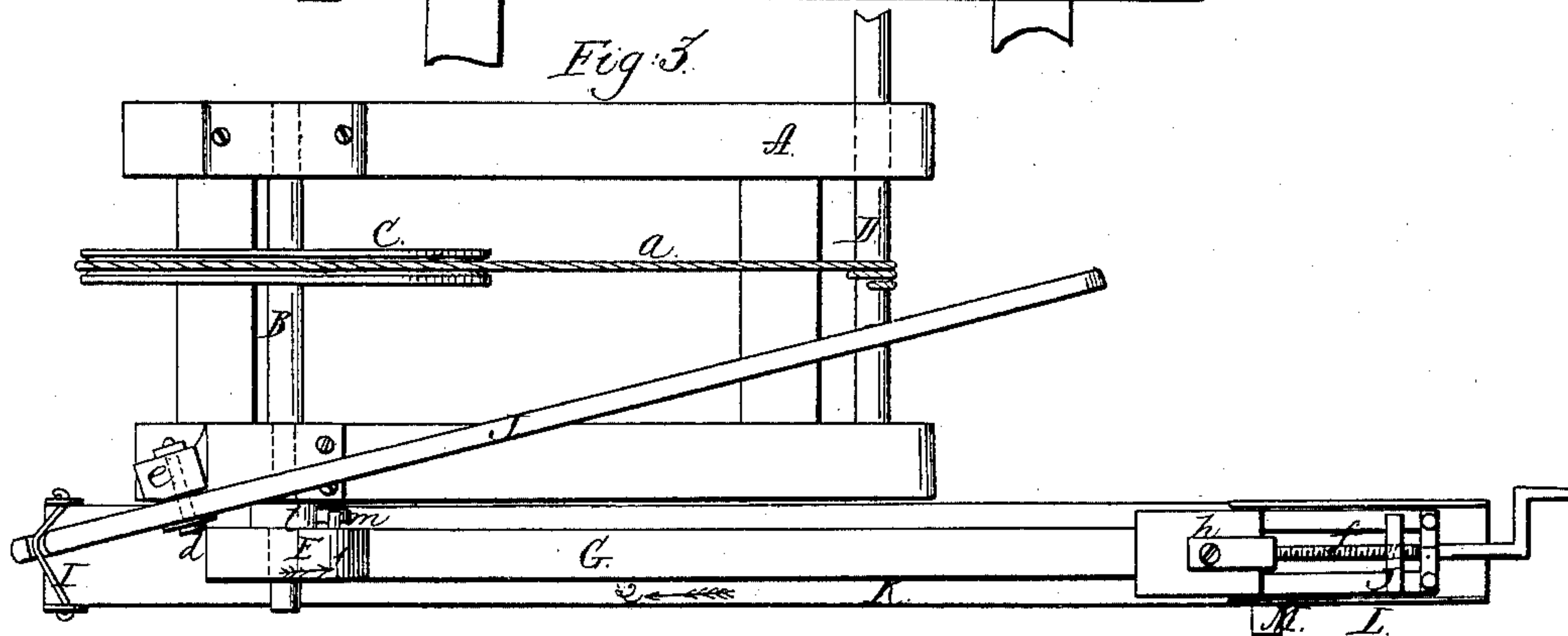
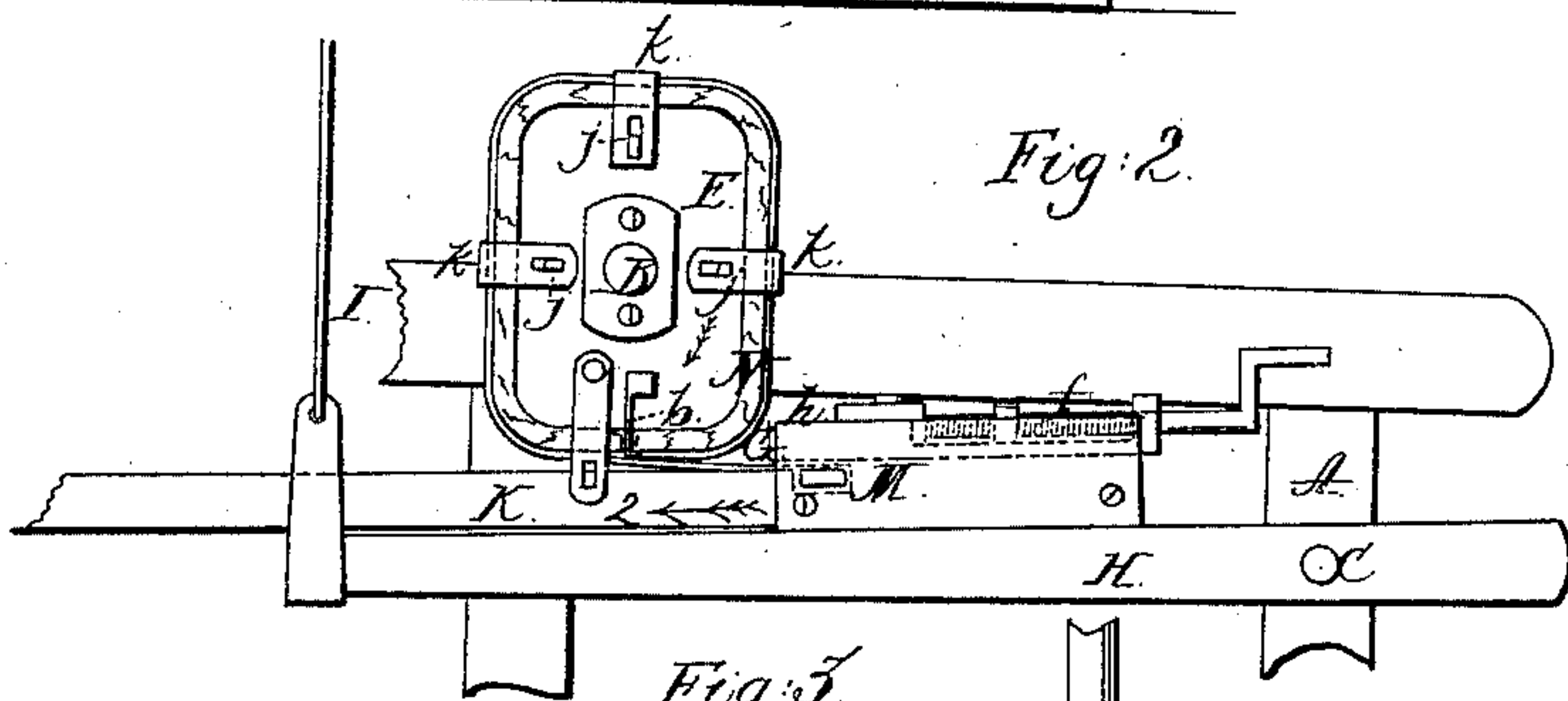
