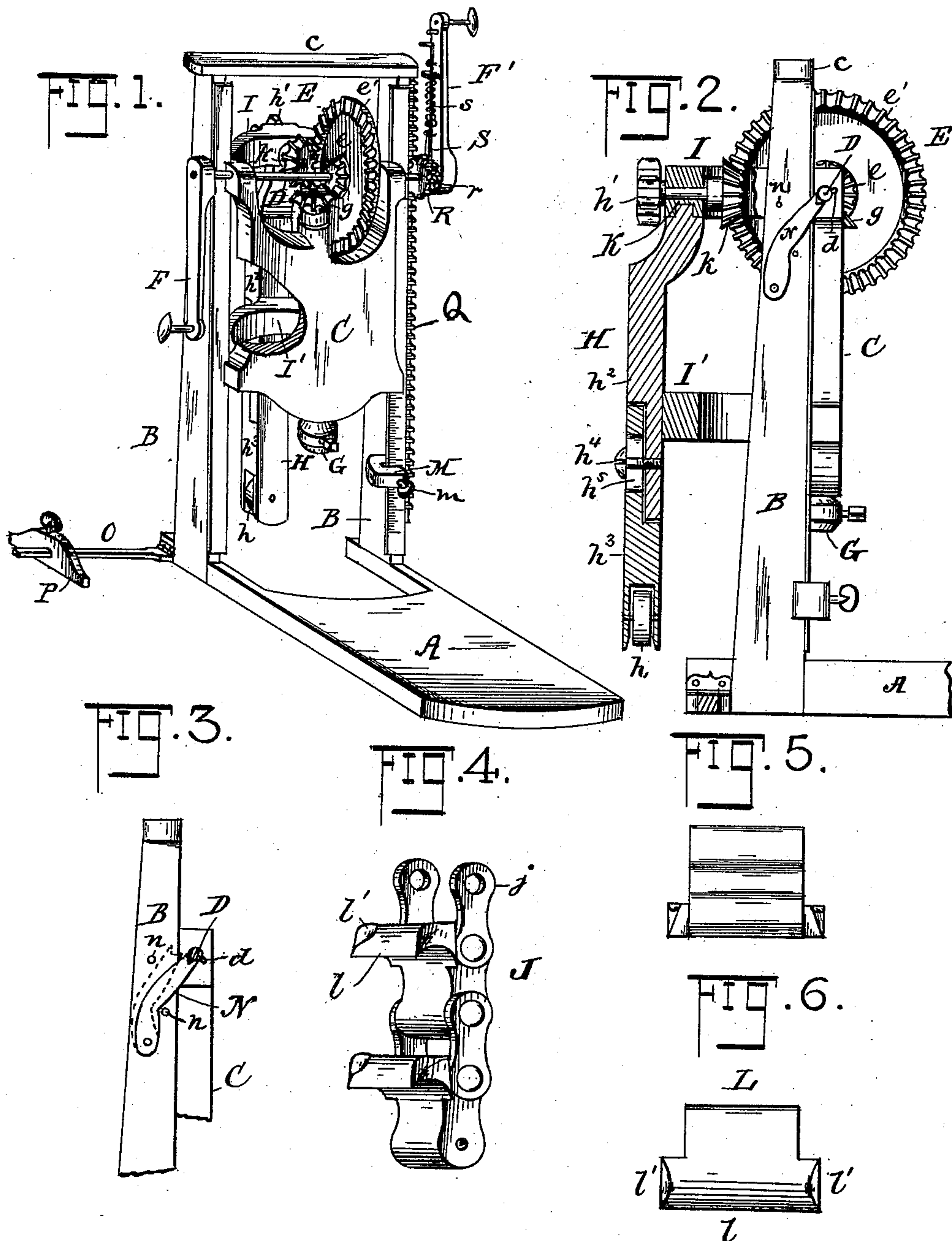


(No Model.)

N. A. CHANEY.  
BORING MACHINE.

No. 464,646.

Patented Dec. 8, 1891.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

NATHAN ALEXANDER CHANEY, OF CADIZ, OHIO.

## BORING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 464,646, dated December 8, 1891.

Application filed October 10, 1890. Serial No. 367,691. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN ALEXANDER CHANEY, a citizen of the United States, residing at Cadiz, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Boring-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to boring-machines, and has for its object to combine in a single machine instrumentalities for boring a round or square hole, as required, and which is adapted for mortising.

