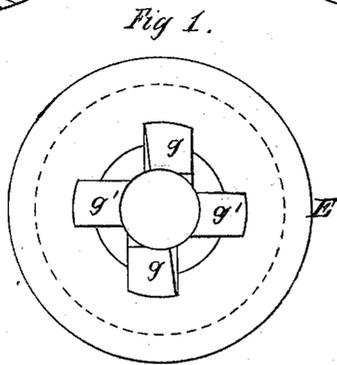
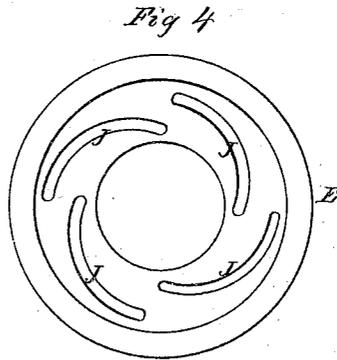
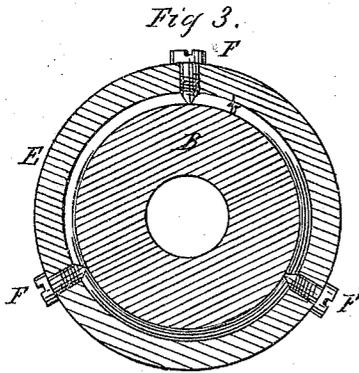
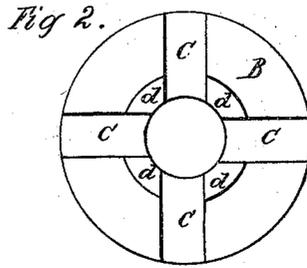
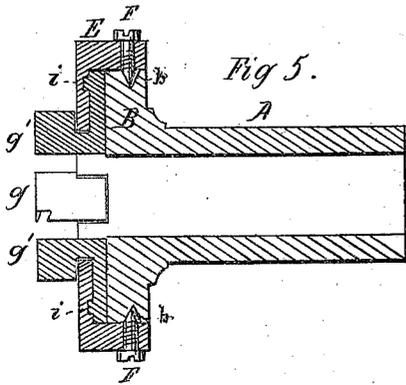


J. DEMING.
Hollow Augers.

No. 133,570.

Patented Dec. 3, 1872.



Witnesses.
Benj F. Wilson.
Simeon Sharp.

Inventor.
John Deming

UNITED STATES PATENT OFFICE.

JOHN DEMING, OF SALEM, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO
A. R. SILVER, OF SAME PLACE.

IMPROVEMENT IN HOLLOW AUGERS.

Specification forming part of Letters Patent No. 133,570, dated December 3, 1873.

To all whom it may concern:

Be it known that I, JOHN DEMING, of Salem, in the county of Columbiana and State of Ohio, have invented an Improved Hollow Auger; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figures 1, 2, 3, and 4 represent different parts of the chuck or bit holder. Fig. 5 is a diametrical section through the bit-holder, showing the bits fixed rigidly in their places.

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

This invention relates to certain novel improvements on hollow augers for producing tenons on the ends of spokes and other objects, as will be hereafter explained.

The following description of my invention will enable others skilled in the art to understand it:

In the accompanying drawing, A represents the hollow stem, on the end of which a circular head, B, is formed, into the periphery of which an annular V-shaped groove is made, and into the face of this head B four radial depressions, C, are made from the central opening, as shown in Fig. 2. The cap E is fitted loosely on the head B and segments *d*, so that when screws F are loosened this cap will turn on head B. The screws F, of which there are three, are cone-pointed, and they are tapped through the annular flange of the cap E, so that their cone points will be received into the V-shaped groove in the periphery of the head B, as shown in Figs. 3 and 5. The object of the screws F is to confine the bits and blanks at any desired radial position, according to the diameter of tenon it is desired to produce. The bits *g* and blanks *g'* are L-shaped, and their shanks are provided with

studs *i*, which are received into curved eccentric grooves J, shown in Fig. 4. When the cap E is loosened and turned about its axis, the grooves J will cause the bits and blanks to move toward or from the axis of the chuck, and in this way the bits are adjusted for tenons of different diameters. The tightening of the bits and blanks is effected, when the screws F are set up, by their cone points acting on one side of the V-shaped groove and drawing the cap E up hard against the shanks of the bits and blanks, thus clamping them between the cap and the face of the head B. By this means the cap E is secured rigidly on head B, at the same time that the bits and blanks are confined in their places. By simply loosening the screws F the cap E, as well as the bits and blanks, are loosened and may be readily adjusted. It will be seen by reference to Fig. 5, that the points of the screws F are on one side of the center of the V-shaped groove. This produces the drawing and clamping effect above described.

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

1. The combination of the hollow auger-stem A, having the circular head B, provided with the circular groove *b*, with the cap E having set-screw F, substantially as and for the purpose herein set forth.

2. The arrangement of the head B, having radial depressions C, also segments *d*, and bits and blanks *g* and *g'*, provided with studs *i*, with the cap E, having eccentric grooves J and set-screws F, substantially as and for the purpose specified.

JOHN DEMING.

Witnesses:

N. A. MORLAN,
N. B. WATSON.