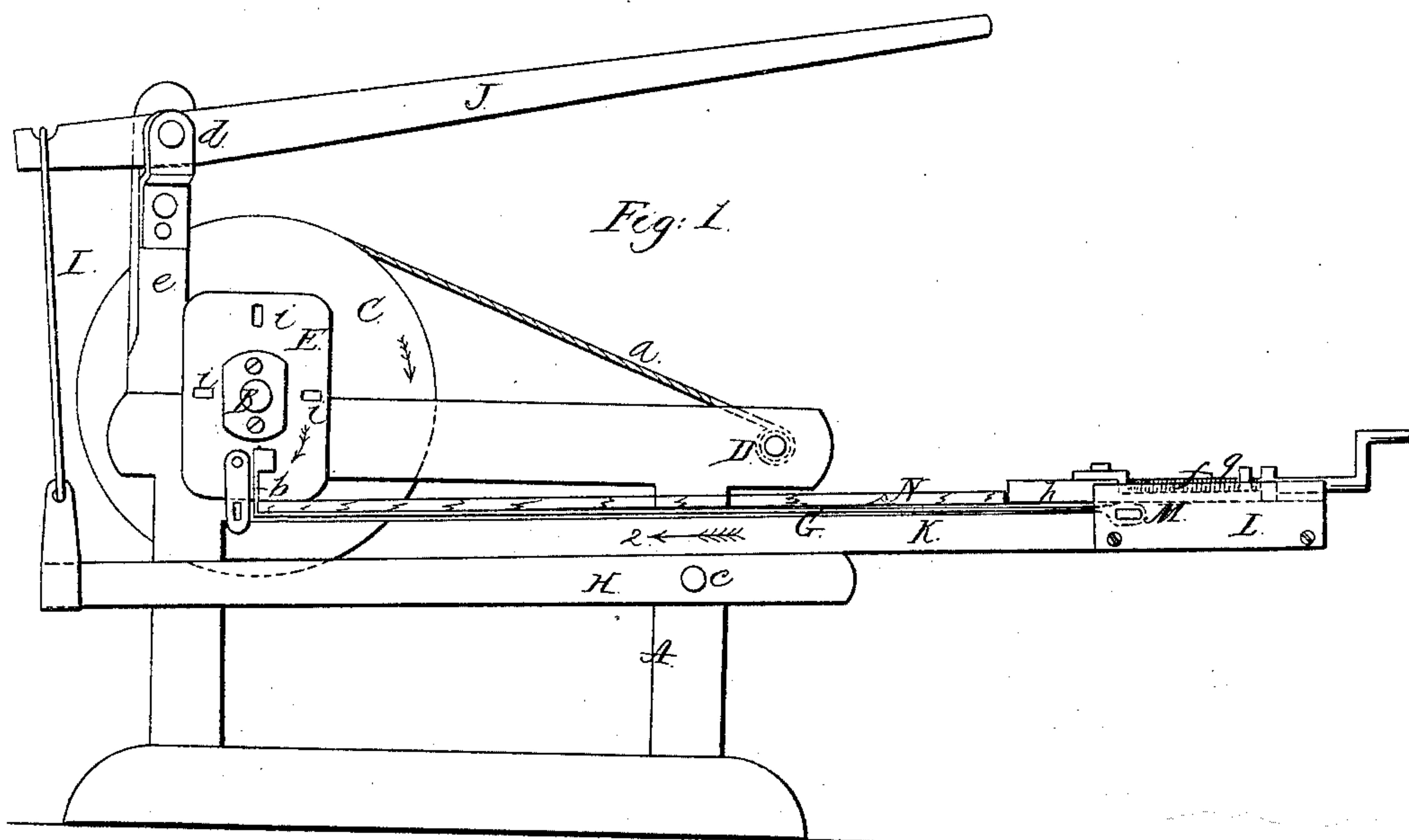


