

J. Hampson.

Boring Mach.

N^o 97,506.

Patented Dec. 7, 1869.

Fig. 2.

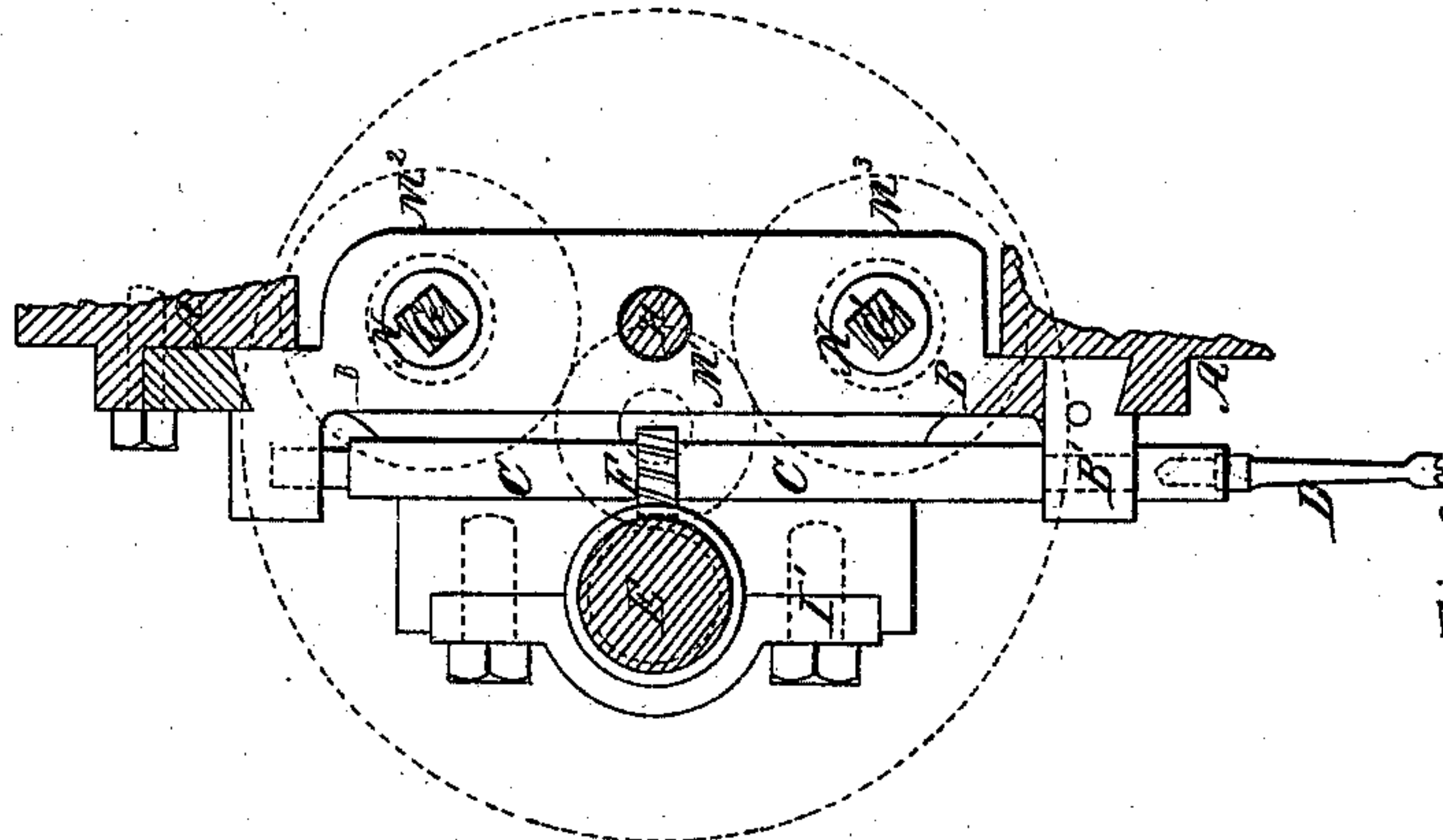


Fig. 3.

