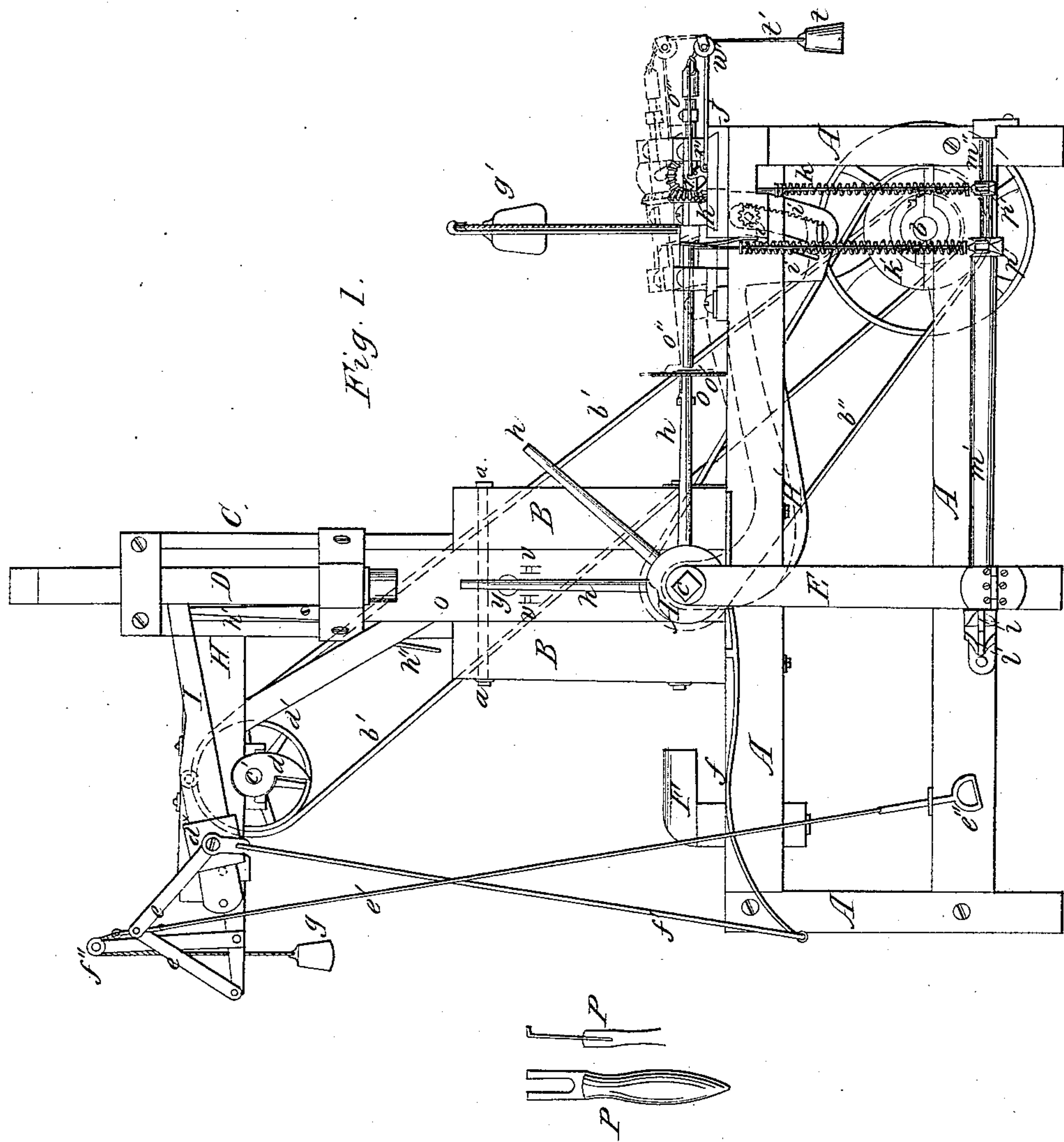


C. W. Corr,
Making Wheels.

№ 64, 201.

Patented Apr. 30, 1867.



Witnesses:

P. T. Dodge

Inventor.

