

(No Model.)

2 Sheets—Sheet 1.

G. A. JACKSON.
BORING MACHINE.

No. 307,550.

Patented Nov. 4, 1884.

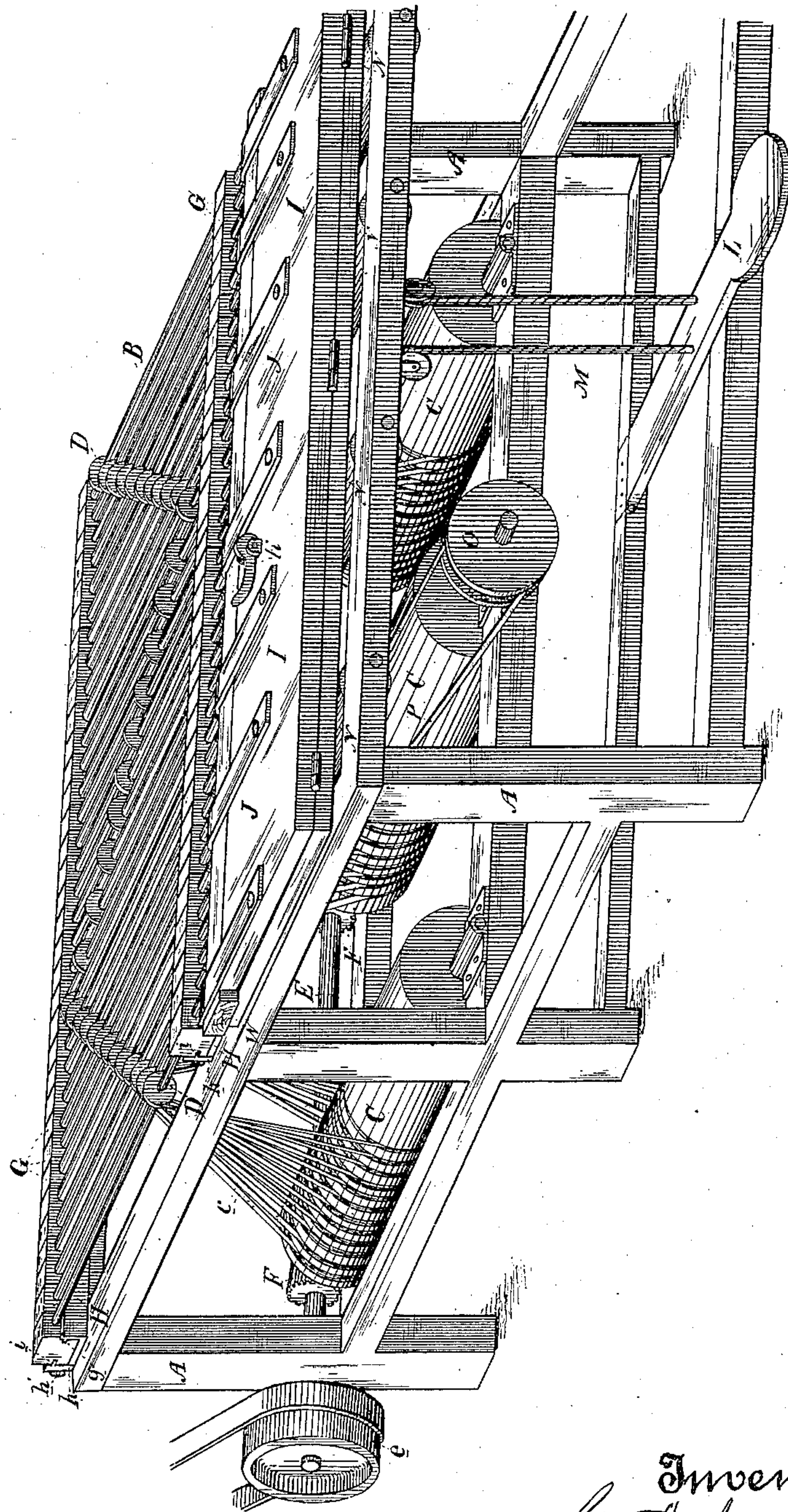


Fig. 1.

