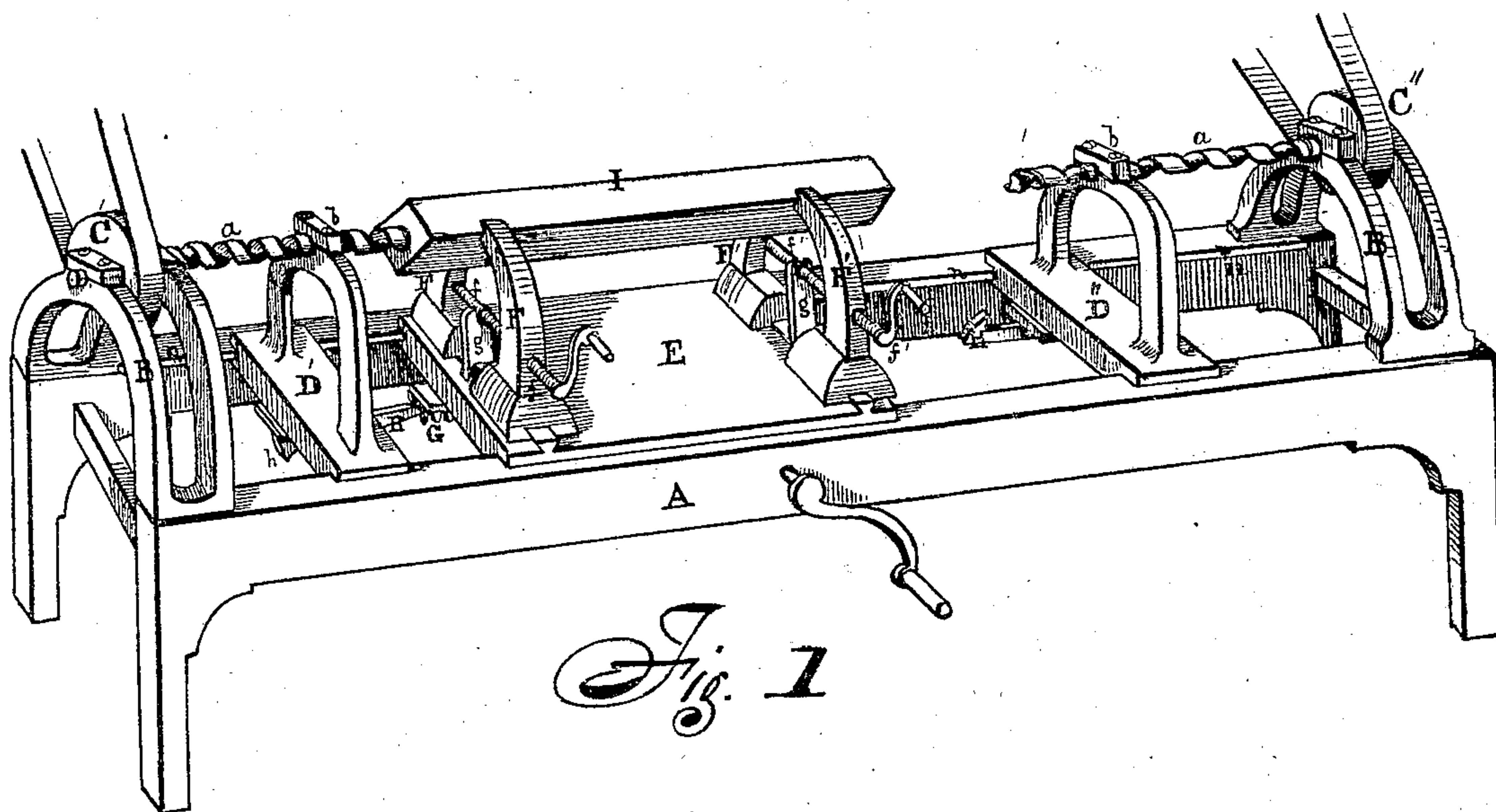