T. Blanchard,

Bending Wood.

N^o 20,137.

Patented May 4, 1858.



UNITED STATES PATENT OFFICE.

THOMAS BLANCHARD, OF BOSTON, MASSACHUSETTS.

MACHINE FOR BENDING WOOD.

Specification of Letters Patent No. 20,137, dated May 4, 1858.

To all whom it may concern:

Be it known that I, THOMAS BLANCHARD, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved device or machine for bending wood in regular or irregular curved form, with the ends adjoining each other, for slate and picture frames, chair-bottom hoops, and like articles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side view of my improvement, showing the position of the parts at the commencement of the operation. Fig. 2 is also a side view of the working parts of the same; showing the position of the parts at the completion of the operation. Fig. 3 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improved device or machine by which the wood is bent in the desired form, without having its fibers distended longitudinally, so that the strength of the wood will not be impaired in consequence of being bent.

The invention consists in the employment or use of a rotating pattern or mold, with a metallic strap attached, used in connection with a sliding pressure bar, having an adjustable stop fitted to it, the outer end of the metallic strap being attached to the sliding bar, and the whole so arranged that the desired work is accomplished in an extremely simple and efficient manner.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a rectangular frame, on the upper part of which and at one end a transverse shaft B is placed. This shaft B has a pulley C upon it, and a rope (a) is attached to the periphery of this pulley, said rope being also attached to a shaft D, at the opposite end of the frame A.

