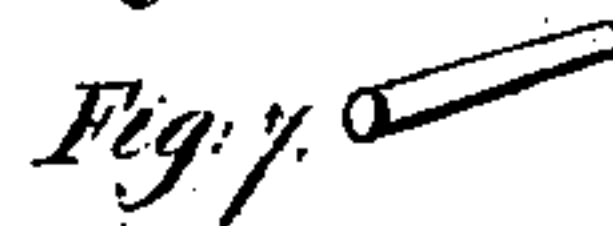
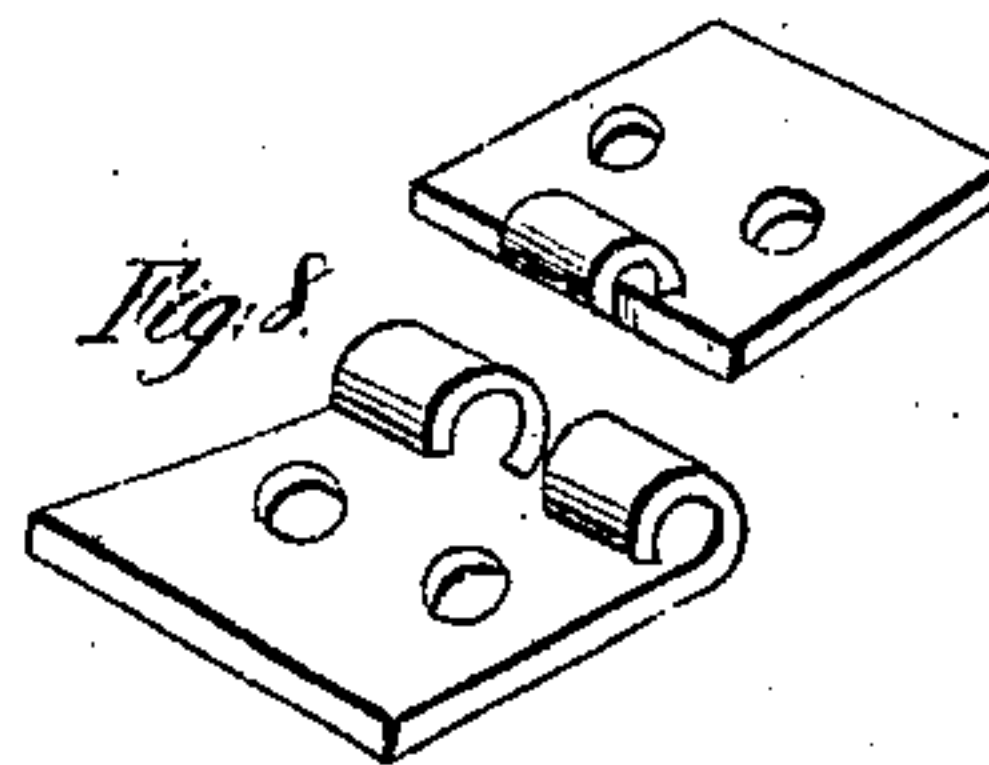
