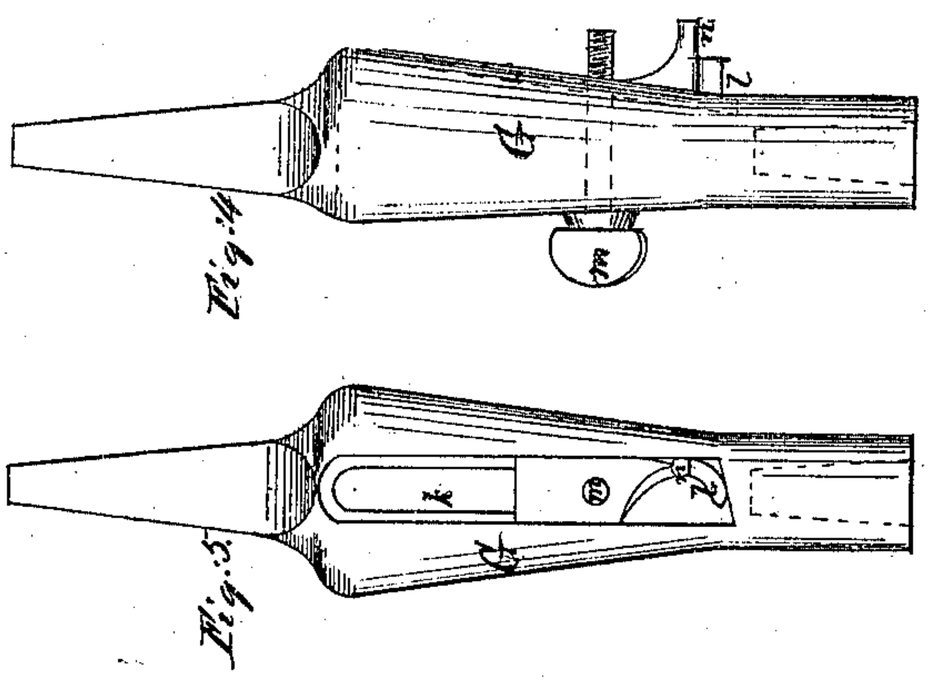
H. J. Bean, J. Freeman & D. B. Mills,

Hollow Auger.

No. 97,590. Patented Dec. 7, 1869.



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United States Patent Office.

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Letters Patent No. 97,590, *dated December* 7, 1869.

IMPROVEMENT IN HOLLOW AUGER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, H. T. BEAM, JOSEPH C. FREEMAN, and D. B. MILLS, of Palestine, in the county of Crawford, and State of Illinois, have invented a new and usefulTool for Making the Tenons on Spokes and the Holes in Felloes for Wheels; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation,

Figure 2, an end view, and

Figure 3, a central vertical section, (taken in the line *x x* of fig. 2,) of the tool for making the tenons on the spokes; and

Figures 4 and 5 are side elevations of the tool for making the mortises in the felloes.

Like letters designate like parts in all the figures.

The nature of our invention consists in the peculiar construction of a tool for making a double tenon on spokes, as will be hereinafter described.

To enable those skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

In the drawing—

A represents a cylindrical stock, with oblong openings in its side, and an extension, B, on its lower end.

C is a ring inside of the stock A, and near its lower end.

This is held in position by a small set-screw, *a*.

In the under side of the extension B, is a groove, in which fits a bit or knife, D, with two cutting-edges *b* and *c*, the form of which is shown in fig. 6.

In the extension B is a slot, in which is a bolt, *d*, which passes through the bit or knife D, by means of which it can be adjusted as described.

E is a cylindrical guide, which fits into an opening in the stock A, and is held in any desired position by means of a set-screw, *e*, which passes through the side of the stock.

At the lower end of this guide is a flange *f*, which extends out against the inside of the cylindrical stock A.

Its upper end is formed to receive a brace or crank, by means of which it is operated.

Inside of the guide E is a spindle, F, in the lower end of which is a centre-point formed like the end of a screw or gimlet.

On this spindle, a short distance from its lower end, is a flange, *g*, of the same diameter as the one on the guide E, thus insuring the centre-point being kept in a line with the centre of the stock A.

On one of the side-pieces of the stock, is an extension, *h*, the lower edge of which does not extend quite down to the top of the lower end of the stock, thus forming a slot, *i*.

In the flange *g*, of the spindle F, is a pin, *j*, of the proper size to pass into the slot *i*.

Figs. 4 and 5 are views of the tool for making the mortises in the felloes.

G is the stock, in the lower end of which is a socket for the reception of the bit which bores the hole through the felloe, which must be of the same size as the lower end of the stock.

The upper end of this stock is made of the proper form to receive the brace or crank, by means of which it is turned.

In a portion of the stock G is a slot, *k*, across which, on one side of the stock, is a bit, *l*, the shank of which is flat and fits into a recess in the stock, its face being flush with the outside of said stock.

A thumb-screw, *m*, which passes through the slot *k*, holds the bit in any desired position.

The bit *l* extends outside the stock, and a short distance above its cutting-edge is a projection, *n*, which prevents the bit from cutting too far into the felloe.

To form the tenon on the spoke, bring the centre-point of the spindle F down below the stock A, and turn it so that the pin *j*, in the flange *g*, will pass into the slot *i*.

The stock A and its accompanying parts are then turned sufficiently to drive the centre-point into the end of the spoke.

When this has been done, give the stock A, a slight turn backward, which will release the pin *j* from under the extension *h*. Then turn the stock forward, and the spindle F and its centre-point will be forced upward until the end of the spoke meets the cutting-edge *b* of the knife D, which will cut the first tenon on the spoke, as shown by the diagram marked A in the drawing.

This shoulder then meets the cutting-edge *c* of the knife D, and cuts another shoulder, as shown in the diagram marked B in the drawing.

The depth of the second shoulder is regulated by means of the adjustable ring C.

To make the mortise in the felloe, a bit is placed in the lower end of the stock G, which may be turned by an ordinary brace, and a hole bored entirely through the felloe.

The lower end of the stock G passes through until the bit *l* comes in contact with the felloe, and cuts away the wood around the hole made by the first bit, the depth of the second tenon on the spoke thus forming a mortise of the proper form to receive the tenons on the end of the spoke.

We are aware of the patent granted, September 8, 1863, to George N. Stearns, for a hollow auger. We do not claim any of the devices claimed in said patent; but having described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the stock A, guide E, spindle F, ring C, and knife D, when constructed and arranged substantially as shown and described.

2. The knife D, when constructed and used substantially as and for the purpose shown and described.

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Witnesses:
E. LAGAN,
JOHN M. T. HILL.