

C. H. THOMPSON.
Improvement in Machines for Cutting Square Mortises.
No. 124,230. Patented March 5, 1872.

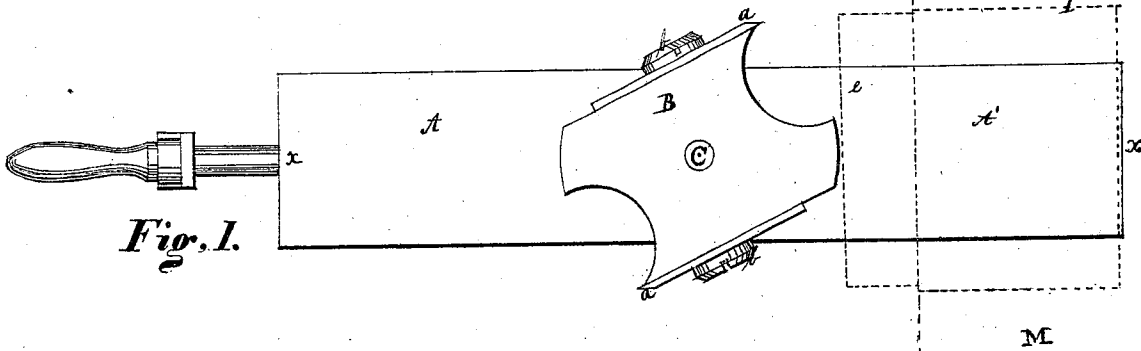


Fig. 1.

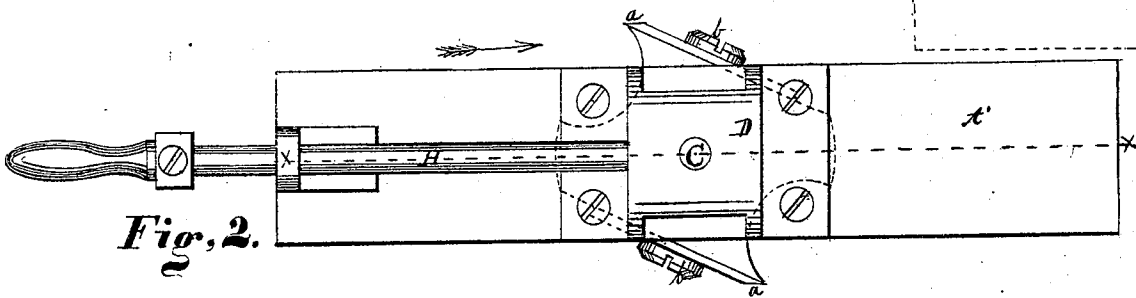


Fig. 2.

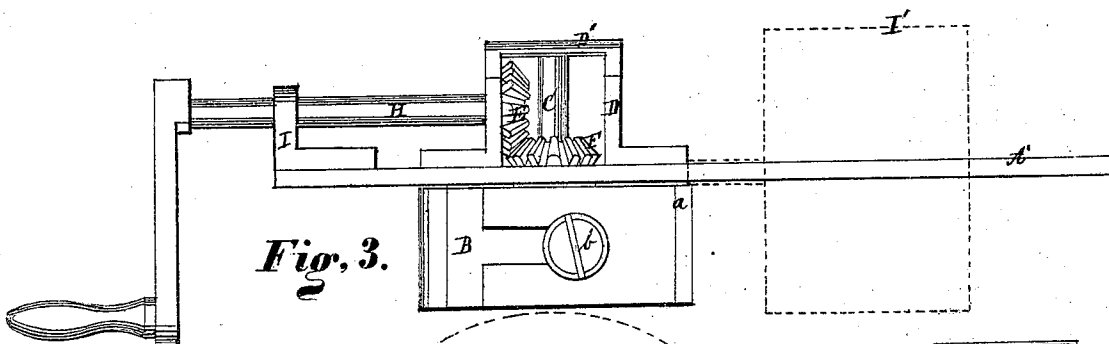


Fig. 3.

