F. B. Marble,

Mortising Machine.

No. 46,372. Patented Feb. 14, 1865.

Fig. 1.

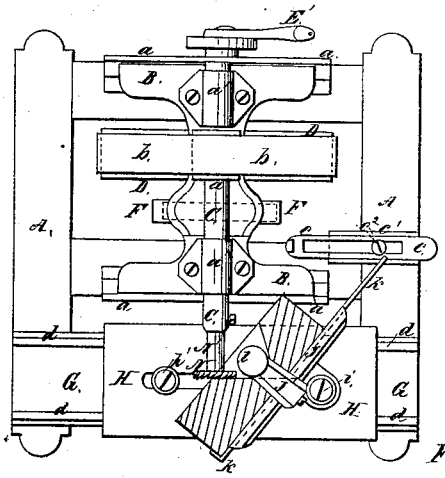


Fig. 4.

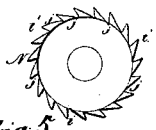


Fig. 5.

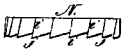


Fig. 6

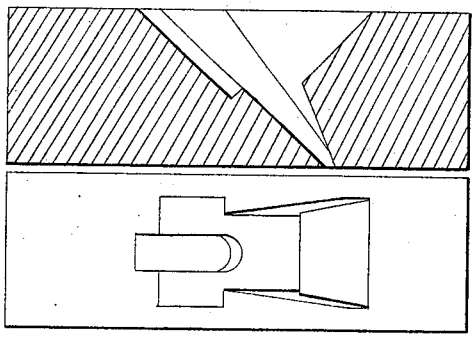


Fig. 7

Fig. 2

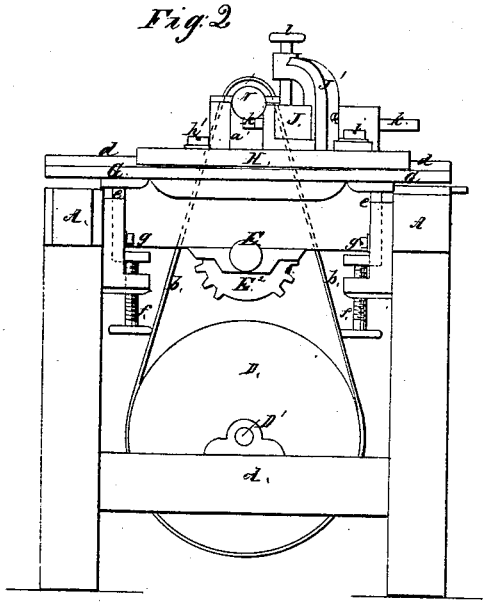
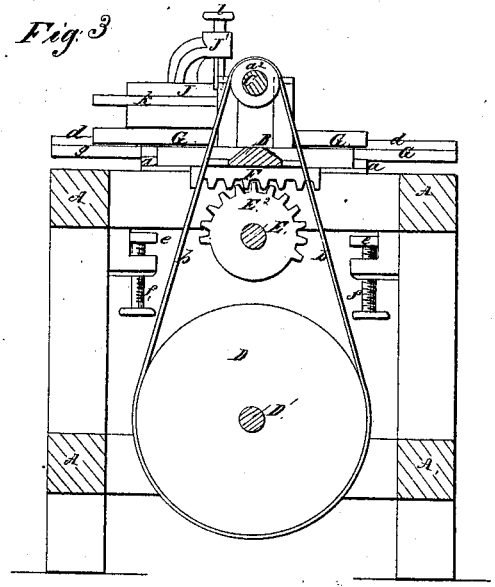


Fig. 3



Witnesses:

R. F. Campbell

Edelhafer.

Inventor:

F. B. Marble.
by his atty's

Mason, Fennick & Lawrence

UNITED STATES PATENT OFFICE.

F. B. MARBLE, OF COLUMBUS, OHIO, ASSIGNOR TO OHIO TOOL COMPANY.

IMPROVEMENT IN MACHINES FOR DRESSING THE THROATS OF PLANE-STOCKS.

Specification forming part of Letters Patent No. **46,372**, dated February 14, 1865.

To all whom it may concern:

Be it known that I, F. B. MARBLE, of Columbus, Franklin county, State of Ohio, have invented a Machine for Planing the Throats of Plane-Stocks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of my improved machine. Fig. 2 is an elevation of the front part of the machine. Fig. 3 is a vertical section taken through the back part of the machine. Figs. 4 and 5 show the construction of the cutter. Figs. 6 and 7 are views of a plane having its throat dressed.

Similar letters of reference indicate corresponding parts in the several figures.

When the throats of plane-stocks are formed by machinery which employ boring-tools, these tools necessarily leave rounded corners at the angles of the throat, which must be removed before the stocks will receive the plane irons and wedges, and as it is found very difficult to remove said corners by hand so as to leave them true and angular, I have invented a machine for this purpose, which I will proceed to describe, in order that others skilled in the art may understand its construction and operation.

In the accompanying drawings, A represents the frame of the machine, which forms a table for containing and supporting the mechanism for dressing the throats of plane-stocks.