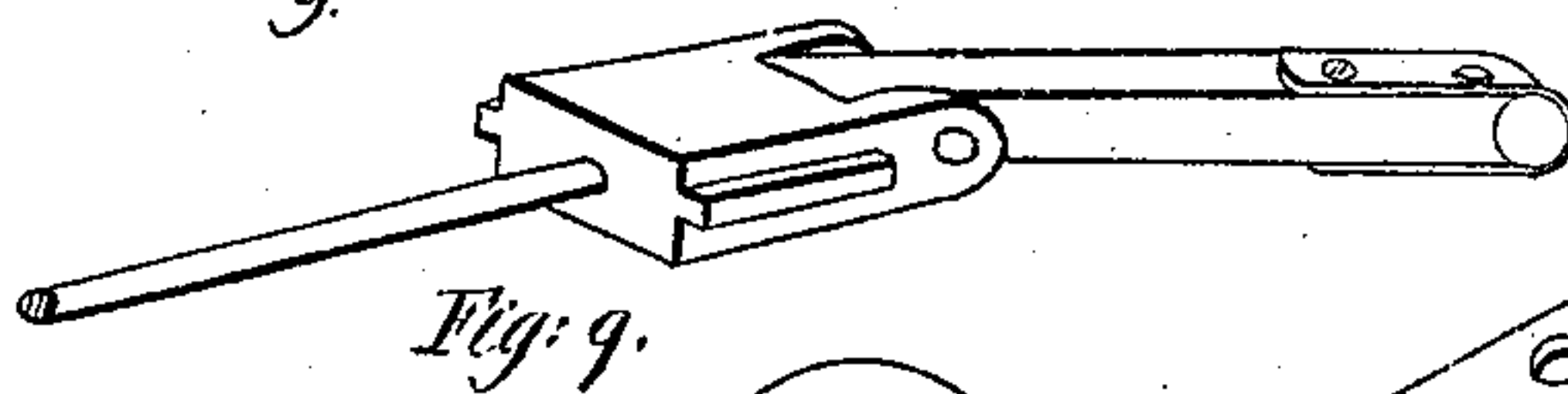