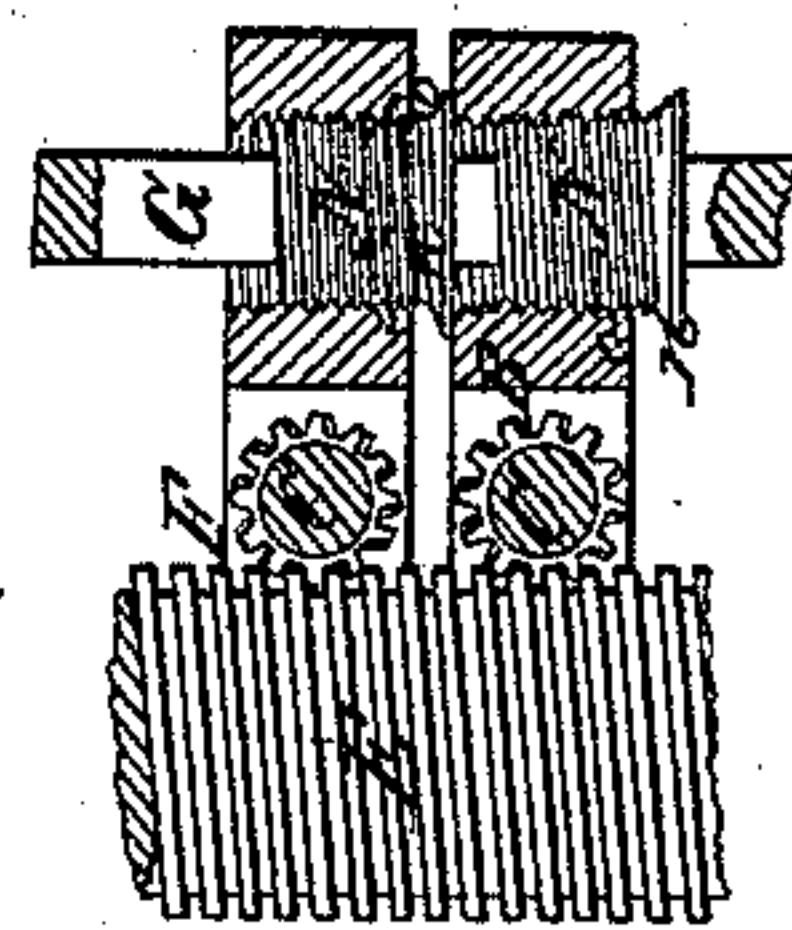
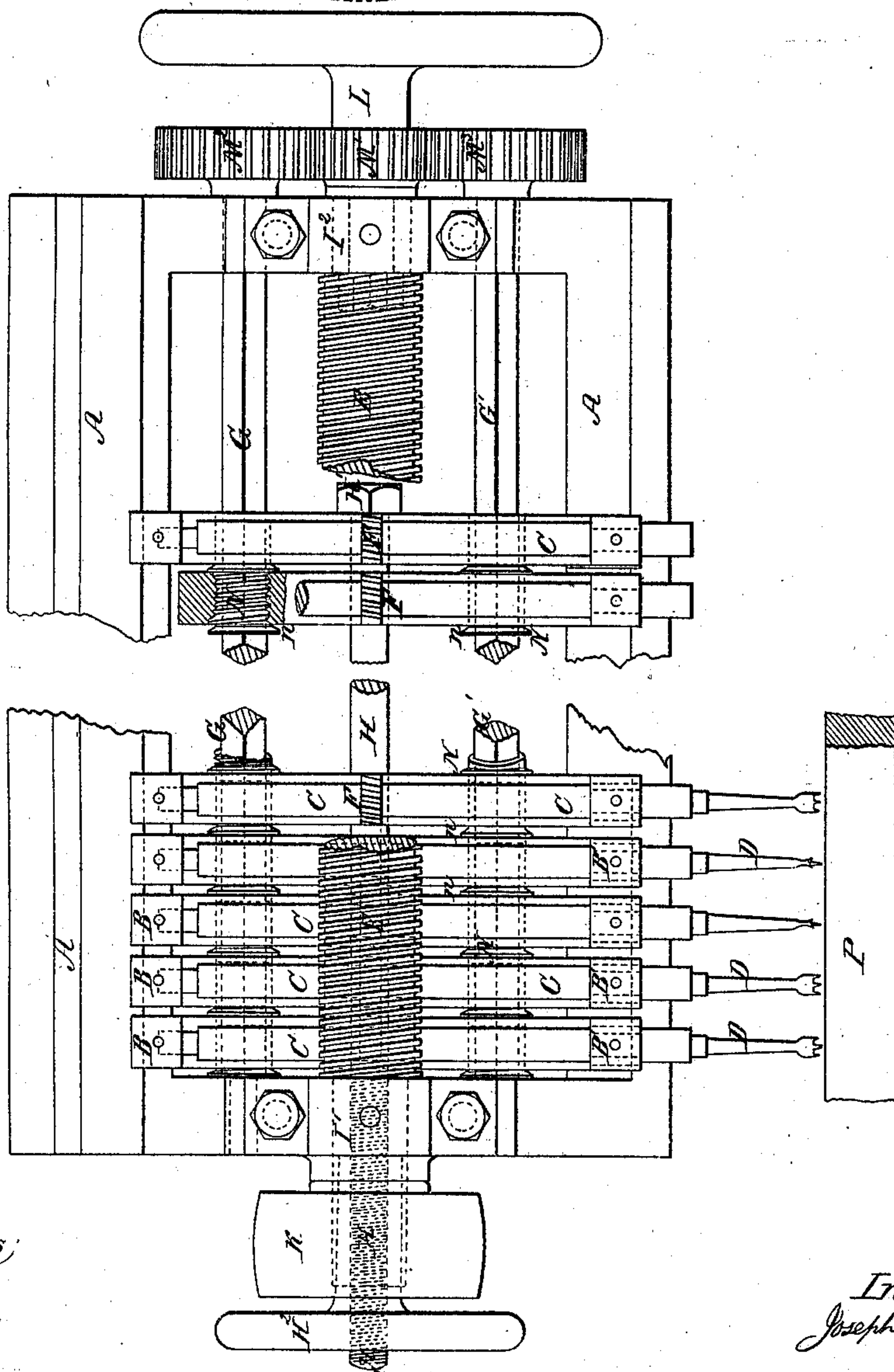