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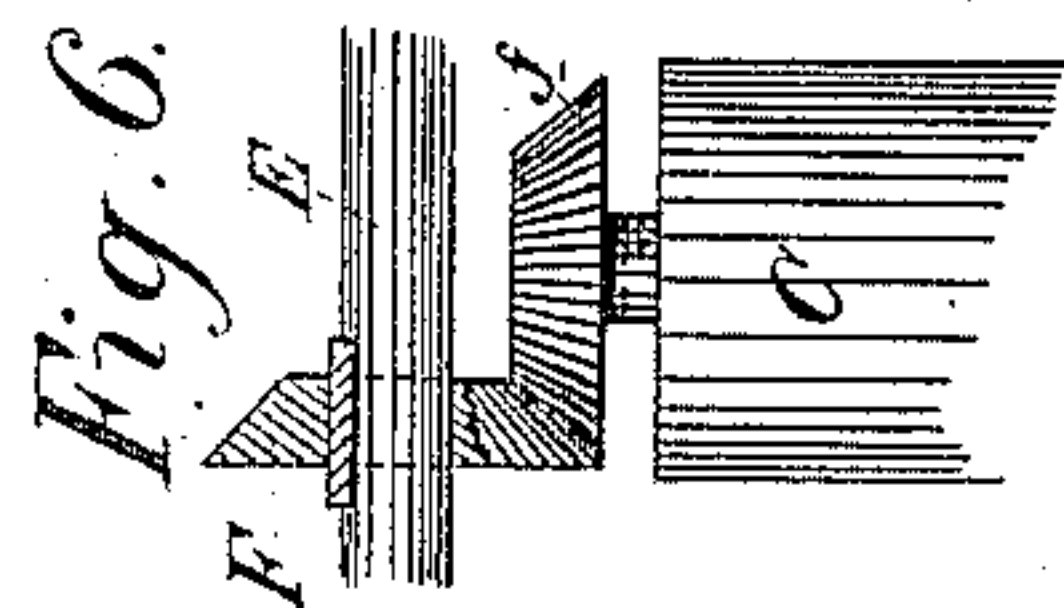