C. Mevor
By Wm Dodge
Attorney.

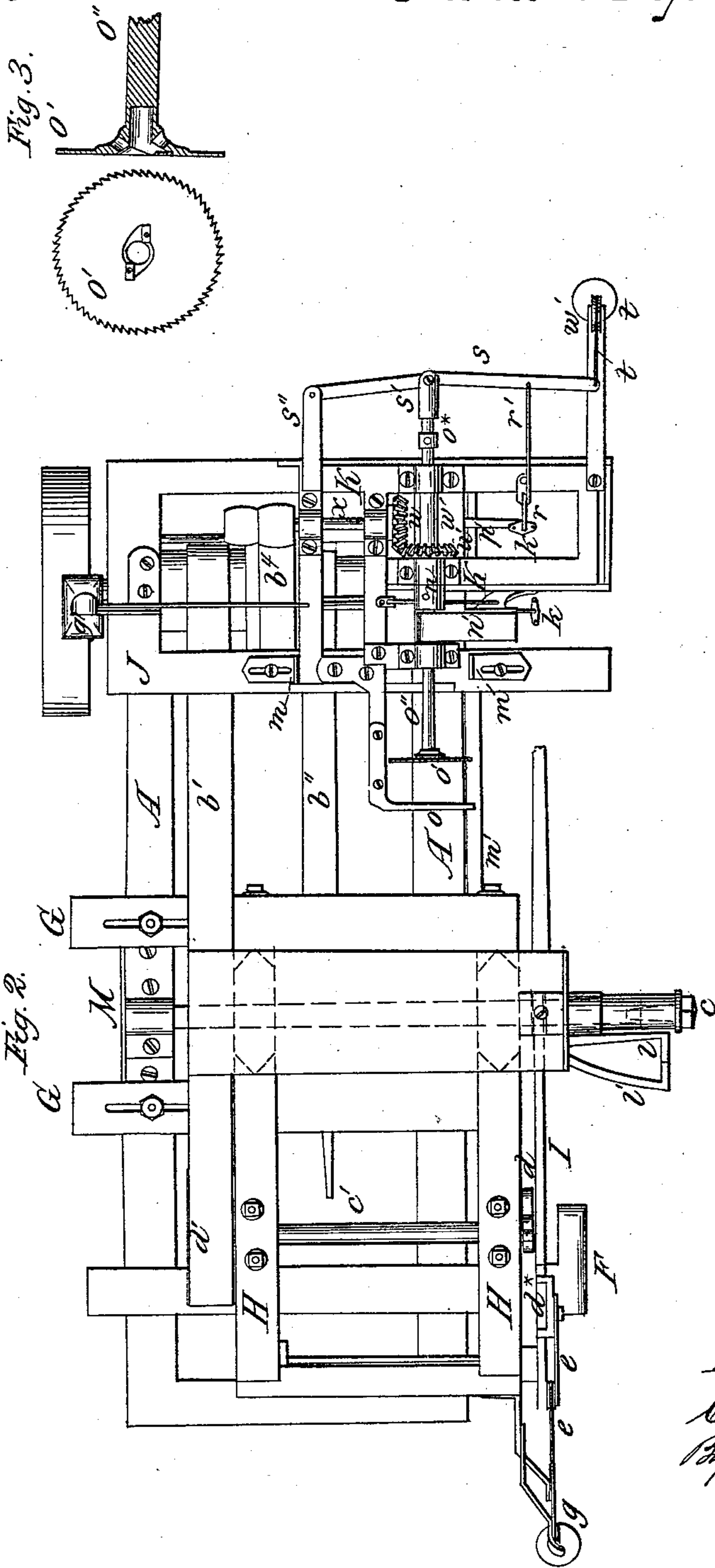
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C. W. CORR, OF CARLINVILLE, ILLINOIS.

Letters Patent No. 64,201, dated April 30, 1867.

IMPROVEMENT IN WHEELWRIGHTS' MACHINES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. W. CORR, of Carlinville, in the county of Macoupin, and State of Illinois, have invented certain new and useful improvements in Wheel-Making Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use the invention I will proceed to describe it.

My invention has for its object the combination in one machine of all the various tools necessary for driving the spokes, sawing them off, and tenoning them ready to receive the felloe, and also to turn the felloe and complete the wheel, without removal from the machine during all these various operations.

Figure 1 is a side elevation; and

Figure 2 is a top plan view.