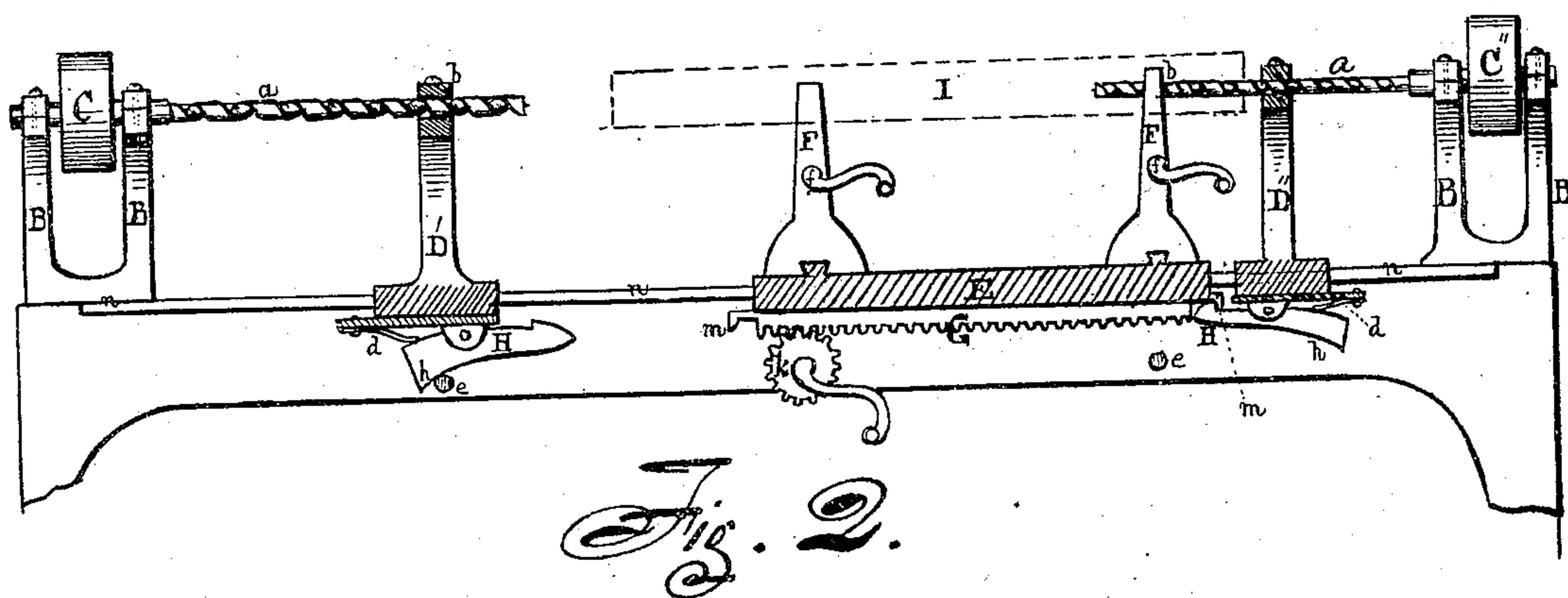
No. 105,188.

PATENTED JULY 12, 1870.