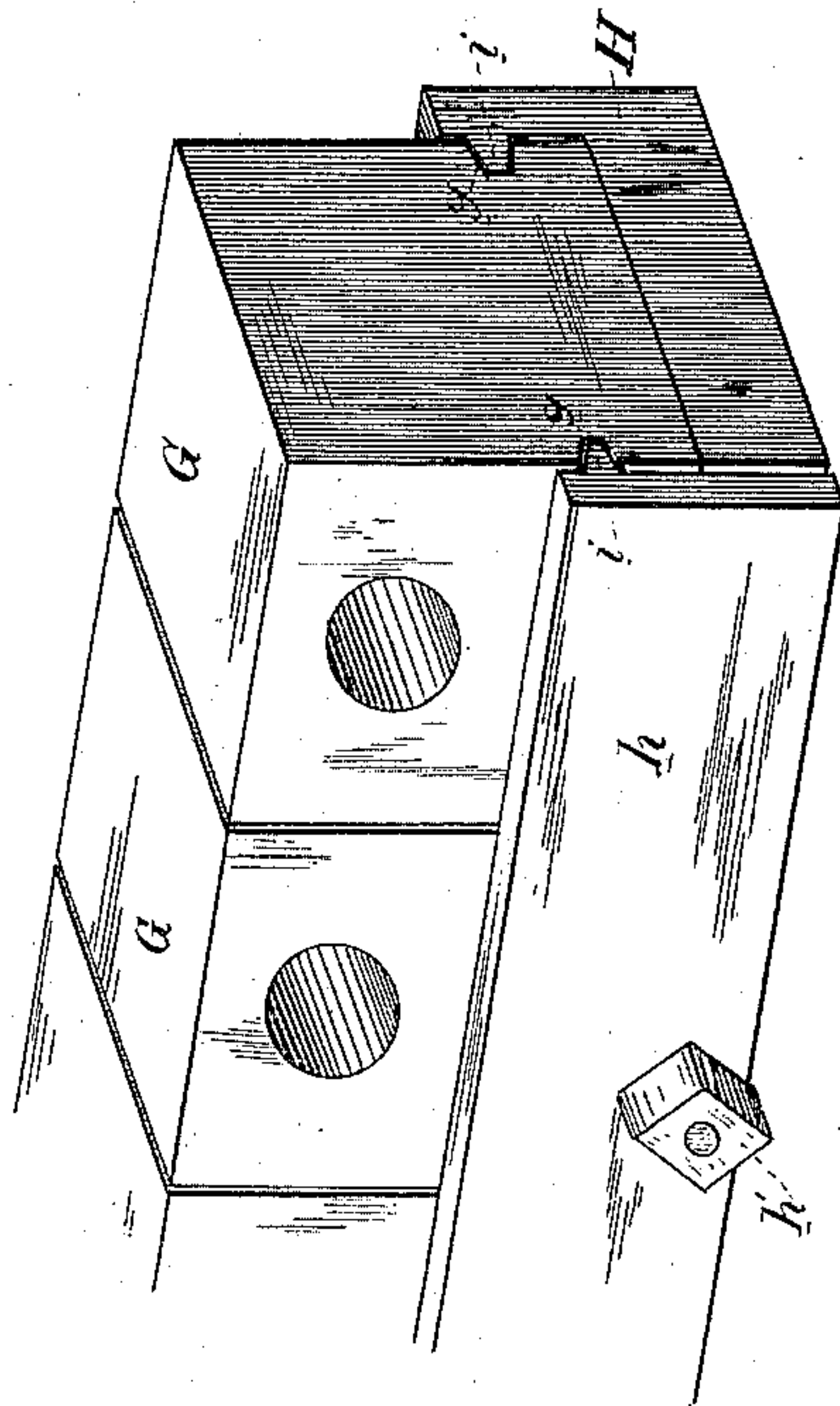
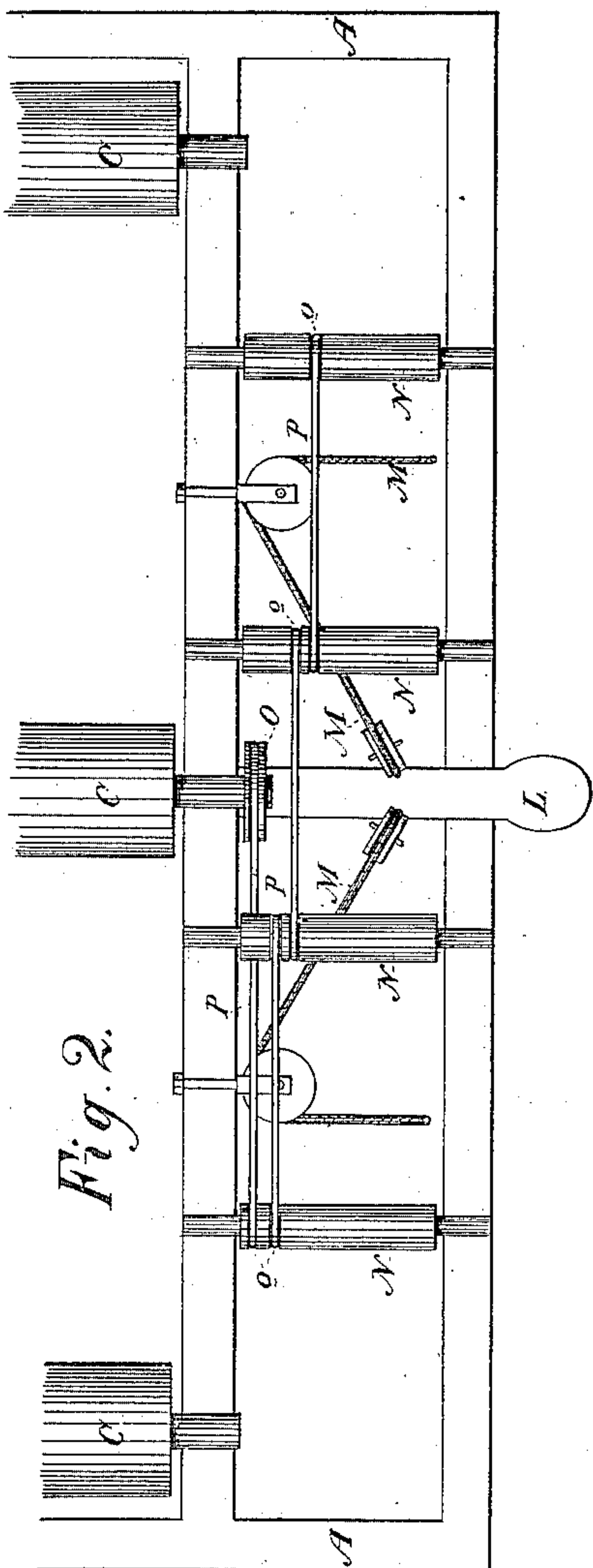
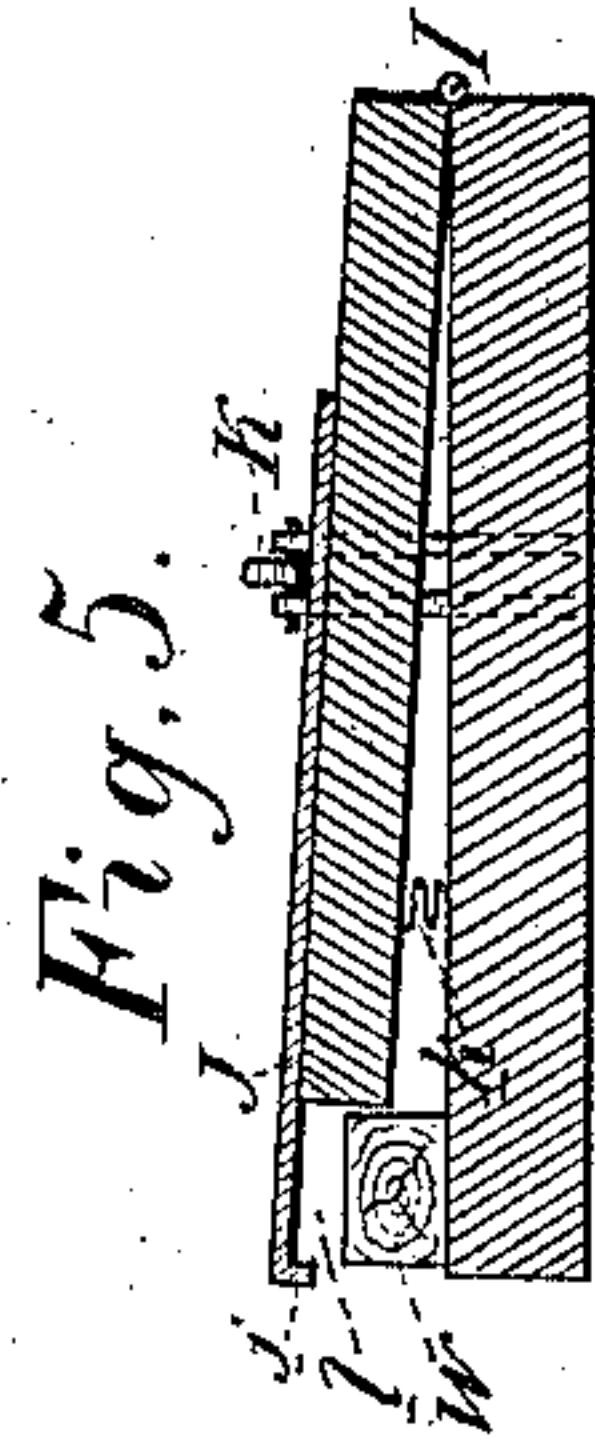
