No. 631,344. Patented Aug. 22, 1899.

C. TOLLE.

TENONING BIT.

(Application filed May 8, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

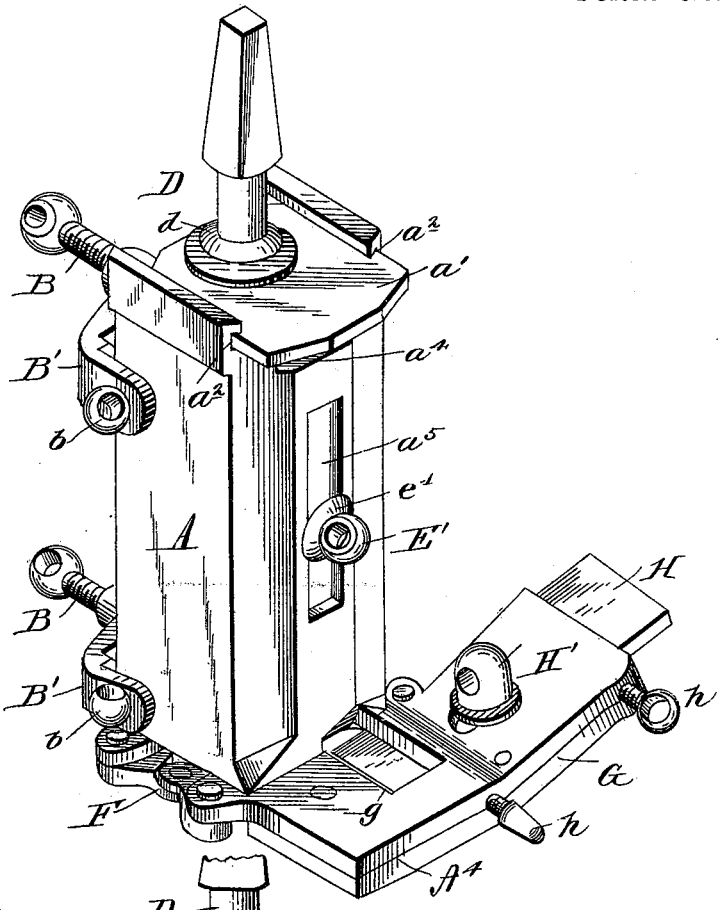

Fig. 2.

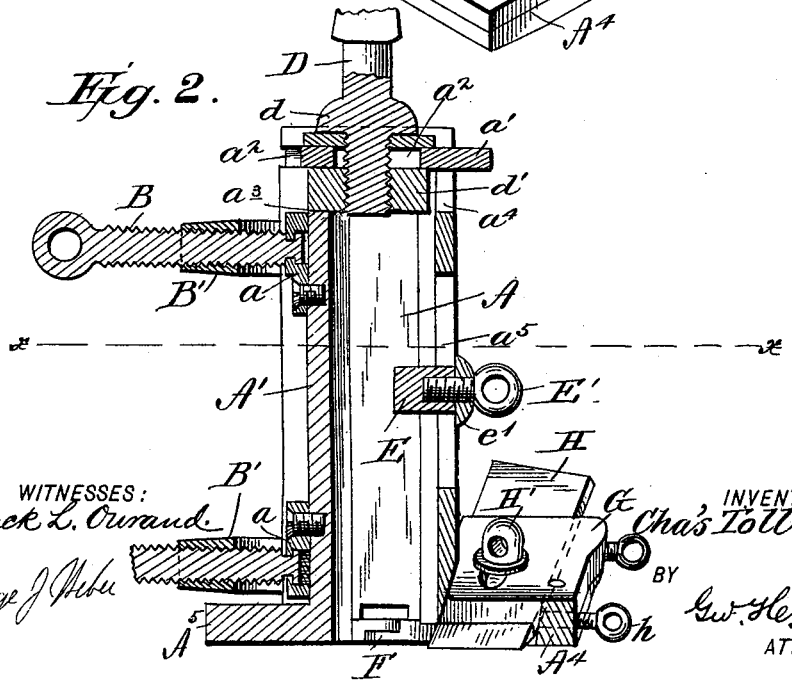

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Fig. 3.