Fig. 1.



Witnesses;
John C. Lee
Robt. F. Little

Inventor;
Joseph Hampson

United States Patent Office.

JOSEPH HAMPSON, OF NEWBURG, NEW YORK.

Letters Patent No. 97,506, dated December 7, 1869

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, JOSEPH HAMPSON, of Newburg, in the county of Orange, and in the State of New York, have invented a new and useful Machine for Drilling Shutter-Stiles, or any similar pieces of work; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of a number of drill-spindles, with inserted bits in a plane, in such a manner that they all at once can be set in a rotary motion, and, being equally distanced between centres, can be kept stationary during working time, but which distance between centres can be changed simultaneously on all spindles, without setting or adjusting every single spindle, according to the work to be done, in this way saving much time required for laying out and drilling every single hole separately, in blind-stiles or similar work.

To better understanding, I refer to the annexed drawings, in which—

Figure 1 is a plan of the whole machine.

Figure 2 represents a cross-section of the machine, showing especially the side view of a spindle-head-stock.

Figure 3 is a cross-section of a pair of those spindle-head-stocks, with spindles.

A A represent the bed-frame of the drilling-machine, and is so arranged that the head-stocks B B' of the spindles C C are held down to the frame by means of two V-shaped grooves, but are allowed to slide sideways along in these grooves, if needed.