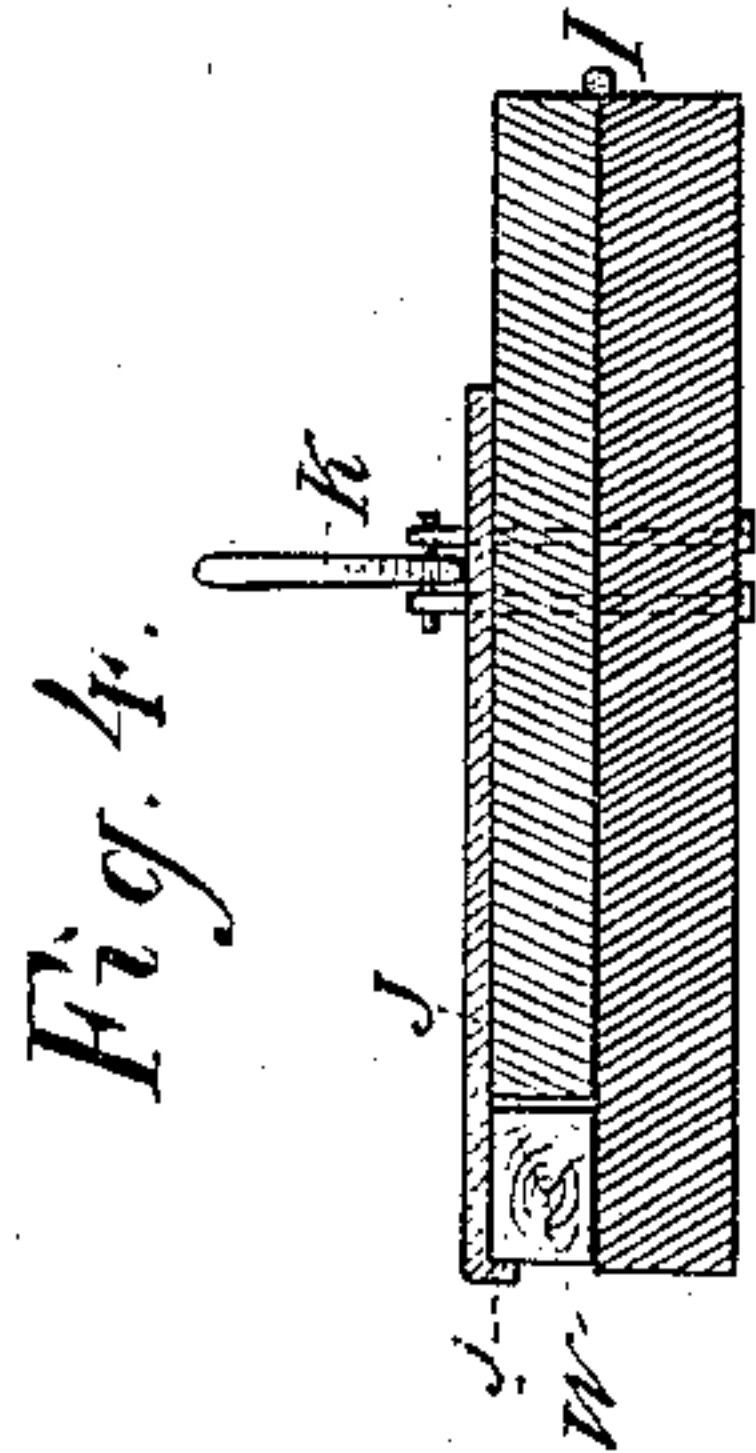
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

