

No. 815,247.

PATENTED MAR. 13, 1906.

N. ZANGERLE.
BORING BIT OR AUGER.
APPLICATION FILED JUNE 28, 1905.

Fig. 1.

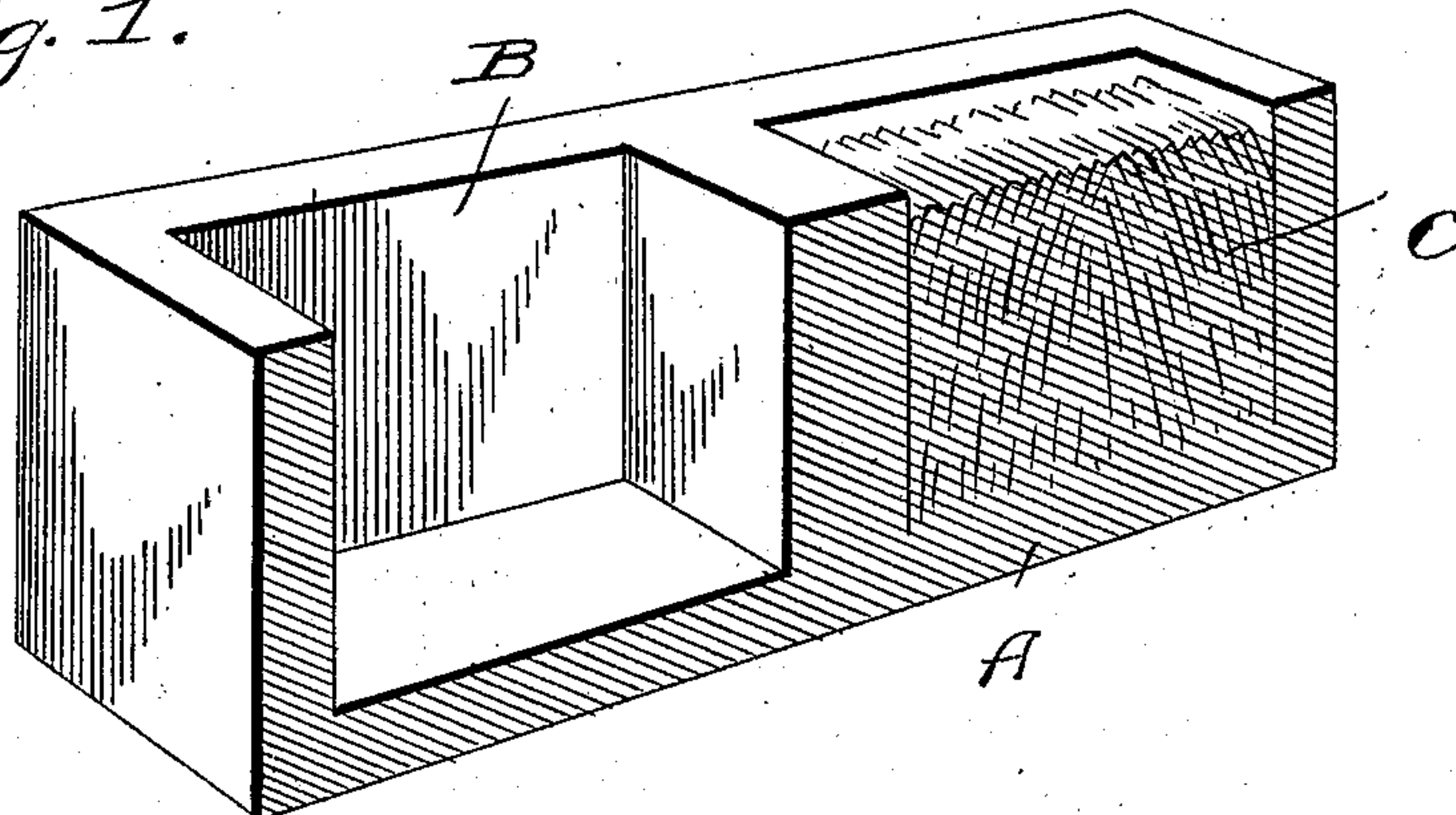


Fig. 3.

