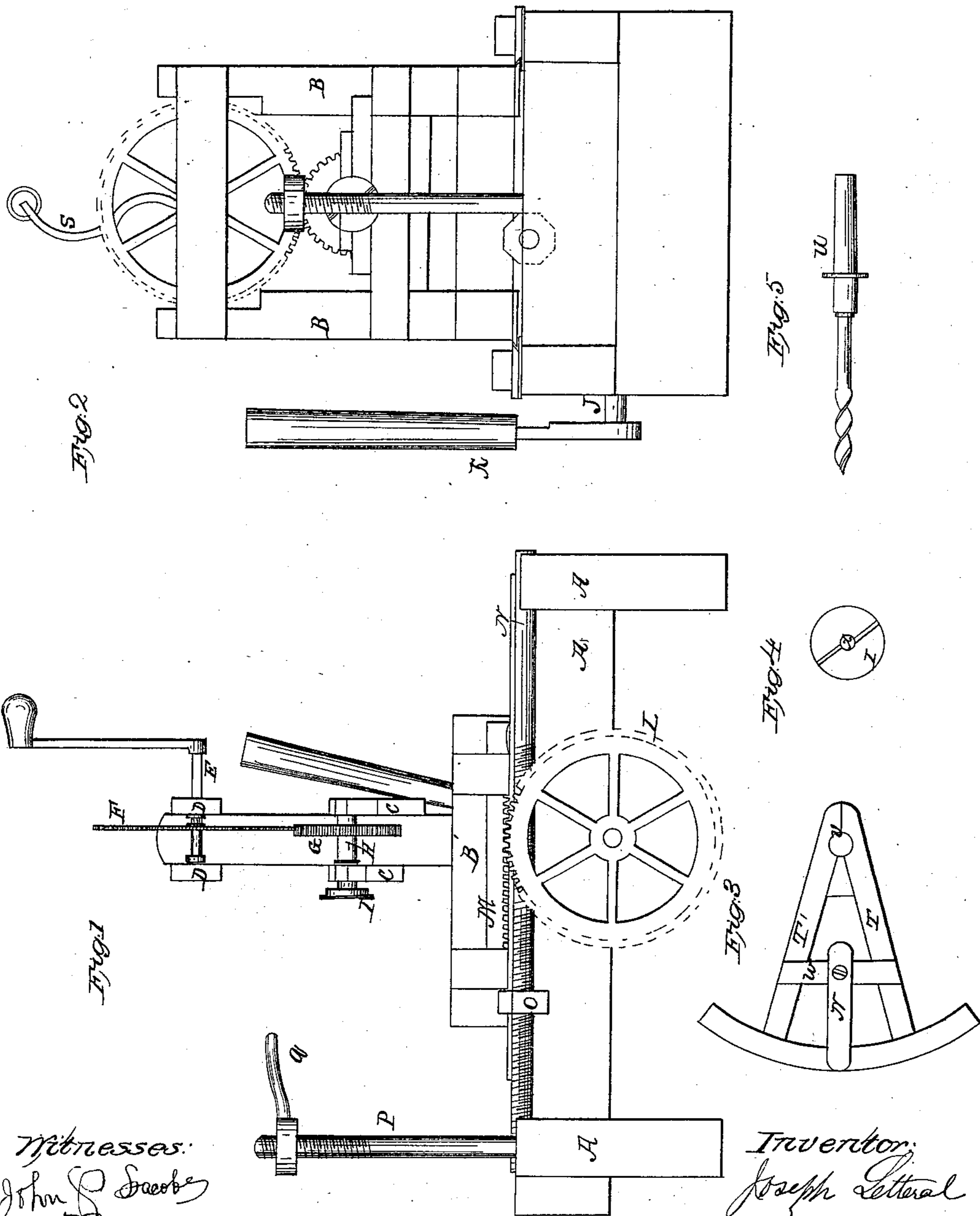


*J. Lateral,*

*Tenoning Spokes and Boring Fellies.*

*N<sup>o</sup> 59,420.*

*Patented Nov. 6, 1866.*



*Witnesses:*  
*John S. Searcy*  
*Charles Alexander*

*Inventor:*  
*Joseph Lateral*  
*per*  
*Alexander Mason*  
*Attorney*

# UNITED STATES PATENT OFFICE.

JOSEPH LETTEREL, OF UNION, INDIANA.