GILES A. JACKSON, OF OAKLAND, CALIFORNIA.

BORING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 307,550, dated November 4, 1884.

Application filed August 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, GILES A. JACKSON, of the city of Oakland, county of Alameda, and State of California, have invented an Improvement in Boring-Machines; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful boring-machine, the object of which is to properly and rapidly prepare a number of holes suitably separated in a piece of work, such, for example, as in the blind-stile of a window-shutter for the reception of the end journals of the movable slats.

My invention consists in a series of parallel boring-bits adapted to be adjusted to or from each other, in the mechanism for driving them, in a peculiar sliding table adapted to receive and feed the work to the bits, in a series of rollers for discharging the work when complete, and in details of construction, all of which I shall hereinafter fully explain by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my boring-machine. Fig. 2 is a plan of a portion of same, showing rollers N. Fig. 3 is a perspective view of a detail showing adjustable boxes G. Fig. 4 is a cross-section of the sliding table closed. Fig. 5 is a view of same opened. Fig. 6 is a detail view of pinions Ff.

A is a frame or stand, upon the top of which are mounted horizontally a series of boring-bits B, the shanks of which lie parallel with each other. The number of boring-bits contained in this series is governed by the number of holes to be bored in the work, and may accordingly vary. These bits are each driven separately and at the same rate of speed in the following manner.

Under the frame A are mounted drums C, having a number of pulleys formed in their faces, from which extend the separate independent belts, *c*, passing over the separate pulleys D, mounted upon the shanks of the boring-bits.

E is the main driving-shaft extending across the back of the table, and having upon its end the usual fast and loose pulleys, (designated by *e*,) and having also beveled pinions F, which mesh with beveled pinions *f*, mounted upon

the ends of the drums. The beveled pinions F should be feathered upon the shaft, whereby they are adapted to be thrown into or out of engagement with the drums, by which means I may operate any or all of the drums, according as the work requires the operation of a certain number or all of the boring-bits, Fig. 6.

