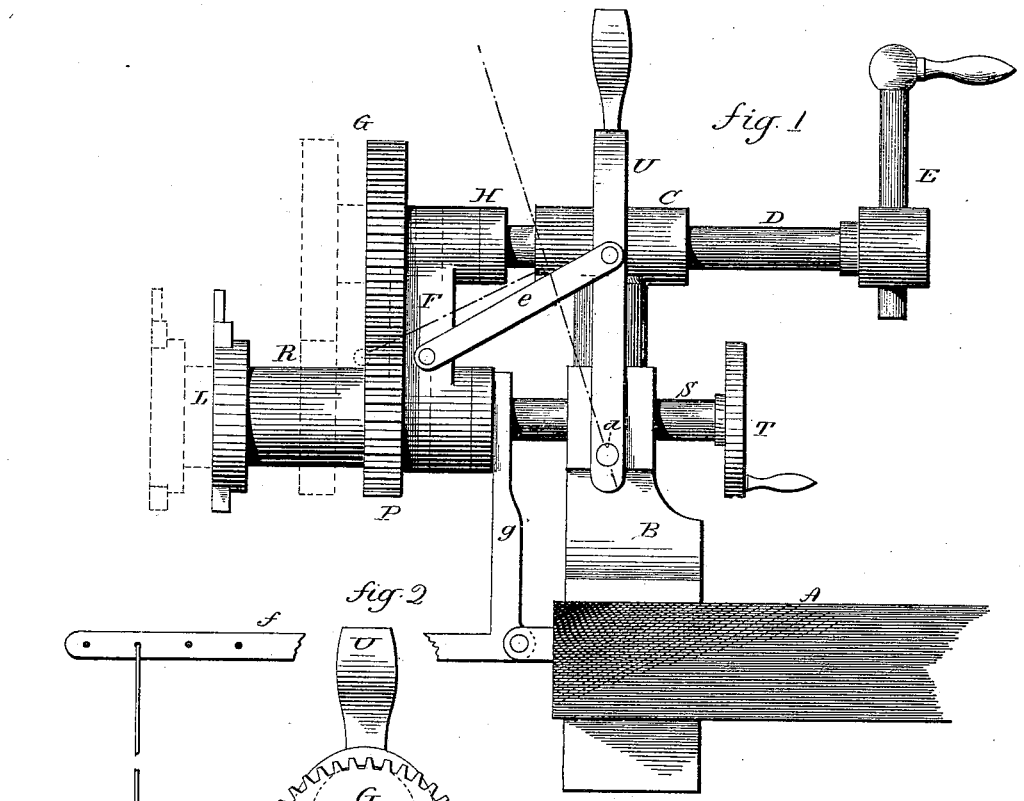
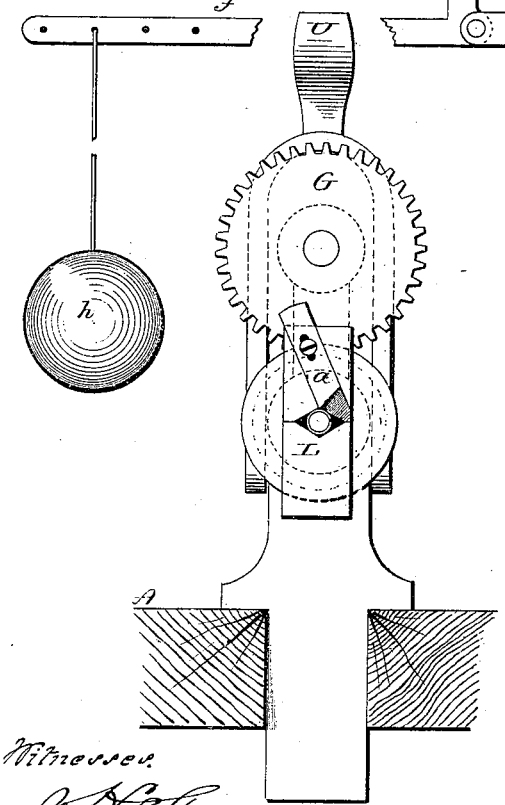
(No Model.)

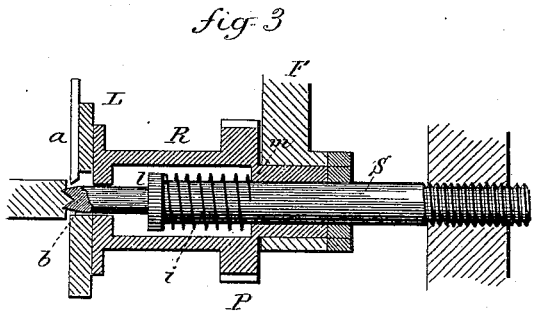
H. PARÈ.

SPOKE TENONING MACHINE.

No. 262,107. Patented Aug. 1, 1882.







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UNITED STATES PATENT OFFICE.

