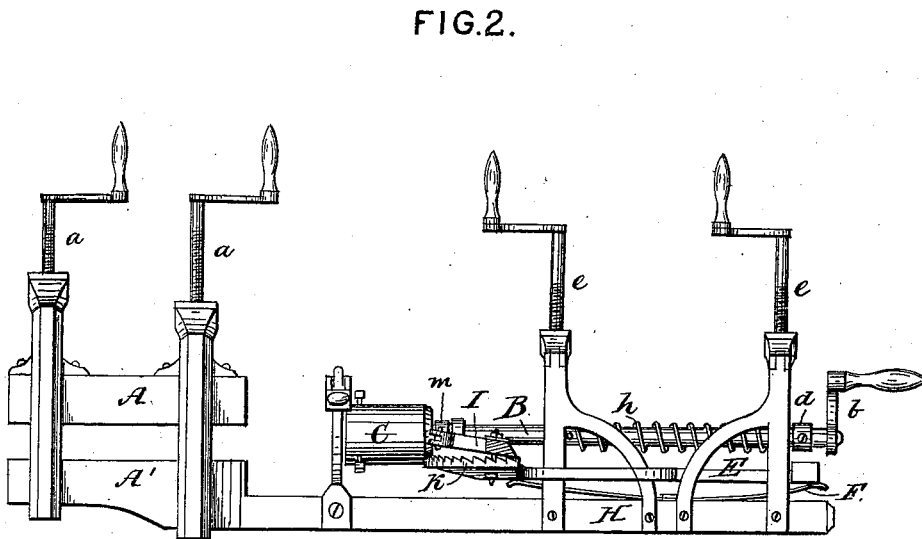
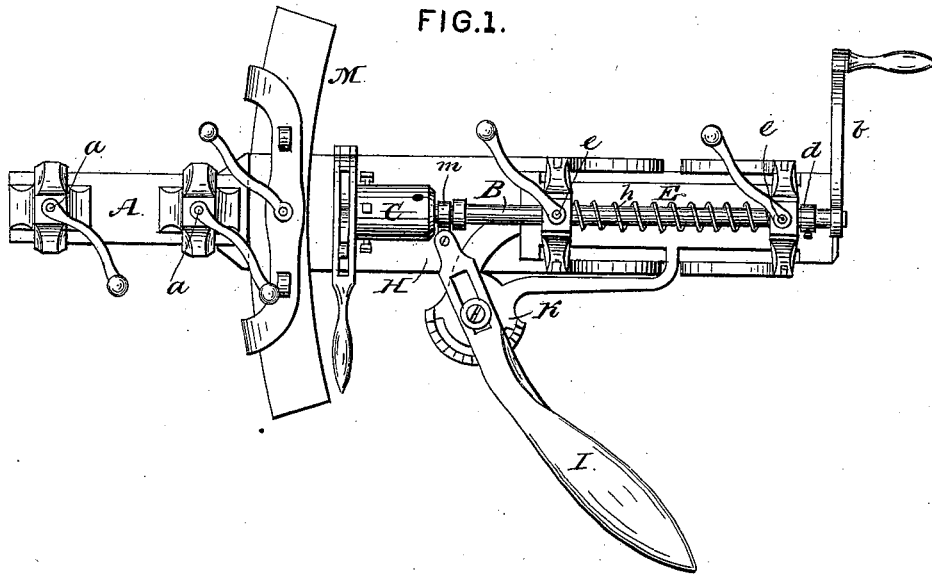


H. S. BARNES & J. I. MILLER.  
Spoke-Tenoning and Felly-Boring Machine.  
No. 200,598. Patented Feb. 26, 1878.



WITNESSES  
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FIG. 3.

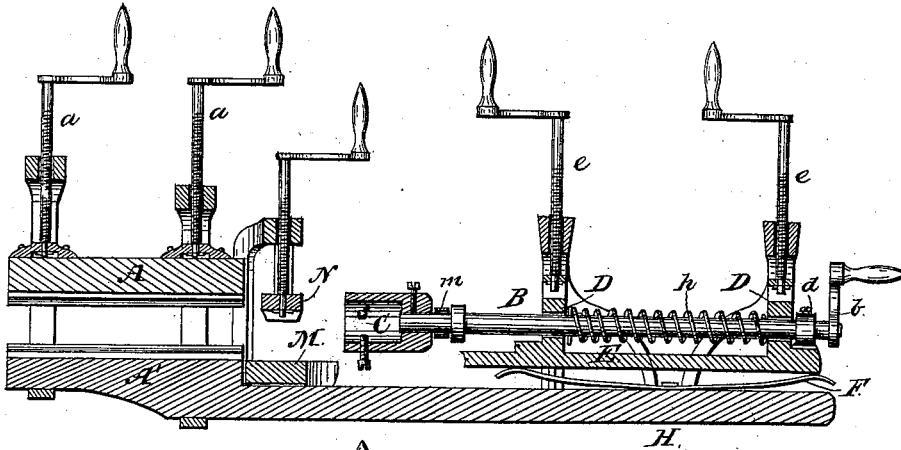


FIG. 4.