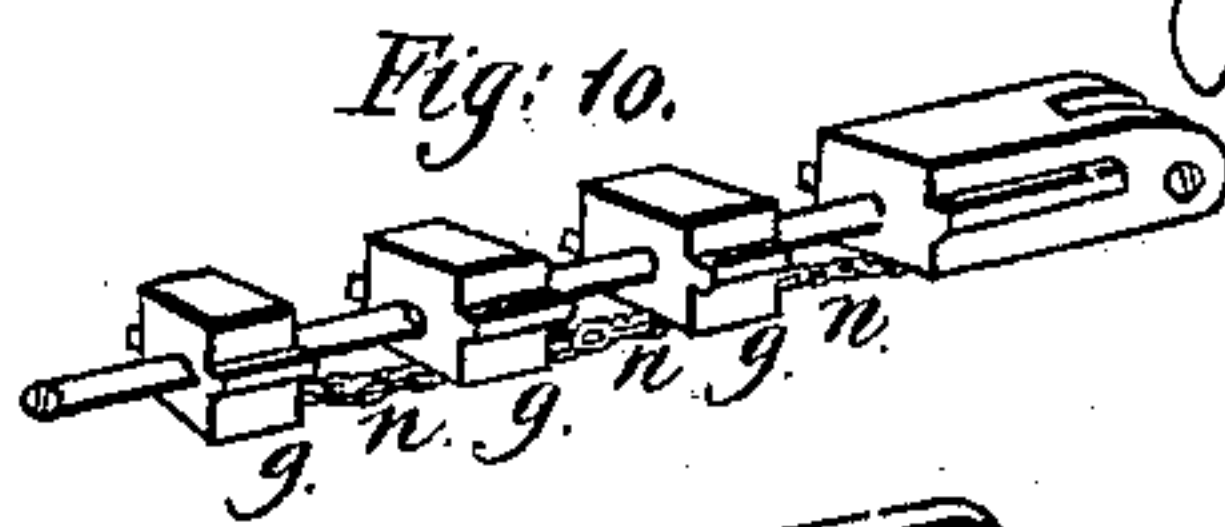
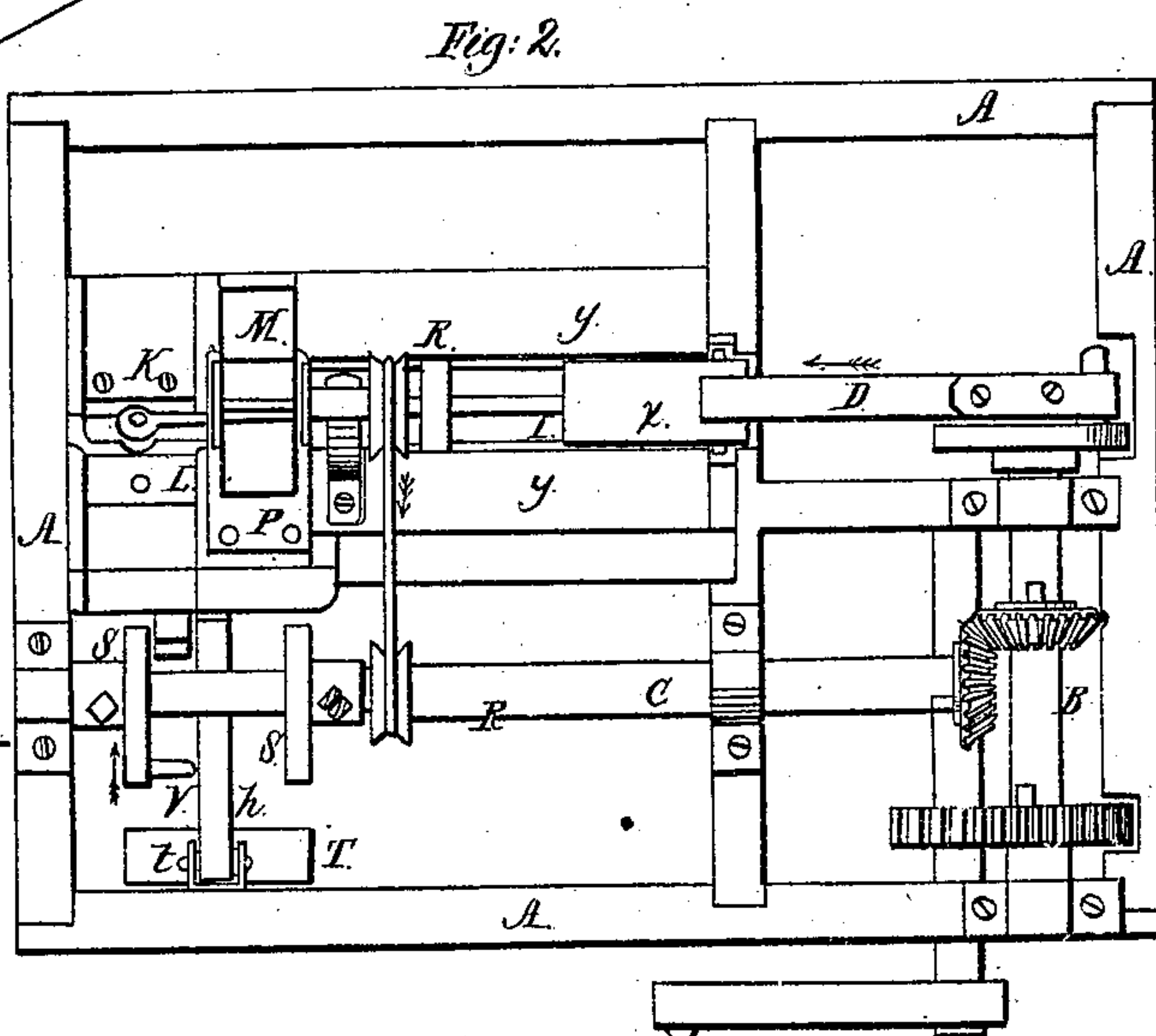