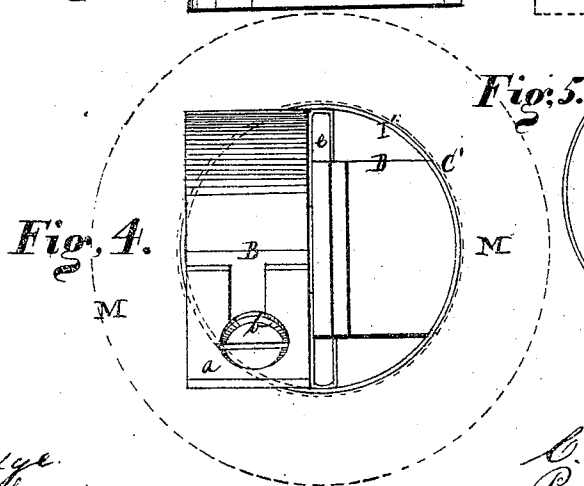


Fig. 4.

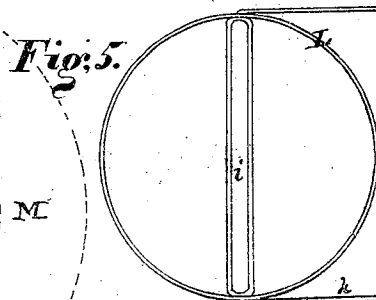


Fig. 5.

Witnesses.
J. H. Burridge.
J. L. Humphrey.

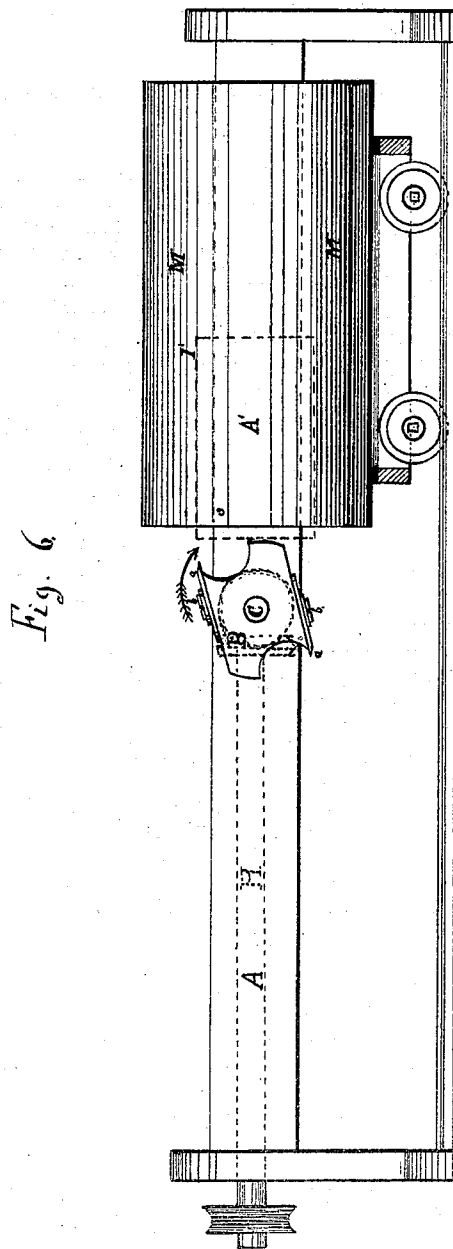
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C. H. THOMPSON.

Improvement in Machines for Cutting Square Mortises.

No. 124,230.

Patented March 5, 1872.



Witnesses:
J. H. Allen
C. H. Watson

Inventor:
Charles H. Thompson

UNITED STATES PATENT OFFICE.

CHARLES H. THOMPSON, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO THOMAS ELWOOD, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING SQUARE MORTISES.

Specification forming part of Letters Patent No. 124,230, dated March 5, 1872.

To all whom it may concern:

Be it known that I, CHARLES H. THOMPSON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Machine for Cutting Square Mortises; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawing making part of the same.

SPECIFICATION.

Figure 1 is a side view of the machine referred to. Fig. 2 is a view of the opposite side of Fig. 1. Fig. 3 is a plan view. Fig. 4 is an end view. Fig. 5 is a detached view of a guide to which reference will be made. Fig. 6 is a longitudinal elevation of the machine.

Like letters of reference refer to like parts in the several views.

