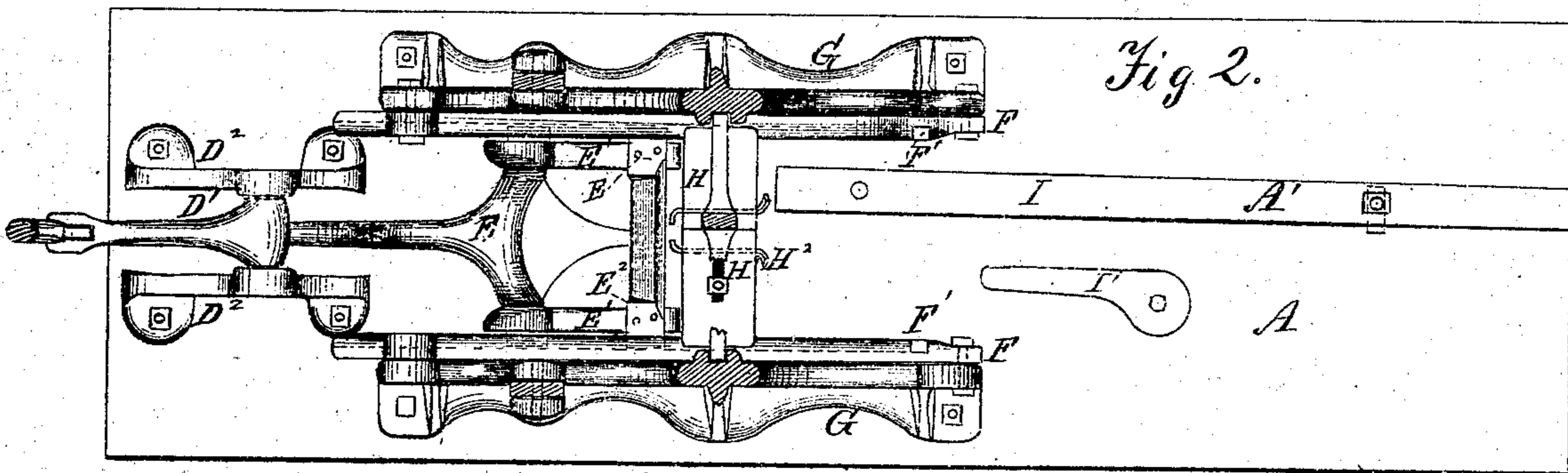
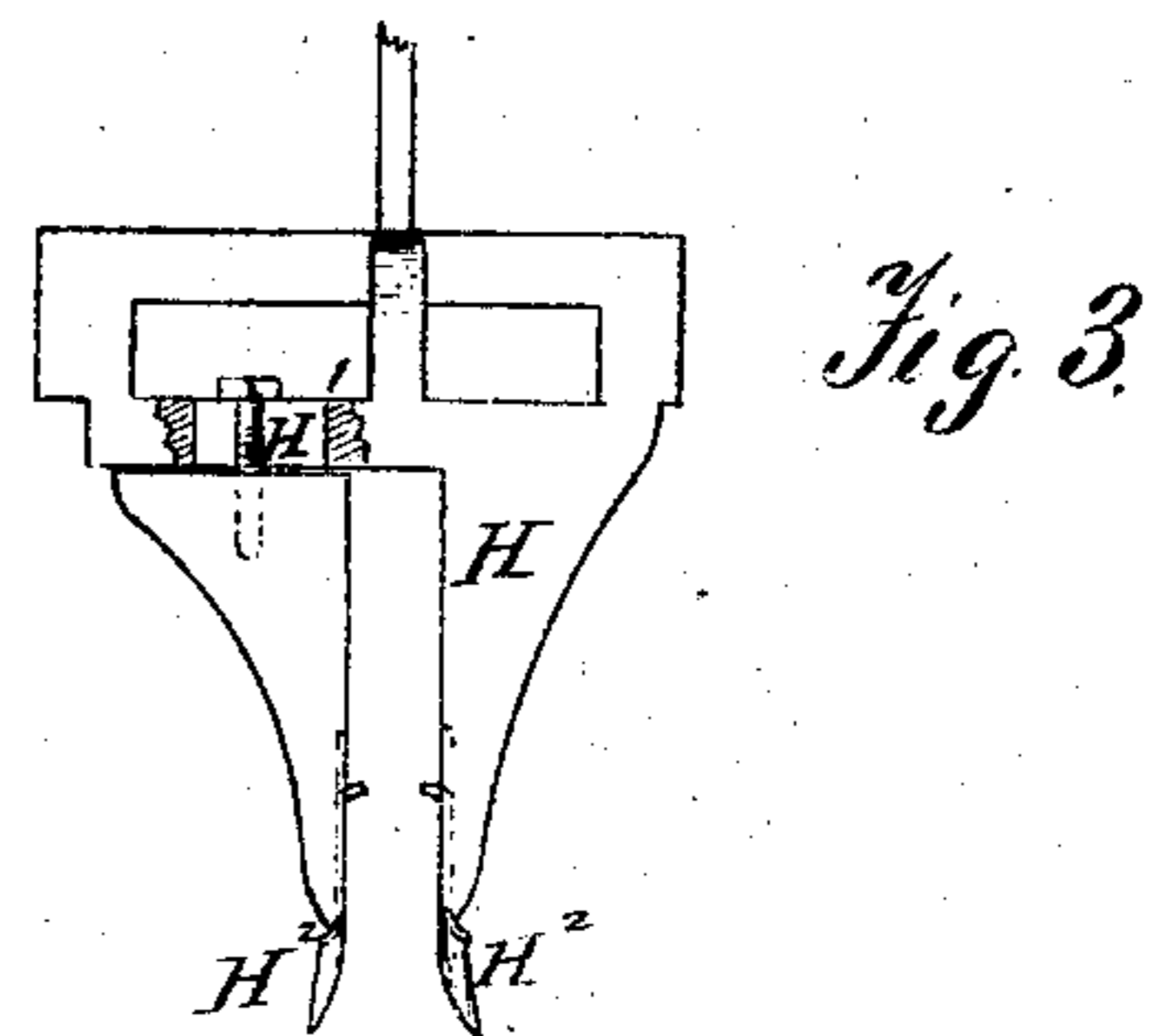
