D. E. HENDERSON.

AUGER.

No. 193,406. Patented July 24, 1877.

Fig. 1.

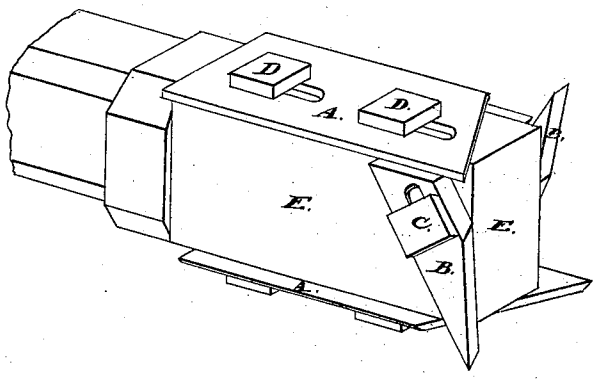


Fig 2.

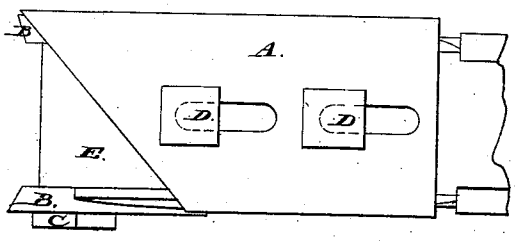


Fig. 3.

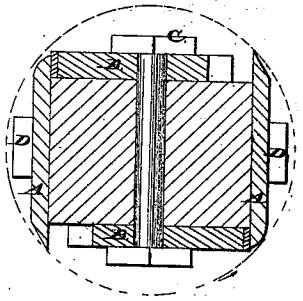
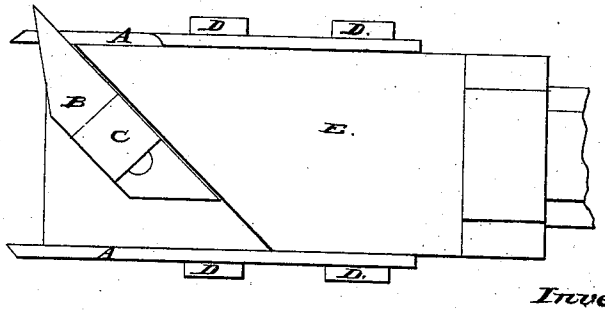


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

DAVID E. HENDERSON, OF LEETOWN, WEST VIRGINIA.

IMPROVEMENT IN AUGERS.

Specification forming part of Letters Patent No. **193,406**, dated July 24, 1877; application filed May 4, 1877.

To all whom it may concern:

Be it known that I, DAVID E. HENDERSON, of Leetown, Jefferson county, and State of West Virginia, have invented a new and useful Improvement in Augers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of the auger. Fig. 2 is a plan of the knife bit and bar. Fig. 3 is a sectional plan of the bits and bar. Fig. 4 is a plan of the bits and bar.

The object of my invention is to form rapidly and easily, by circular motion, an oblong hole or mortise which shall have its diameters, when taken at right angles, of different lengths—viz., one diameter of one inch, and the other of six, or any required length or width—bringing it into use for all kinds of mortising, and especially for fence-posts, as also to furnish an auger which can be taken apart and ground like the bits of a plane.

In the drawing, Fig. 1 is a perspective view of the auger, in which E is a spindle fastened in boxes and run by a strap, only one end of which is shown, with the auger-bits attached. The end is in the shape of a parallelogram, to which are firmly fastened by bolts C and D D the bits A A and B B. The dotted line and arrow show how the bits are supposed to revolve.

The two bits marked A A are knife-bits, and are fastened lengthwise on the bar, cutting as they revolve circular grooves in succession as they pass from one end of the hole to the other, and are followed by the two bits marked B B, which are plane-bits which take out the chips marked and cut off by the knife-bits, as they follow each other from one end of the hole to the other, backward and forward, as either the wood or the frame on which the auger-shafts are moves back and forth.

The bits A A and B B can be taken off the bar and ground, the portion ground off being made up by moving the bits forward on the bar, the holes in the bits being oblong.

The shaft or shafts (for they can be worked to advantage in gangs) are set horizontally on a frame, and are capable of being driven at any rate of speed desired, the chips falling out of themselves, the auger-shafts being moved forward into the wood by a feed attachment at the opposite end of the spindles from the auger.

Of course this auger will not make a round hole, and will not work well except at a high rate of speed, and it must move in three directions at the same time, or in two when the wood moves.

Figs. 2, 3, and 4 show the construction of the auger in detail.

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

The auger-head E, having knife-bits A and clearing-bits B, secured thereto by bolts or set-screws, substantially as shown and described.

D. E. HENDERSON.

Witnesses:

THOMAS B. HOMAR,

JOHN H. MUSGROVE.