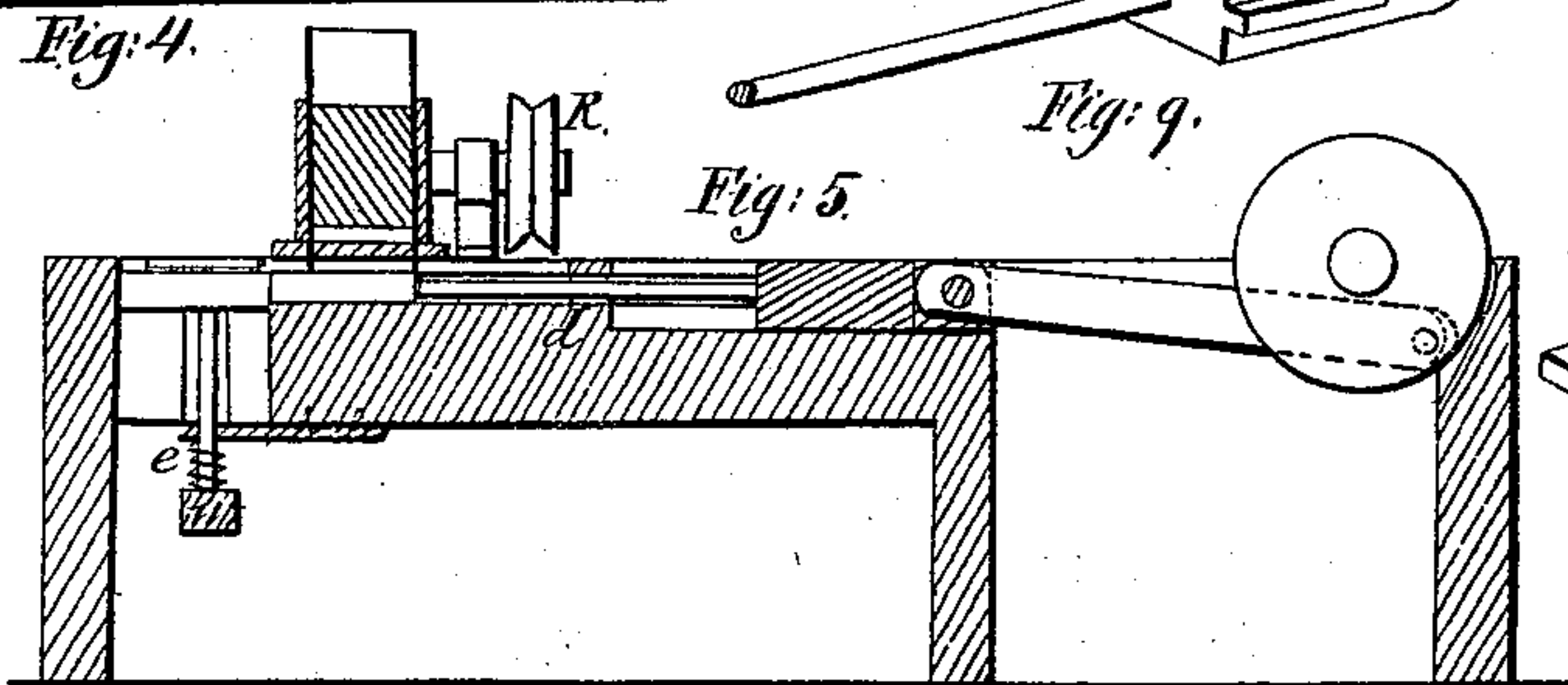