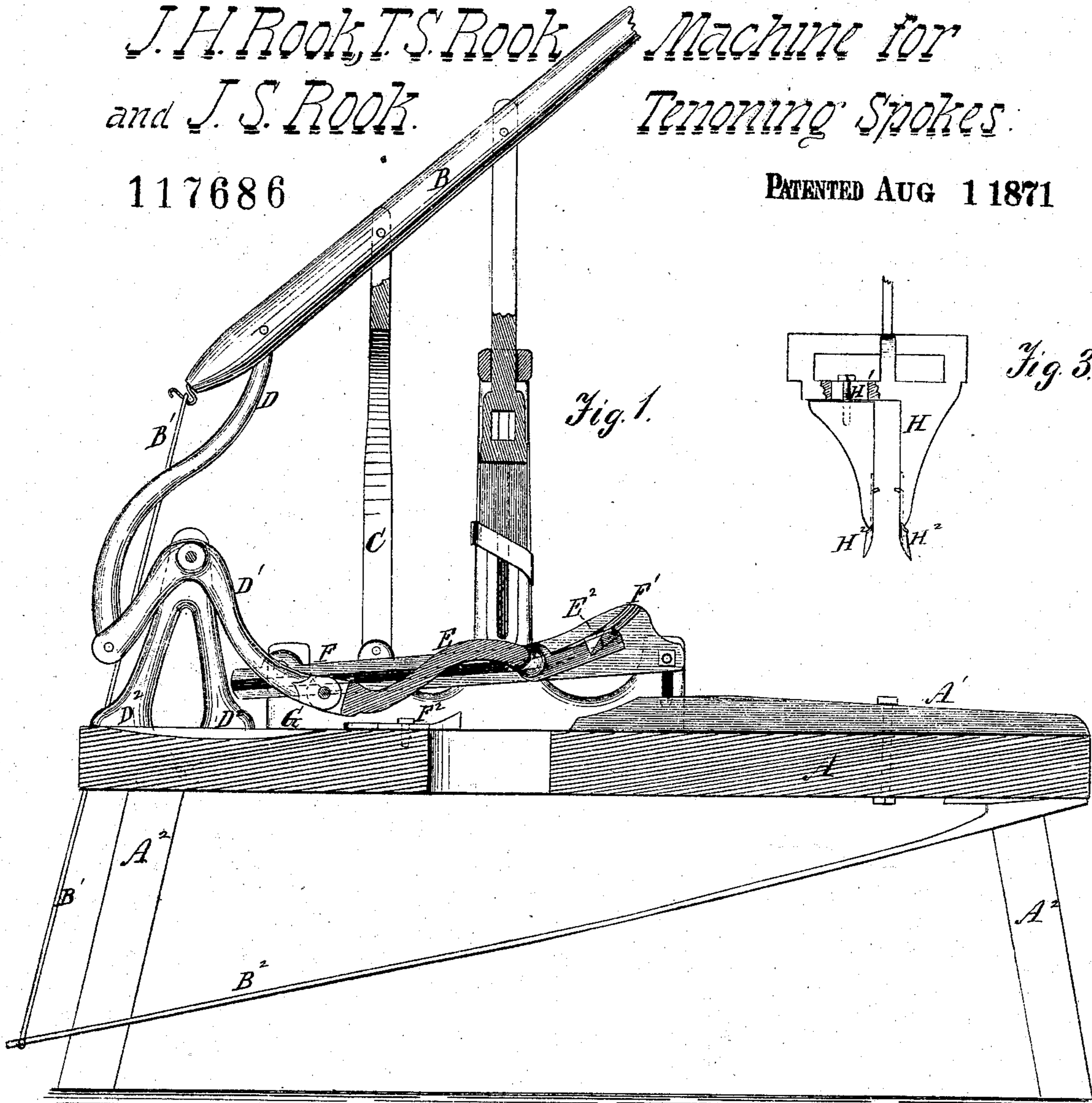