A represents the main frame, which may be made of any suitable form and size. Upon this main frame is secured an upper frame, consisting of the upright posts B and cross-bars G, (see fig. 2,) the latter being slotted longitudinally to permit of a lateral adjustment. Between the upright posts B is fitted a vertical frame, O, the edges of which fit into grooves formed in the edges of B to guide it in its vertical movement, the frame O being adjustable vertically by withdrawing the bolts *a* and inserting them in other holes in O made for that purpose. A shaft, M, is mounted transversely of the main frame A directly under the centre of the upright frame O, (see fig. 2,) and projects at the front side far enough to receive the hub A', as shown in fig. 1, the hub being secured on the end of the shaft M by means of a screw-bolt, *c*, which screws into the end of the shaft, as represented in dotted lines in fig. 2, the bolt *c* being capable of such adjustment as to fit hubs of any length. To the side of the vertical frame O is secured, by suitable guides, a driving-bar or hammer, D. This hammer is operated by the lever I, which is pivoted at its opposite end to the horizontally-projecting arm H, which is attached rigidly to the vertical frame O. The lever I is operated by the tappet *d*, secured to a shaft, *c'*, having a pulley, *d'*, driven by a belt, *b'*, from the main shaft *b*, as shown in fig. 1. The stroke of the hammer D is regulated by means of a sliding-collar, *d^x*, which is kept drawn back by the toggle-lever *e* and weight *g*, attached by a cord passing over the pulley *f''*. A rod, *e'*, is attached, as shown, to the toggle-levers *e*, and extending down by the side of the frame, terminates in a stirrup, *e''*. The sliding-collar *d^x* is connected by another rod, *f'*, to a spring, *f*, secured to the frame A. By pressing on the stirrup *e''* the collar *d^x* is shoved forward on the lever I, thereby causing the spring *f* to exert more force on the lever I, and thus cause the hammer to strike a heavier blow. As soon, however, as the rod *e'* is released from the pressure of the foot the weight *g* draws the collar *d^x* back on the lever, thereby releasing the spring *f* from its tension and causing the hammer D to descend with less force. By these means the blow of the hammer D on the spokes *h* may be regulated as desired. A hinged post, E, is secured to the front of the main frame in proper position to support the outer end of the hub and hold it firm and solid while the spokes are being driven. The object of hinging this post is to enable it to be turned down out of the way when the wheel is to be removed from the machine after it is finished. The spoke is supported on its rear side by the piece *y*, which is made adjustable to suit the angle or "dish" of the spoke; and it is further supported and held steady, while being driven, by means of the forked tool P, the prongs of which are inserted in the cavities on each side of the spoke *h* in frame O, and hooked over the pins *v*. A spring-catch, *h'*, serves to hold the hammer up when not in use. Upon the right-hand end of the main frame is mounted a metal frame, J, in which is secured the apparatus for sawing off and tenoning the spokes. This frame J is not bolted fast to the main frame A, but is pivoted by means of two arms H', one on each side, to the shaft M, these arms being provided at their outer end, underneath the frame J, with a vertically-projecting plate, *i*, having a rack or teeth on one edge, into which a pinion, *i'*, gears, as shown in fig. 1, these pinions *i'* being mounted on a shaft extending transversely across the main frame, this shaft being provided at one end with a crank or hand-wheel for rotating the pinions *i'*, and thus raising or lowering the frame J and all its attachments as may be desired, and as indicated in red in fig. 1. The object of this adjustment of the sawing and tenoning apparatus is this: it is desirable to have the apparatus so arranged that while one spoke shall stand vertically directly under the hammer D, so that the hammer may be driving it, the saw *o'* shall be directly opposite the end of one

