

C. MUSCHAR.

Mortising-Machines.

No. 134,815.

Patented Jan. 14, 1873.

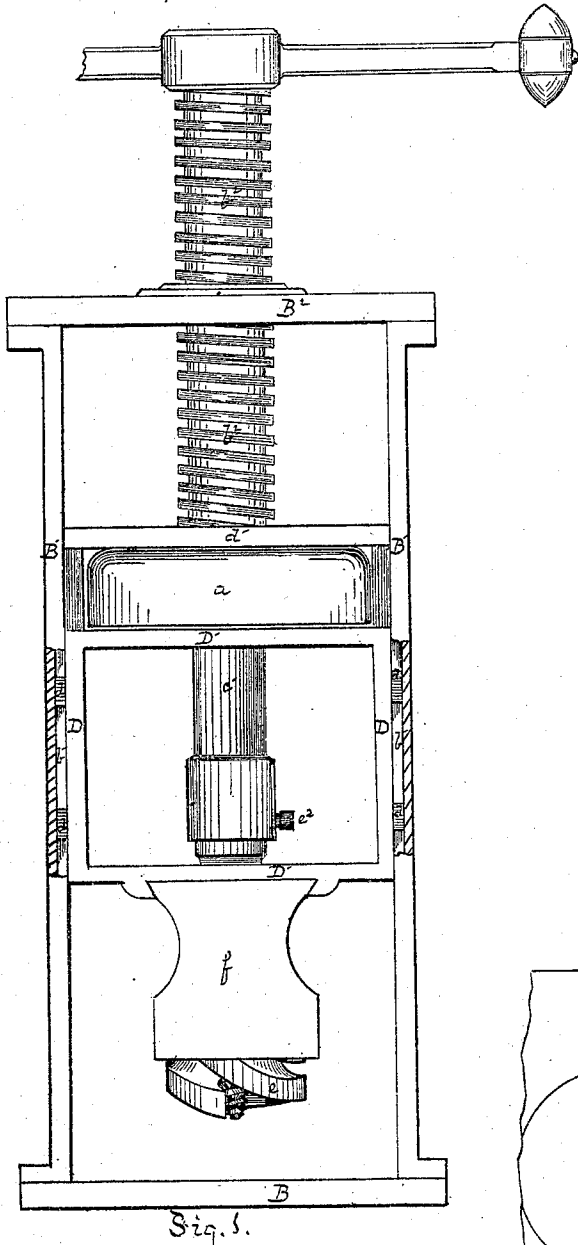


Fig. 1.

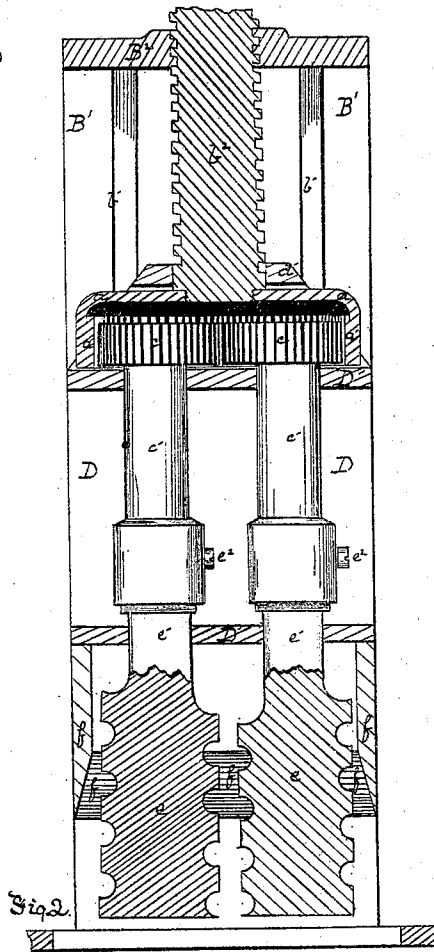


Fig. 2.

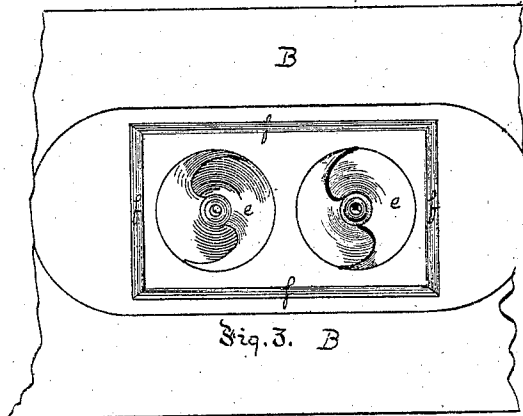


Fig. 3. B

WITNESSES

James J. Kay

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UNITED STATES PATENT OFFICE.