J. H. Rook, T. S. Rook and J. S. Rook. Machine for Tenoning Spokes.

117686

PATENTED AUG 1 1871



Witnesses.
A. Ruppert.

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Inventors.
D. P. Holloway & Co
Attys

UNITED STATES PATENT OFFICE.

JESSE HENRY ROOK, JOHN S. ROOK, AND THOMAS S. ROOK, OF YORK, ILLINOIS.

IMPROVEMENT IN MACHINES FOR TENONING SPOKES.

Specification forming part of Letters Patent No. 117,686, dated August 1, 1871.

To all whom it may concern:

Be it known that we, JESSE HENRY ROOK, JOHN S. ROOK, and THOMAS S. ROOK, of York, in the county of Clark and State of Illinois, have invented certain Improvements in Machines for Tenoning Carriage-Spokes; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing forming part of this specification, in which—

Figure 1 is a sectional elevation through the center of the machine, showing the frame, the operating-lever, the sliding tool-stock, the curved lever for moving the sliding bed, and a portion of such bed. Fig. 2 is a plan view, showing the table upon which the machine rests, the cam for holding the spokes in position, the guides or ways upon which the sliding frame moves, and the lever for operating the same. Fig. 3 is a view of the sliding tool-stock and of the cutters for forming the sides of the tenon.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to a machine for tenoning wagon and carriage-spokes by hand; and it consists in the construction, combination, and arrangement of some of the parts of which it is composed, as will be more fully explained hereinafter.

