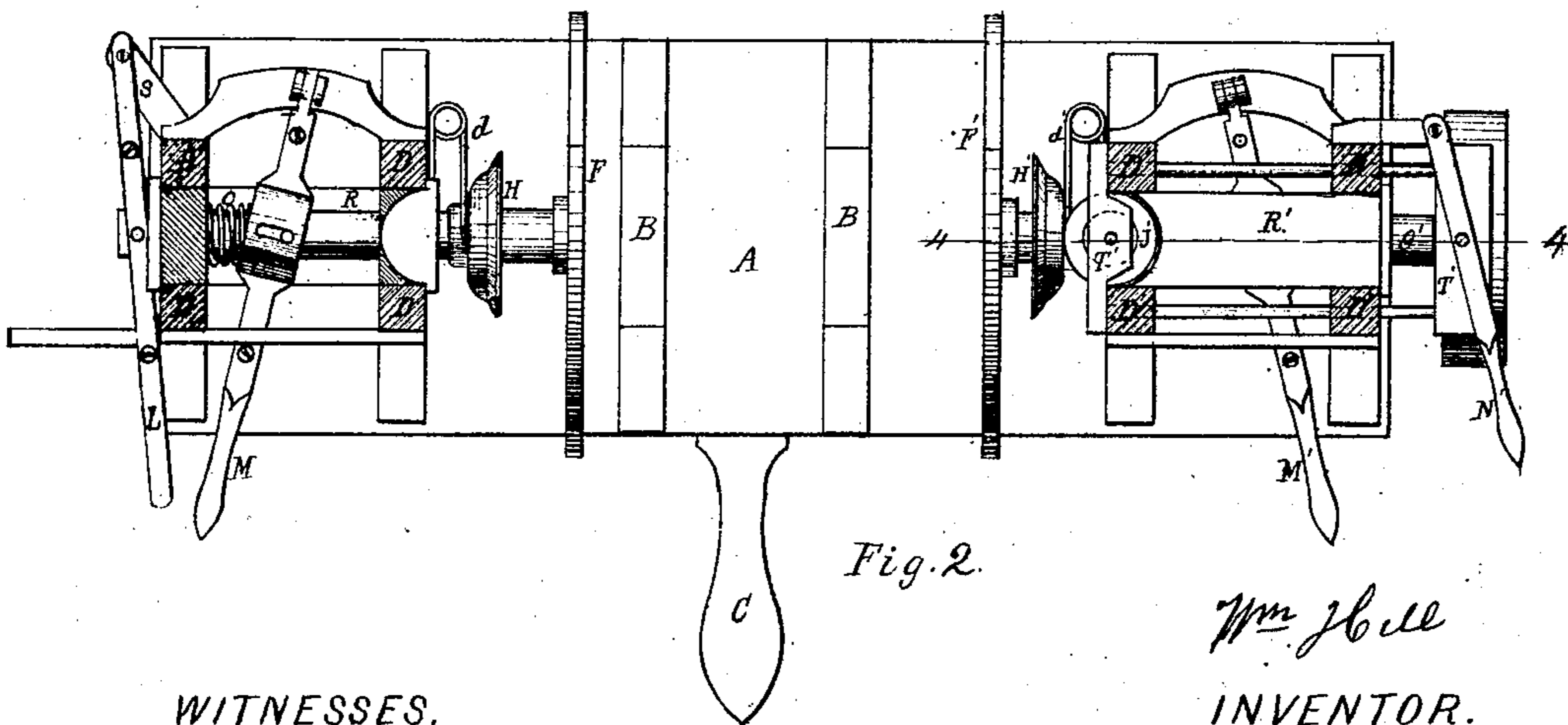


Fig. 2.