The nature and the special object of this invention are to square the hole bored in a log for the purpose of inserting therein a square shaft, said log being used for a roller or for other purposes. Said invention consists of a center bar or plate, on one side of which is a head of revolving cutters operated by an arrangement of wheels secured in a stay attached to the opposite side of said plate. A more full and complete description of said invention is as follows:

In the drawing, Fig. 1 represents the center plate or bar referred to, the length of which is twice the length of the log to be mortised, and as much more as the length of the cutter-head B, hung thereto on a shaft, C, Fig. 3. One end of said shaft is journaled in the center bar, whereas the opposite end is journaled in the stay D. The head of cutters is rotated by the gearing E F, operated by the shaft H, driven by a belt and pulley, or by other means. Said shaft is supported in the stays D and I, as shown in the drawing. To each face of the cutter-head is secured a cutter, *a*, by a set-screw, *b*.

The practical operation of the above-described device is as follows: As above said, the special purpose of the machine is for squaring the hole previously bored in wooden rollers

used in calico-works, and which rolls are of considerable length, and mounted upon a square shaft of large size. Hitherto the holes have been worked out by hand by the use of a chisel, which is a long, tedious, and expensive operation, to avoid which is the purpose of my invention. The machine is hung on the center of an ordinary slide-lathe, as shown in the line *x x*, Figs. 1, 2, and 6, which is prevented from turning, and is held in a horizontal position by being fastened in a chuck, or by other means. The log or roller M, to be operated on, is also secured in the lathe, according to the manner in which the machine is to be operated, as shown in Fig. 6, so that the bar A shall pass through the hole previously bored, and while traveling over the bar from end to end the cutters, according to the number used, as hereinafter described, will remove a part or all of the excess of wood, and thereby make the hole square in form. The curved side D' of the stay D is the arc of a circle having the same diameter as the hole bored in the log; hence the side of the stay will fit in the bore of the roller, and, in part, serve as a guide to the cutters, and steady them in their operation. A guide, consisting of a ring, indicated by the dotted line I', Figs. 1 and 4, is first introduced into the bore, which it nearly fills. The end of the bar is inserted in the diametrical slot *e*, Fig. 4, of the guide, and is thereby held, and which also guides the end of the bar and cutters along through the bore while cutting. The position of the machine, in its relation to the bore of the roller, is shown in Fig. 4, in which figure the dotted line C' indicates the hole, I' the guide, and *e* the slot in which the bar is held and guided by the ring of the guide. The log, when thus secured in position, is fed along in direction of the arrow, Fig. 1, toward the cutters, which are made to revolve by a belt and pulley, or other means. The cutters, as the log advances, cut out a square one-half the diameter of the hole. The length of the bar at the right of the cutters being the length of the hole, the entire length, therefore, of one-half of its diameter is, by this means, squared. The other half or side of the hole is squared by turning the cutters

from the side just squared to the opposite one, or from the position shown in Fig. 1 to that shown in Fig. 2. This inversion of the machine brings the edges of the cutters so as to cut in the opposite direction, as will be seen in said Fig. 2. In order to guide the machine again through the log in its backward movement, a guide, L, Fig. 5, is introduced into the hole, so that the square part *h* of the guide will run in the square part of the hole. The end of the bar is inserted in the slot *i* of the guide in like manner as above described in reference to the round guide I'. The log is now run back, as indicated by the arrow in Fig. 2, and while in its backward movement the cutters cut away or square the other side of the hole, as it did in the former instance. By this means the hole is made square throughout its whole length in a smooth, true, and equal form for the admission of the shaft.

I do not confine myself to a single head of two cutters, whereby one-half only of the diameter of the hole is squared at once, for by a slight modification of the bearing I can, by the addition and arrangement of one or more cutters, square the hole at one operation or passage of the machine through it. In the event

that one or more cutters are used, a corresponding number of heads must be employed. I also propose using two or more saws in the place of the cutter-heads and knives, so that by passing through the log with two saws, and turning the machine one-quarter over and returning, the hole will be squared; or, with four saws, once passing will complete the operation.

Claims.

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

1. The revolving head B, with one or more cutters, in combination with the bar A, operating conjointly substantially as and for the purpose set forth.

2. The adjustable guide I', in combination with the bar A, when arranged substantially as described, and for the purpose specified.

3. The adjustable guide L, in combination with the bar A, substantially as described, and for the purpose specified.

CHARLES H. THOMPSON.

Witnesses:

J. H. BURRIDGE,
D. L. HUMPHREY.