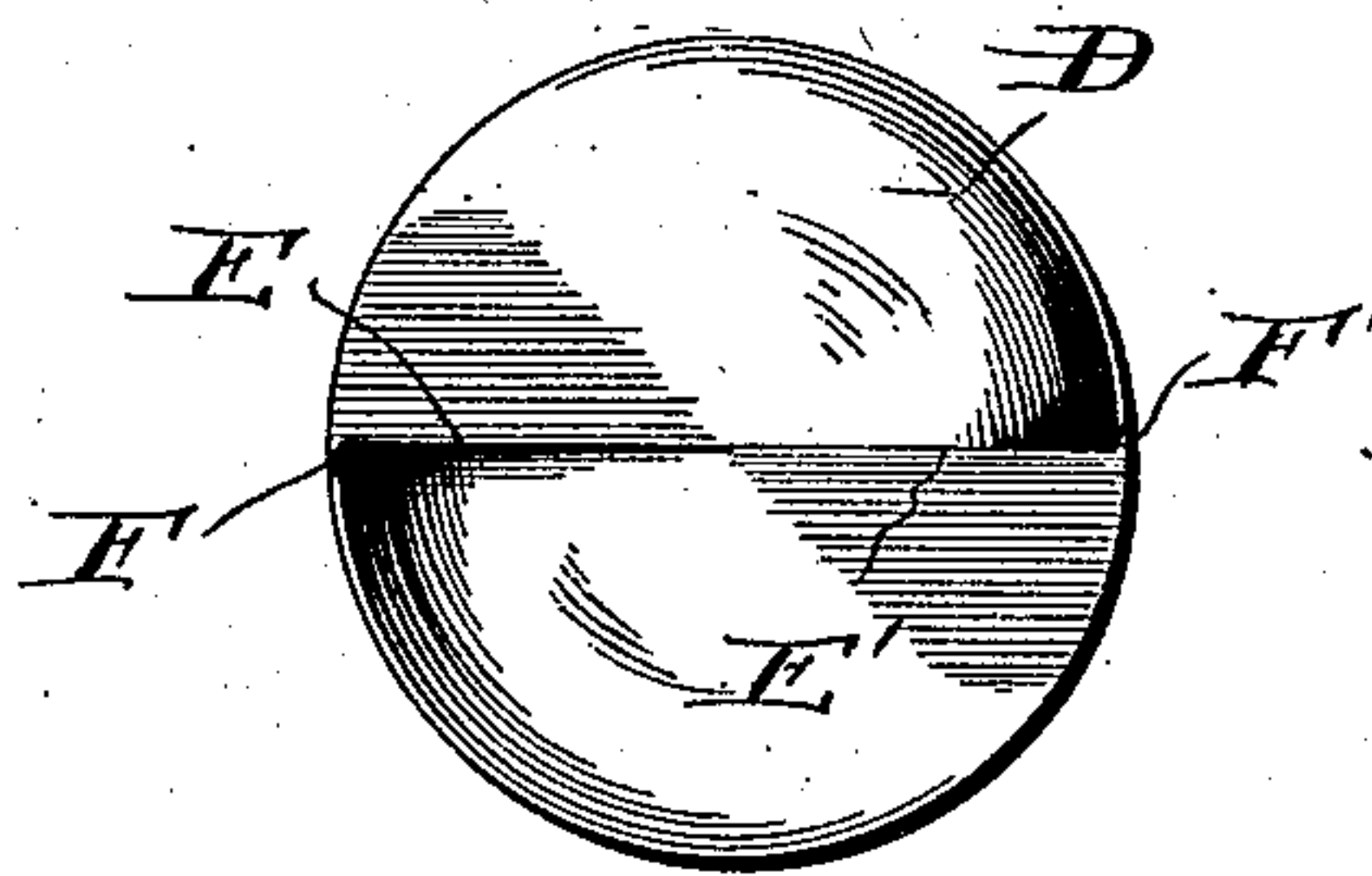


Fig. 2.