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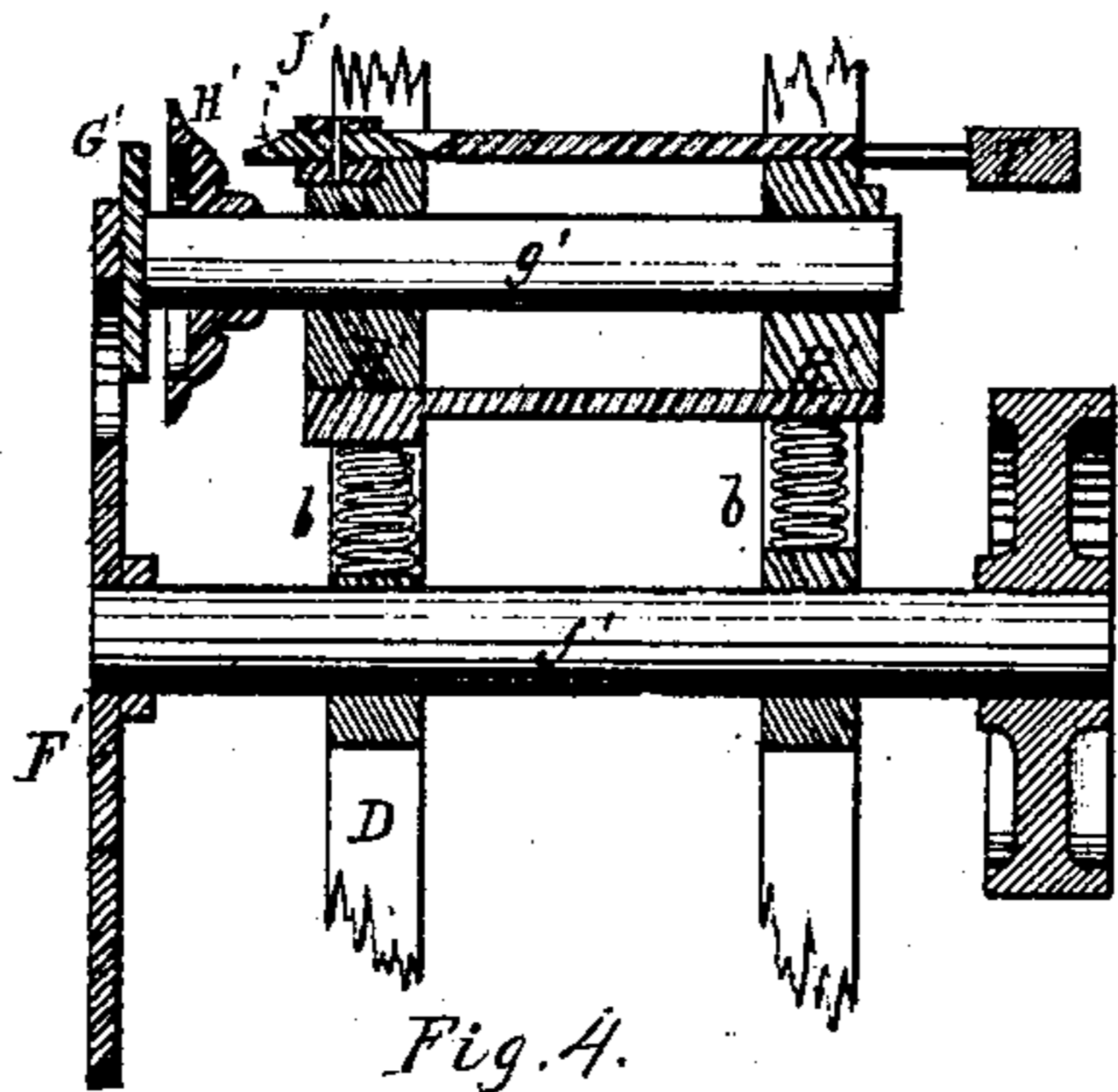
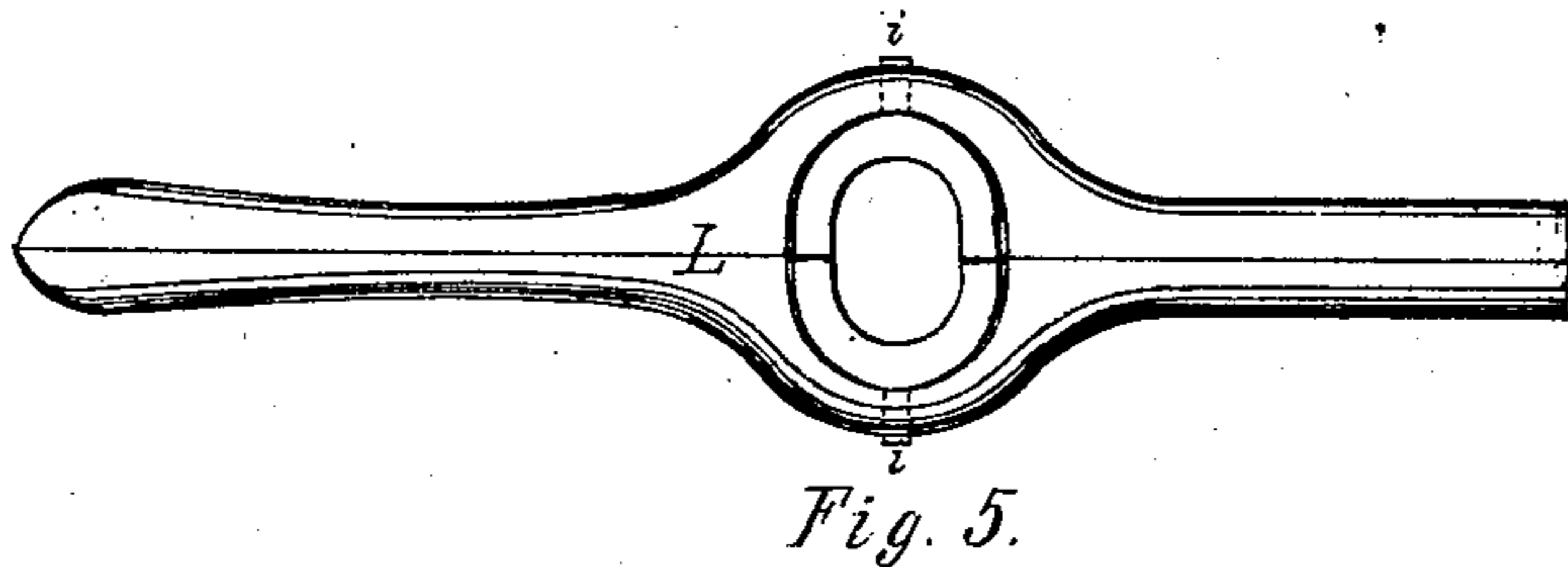