HILAIRE PARÈ, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO ARTHUR SKINNER, OF SAME PLACE.

SPOKE-TENONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,107, dated August 1, 1882.

Application filed May 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, HILAIRE PARÈ, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Spoke-Tenoning Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a front end view; Fig. 3, a longitudinal section through the cutter-head.

This invention relates to an improvement in apparatus for cutting the tenon on the end of spokes of wheels. The spokes are first driven into the hub. Then the hub is placed upon a center, so as to revolve in a horizontal plane and present the spokes successively to the tenon-cutting device, the tenon-cutter being usually what is termed a "hollow auger." It is desirable to cut the tenon concentric with the axial line of the spoke—that is, upon the same center on which the spoke is turned; but in the usual construction of spoke-turning machines the hollow auger cuts directly onto the spoke without any special guide or centering of the spoke.

The object of my invention is to construct a machine for a centering device within the hollow auger, combined with mechanism for adjusting the centering device and feeding the auger onto the spoke; and in such a machine my invention consists, as more fully hereinafter described, and particularly recited in the claims.

A is the bench or support upon which the machine is placed. The machine consists of a post, B, fitted into a socket in the bench, and carrying at its top a transverse sleeve, C, which forms a bearing for the driving-shaft D, and so that while the shaft may be revolved freely in the bearing it may also be moved longitudinally therein, as indicated in broken lines, Fig. 1. The shaft D is provided with a crank, E, or other suitable device for imparting rotation thereto either by hand or power. At the opposite end of the shaft to where the power is applied an arm, F, is arranged, through which the shaft extends, so as to revolve freely therein. A pinion, G, outside and a collar, H, inside the arm on the shaft carry the arm F with the shaft in its movement back and forth in its bearing C. In the lower end of the arm F a cutter-head, L, is supported, as seen in Fig. 3. This cutter-head is substantially like the common and well-known hollow auger. It is provided with a cutter, *a*, and is arranged to revolve in its bearing in the arm F. Power for revolving it is communicated through the pinion G on the shaft D, working in a corresponding pinion, P, on the body R of the cutter-head, and is attached to the arm so as to move with it in its longitudinal movement, as seen in Fig. 3. Longitudinally through the cutter-head and through the post B is a mandrel, S, screwed thereto through the post, as seen in Fig. 3, and provided with a hand wheel or crank, T, by which it may be turned by hand. This mandrel is concentric with the cutter-head. Its outer end terminates in a center, *b*, so as to engage the center-point in the end of the spoke, as shown in Fig. 3. U is a hand-lever hung to the post, as at *d*, and connected by a link, *e*, with the arm F, so that the workman, taking hold of the hand-lever, may move the cutter-head forward and back—that is, onto and off from the spoke.

The hub with the spokes therein is arranged relatively to the cutting mechanism in the usual manner, and so that the path of the spokes, as the hub is revolved, will pass the center of the cutter and come in line with the mandrel S. When the first spoke is presented in front of the mandrel the operator turns the mandrel forward to bring the center into connection with the spoke, and so as to firmly hold it in its proper axial line. Then the revolving cutter is advanced to cut onto the spoke and form the tenon in the usual manner. The tenon finished, the cutter is withdrawn as well as the mandrel, then a second spoke presented, and the tenon cut as before, and so on until all are cut.

To automatically feed the cutter during the cutting operation, a bell-crank lever, *f g*, is arranged, the arm *g* bearing against the cutter-head of arm F, as seen in Fig. 1. To the other arm, *f*, a weight, *h*, (or may be a spring,) is ap-

plied, which will press the cutter forward during the cutting operation.

Instead of working the mandrel by means of a screw, it may be provided with a spring, *i*, within the cutter-head, bearing at the forward end against a collar, *l*, on the mandrel and at the rear end against a shoulder, *m*, in the cutter-head, and so that the tendency of the spring is to force the mandrel outward and hold it in contact or connection with the spoke. In this case the same handle U will withdraw first the cutter-head and then the mandrel, and when moved forward for the second spoke the mandrel will, by means of the spring, be first engaged with the spoke, and then the cutter-head will be advanced against the spring; or the spring may be arranged as described and the mandrel screw-threaded, as before described, and as shown in Fig. 3. The spring in that case will serve to withdraw the cutter-head and the hand-lever used to advance it.

I claim—

1. The combination of the shaft D, arranged for free revolution and longitudinal movement in its bearing C, the arm F thereon, carrying the cutter-head R below and in line parallel with the shaft D, pinions connecting the shaft D and the cutter-head, and the centering-mandrel S, arranged longitudinally through the cutter-head, substantially as described.

2. The combination of the shaft D, arranged for free revolution and longitudinal movement in its bearing C, the arm F thereon, carrying the cutter-head R below and in line parallel with the shaft D, pinions connecting the shaft D and the cutter-head, and the centering-mandrel S, arranged longitudinally through the cutter-head, with the hand-lever U, connected to the arm which carries the cutter-head, substantially as described.

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