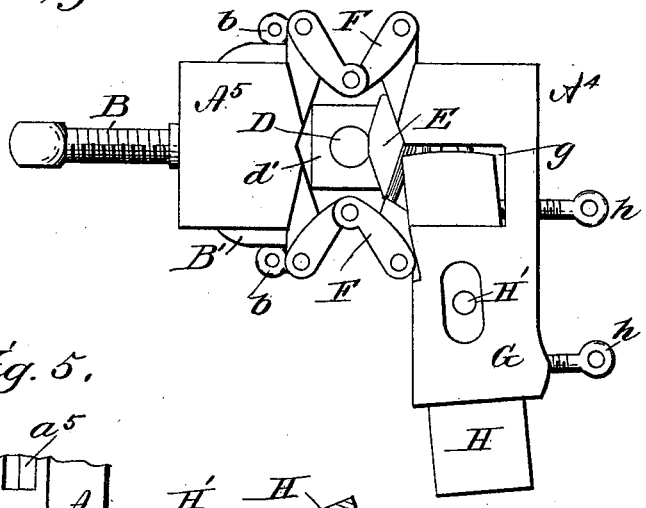


Fig. 5.

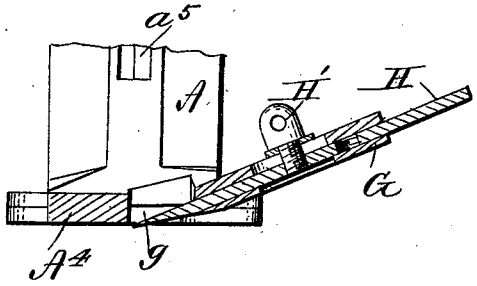


Fig. 4.

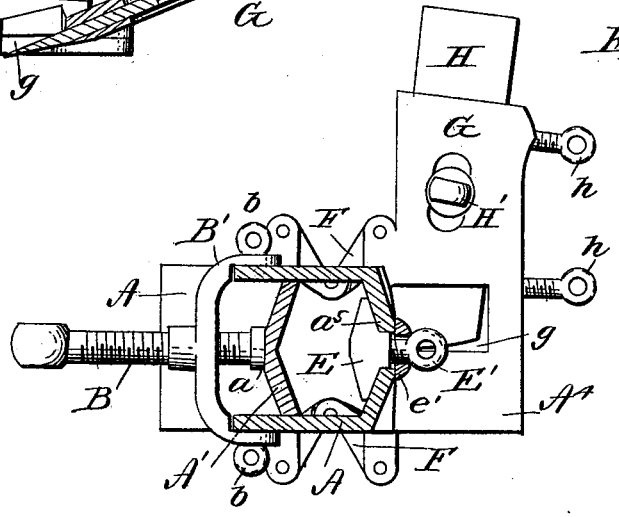
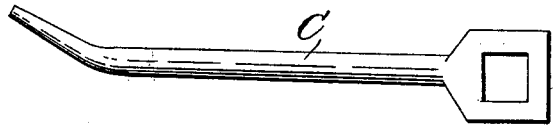


Fig. 6



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UNITED STATES PATENT OFFICE.

CHARLES TOLLE, OF GODFREY, ILLINOIS, ASSIGNOR OF ONE-HALF TO HENRY TOLLE, OF DENVER, COLORADO.

TENONING-BIT.

SPECIFICATION forming part of Letters Patent No. 631,344, dated August 22, 1899.

Application filed May 8, 1899. Serial No. 715,962. (No model.)

To all whom it may concern:

Be it known that I, CHARLES TOLLE, a citizen of the United States, residing at Godfrey, Madison county, Illinois, have invented certain new and useful Improvements in Tenoning-Bits, of which the following is a specification.

The objects of the invention are to provide a simple and effective bit for tenoning the ends of spokes; to form the bit-stock in two sections adjustable toward and from each other to receive the ends of different sizes of spokes; to connect the shank or tang of the bit adjustably to the stock, so that it may always be properly centered with respect thereto; to provide an adjusting mechanism which will not only correctly and evenly adjust the movable member of the bit-stock, but hold it firmly in its adjusted position, and finally to provide the stock with a socket adapted to contain the tenoning knife or blade and having adjusting-screws for setting and holding the knife or blade in proper relation to the bore of the bit-stock. These objects I accomplish by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved tenoning-bit. Fig. 2 is a central vertical sectional view. Fig. 3 is a bottom plan view. Fig. 4 is a transverse section on line *x x*, Fig. 2. Fig. 5 is a detail sectional view of the cutting-tool and its socket or holder, and Fig. 6 is a plan view of the wrench used in adjusting the tenoning-bit.

A designates the tubular stock, open at its lower spoke-receiving end and having one of its longitudinal sides A′ adjustable in and out, so as to vary the size of the bore in order to accommodate the ends of different-sized spokes. This adjustable side or member A′ is provided with sockets *a a* on its outer side, in which sockets are swiveled the ends of the transverse adjusting-screws B B, mounted in threaded openings in the cross-bars or yokes B′ B′, secured to the stock A by screws *b b*. By turning the screws B B in or out by means of a suitable tool C the adjustable side piece A′ may be moved in or out, as may be desired.