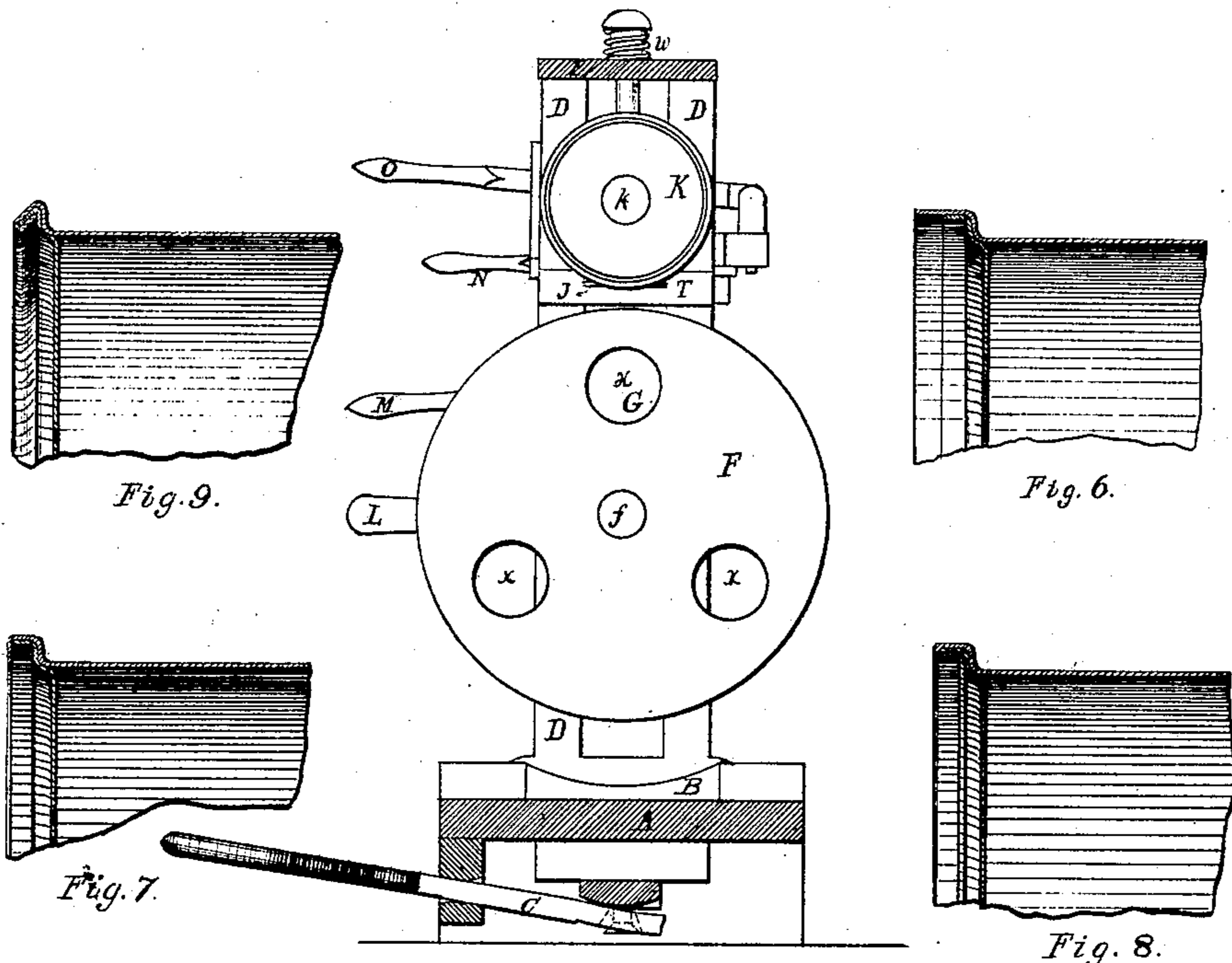
WITNESSES.
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2. Sheets. Sheet 2.

