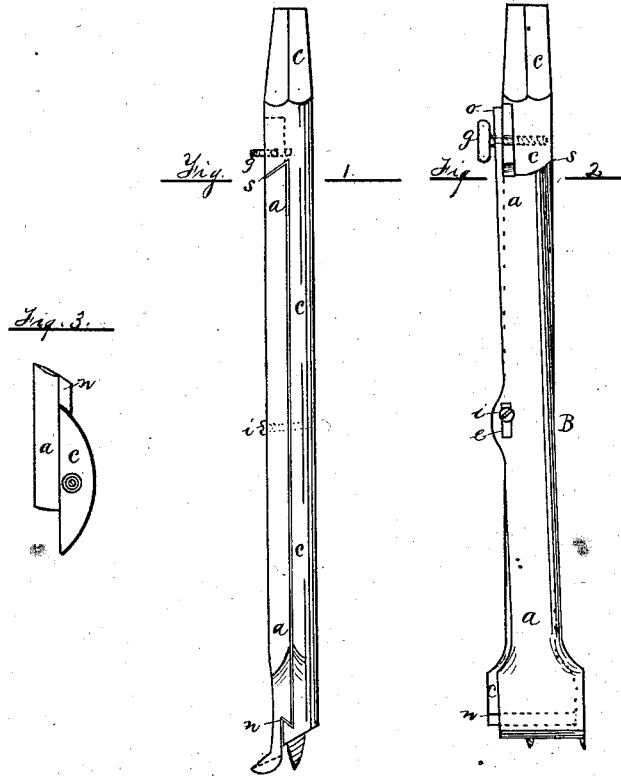


F. WILLIG.
Expansible-Bit.

No. 164,953.

Patented June 29, 1875.



Witnesses

Thos. H. Hutchins

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IMPROVEMENT IN EXPANSIBLE BITS.

Specification forming part of Letters Patent No. **164,953**, dated June 29, 1875; application filed April 17, 1875.

To all whom it may concern:

Be it known that I, FREDRECK WILLIG, of the city of Joliet, in Will county and State of Illinois, have invented certain Improvements in Expansible Bits, of which the following is a specification:

The nature of my invention consists in constructing the bit of an auger so that it may be set to bore a hole of any size consistent with the size of the auger, the construction and operation of which I will proceed to explain, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a perspective view, and Fig. 3 a plan view, on the bottom of the bits.

Referring to the drawings, *c* represents the center-bit, or the half of the auger which has the screw-point on the lower end to enter the wood, and which also has the square upper end to fit the brace. This center-bit *c* carries an auxiliary cutting-bit, *a*, attached to the center-bit *c* by means of the pivot *i* near the center, and a little to one side, for the purpose of giving the parts strength. The cutting-bit *a* swings on the pivot *i* as a center, so that by means of the thumb-screw *g* at its upper end it may be set in or out at the bottom, as shown in Fig. 2. The cutting-bit *a* is held fast to the center-bit *c* by means of the dovetail *s* and *n*,

which hold each end steady and firm. As the cutting-bit *a* swings on the center-pin *i*, it moves up and down a trifle on the center-pin *i* by means of the slot *e*. *o* is a projection of the cutting-bit *a*, carrying the set-screw *g*, which screws into the center-bit *c*. The view Fig. 1 is from the side B, Fig. 2, to show more particularly the dovetail *s* and *n*. Fig. 3 is a view on the bottom of the two bits *a* and *c*, showing the manner in which they operate together.

By this arrangement it becomes unnecessary for a mechanic to have an auger to fit any sized hole he may desire to bore. One or two such augers as the one described will generally be all the augers he will require to bore any sized hole.

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

The shaft *c*, provided with the dovetail *s n* and center-pin *i*, in combination with the part *a*, having the slot *e* and set-screw *g*, and provided with a cutting-lip, and pivoted to the shaft *c*, and operating in the dovetails *s* and *n*, in the manner and for the purpose specified.

FREDRECK WILLIG.

Witnesses:

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THOS. P. FORD.