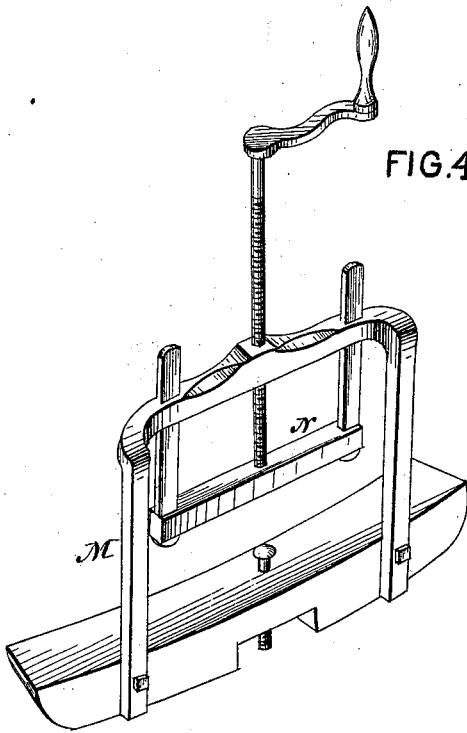
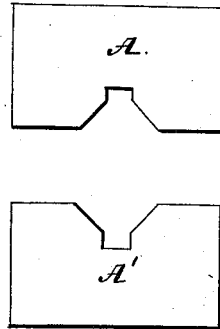


FIG. 5.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HARVEY S. BARNES AND JOHN I. MILLER, OF WEST POINT, WISCONSIN.

## IMPROVEMENT IN SPOKE-TENONING AND FELLY-BORING MACHINES.

Specification forming part of Letters Patent No. **200,598**, dated February 26, 1878; application filed September 3, 1877.

*To all whom it may concern:*

Be it known that we, H. S. BARNES and JOHN I. MILLER, of West Point, county of Columbia, and State of Wisconsin, have invented an Improved Spoke-Tenoning Machine.

The following description, taken in connection with the accompanying plate of drawings, hereinafter referred to, forms a full and exact specification, wherein are set forth the nature and principles of the invention, by which the same may be distinguished from others of a similar class, together with such parts thereof as are claimed as new and are desired to be secured by Letters Patent of the United States.

Our invention relates to that class of machines which are made use of for forming tenons on the outer ends of spokes, and also for boring fellies; and the nature thereof consists in certain improvements in the construction of the same, hereinafter shown and described.

In the accompanying plate of drawings, in which corresponding parts are designated by the same letters, Figure 1 is a plan view, showing the spoke-tenoning machine with the felly-boring attachment combined therewith. Fig. 2 is a side elevation, showing the spoke-tenoning machine with the felly-boring attachment removed therefrom; Fig. 3, longitudinal section; Fig. 4, perspective view of felly-boring attachment; Fig. 5, end view of two frames.

The general construction and operation of the machine are obvious from the drawings.

A A' designate two frames, longitudinally slotted for the reception of the spoke. The upper frame A is vertically adjustable, and is operated by the screws *a*. B is the shaft, which is rotated by the crank *b*, and provided with a collar, *d*, secured in position by a set-screw, for the purpose of gaging the depth of the tenon cut by the hollow auger C.

The boxes D, in which the shaft revolves, are arranged to slide vertically in the frame, and are attached to the longitudinal frame E. They are rendered vertically adjustable by the screws *e* and the spring F, arranged between the said frame E and the bed-plate H of the machine.

The said hollow auger C is rendered self-feeding by means of the spiral spring *h*, arranged upon the shaft B. The said shaft is forced back from the spoke by means of the lever I, having a beveled side, which catches in notches cut on the curvilinear support K, and is thereby held in position. The short arm of the said lever is pivoted to sleeve *m* upon the said shaft.

M designates the felly-boring attachment, consisting of the vise-block *m*, having a slot cut thereon, by means of which it is fitted upon the base-plate. The felly is clamped in place upon the vise-block by means of the screw, which actuates the clamping-piece N.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

A combined spoke-tenoning and felly-boring machine, consisting of the frames A A', screws *a*, shaft B, collar *d*, hollow auger C, boxes D, frame E, screws *e*, springs F and *h*, lever I, and felly-boring attachment M, all combined and operating together as and for the purposes described.

In testimony that we claim the foregoing we have hereunto set our hands this 23d day of June, 1877.

HARVEY S. BARNES.  
JOHN I. MILLER.

Witnesses:

H. M. AYER,  
H. R. EATON.