The improvement consists of the novel features and the peculiar construction and combination of the parts which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a perspective view, parts being broken away, of a machine embodying my invention. Fig. 2 is a side view, parts being broken away, of the standard around which the chain cutter passes, showing the means for transmitting motion from the master-wheel to the said cutter. Fig. 3 is a detail view of the catch for supporting the head, showing the manner of detaching the catch from the shaft of the master-wheel by dotted lines. Fig. 4 is a perspective view of a portion of the chain cutter. Fig. 5 is a rear view of that portion of the cutter shown in Fig. 4. Fig. 6 is a top plan view of a cutting-tool of the chain.

The base A is provided at its front end with the standards B B, between which the head C is located and guided in its vertical movements. The cross-bar c at the upper ends of the standards B B connects and braces the said standards. The shaft D, on which the master-wheel E is mounted, is journaled on the head C and is provided at its ends with the cranks F and F', by means of which the said shaft D is caused to rotate. The spindle G, which is fitted with the auger or other boring-tool, (not shown,) is journaled vertically in the head and is provided at its upper end with the bevel-pinion g, which meshes with

the beveled crown-gear e on the side of the master-wheel E. The standard H is secured to the brackets I and I', which extend from the head C, and is provided at its lower end with the roller h, around which the chain cutter J passes, and with the sprocket-pinion h' at its upper end, around which the upper end of the chain cutter J passes. To take up wear and permit the removal and replacement of the chain cutter, the standard is composed of two parts h<sup>2</sup> and h<sup>3</sup>, which are halved together, the overlapping ends being adjustably connected together by the binding-screw h<sup>4</sup>, which screws into the part h<sup>2</sup> and passes through slot h<sup>5</sup> in the part h<sup>3</sup>. The sprocket-pinion h' is secured on the shaft K, which is journaled in the bracket I, and which is provided on its inner end with the bevel-pinion k, which is in mesh with the gearing or teeth e' on the master-wheel E.

The chain cutter is composed of cutting-teeth L and links j. The cutting-teeth are preferably solid and have a cutting-flange l projected laterally from one end. The ends of this cutting-flange project beyond the ends of the vertical portion of the cutter and are beveled to give clearance in the rear of the cutting-edge. A cutting-flange l' projects outwardly at right angles to the flange l, at each end thereof, to cut into the body of the wood at each end of the bore, thereby obtaining a smooth and clean bore. By having the ends of the flange l project beyond the ends of the vertical or main portion of the cutter L the links j, which are secured thereto and connect the cutters, are out of the way.

The adjustable gage M on one of the standards regulates the depth of the bore. The standard to which the gage is secured by the binding-screw m is graduated, being marked off in inches and fractional parts thereof. The downward movement of the head C is limited by the gage M.

The head C is held at the highest limit of its movement by the catch N, which is pivoted to one of the standards and has its free end projected beyond the side of the standard, so as to engage with the shaft D and support the head in its elevated position. The stops n limit the movements of the catch. The projection d on the side of the shaft D



engages with the catch N on turning the shaft backward and disengages the catch therefrom and permits the head to descend.

5 The machine is held from lateral motion by the arm O and the gage P, which is adjustable thereon. The arm O is hinged to the frame, so as to fold and be out of the way when the machine is not in use.

10 The rack Q on the standard is engaged by the pinion R, which is loosely mounted on the shaft D. The ratchet-wheel *r* on the side of the pinion is adapted to be engaged by the latch-bolt S on the crank F' when it is desired to elevate the head after the bore is completed. The spring *s* holds the latch-bolt in engagement with the ratchet-wheel *r*.

15 In the event of mortising, a round hole can be formed in the wood to be mortised by an auger, bit, or other tool applied to the spindle G, and this hole can be subsequently squared and lengthened in each direction, if desired, by the chain cutter. The operation can be quickly performed, as the change from the rotary to the square boring-tool can be effected in a moment's time. When boring, the latch-bolt is drawn out of engagement with the

ratchet-wheel, and when it is desired to elevate the head after boring the required depth the latch-bolt is engaged with the ratchet-wheel and the shaft is turned backward. The ratchet-wheel meshing with the rack-bar causes the head to ascend. 30

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 35

In a boring-machine, the combination of the head C, provided with the actuating mechanism and with the brackets I and I', the standard H, composed of the parts  $h^2$  and  $h^3$ , having their contiguous ends overlapping, one of the said ends being slotted, and a binding-screw passing through the said slot and adjustably securing the parts  $h^2$  and  $h^3$  together, substantially as and for the purpose described. 40 45

In testimony whereof I affix my signature in presence of two witnesses.

NATHAN ALEXANDER CHANEY.

Witnesses:

JOHN C. JAMISON,  
JAMES N. HAVERFIELD.