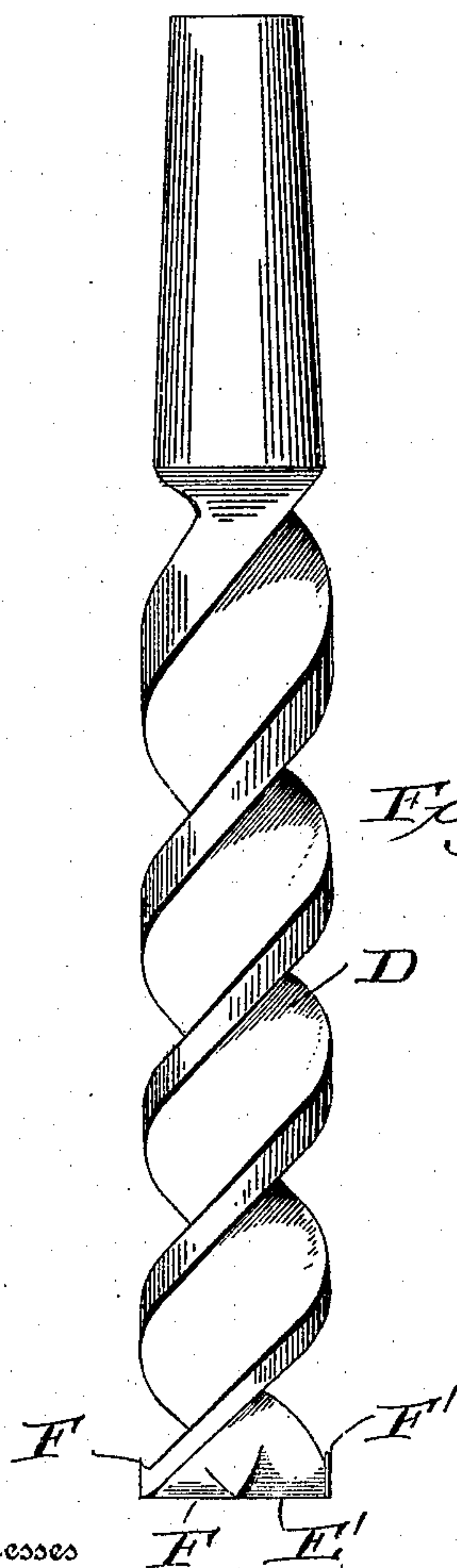


Fig. 4.



Witnesses

J. L. Mockabee
James F. Brown

By

Nicholas Zangerle -
Inventor

James Du Shane,
Attorney

UNITED STATES PATENT OFFICE.

NICKOLAS ZANGERLE, OF SOUTH BEND, INDIANA.

BORING-BIT OR AUGER.

No. 815,247.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed June 28, 1905. Serial No. 267,406.

To all whom it may concern:

Be it known that I, NICKOLAS ZANGERLE, a citizen of the United States, residing at South Bend, in the county of St. Joseph, State of Indiana, have invented new and useful Improvements in Boring-Bits or Augers, of which the following is a specification.

My invention consists in an improvement in boring-bits or augers; and its object is to provide a bit that will clean the chips out of a mortise, producing a clean mortise with a smooth bottom ready to receive the tenon. When a mortise has been made in a stick of timber by the mortising-chisel, it comes from the tool filled by the chips from the chisel, and these chips are firmly impacted in the mortise. These chips must be removed and the mortise cleaned by the use of a gouge by hand—a tedious and difficult operation. To produce a tool that will clear the mortise from these chips and produce a smooth bottom and perform these operations expeditiously is the object of this invention; and these objects I attain in the manner herein-after set forth, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective sectional view of a block of wood containing two mortises. Fig. 2 is a side view of the mortise-cleaning bit. Fig. 3 is a plan view of the same, showing the cutting edges. Fig. 4 is a cross-sectional view of one of the cutting edges of the bit, showing its chisel-like shape.

In the figures the same letters refer to similar parts of the bit.

In Fig. 1, C represents the impacted chips in the mortise as they are left by the mortising-chisel. B shows the smooth bottom of the mortise after it has been cleared by my bit.

In Fig. 2, E and E' are the cutting edges in line with each other across the center of the bit. F F' are upstanding cutting-lips at the outer edge of the bit. D is the spiral twist of the bit-blade.

To construct my bit, I take a blade of the required width to form a bit of the size desired and give it a loose or free, as contradistinguished from a close, twist. This facilitates the elevation of the chips. I then

form a chisel-shaped cutting edge on both sides of the blade, so that they will be in line with each other, extending radially from the center of the bit, and on each of the outside edges I form an upstanding cutting-lip. This is to free the chips from the corner of the mortise at the bottom. It will thus be seen that having no lead-screw in the center and no scoring-lip below the cutting edge it will make a smooth bottom in the mortise and that it is free to move horizontally to the right or left in the mortise. In the operation of this tool the mortise, with its impacted chips, is brought under a revolving bit of a diameter usually equal to the width of the mortise, the stick being usually secured upon a movable table. The stick is then raised against the bit to the depth of the mortise. The chips will be cut loose from the bottom and elevated and thrown out by the spiral blade. The stick is then shifted to the right or left and the bit will loosen and elevate the chips and at the same time smooth the bottom of the mortise as far as it extends.

I am aware that bits have been formed with a lead-screw in the center; but I believe no bit has heretofore been constructed without a lead-screw or cutting-lips extending below the cutting edge or with cutting edges arranged radially and in line with each other, as in this construction.

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

A mortise-cleaning bit provided with integral radial cutting edges, said edges being opposite and in line with each other, and merging one into the other, the outer extremity of each cutting edge being provided with an approximately vertical lip having a cutting edge, the body of said bit being in the form of a loose spiral.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

NICKOLAS ZANGERLE.

Witnesses:

EDWD. F. DUBAIL,
JAMES M. BUDBECK.