B represents a carriage, which is supported in a horizontal plane on top of the table A and guided in its lateral back and forth movements by means of the ways *a a*, which are arranged parallel to each other and secured down rigidly on the table A, as shown in Fig. 1. Bearing-blocks *a' a'* are applied rigidly to the front and back ends of the said carriage B for receiving the shaft or spindle C, which is adapted for receiving on its front end the tool for dressing the corners of the throats. Between the bearing-blocks *a' a'* and applied to the spindle C is a pulley, a^2, over which a belt, *b*, passes, that receives its motion from a large driving-wheel, D, on the driving-shaft D', as clearly represented in Figs. 1, 2, and 3. Beneath the carriage B is a rock-shaft, E, which is rocked by means of a hand-lever, E', Fig. 1. This shaft E carries a spur-wheel, E^2, the teeth of which engage with those of a rack, F, which is affixed to the bottom of the carriage B, as shown in Fig. 3. On one side of the carriage B, and secured to the top of the table A, is a grooved plate which receives and serves as a guide for a slotted gage, *c*, which is secured to the plate *c'* by means of a screw, c^2. The object of this gage *c* is to stop the advancing movement of the carriage at the proper time to cease cutting.

G is a horizontal table, provided with parallel ways *d d*, which serve as guides for the carriage or slide H. This table G is mounted on vertical posts *e e*, which are let into guides that are secured to the frame A, and which are supported upon adjusting-screws *f f*. The set-screws *g g*, which pass through slots in said posts, are for securing the table G rigidly in position when once adjusted. The carriage or slide H has a longitudinal slide, *h*, through which passes a set-screw, *h'*, for securing this slide rigidly to the table G after it is properly adjusted.

J represents an oblique rest, the sides of which are perpendicular to the surface of the table-slide. This rest is arranged obliquely across the slide H and secured to it by a pivot piece, *i*, which, when loosened, will admit of the rest being adjusted and set at any desired angle with respect to the axis of the spindle C. A gage, *k*, in the form of a narrow strip having one end bent at right angles, is employed to set the plane-stocks in a proper position against the rest J to receive the cutter in their throats. This gage *k* has its edge beveled, and it is let into a dovetail groove formed in the face of the rest J, as shown in Fig. 3. The plane-stock to be dressed is confined down in its proper place upon the slide H by means of a screw, *l*, which is tapped through an overhanging clamp-post, J', that forms a part of the rest J, as shown in Figs. 1, 2, and 3.

If the surfaces surrounding the opening or throat in a plane-stock were all cut of the same angle or inclination, there would not be a necessity for adjusting the rest J on its slide H; but as this is not the case, this rest must be adjusted frequently for different surfaces

to be dressed. The gage *k* is adjusted for different lengths of stocks.

I employ a circular cutter, N, for cutting out the corners of the throats, which is constructed with cutting-edges on its periphery, and also on its face, as shown in Figs. 4 and 5. These cutting-edges are produced by forming teeth *i i* on the circumference of a circular disk, and then reaming out the face of said disk so as to leave portions of the teeth projecting therefrom and forming the cutting-edges *j j*. Each tooth has two cutting-edges, one edge extending obliquely across the circumference of the disk, and the other edge extending inward toward the center of said disk. A cutter thus constructed is adapted for planing two surfaces which are at right angles to each other, and leaving sharp angles at the corners of the mouth or throat of a plane-stock, which has been formed by a rotating auger, as represented in Figs. 6 and 7. For coopers' planes, which are rounded in their throats to receive a rounded iron, the cutting-edges *j j* on the face of the cutter N should have a corresponding curve.

I have described the bed H as a carriage for moving the adjusting gages and clamp, but wish it to be distinctly understood that this bed H is rigidly fixed to the table G during the operation of the cutter N upon the stock. In my machine the cutter is moved up to the work, thus enabling me to properly adjust the plane-stock (to receive said cutter) upon the stationary but adjustable bed H, and to secure it rigidly thereon.

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

1. The combination and arrangement of the rotary traveling cutter N and oblique adjustable rest and clamp J *l*, substantially as and for the purpose described.

2. The application of the gage *k* to the vertical face of the pivoted rest of a machine for planing the throats of plane stocks, substantially as and for the purpose described.

3. The rotating planing-cutter N, with cutting-edges on its periphery and on its face, arranged and operating substantially in the manner and for the purpose described.

4. The combination, in a machine for planing the throats of plane-stocks, of the rest J, gage *k*, clamp *l*, horizontally-adjustable bed H, vertically-adjustable table G, and a traveling cutter, constructed and operated substantially as and for the purposes herein described.

5. The pivoted adjustable clamping rest and gage J *k*, constructed and operated substantially as and for the purposes herein described.

6. The adjustable stop-gage *c*, applied to a frame, A, in combination with a traveling rotary cutter, N, and stock-holding bed H, substantially as and for the purposes described.

F. B. MARBLE.

By his attorneys, Mason, Fenwick & Lawrence.

Witnesses:

R. T. CAMPBELL,

E. SCHAFER.