To one end of the shaft B, a mold or pattern E is attached. This mold or pattern is made of a form corresponding with the desired form in which the wood is to be bent, for instance, if an oval frame is required, the mold should be a solid oval; and if a quadrilateral frame with rounded corners is

required, a correspondingly shaped mold will be necessary. The latter form of mold is represented in the drawings.

The shaft B passes through the center of the mold, and a metallic strap G is attached to the periphery of the mold E, as shown at (b).

To the side of the frame A, and below the mold E, a bar H is attached by a pin or bolt (c); said bar being allowed to work on said pin or bolt. One end of this bar has a strap I attached to it, the upper end of which is fitted over the end of a lever J, which works on a fulcrum pin (d) in the upper part of an upright (e) attached to the frame A.

On the bar H, a bar K is placed. This bar K is allowed to slide freely on the bar H, and is retained thereon by any proper guide. On the outer end of the bar K, a box L is attached, in which box a screw (f) is placed; said screw passing through a nut (g) fitted permanently within the box; the inner end of the screw being attached to a sliding plate (h) which serves as a stop, as will be hereinafter shown.

The outer end of the metallic strap G is attached to the inner end of the box L by a bar M, which passes transversely through the inner end of the box L, and through a loop formed at the end of the strap G.

Through the mold E, and near its edge or periphery, holes (i) are made to receive keys (j) which secure clamps (k) to the mold. These clamps are merely metal bars, bent so as to fit over the edge of the mold; the keys (j) passing through the ends of the clamps, which ends are at right angles with the portion that cross the edge or periphery of the mold.

The mold E is placed loosely on the end of the shaft B, and is fitted against a boss (l) on the shaft, and is made to turn with it, by means of a shoulder on the boss bearing against a pin (m) on the mold, see Fig. 3.

The operation is as follows:—The mold E is turned in the position indicated in Fig. 1; and the strip of wood N, to be bent, is steamed, and one end is fitted against the inner end of the metallic strap G, at its junction with the mold E; the strip N being between the periphery of the mold E and the strap G. The outer end of the strip N is placed against the slide (h); said slide bearing snugly against it. Motion is then

given to the pulley C and the mold E by rotating the shaft D; the pulley and mold turning in the direction indicated by the arrows 1. As the mold rotates, the strip N is wound upon its periphery; the strip being pressed firmly against the mold by depressing the outer end of the lever J. As the mold rotates, the bar K is moved of course in the direction indicated by the arrow 2, in consequence of the outer end of the strap G being attached to the box L. When the mold has been turned one revolution, the strap will be entirely wound upon it, as shown in Fig. 2; the butts adjoining each other, and the fibers of the wood will not be in the least distended as the end of the slide (h) serves as a stop, and effectually prevents the longitudinal distension of the strap G. When the strip N is wound upon the mold, it is secured thereto by the clamps (k); and the outer end of the strap G being detached from the bar K, on the box L, by withdrawing the bar or key M, the mold may be removed from the shaft B.

Preventing the fibers of wood from being distended longitudinally while being bent, is an important feature in the bending of wood; and this process or improvement in wood-bending was formerly patented by me,

and is fully described in the Letters-Patent dated Dec. 18, 1849.

I do not claim, broadly, what is termed "compound bending", or preventing the fibers of the wood from being distended longitudinally while being bent in the required form; for this process was formerly patented by me. But—

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

The particular means employed for thus bending the wood in the required form, for the special purpose hereinbefore mentioned, that is to say, the employment or use of the rotating mold E, with the strap G attached, in combination with the sliding pressure bar K, provided with the adjustable slide or stop (h); the outer end of the strap G being attached to the bar K, or box L, and the parts arranged as shown, whereby the strips N may be bent in regular or irregular curved form, with the ends adjoining each other, for the manufacture of picture and slate frames, chair-bottom hoops, and similar articles.

THOS. BLANCHARD.

Witnesses:

EDWARD F. HALL,
JOHN S. SIMPSON.