Securing Heads to Metallic Keys
No. 108594.

Patented Oct. 25. 1870.



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UNITED STATES PATENT OFFICE.

WILLIAM HILL, OF POTTSVILLE, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR SECURING HEADS TO METALLIC KEGS.

Specification forming part of Letters Patent No. 108,594, dated October 25, 1870.

I, WILLIAM HILL, of Pottsville, Schuylkill county, State of Pennsylvania, have invented a new and Improved Machine for Securing Heads to Metallic Kegs, of which the following is a specification:

The invention consists in constructing and organizing a machine whereby both heads may be secured to the body of a metallic keg mechanically at the same time by the operation.

The invention consists, further, in constructing and arranging a series of wheels and the mechanism for operating them in such manner that, by the action of the wheels, a head may be secured to a metallic keg without removing the keg from the machine.

It consists, further, in various details of construction, hereinafter fully set forth.

In the drawing, Figure 1 is a front elevation of my machine. Fig. 2 is a plan, showing those parts of the machine which lie below the lines 1 1 and 2 2 of Fig. 1. Fig. 3 is an elevation, showing the parts of the machine to the left of the line 3 3 in Fig. 1. Fig. 4 is a section through the line 4 4 of Fig. 2. Fig. 5 is a lever which operates one of the carriages of my machine. Figs. 6, 7, 8, and 9 represent a keg at different stages of the operation of securing the head.