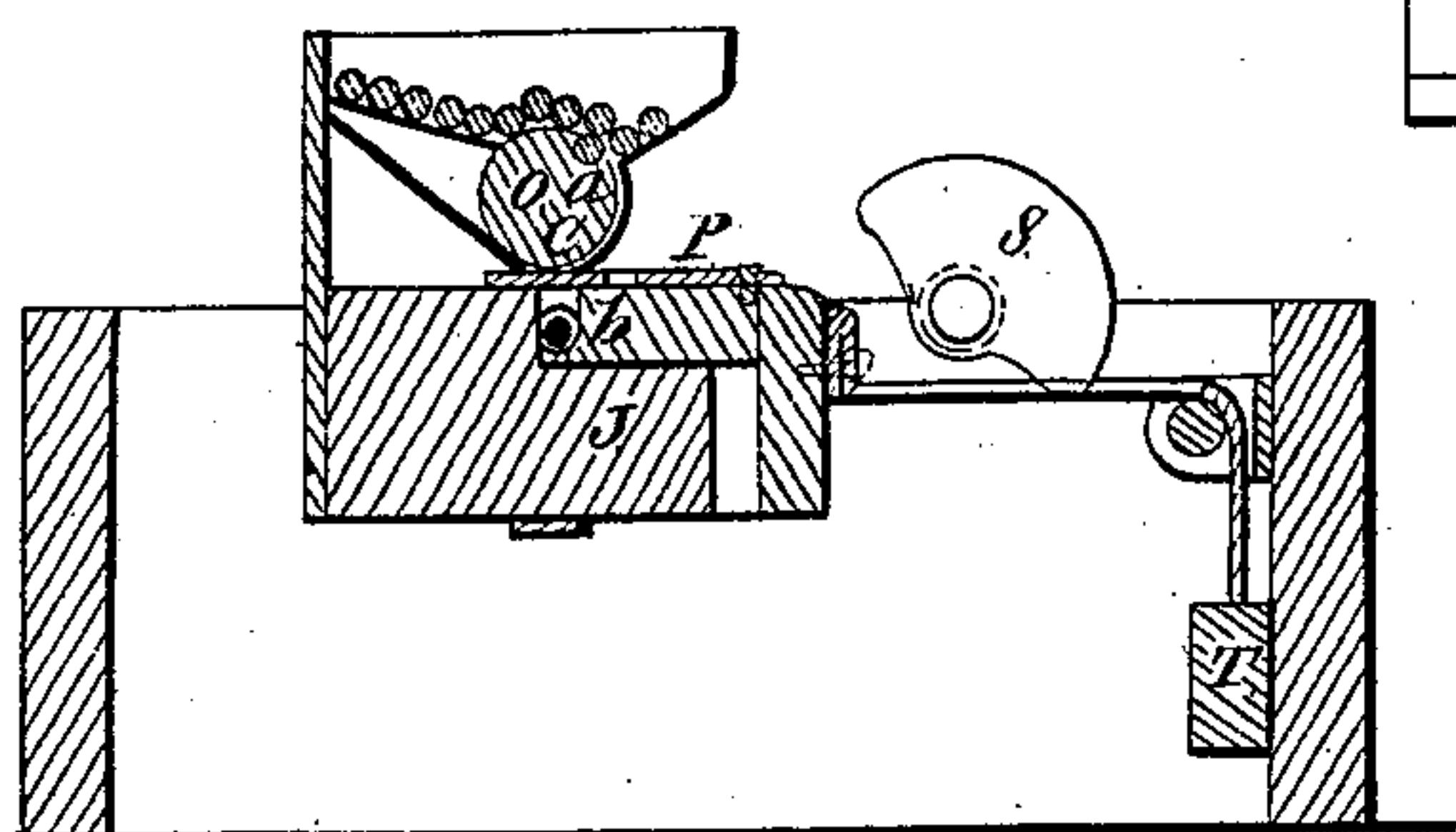
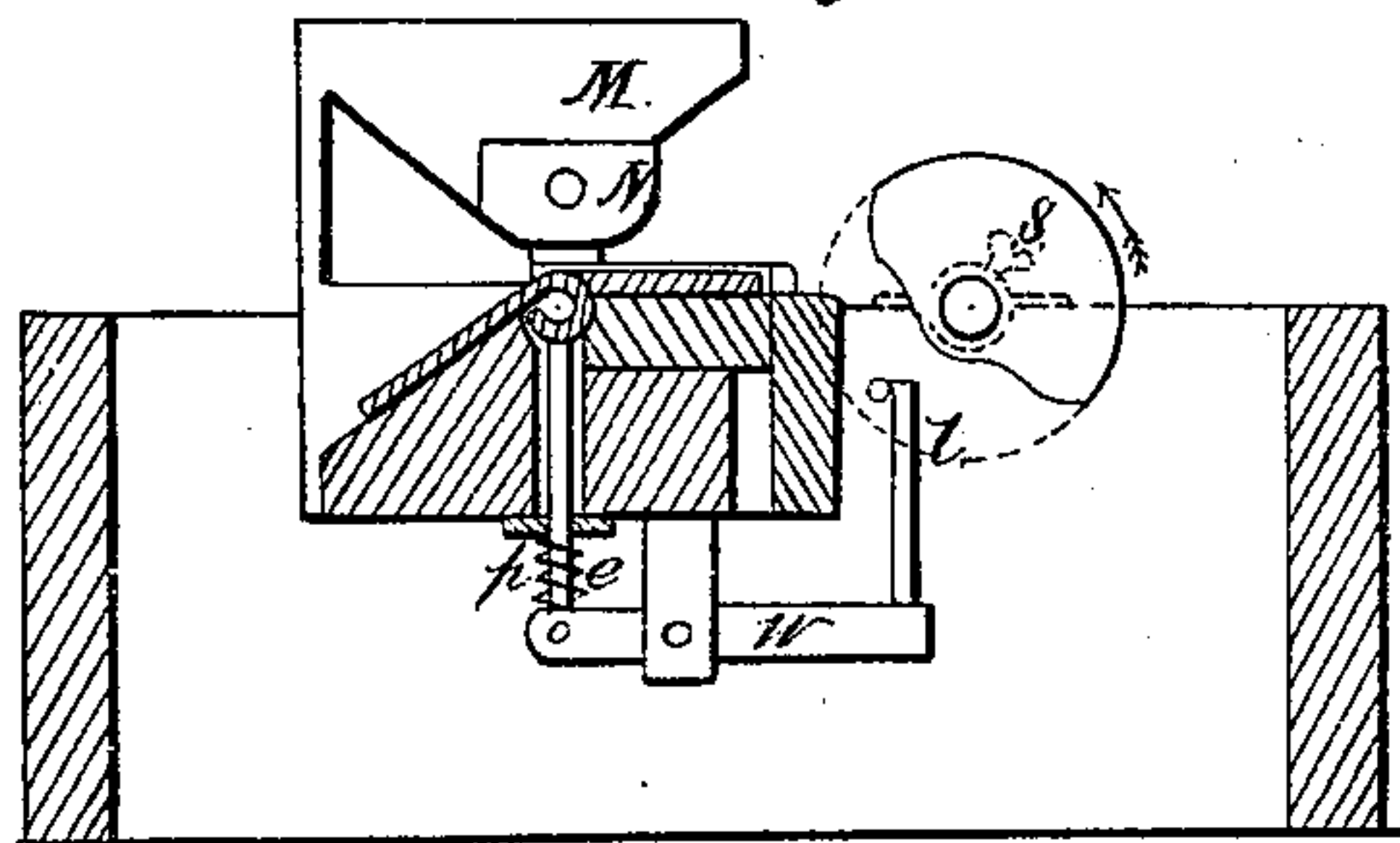
