A. B. Hendryx,

Hollow Auger,

No. 34,497. Patented Feb. 25, 1862.

Fig 2

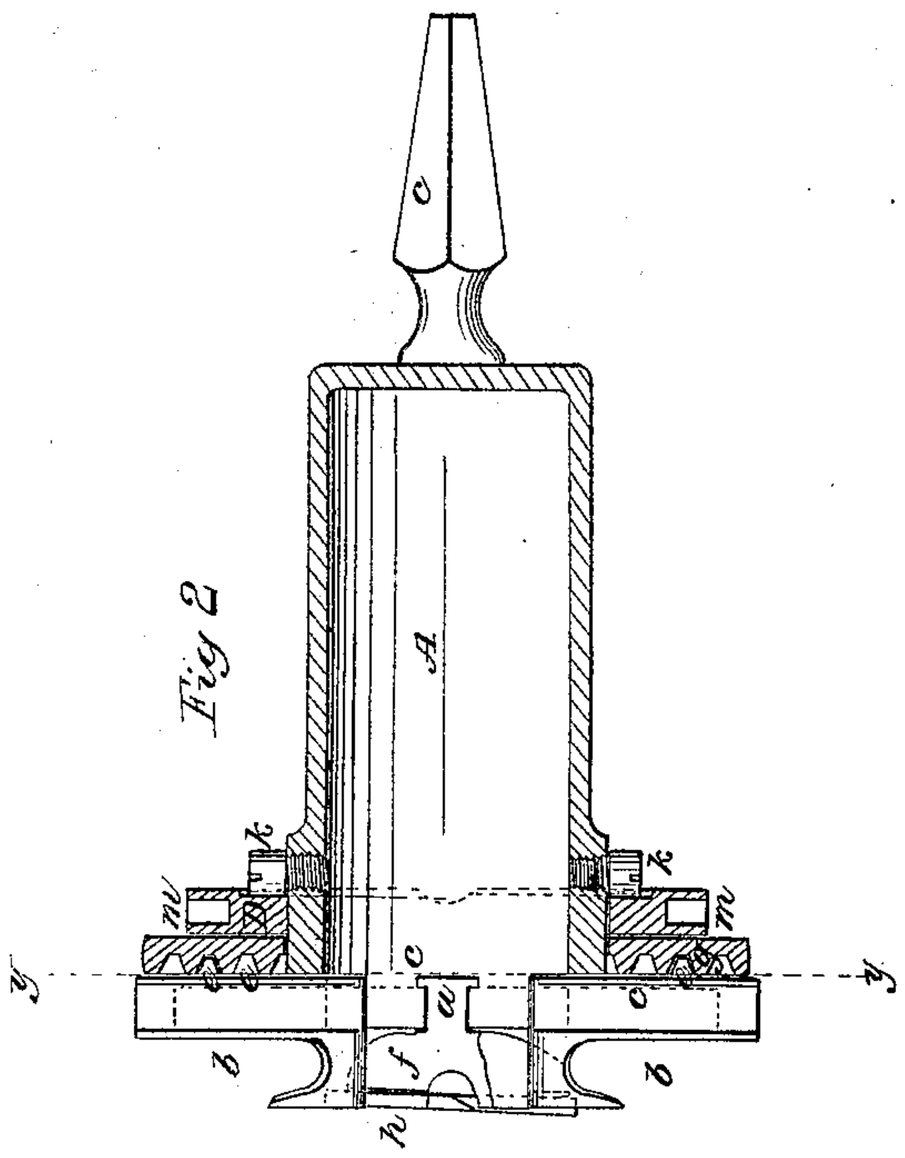


Fig 1

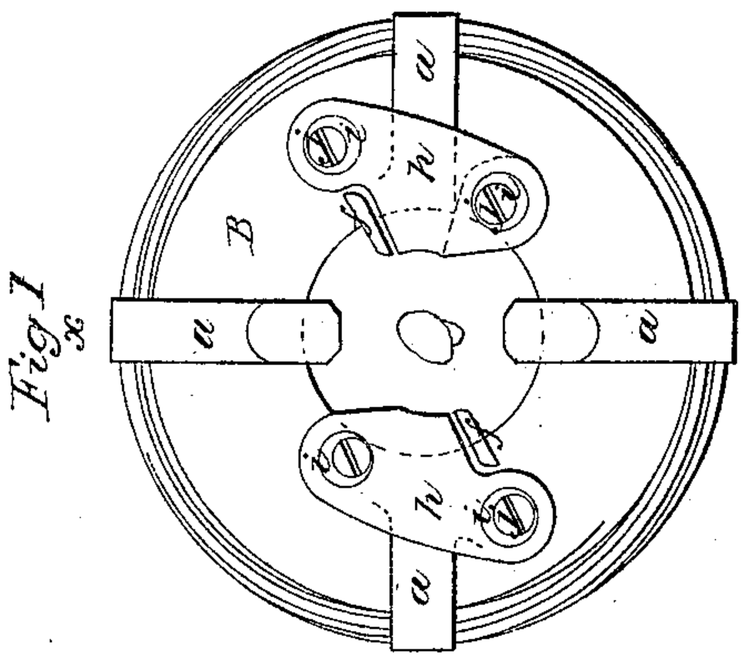
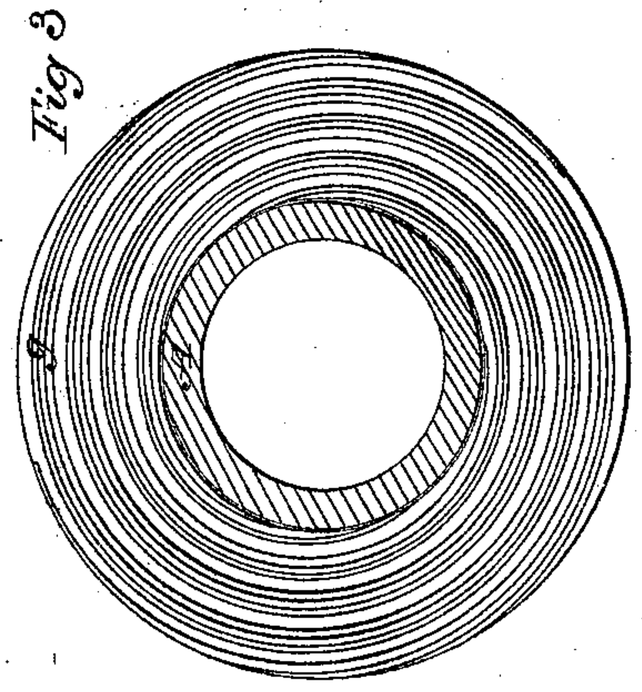


Fig 3



Witnesses:

James Laird
Richard Gaulay

Inventor:

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UNITED STATES PATENT OFFICE.

A. B. HENDRYX, OF SEYMOUR, CONNECTICUT.

IMPROVEMENT IN HOLLOW AUGERS.

Specification forming part of Letters Patent No. **34,497**, dated February 25, 1862.

To all whom it may concern:

Be it known that I, A. B. HENDRYX, of Seymour, in the county of New Haven and State of Connecticut, have invented a new and Improved Hollow Auger; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a face view of my improved hollow auger. Fig. 2 is a longitudinal section of the same, taken in the line *x x* of Fig. 1. Fig. 3 is a transverse section of the same, taken in the line *y y* of Fig. 2.

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

This invention consists in an eccentric device for setting up or adjusting the cutters as they wear away by use.

It also consists in the V-shaped scroll-disk and conical or taper pins secured in the dogs, in combination with the inner flanges of the dogs, slotted face-plate, and wedge-nut, whereby the dogs and cutters are nicely adjusted in the face-plate to preserve the exact relation each to the other and to the center of the auger and to give additional security to the dogs against radial movement during the operation of boring.