In constructing machines of this character we use a table or bed, A, which may be of wood or of metal, it being supplied with legs A' A', for the purpose of raising it to the proper height. For the purpose of operating the moving parts a lever, B, is pivoted to a standard, C, in such a manner that its short arm will operate a connecting-rod, B¹, which is attached to the outer end thereof, and extends downward, and connects with a spring, B², which has its opposite end attached to the bed A, as shown in Fig. 1. This short arm or lever B also has attached to it, at some distance from its outer end, a lever, D, the office of which will soon be described. The opposite or long arm of lever B extends from the standard C far enough to enable the operator to apply to the knives the requisite amount of force, it being provided at the proper distance from the standard C with a slot to receive the end of a guide-bar, to the lower end of which the tool-stock is attached. To the short arm of the lever B there is attached, near its end, a con-

necting-rod, D, which extends downward and connects with a bell-crank lever, D¹, which is held in standards or brackets D² D², it being so constructed and arranged that its opposite end may be connected to a frame, E¹, as shown in Fig. 1, by means of a connecting-rod, E, said frame being caused to move backward and forward over that portion of the spoke upon which the tenon is to be formed, it being guided in its movements by projections upon its outer surfaces, which move in and are guided by grooves F', which are formed in adjustable bars attached to the side frames F of the machine. These bars with the grooves F' are adjustable vertically at each end in the side frames F, so that the path of the knife E may be raised and lowered, as well as more or less inclined, for the purpose of cutting tenons of different width and with different taper. The frame E has secured to it a knife, E², which is so arranged as to present its cutting-edge to the upper edge of the spoke by the same movement of the lever B which causes the descent of the knives which trim the side surfaces of the tenon. The outer ends of the slots F' are curved upward at their outer ends in order that the frame which carries the knife may be raised up out of the way upon arriving at the point where it is desirable to have it when a new spoke is to be placed in the machine, and so that when desirable the shoulder of the tenon may be cut upon the segment of a circle. Upon the upper surface of the side frames F there are formed standards G, which rise upward far enough to receive upon their upper ends a cap piece, G', which extends from one to the other and is provided with a slot in its center, through which the handle or guide-rod of the tool-stock H passes to connect with the operating-lever. These standards have grooves formed upon their inner surfaces in which projections upon the tool-stock run.

The tool-stock consists of a frame of metal, constructed as shown in Fig. 3, one of its jaws being made adjustable on such frame, or, if preferred, both may be in order that it or they may be so placed upon the frame as to cut tenons of any desired thickness. The adjustable jaw is secured to the frame H by means of a screw-bolt, as shown, passing through an elongated slot, H¹, in such frame. The tool-stock shown in Fig. 3 has only one of its jaws adjusta-

ble, but the same means adopted for adjusting that may be applied to the other, it only requiring another slot, H^1 , in such frame, and another bolt for securing the jaw thereto.

Upon the lower ends of the jaws, upon frame H , there are secured knives H^2 H^2 , they being of such contour as to give the required form to the shoulders of the tenon, which may be the segment of a circle, or a right angle to such tenon, or any other angle that may be desired. These knives have projecting points upon them which enter the wood and cut the shoulder in advance of the cutting of the other portions of the tenon; and, in order that the work may be performed with the least possible expenditure of power, the knives are placed at an angle with the lower ends of the tool-stock, or rather with the spoke to be tenoned, in order that only a portion of their cutting-edges shall be in contact with the spoke at any one time.

In order that the spoke may be held in its proper position while being tenoned, suitable guides are placed upon the table or bed of the machine, as shown in the drawing, and as indicated by the letters I , I^1 , and I^2 .

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

1. In a machine for tenoning spokes, the guide-bars, constructed with the curved grooves F' , when arranged for vertical adjustment at each end, substantially as and for the purpose set forth.

2. The combination of the curved guides F' , the frame E^1 and its knife E^2 , with the vertically-moving tool-stock, all arranged with reference to one another to operate substantially as and for the purpose set forth.

3. The combination of the sliding frame E^1 , knife E^2 , and curved grooves or guide-pieces F' .

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

J. HENRY ROOK.
JOHN S. ROOK.
THOMAS S. ROOK.

Witnesses:

JUSTUS BARRON,
DANIEL COLLAR.