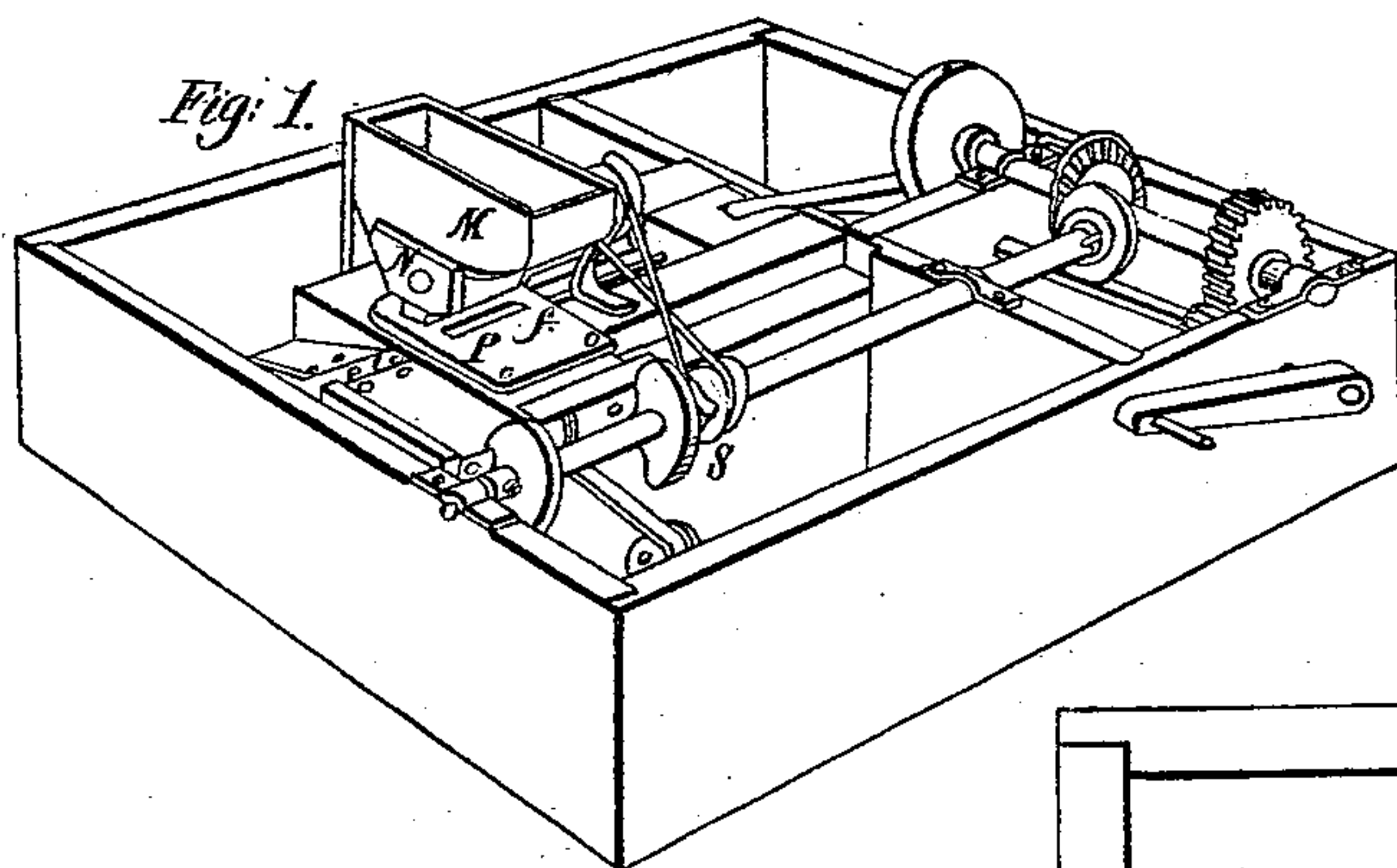