A is the bed-plate. B B are ways, upon which the keg is rolled into the machine. Portions of the ways are shaped to hold a keg, as shown in Fig. 3. These portions are connected with a treadle, C, by which they are raised or lowered to the desired position. Upon each end of the bed-plate there is secured a frame-work, consisting of four posts, D and D', and cross-pieces. The two frames are united at the top by a cross-piece, E. F F', G G', H H', J J', and K K' are wheels. The wheels F F', G G', and K K' are vertical wheels, firmly attached to and revolving with the spindles *f f'*, *g g'*, and *k k'*, respectively. Upon the spindle *f'* there is a fast and loose pulley, through which motion is given to the machine. The loose pulley is not shown. The spindles *f* and *f'* are supported in bearings in cross-pieces in the frame-work, as shown. L is a lever by which the spindle *f* is moved inward and outward. The lever L is made with a ring, as shown in Fig. 5, within which are

two half-rings, fastened to the outer rings by pins *i i*. The half-rings fit into a groove in the spindle, allowing the spindle to turn, but confining its longitudinal motion to the sidewise movement of the lever. The groove is deep enough to allow the lever a slight play up and down, to secure it to or free it from the notch *a* without affecting the spindle. The lever is pivoted to a projection, S, upon one of the rear posts of the frame. The bearings of the spindles *g* and *g'* are in carriages R and R', which slide up and down within the frames. The carriages rest upon springs *b b* and *b' b'*, (see Fig. 4,) which, in turn, rest upon the cross-pieces, in which are the bearings of the spindles *f* and *f'*. The movement of the carriages R and R' up and down is governed by levers M and M', which also serve to move the spindles *g* and *g'* inward and outward. The levers M and M' are pivoted to posts upon platforms at the rear of the frames, as shown. They are connected with their spindles in the same manner as the lever L, but the pins connecting the outer rings with the half-rings are rigidly attached to the half-rings only, allowing to the levers a slight sidewise or lost motion, in order to get them into the notches *m* and *m' n'*.

P and P' are plates screwed upon the front of the frames to guide and limit the motion of the levers. Each plate has an arm, *p* and *p'*, upon which there is a pin fitting into a hole in the lever, and two notches, *m n* and *m' n'*, into which the lever closely fits.

The springs *c* and *c'*, coiled round the spindles *g* and *g'*, press the spindles and the wheels G G' inward. The wheels H and H' turn freely upon the spindles *g* and *g'*. They are cup-shaped, and embrace the wheels G G' whenever the springs *d* and *d'* are allowed to exert their full force.

Just above the carriages R and R' are carriages T and T', having a horizontal movement only, which is governed by levers N and N', pivoted at the rear of the frames. The carriages T and T' support the horizontal wheels J and J'.

The carriages V and V' have an up-and-down motion and a sidewise motion, like the carriages R and R'. They are controlled by levers O and O', pivoted at the back of the

frames, but these levers have not the lost motion of the levers M and M'. The spindles *k* and *k'* have their bearings in the carriages V and V'.

The springs *e* and *e'* press the spindles and wheels inward, and springs *w w* and *w' w'*, upon the top of the frame, keep the carriages up, as shown.

In front of the carriages V and V' are plates Q and Q'. These plates have notches *q r* and *q' r'*, into which the levers O and O' may be depressed.

In the wheel F or F' are several holes, *x*, as shown, for the slide upon one of the heads of the keg to fit into; or the wheels may be made with spokes, and the slides will lie between the spokes.

The edges of the wheels F F' and G G' are straight and perpendicular to the faces of the wheels which are presented to the can.

The wheels H H' have a sharp edge. The inward faces are flat rings. The rear faces slope back from the edge at an angle of forty-five degrees, as shown.

The wheels J J' are beveled to a sharp edge, as shown.

The edge of the upper wheel, K and K', has a shoulder near the inner face, as shown; is then beveled at an angle of forty-five degrees, and is then straight, as shown.