## IMPROVEMENT IN MACHINES FOR TENONING SPOKES.

Specification forming part of Letters Patent No. 59,420, dated November 6, 1866.

*To all whom it may concern:*

Be it known that I, JOSEPH LETTEREL, of Union, in the county of Pike and State of Indiana, have invented certain new and useful Improvements in Machines for Tenoning Spokes and Boring Fellies; 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, and to the letters of reference marked thereon.

In the annexed drawings, making part of this specification, A represents the frame of the machine, which is made of timber and in a substantial manner. B' represents a carriage, which slides upon ways properly secured upon the frame A. B B represent two standards which are erected upon the carriage B'. C and D represent cross-pieces, which are firmly secured to the standards in the position represented. E represents a shaft, which lies across the two cross-pieces D, said shaft being provided with journals, which rest in suitable journal-boxes in said cross-pieces. F represents a gear-wheel upon shaft E, which meshes into a gear-wheel, G, upon a shaft, H, which said shaft has its bearings upon the cross-pieces C C.

Upon one end of shaft H is a wheel-shaped hollow bit. This bit has a hole at its center and knives (two or more) on its face, running from the periphery to the hole at the center. This hole in the bit is just large enough to receive the tenon on the end of the spoke, the knives serving to cut away the wood on the end of the spoke, so as to form the tenon.

J represents a shaft, which lies crosswise of frame A, having its bearings in said frame. This shaft has a lever-handle, K, upon one end of it, and about center way of it a gear-wheel, L, which said gear-wheel works into the teeth of a rack-bar, M. The rack-bar M is secured to the under side of the carriage B'. By raising or lowering the lever-handle K the wheel L is partially revolved, and the carriage B' is thus moved backward or forward on the frame A by the wheel working in the rack-bar M.

N represents a shaft with a thread cut upon it, which lies lengthwise of the frame A and under the carriage. This shaft has a nut, O, upon it, and this nut serves to arrest the progress of the carriage as it moves in one direction upon the frame.

P represents a vertical shaft secured at one

end of the frame A. This shaft has a thread cut upon its upper end. A nut with a handle, Q, to it passes over the thread on this screw.

In using this machine for tenoning spokes, the hub of the wheel containing the spokes is placed over the shaft P, said shaft running through the opening for the box in the hub. The nut is placed on the top of shaft P and screwed down, holding the hub tight in its place on the shaft. By means of the handle K the carriage, with the bit I, is run up toward the spokes. The bit is set in motion (revolving) by the handle S on shaft E. The end of one spoke passes into hole X on bit I as the knives on said bit cut away the wood, forming the tenon. The nut O is set so as to stop the carriage when the tenon has been cut long enough. When one spoke has been finished the carriage is moved back a little and the hub turned, so as to allow the next spoke to be cut by the bit, which is operated upon in like manner as the first, and so all of the spokes are tenoned.

In order to bore fellies the shaft H is removed from wheel G and the auger U inserted, which is both an auger and a shaft. The wheel is removed from shaft P, and the frame, composed of the arms T, cross-piece W, and keeper Z, is placed over the shaft P, said shaft passing through hole V in said frame. The felly, bent in proper shape, is placed upon this frame and secured down by the nut of shaft P. The carriage is then run up with the auger U, which bores the hole in the felly for the tenon of the spoke. Hubs or blocks with holes in them are first placed over shaft P, in order to raise the frame to the proper height for the auger.

Having thus fully described my invention, what I claim is—

A bit and boring apparatus with shafts P and N, movable frame B', by means of the rack-bar M, lever-handle and wheel, constructed upon a suitable frame, A, when arranged in the manner and used as and for the purposes herein described.

As evidence that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JOSEPH LETTEREL.

Witnesses:

THOMAS HORN BROOK,  
A. J. LOUDER.