It also consists in the combination of the wedge-nut and screws or pins in the shank of the auger with the inner flange of the dogs and slotted face-plate, for the purpose of locking the dogs and cutters, as will hereinafter be fully explained.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the hollow shank or barrel of the auger, which has a disk or face-plate B on its front end and a square tapered shank C at its back end, by which the tool is secured in the socket of a spindle. The face-plate B has four radial slots cut in it equidistant apart and at right angles to each other. In these slots, and fitted to slide in and by means of the scroll-disk, are four dogs *a*, which have flanges on both their inner and outer sides, which embrace both sides of the face-plate, and thereby prevent longitudinal movement of the dogs independent of the face-plate. The inner flanges *c* of the same, when clamped by the wedge-nut D, prevent the dogs and cutter-heads from changing their position in the slots in the face-plate during the operation of boring.

Projecting from the inner sides of each of the dogs and about the middle thereof is a conical or taper pin *e*, which corresponds in bevel with that of the V-shaped scroll *g* of the disk E, in which they travel as the disk is revolved in one or the other direction to move the dogs in or out in the face-plate, always keeping the dogs an equal distance from the center of the auger.

On the outside of two of the dogs, which are opposite and in line with each other, cutter-heads *f* are cast or otherwise secured to them, to which the cutters are secured in the following manner: The cutters *h* are made of steel and have a cylindrical hole made in each end of them, which is countersunk on the under side. In each of these holes is fitted a flanged eccentric *i*, inserted from the under side, and a screw *j* passed through them from the outside, which screw passes into the cutter-head, and when loosened serves as a pivot for the eccentric to adjust the cutters and to secure them in position when adjusted.

The wedge-nut, by means of which the dogs are clamped when properly adjusted, consists of an annular ring D, fitted loosely on the shank of the auger. This annular ring is flat on its inner side and is cut out on its outer side to form two inclined planes, each extending one-half of the diameter of the disk, and both inclining in the same direction. These inclined planes work against the screws or pins *k*, and when turned in one direction crowd the inner flanges of the dogs against the back side of the face-plate to secure the dogs, and at the same time the taper sides of the scroll working upon the conical or taper pins take up all backlash and make the fastening doubly secure.

The wedge-nut D is furnished in its periphery with a series of cavities *m*, in which a rod or key is inserted to tighten or loosen the nut. When loosened the scroll-disk can be easily turned on the shank of the auger to adjust the dogs and cutter-heads in and out in the slots of the face-plate to adapt the auger to cut a larger or smaller sized tenon. The flanges *b* on the front side of the dogs keep them parallel with the face-plate while the nut is loosened and the dogs are being adjusted, thus

preventing the conical or taper pins from changing their shape by wearing more on one side than the other, and thereby preventing backlash.

The operation is as follows: The cutters being adjusted to the proper angle by means of the eccentrics and secured by the screws, the wedge-nut is loosened, which leaves the scroll-disk free to be revolved on the shank of the auger. It is then revolved by hand, it having a milled edge for that purpose, causing the dogs and cutter-heads to move simultaneously in or out, according to the direction in which the disk is revolved, the dogs always moving in concentric circles. The dogs being adjusted so that the distance between the cutters is equal to the diameter of the tenon desired to be cut, they are secured in that position by a partial turn of the wedge-nut, as before explained, when the tool is ready for use.

I do not claim, broadly, a scroll for adjusting the cutter-heads of a hollow auger, as that is found in Patent No. 23,381, granted to Charles Meyer, March 29, 1859; but,

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

1. The eccentrics *i*, for adjusting the cutters of a hollow auger, in combination with the screws *j*, cutter-heads *f*, and dogs *a*, when arranged to operate substantially as described.

2. The combination of the V-shaped scroll *g* and conical or taper pins *e* with the inner flange *c* of the dogs, slotted face-plate B, and wedge-nut D, when arranged to operate in the manner described.

A. B. HENDRYX.

Witnesses:

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