The cylinder and heads having been rolled and stamped so as to have corresponding shoulders, the heads are slipped into the cylinder, as shown in Fig. 6, and the keg is ready for the operation of the machine, which is as follows: The levers M M' being upon the pins at the extremities of the arms *p* and *p'*, and the levers O O' being in the position they take when free—that is, at the upper inner corners of the plates Q Q'—the lever L is thrown out of its notch along the projecting arm, drawing back the wheel F. The keg, with its head inserted as above, is placed upon the ways B B', and raised to its proper level by the treadle C. The lever L is then pushed to the right, and returned to the notch *a*, firmly securing the wheels F and F' within the depressed heads. In stamping the head, the inner shoulder, as seen in Fig. 6, is made to correspond with the wheels in thickness, and the wheels have the same diameter as the inner depression of the head. The keg is then put in motion by the pulley on shaft *f'*. The levers M M' are then released from the pins or arms *p p'*, and moved vertically along the guards to the top, and then horizontally to the slots *m m'*, carrying with them the wheels G G', by aid of the springs *e e'*, and the wheels H H', by aid of the springs *d d'*, the inner wheels being carried by this movement under the projecting rim of the cylinder against the large revolving wheels, F F', and the outer wheels, H H, being carried up against the backs of the wheels K K'. The top levers, O O', are then moved outward along the top of the plates Q Q' and pressed

down into the slots *r r'*, causing the shoulders on the edges of the wheels K K' to turn inward edges on the outer rims of the cylinder over the wheels G G', placed under the rims. (See Fig. 7.) The levers O O' are then let go and assume their original position by force of the springs *e e'* and *w w'*, and the levers M M' are moved back and secured to the pins or arms *p p'*, when the levers N N' are moved inward, bringing the wheels J J' against the edge of the cylinder, the present condition of which is shown in Fig. 7, and turning them inward and parallel to the body of the cylinder, as seen in Fig. 8.

The wheels K K', in their natural position, are a guard or backing to the rims of the cylinder, and prevent the horizontal wheels from forcing the rims outward. The levers N N' are then thrown outward, taking the wheels J J' out of the way, and the levers M M' are moved into the slots *n* and *n'*, this time carrying the wheels H H', as well as the wheels G G', under the rim of the keg. The levers O O' are then pulled downward into the slots *q q'*, and the rims of the keg are caught between the back of the wheels H H' and the angular parts of the rims of the wheels K K', and further turned to an angle of forty-five degrees, as shown in Fig. 9. The levers O O' are then allowed to assume their original position, and the levers M M' are secured to their pins. Finally, the levers O O' are again pressed down into the slots *q q'*, bearing the wheels K K' down until the shoulders upon their edges rest upon the outer edges of the cylinder, thus increasing the angle of forty-five degrees (shown in Fig. 9) to or near ninety degrees as may be. The levers are then let go, and the completed keg removed.

For some purposes the keg may be considered completed at the stage of the operation seen in Fig. 8.

In the above-described machine the keg is so chucked that the heads may be secured each by a double fold mechanically without the use of solder.

I claim—

1. The wheels G, H, J, and K, acting in combination, substantially as described, to secure the head to a revolving keg.
2. The wheels K, G, and J, acting in combination, substantially as described, to secure a head to a keg, as represented in Fig. 8.
3. The wheels G and H, combined as described, so that each wheel may do the work required of it without interfering with the other.
4. The wheel K, having a shoulder to act in combination with the wheel G and a bevel to act in combination with the wheel H, substantially as described.
5. The wheel K, arranged so that it serves as a guard to the rim of the cylinder to prevent the wheel J from forcing the rim outward, substantially as described.
6. The carriage R, spindle *g*, and lever M,

acting in combination, substantially as described, to control the position of the wheel G or H, or both.

7. The carriage V, spindle *k*, and lever O, substantially as described, for the purpose described.

8. The three carriages R, T, and V, as described, to determine the relative position of the edge-turning instruments, as desired.

The above specification of my invention signed and witnessed at Pottsville this 11th day of April, A. D. 1870.

WM. HILL.

Witnesses:

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SAMUEL CHRISMAN.