E. Luther

Wiring Hinges.

N^o 95,700.

Patented Oct. 12, 1869.



Witnesses:
E. Carver
Francis A. Woods.

Inventor:
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United States Patent Office.

ELLIS LUTHER, OF WEST TROY, NEW YORK.

Letters Patent No. 95,700, dated October 12, 1869.

IMPROVED MACHINE FOR WIRING HINGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELLIS LUTHER, of West Troy, in the county of Albany, and State of New York, have invented an Improved Machine for Wiring Hinges; and that the following is a full, true, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of a machine containing my said invention;

Figure 2 is a view of the same, from above;

Figure 3 is a section of my said machine, showing the manner in which the hinge is held during the process of wiring;

Figure 4 is another section of my said machine, exhibiting the mode of conveying the wires from the hopper to the groove, from which they are forced into the joints of the hinges;

Figure 5 is a section of my said machine, through the groove above mentioned;

Figure 6 exhibits the construction of the revolving cylinder, hereinafter described;

Figure 7 shows one of the wires; and

Figure 8, the separate parts of a hinge.

Figure 9 represents the shaft and plunger, by which the wire is forced through the joints of the hinge; and

Figure 10, the manner in which the plunger may be supported by sliding blocks, as hereinafter described.

Having stated the nature of my said invention, I will proceed to describe the construction and operation thereof.

A is a strong frame of wood or metal, which supports the shafts B and C.

As shown in the drawing, the shaft B is actuated by a crank, but it is my intention to have it driven by steam or other power.

Motion is communicated from shaft B to shaft C, by means of a bevelled gear, as shown in fig. 2.

At the end of the shaft B is attached, in the usual manner, the reciprocating shaft D, to which is attached the plunger I.

The said reciprocating shaft, below the joint, at X, slides in a frame, Y Y.

K is the stationary and L the movable jaw of a vise, which opens far enough to receive the joint of a hinge.

At the place where the hinge is inserted and held the jaws are constructed with plates of steel or other suitable metal at their upper surface, which plates project toward each other, slightly beyond the body of the jaws.

The said jaws, under the hopper or reservoir, each contain a small semicircular groove, half the size of the wire to be used, so that when the vise is closed, the two grooves will form a circular passage the size of the wire aforesaid. This groove is upon an exact

line with the joint of the hinge, when placed in the vise, and with the plunger I.

J is a platform under that portion of the movable jaw in which the groove is constructed, and its top is just even with the bottoms of the grooves, so that if a wire is dropped on the platform between the jaws, it will, when the jaws are shut, be enclosed in the circular passage formed by said grooves, as aforesaid.

The shaft C carries the cams S S, which, at each revolution, close the vise by forcing the movable jaw L against the stationary jaw K.

After the cams have ceased to act upon the said movable jaw, it is drawn back to its former position by the weight T and cord h, which passes over the pulley t.

M is a species of hopper, whose width is but a trifle greater than the length of the wires to be used.

The bottom of this hopper slopes from each end to an oblong aperture, near the centre, to which is closely fitted the surface of the revolving cylinder O, as shown in fig. 4.