The upper end of the stock A is closed by a plate a', secured to the upper end of the adjustable side piece A′ and sliding in transverse grooves a^2 a^2, formed in the upper ends of the stock A at the inner sides thereof. This top plate a' is provided with a slot a^2, in which the shank or tang D of the bit-stock is adjustably mounted. This adjustment is effected by passing the lower threaded end of the shank D through the slot, with its shoulder d resting on the upper side of the plate a' or on an interposed washer, and a nut d' on the shank engages the under side of the top plate and binds the shank firmly in place. By this means the shank D may be adjusted so that it will always be in longitudinal alinement with the center of the bore of the hollow stock, which of course varies with the adjustment of the side piece A′. The upper edge of the side piece A′ is provided with a notch a^3 to receive a portion of the nut, and the opposed side of the stock A is provided at its upper edge with a similar notch a^4 for a like purpose. Owing to these notches the nut will not interfere with the adjustment of side piece A′ inwardly as far as may be desired. The stock A is further provided with a longitudinal slot a^5, in which slides the neck e of a gage E within the stock. The gage is adjusted by means of a screw E′, which enters a threaded opening in the neck e and is provided with a shoulder e', which bears on the outer face of the stock.

The working or lower end of the stock is provided with a horizontal face-plate, one half A^4, of which is formed on the lower end of the stock A outside the bore thereof and the other half A^5 of which is formed on the lower end of the adjustable side piece A′. The lower opposite corners of the stock A and plate A′ are connected by the two pairs of toggle-levers F, so that when the side A′ is adjusted by its screws B B it will not tilt or incline, but will move in perfect parallelism to the opposed inner face of the stock A.

The face-plate section A^4 is provided with a throat or knife-opening g, the inner side of which intersects the bore of the stock, and an upwardly and outwardly inclined tubular knife-holder G forms an integral part of this face-plate section A^4.

The top and bottom walls of the knife or

cutter holder G are provided with longitudinal slots to accommodate the set-screw H′ of the knife or cutter H. By loosening this screw the knife or cutter may be adjusted longitudinally, and lateral adjustment of the knife is effected by set-screws *h h*, which project through apertures in the outer wall of the knife-holder. Thus the exact angle and amount of cutting-surface of the knife to cross the bore of the stock may be determined and so the desired depth of cut effected.

All of the above-described screws are provided with eyes, so that they may be turned by the pointed end of tool C, and the other end of the tool is formed as a wrench to fit the squared shank and loosen it for adjustment.

The improved bit may be used with a hand-brace or in a lathe, as may be convenient. A spoke being held stationary, the bore of the stock is properly adjusted to receive the end to be tenoned, the cutter or knife is set for the proper depth of cut, and the gage is set for the length of tenon to be formed. The bit-stock is then passed upon the end of the spoke and rotated till the tenon is formed, the chips or shavings passing out through the throat *g*.

What I claim is—

1. The combination with a tubular stock provided with means for adjusting its bore for different-sized spokes, of a shank adjustable laterally on the stock into alinement with the center of the bore, and a cutter or knife holder.

2. A tenoning-bit comprising a tubular stock, provided with an adjustable side piece to adjust its bore, means for effecting such adjustment, a shank adjustable laterally on the stock into alinement with the center of the bore, and a knife or cutter holder at the opposite end of the stock.

3. A tenoning-bit provided with a tubular stock having an adjustable side piece to vary the size of its bore, a shank adjustable on one end of the stock, transverse face-plate sections at the other ends of the stock and its adjustable side piece, and a knife-holder extending from the face-plate section of the stock.

4. A tenoning-bit comprising, a tubular stock having an adjustable shank and an adjustable side piece to vary its bore, toggles connecting the opposite outer corners of the stock and its adjustable side piece, set-screws for adjusting said side piece, and cross-pieces in which said screws are mounted.

5. A tenoning-bit comprising, a tubular, longitudinally-slotted stock provided with an adjustable side piece to vary its bore, a gage adjustable along said slot; set-screws for adjusting said side piece in and out, cross-pieces in which said screws are mounted, an adjustable shank at one end of the stock and a knife-holder at the opposite end, substantially as set forth.

6. A tenoning-bit comprising, a tubular stock having an adjustable side piece to vary its bore, a slotted top plate on the upper end of said side piece and working in grooves in the stock, a shank mounted in said top-plate slot and provided thereunder with an adjusting-nut, and a knife-holder at the opposite end of the stock, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES TOLLE.

Witnesses:

HENRY HOHMANN,

JOHN M. PFEIFFENBERGER.