I do not confine myself to the shaft E for driving the drums, as I may accomplish that result by belting or square-faced gearing suitably arranged, any of said means being used where most convenient or desirable.

In boring the holes in the blind-stiles it is often necessary for different sizes of stiles to vary the distance between the holes, and where the cross-bar of the shutter is joined to the stiles on each side that the holes should be omitted over this space.

In order to adapt my machine for the varying sizes of shutters requiring, as before stated, the varying spaces between the holes to be bored, I make the boring-bits adjustable to or from each other, so that they may be placed as close together as necessary for one stile, or as far apart for another, or they may be varied to intermediate spaces. The manner in which I render them adjustable is as follows: The shanks of the boring-bits are journaled in suitable separate and independent boxes, G, which are provided in front and behind with grooves *g*, Fig. 3. Upon the table are secured the channeled guides H, one side, *h*, of which is independent of the bottom, and is adapted to be secured to its place by means of tap-screws *h'*, Fig. 3. The inner surfaces of the side walls of these guides are provided with tongues *i*, which fit the grooves *g* of the boxes. The boxes are thus adapted to be moved in their guides and to be fixed in any suitable position for the purpose described by means of setting up the adjustable side *h* and tightening it by the tap-screws.

Upon the front of the main frame and extending its entire length is the sliding table I, consisting of two parts, the upper of which is hinged at one edge to the lower, and is narrower, whereby a rabbet-front, *l*, is formed, in which the material or work W is held, Figs. 4, 5. Upon the swinging top of the table are secured the spring-straps J, the front ends of

which are formed into hooks *j*, adapted, when the swinging top is pressed down, to overlap and hold the material or work to its seat in the rabbet-front of the table. The swinging top is normally held in a separated position by means of the springs *k*, and is pressed down to hold the work by means of the pivoted cam or eccentric lever *K*. This table *I* is adapted to slide upon the main frame by means of tongues formed in its bottom, which enter suitable grooves formed in the frame.

In order to operate the sliding table to feed its work to the boring-bits, I have the treadle *L* and the chains *M*, which pass over suitable pulleys, and are secured to the bottom of the said table, Figs. 1, 2. When the material or work is placed in the rabbet-front of the sliding table, the treadle is pressed down so that the table *I* is moved to carry its work directly in front of and against the boring-bits, and to feed it thereon until the holes are bored sufficiently deep. When the treadle is relieved, table *I* is thrown back by hand and the hooks *j* on the spring strips *J* pull the work away from the bits. The cam-lever *K* is then released, and the swinging top of the sliding table springs upward, thus allowing the work to drop out of its front.

Under the sliding table and in the main frame are journaled the rollers *N*, upon which the work when freed from the sliding table falls, and by the revolution of which it is discharged. These rollers are rotated by means of a pulley, *O*, upon the end of one of the drums *C*, the several pulleys *o* upon the ends of the rollers, and the various belts *P*, by

which the power is transmitted from the pulley *O* to the pulleys *o*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a boring-machine, the combination of the series of parallel rotating boring-bits *B*, the sliding table *I*, for feeding the work to the bits, and the rollers *N*, under the sliding table, for discharging the work, substantially as herein described.

2. In a boring-machine, the series of parallel boring-bits *B*, and the means for rotating them, consisting of the drums *C*, pulleys *D*, and belts *c*, in combination with the discharge-rollers *N* and the means for driving them, consisting of the pulley *O* on one of the drums *C*, the pulleys *o* on the rollers, and the ropes or belts *P*, substantially as herein described.

3. A boring-machine consisting of the frame *A*, the series of parallel adjustable boring-bits *B*, mounted in its top, the drums *C* below, and suitable means for transmitting power from the drums to drive the bits, the sliding table *I* on top of frame *A*, and adapted to receive and feed the work to the boring-bits, and the rollers *N* under the table, driven from drum *C* and adapted to receive the work from table *I* and discharge it, substantially as herein described.

In witness whereof I have hereunto set my hand.

GILES A. JACKSON.

Witnesses:

S. H. NOURSE,
H. C. LEE.