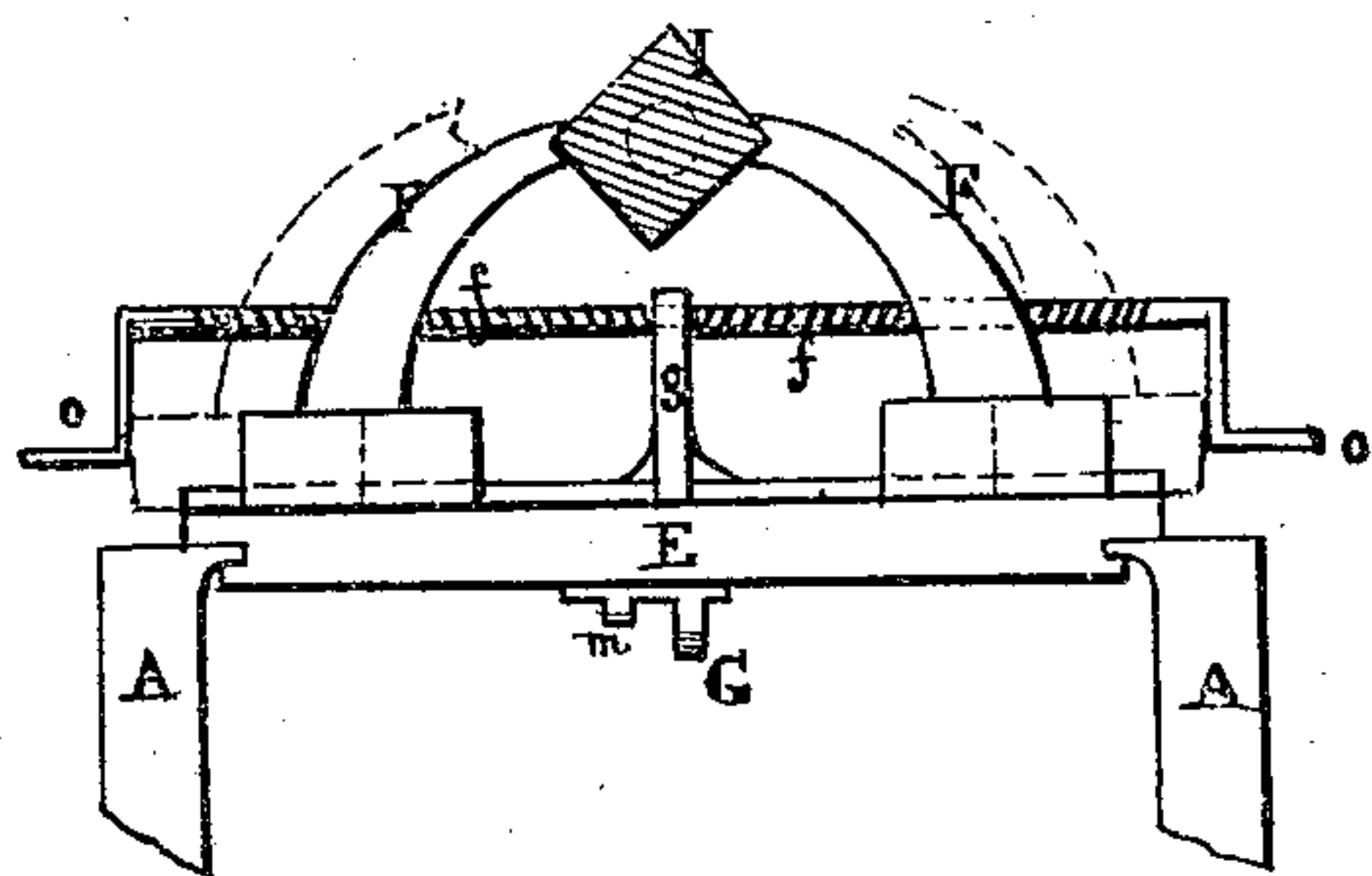
J. W. FRAZEE.  
BORING MACHINE.



*Fig. 1*



*Fig. 2.*



*Fig. 3.*

Witnesses  
Harrison Anderson  
E. Hurlburt

Joshua W. Frazee  
Inventor



# United States Patent Office.

JOSHUA W. FRAZEE, OF PEORIA, ILLINOIS.

Letters Patent No. 105,188, dated July 12, 1870.

## IMPROVEMENT IN BORING-MACHINE.

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, JOSHUA W. FRAZEE, of the city of Peoria, in the county of Peoria and in the State of Illinois, have invented a new and improved Double-boring Mill; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a perspective view.