CHRIST MUSCHAR, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. 134,815, dated January 14, 1873.

To all whom it may concern:

Be it known that I, CHRIST MUSCHAR, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Mortising-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an end elevation of my improved machine; Fig. 2 represents a vertical longitudinal section along a plane a little to the left of the vertical center of Fig. 1; and Fig. 3 is a lower-end plan view of the augers and mortising-chisel.

Like letters of reference indicate like parts in each.

My improvement relates to a machine for boring and cutting out a mortise complete in carpenter-work at one operation. In it an auger or series of augers is combined with a mortising-chisel, the cutting-bit of which is four-sided. The auger or augers and chisel are mounted in a sliding frame, which is forced down and up by the same operation as that by which the auger or augers are rotated.

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

The frame-work $B B^1 B^2$ is of the usual or any suitable construction, except that grooves $b^1 b^1$, or other suitable guiding devices, are made in or attached to the uprights B^1 . Between these uprights B^1 is a box-shaped sliding frame, $D D'$, on the sides of which are lugs or ribs d , which play in the grooves b^1 ; or other suitable guiding devices may be employed corresponding to those employed with the uprights B^1 . The sides D of the frame are connected a little above the upper plate D' by a cap, d' . Through a tapped hole in the upper cross-piece B^2 a screw-stem, b^2 , passes down and extends through the cap d' . To its lower end, and between the cap d' and plate D' , is attached an inverted cup-shaped gear-wheel, a , having an internal gear, a' . The two pinions $c c$ mesh into the gear a' , and to them are attached the auger-shafts $c' c'$. These shafts pass down through (or, better, nearly to) the lower plate D' , and to them are attached, by set-screws e^2 or in other suitable way, the

augers e by means of their stems e^1 . To the under side of the lower plate D' , by a dovetail joint, as shown, or in other suitable way, I attach a mortising-chisel, f . This chisel has a four-sided cutting-bit, as shown in Fig. 3, of the size and shape of the mortise desired. This chisel surrounds the augers e in such relative position as with the greatest practicable facility to cut or trim down the sides and ends of the mortise as the boring progresses. The better to accomplish this the augers are made to work a little in advance of the chisel. After the mortise is bored and trimmed down in this way nothing remains except to clean out the chips, which is easily done by even an unskillful laborer.

If the chisel is connected with the lower plate D' by a sliding dovetail joint, the auger-stems e^1 must pass up through its upper side as well as through the lower plate D' , and the place of jointing the stems e^1 to the shafts c' must not be lower down than the upper face of the upper side of the chisel; but other modes than that shown may be employed for connecting a chisel having a four-sided cutting-bit with the vertically-sliding frame which carries it. It is only important, in this respect, that the chisel be removable, so that different-sized chisels may be used for cutting different-sized mortises; and the augers e are likewise made removable and interchangeable for the same reason.

In connection with the form of chisel described, a single auger may be used for a square mortise, or the augers may be employed in any desired number and in any desired relative arrangement, such as will suggest themselves to the skilled mechanic for boring mortises of different sizes or shapes, a chisel of suitable size and shape being used therewith; but both the chisel and the augers may have a permanent fixed connection to the machine if so preferred. Power is applied by a hand-wheel or in other suitable way.

The operation beyond what has been described will be obvious.

In practical use it is generally best to connect the machine firmly to the timber, and this may be done by dogs or in other suitable way.

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

1. The inverted cup-shaped gear-wheel *a* having an internal gear, *a'*, operating the auger-shafts *c' c'*, in combination with the sliding frame *D*, screw *b²*, and frame *B²*, substantially as and for the purpose set forth.
2. The shafts *c' c'* and augers *e e*, in combination with the plate *D'* provided with dove-tail joint and chisel *f*, substantially as and for the purpose specified.

In testimony whereof I, the said CHRIST MUSCHAR, have hereunto set my hand.

Witnesses: CHRIST MUSCHAR.

A. S. NICHOLSON,
G. H. CHRISTY.