already driven, so that it may be operating thereon at the same time; and, as in some wheels, the spokes will be more numerous, and hence closer together than in others, it becomes necessary to adjust the apparatus to meet this condition. As the frame J moves on a centre, which is also the centre of the wheel, it follows that however much or little the frame J with its apparatus may be raised or lowered the saw-shaft o'' will always be in line with the spoke to which it may be opposite. By this means the apparatus may be adjusted to suit a wheel having any number of spokes. Upon and secured to the frame J, is another frame, K, having a lateral movement thereon; and in this second frame K is mounted the sawing and tenoning device, which latter consists of a shaft, o'' , having a circular saw, o' , attached to its inner end. The end of this shaft o'' is made tubular, and is provided with cutting-lips for forming the tenon on the end of the spoke, thus combining the sawing and tenoning tools in one, as shown in detail in fig. 3. The sliding movement of the frame K is effected by means of a treadle, l , (see fig. 2,) which operates a rock-shaft, m' , secured along the front side of the main frame A near its bottom. At its opposite end this rock-shaft has a horizontally-projecting arm, p , (see fig. 1.) which is connected by a spring-rod, k' , to an elbow lever which in turn is connected to the frame K. By these means the operator can at any time, by simply pressing his foot on the treadle l , slide the frame K outward, and thus bring the saw o' in contact with the spoke h and cut it off, the saw, with its frame K, being drawn back as soon as the foot is removed from the treadle l by the weight g' . A forked rest, o , is attached to the frame K and protrudes in front of the saw, so that as the latter approaches the spoke the rest o is caused to embrace it, as shown in fig. 1, and thus hold it firm while being sawed off, this rest, of course, receding with the frame and saw so as to permit the wheel to be rotated for the purpose of bringing another spoke within range of the saw. Motion is imparted to the saw by means of a belt, b^4 , leading from the main shaft b to a pulley on shaft x , on which is a bevelled gear-wheel, u , engaging with a similar wheel, u' , on the sleeve w , through which the saw-shaft o'' passes, and is secured thereto by a feather. In order to admit of the longitudinal movement of the shaft o'' to cut the tenon on the end of the spoke h the shaft has an endwise play in its bearings and in the sleeve w , the latter being prevented from turning on the shaft o'' by means of a feather, as already mentioned. The outer end of the shaft o'' is pivoted to a lever, s , by means of a swivel, s' , the further end of the lever s being pivoted to a projecting arm, s'' , attached to the sliding frame K. To the front end of the lever s is secured a weight, t , by means of a cord, t' , passing over a pulley, w' , which tends to keep the tenoning tool drawn back away from the end of the spoke. It is thrown forward by the rod r' connecting with an elbow lever, r , which latter is connected by a spring-rod, k , with rock-shaft m'' secured parallel with rock-shaft m' near the bottom of the frame, this rock-shaft m'' being also provided with a treadle, l' , located close alongside of the treadle l , so that the same person may readily operate either at will. A guard, n' , is secured rigidly to the frame J, (see fig. 2,) and extends forward over the shaft o'' , and a collar, n , on said shaft prevents the latter from being shoved forward until the shaft shall have passed entirely from under the guard n' , at which instant the tenoning tool at the centre of the saw will be exactly opposite the end of the spoke, and may be shoved forward to form the tenon, the distance of its forward movement being regulated by means of a collar, o^x , secured by a set-screw near its outer end, as shown in fig. 2. The distance that the sliding frame K is permitted or required to move is also regulated by the stops m , secured to the frame J, and made adjustable thereon. After the spokes have been driven, cut off, and tenoned, the felloe is put on in the usual manner without removing the wheel from its position on shaft M. This shaft is driven by a belt, b'' , from the main shaft b , and is provided with a fast and loose pulley, or a clutch, so that, while the spokes are being driven the shaft may remain stationary, except as rotated at intervals by hand as new spokes are added to the wheel; but when the felloe is on the shaft is made to revolve, thus rotating the wheel in order to turn it off true. To facilitate this latter operation a rest, F , is secured permanently to the frame A in such a position as to support the chisel while performing the operation of turning the felloe and finishing the wheel, the rest F being made adjustable, if desired, to suit different-sized wheels, and to facilitate their removal when completed. The object of operating the saw and tenoning tool by means of spring-rods k and k' is to allow them to be fed up to their work gradually and prevent their being forced too much by any undue pressure of the foot on the treadles l or l' .

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

1. The adjustable frames O and B and the shaft M, with the hinged support E, when the said several parts are arranged to operate as and for the purposes set forth.
2. The hammer D, arranged to be operated by the spring f and lever I, together with the means of regulating the force of its blow at will, as shown and described.
3. The combined sawing and turning tool, constructed substantially as described.
4. The frames J and K, arranged to move in the arc of a circle, the centre of which shall be coincident with the centre of the shaft supporting the hub for the purpose of adjusting the sawing and tenoning tool to work on a wheel having any number of spokes, as herein described.
5. I claim so mounting the tool o' that it shall have a lateral movement for sawing off the end of the spoke, and also a longitudinal movement for forming the tenon on the spoke, substantially as set forth.
6. The tool P, for supporting and holding the spoke while being driven, as described.

C. W. CORR.

Witnesses:

CORNELIUS LANG,
JOHN CURRIE.