Figure 2, a longitudinal elevation.

Figure 3, an end view.

Like letters in the different figures of the drawing indicate like parts.

This improvement relates to providing a boring-mill, for wooden pumps, tubes, &c., with mandrels and augers at both ends, to operate in boring an object at both ends, without changing the object end for end.

Also, adding an auxiliary sliding carriage, having the requisite jaws or clamps to hold the object to be bored.

Also, to providing sliding guides to steady the points of the long augers required, which recede as fast as the auger pierces the object.

A represents the frame of the machine, with the usual parallel guides *n* projecting from the inner sides of frame.

B B represent the two mandrel-rests, one at each end of the machine, with pulleys and bands.

D D are two sliding bearings, for steadying the long augers here used, one for each auger, and each pressed backward toward its respective mandrel, by the end of the sliding carriage E, as the auger pierces the object bored, until the point when the auger has reached the limit of its cut, when the bearing is drawn back by means of the hook H, beneath the sliding carriage E, until it reaches a point near the end of the auger, at which place the inclined under surface of the tail *h* of the hook H strikes the stationary transverse rod *e* attached to each side of the bed-frame of the machine.

This hook is mounted on a horizontal pin beneath the sliding bearing, the hook proper being kept raised by a spring, *d*, high enough for the inclined head of hook to strike the catch *m*, under the sliding carriage E, and becomes engaged with the latter when it bears the object bored within the range of the guide, this same catch *m* on the carriage drawing the bearing back to its original station near the point of the auger, at which point, as above stated, the transverse rod *e* intercepts the curved under surface of the tail of hook, and the latter becomes disengaged from the carriage.

The same action of the relative parts occurs at relative times at the other end of the machine.

The bearings in question hold the body of the auger in a metallic box at the top of the bearing.

E is a sliding carriage, which holds the object to be bored, and carries two pairs of clamps, F F, which are adjusted by means of combined right and left screws, *f f*, passing through each clamp, and held by a brace, *g*, between them, which brace clasps the neck or recess between the two divisions of the screws.

The screws are operated by a handle or other convenient device, the clamps sliding along a transverse guide on the bed of the carriage.

The latter is moved by means of a winch and pinion, *k*, operating on a rack, G, beneath the bed of the same.

The operation of this machine is as follows:

The object to be bored is placed between the clamps F F, the right and left screws on each clamp bringing the latter against and holding the same.

The crank *o* is now turned. The pinion *k*, pushing forward the rack G and carriage, brings the object against the point of the augers, when the catch *m*, under the carriage, being pressed against the inclined head of the hook H, projecting from the sliding auger bearing D in this direction, becomes engaged, still pressing the latter before it as the auger deepens its cut, until, the limit of the bore being reached, the winch is reversed, carrying back the carriage and object thus bored at one end, (to be operated upon in the same manner by the other boring apparatus at the other end of the machine,) the catch *m* drawing, by the hook H, the sliding auger bearing with it until the transverse rod *e* strikes the lower part of the hook, and bearing D is disengaged, having, as a stay for auger-point, done its work, and reached its proper place ready for the next similar operation.

The object is thus bored at each end without readjusting it.

Having thus fully described my invention,

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

1. The sliding bearings D' D", provided with the hooks H, springs *d*, in combination with the transverse rods *e* and catches *m* of rack G, substantially as and for the purpose set forth.

2. The arrangement of the sliding bearings D' D", hooks H H, springs *d d*, rods *e e*, rack G, with catches *m m*, sliding carriage E, right and left screws *f f*, winch and pinion *k*, and double augers *a a*, substantially as described.

In testimony that I claim the foregoing, I, JOSHUA W. FRAZEE, have hereunto set my hand this 8th day of December, 1869.

JOSHUA W. FRAZEE.

Witnesses:

HARRISON ANDERSON,  
E. THURLOW.