In the surface of this cylinder is constructed the longitudinal channel or recess a, of just sufficient size to hold a single wire.

The cylinder revolves in a kind of drum, N, which contains, at the bottom, an aperture, c.

P is a plate of metal, fixed upon the movable jaw under the hopper, and having the oblong recess f, of sufficient dimensions to admit a single wire.

The cylinder O is revolved by means of a band passing over the wheels R R.

V is a projection on one of the cams, which, at each revolution, strikes the arm l of the compound lever W and depresses it, thereby elevating the arm p of said lever, for the purpose hereinafter mentioned.

e is a spiral or other spring, which brings the said lever back to its former position after it has been actuated by the cam and projection V, as aforesaid.

g g are small blocks, made to slide in the frame Y Y, for the purpose of supporting the plunger I, and are attached by the chain n n to each other and to the shaft. They may be employed in any number desirable, which will not interfere with the necessary length of stroke.

The mode of operation of my said invention is as follows:

The hopper M is first filled with wires, piled across the hopper and parallel with the cylinder O.

The shaft B is then put in motion, causing the shaft C and the cylinder O to revolve.

As the cylinder O revolves, bringing the recess a under the opening in the bottom of the hopper, one of the wires will drop into the recess a and will be carried round with the cylinder until it reaches the aperture c, in the drum N.

At this moment the movable jaw L is forced toward

the stationary jaw K, by the operation of the cams S S, and the recess *f*, in the plate P, is brought directly under the said opening *e*, and the wire drops into the said recess *f* from the cylinder O.

The wire is retained in said recess *f* until, by the continued revolution of the shaft C, the cams S S release the movable jaw L, which is immediately drawn back by the cord and weight T, allowing the wire to drop on the platform J.

At this moment a hinge is placed in the vise in such a manner that the joint of the hinge is between the jaws and so that edges of the metallic plates L K will grasp the upper surfaces of the joint on each side close to the leaves of the hinge, thus holding the hinge firmly by the joint, and preventing the slightest motion.

As the jaws are thus closed, the wire upon the platform J is enclosed in the double groove or cylindrical passage *d*, the plunger I being sufficiently drawn back to permit its entry into said passage.

By the further revolution of the shaft B, the reciprocating shaft D is thrust forward, and the plunger I, moving in the double groove or passage *d*, forces the wire into the joint of the hinge with perfect accuracy.

As soon as the insertion of the wire is complete, the cams S S again release the movable jaw L, and, as the vise opens, the projection V strikes the arm *l* of the compound lever W, depressing it and elevating the other arm, *p*, so that the hinge is thrown out of the vise and falls into a receptacle provided for that purpose. Another hinge is then immediately fixed in the vise ready to receive the next wire, which, by this time, is dropped on the platform J.

By this means a wire is inserted at every revolution of the shaft B, and much more rapidly and accurately than can possibly be done by hand, and dispensing with a very large amount of manual labor.

As the plunger I cannot be larger than the wire to

be inserted, it is obliged to overcome a great deal of resistance, in proportion to its diameter. I have therefore devised a plan for preventing any tendency to break or bend, by the use of the sliding blocks *g g*.

They may be made of any suitable material, and should be so closely fitted to the frame that to slide them will require some little degree of force.

When the plunger is driven into the groove or passage above mentioned, these blocks will be forced together, but, when it is drawn back, they will be distributed along its length by means of the chain *n*, and will effectually counteract any deviation of the plunger from a right line.

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

1. The combination and arrangement together, in the manner described, of the jaws K L, discharging-follower *e*, and the mechanism by which the movable jaw L is advanced and retracted.

2. The combination of holding-jaws K L, with block J, slatted side P, recessed rotating cylinder O, hopper M, and reciprocating plunger I, all constructed and arranged as set forth.

3. The receiving-plate J and movable jaw L, in combination with the slatted side P, the recessed rotating blank-feeder O, and hopper M, all constructed and arranged as specified.

4. The construction and arrangement, with the reciprocating plunger I, of movable rest-blocks *g*, and chains *n*, as and for the purpose specified.

In witness whereof, I have hereunto set my hand, this 2d day of February, 1869.

ELLIS LUTHER.

Witnesses:

JOHN A. SHAPPO,
FRANCIS A. WOODS.