A sufficient number of those head-stocks B B' is placed on this bed-frame, each one carrying a spindle, C, in suitable bearings at each end.

These spindles C C are set in rotary motion by a worm-screw, E, gearing into the small worm-wheels F F, on each spindle C, and which is driven by a belt running on pulley K.

The spindles C C are all alike, and their ends are all in line.

The bits D D, inserted in those spindles, are all of the same length, and therefore a piece, P, representing a blind-stile, pressed even against the bits when they are revolving, will be drilled with holes of the same depth, size, and distance apart, ready to receive the tenons of the slats.

The spindle-head-stocks B B' are all made of the same width, so that they carry the spindles, when packed close, side by side, the same distance apart, from centre to centre, and as close together as ever will be required to drill holes in blind-stiles; but, as the slats are not all of the same width, and are not

all set evenly apart in different shutters or blinds, it is necessary to set the centres of the bits according to the distance the holes for the tenons of the slats want to be, and this is done by the following mechanism:

In each head-stock, B B', are screwed in two brass bushes, N N, some distance apart, with a square hole through their centres, for a square rod, G G', to pass through.

Each bush N has a shoulder, *n*, on one side, to fit into a corresponding countersink, *o*, in the body of the head-stock, so that the bush will not project over the sides when screwed home, and will therefore allow those head-stocks to be placed close together.

The thread on those bushes N is alike on all, and the square hole is standing alike in all, when in their places, so that the square rods G G' can be pushed through from one end to the other, without turning a single bush.

The shoulder *n* of the one bush covers the smaller end of the bush next to it, and for this reason, when both rods G G' are turned simultaneously, all bushes will unscrew alike, and will push the head-stocks B B', with the spindles C C, the further apart, the more the bushes are screwed out of their places. Are the rods G G' turned the other way, the bushes N are screwed in again, and allow the head-stocks to be placed closer together again.

On one side of the bed-frame A is placed a stud, to carry a pinion, M¹, and a hand-wheel, L, the pinion to gear into two equal wheels, M² M³, which are fastened to the square rods G G'. When the hand-wheel L is turned, the bushes N are turned either one way or the other, but all alike, and the distance of drill-spindles is easily regulated.

To keep the spindles steady when once set right, a hole is drilled about in the middle of each headstock for a bolt, H, to pass through. This bolt H also passes through one side of the bed-frame A, and carries a hand-wheel, H², on its end, in which wheel is cut thread, and which acts like a wing-nut on the bolt.

The head H¹, of the bolt H, lies behind the last head-stock, and when the wing-nut H² is screwed up tight, the bolt keeps all the head-stocks closely bound together, and they can only be set further apart after loosening the nut so that the bolt gives more room between head and nut to be taken up by the head-stocks, by spreading them apart, which is done by turning wheel L in the right direction. Are the spindles to be placed closer together, the wheel L has to be turned the other way, and the nut H² screwed up more on the bolt H until the head-stocks are held tight in their places.

A suitable table is arranged to the bed-frame A, to

carry the work to be drilled, and move it evenly against the bits, so that the holes will come straight, and of even depth.

A large amount of labor is saved by using this machine, especially in factories where much blind work is done.

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

1. The bushes N N, with shoulders *n n*, in combination with rods G G', head-stocks B B', gearing M¹ M² M³, and hand-wheel L, for altering simultaneously the distance between centres of the drill-spindles C C, as specified.

2. The bolt H, with head H¹ and wing-nut H², in combination with the head-stocks B B', for holding the spindles stationary, when set right for use.

3. The drilling-machine, composed of frame A, spindle-head-stocks B B', revolving spindles C C, with bits D D, rods G G', with bushes N N, gearing M¹ M² M³, hand-wheel L, bolt H H¹, with nut H², all combined for the purpose as specified.

JOSEPH HAMPSON.

Witnesses:

JNO. C. NOE,

ROBT. F. LITTLE.