N. H. DAVIS.

Machines for Turning Spokes.

No. 134,037. Patented Dec. 17, 1872.

fig. 1

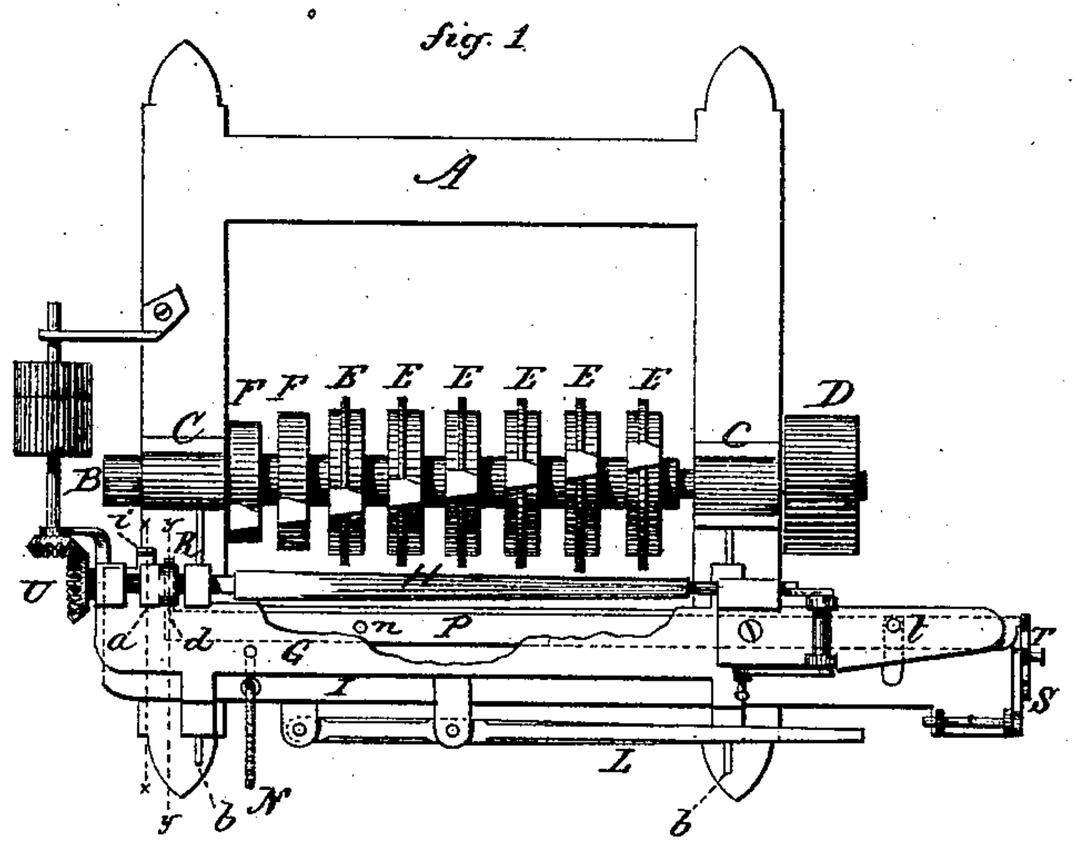


fig. 2

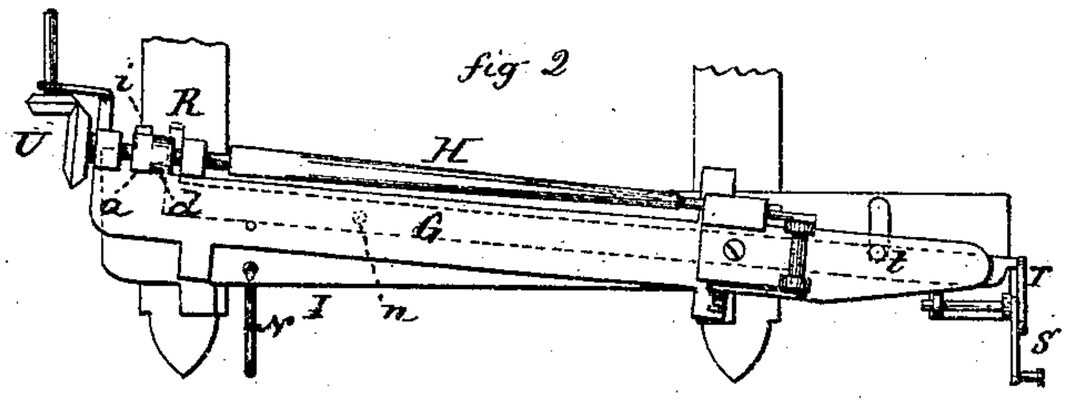


fig. 3

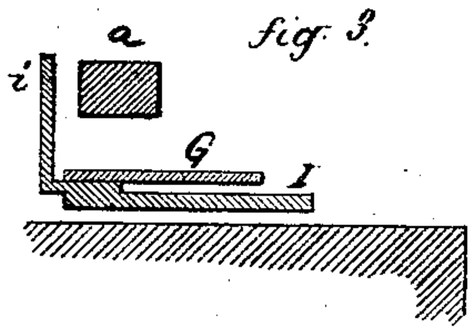
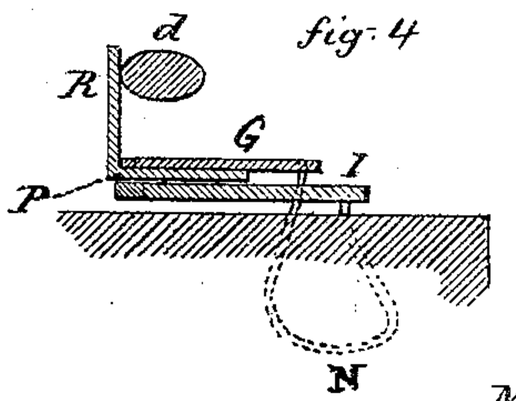


fig. 4



Witnesses.
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UNITED STATES PATENT OFFICE.

NELSON H. DAVIS, OF NAUGATUCK, CONNECTICUT, ASSIGNOR TO HIMSELF AND LESTER CONKLIN, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR TURNING SPOKES.

Specification forming part of Letters Patent No. **134,037**, dated December 17, 1872.

To all whom it may concern:

Be it known that I, NELSON H. DAVIS, of Naugatuck, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machine for Turning Spokes; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a top view, and in Figs. 2, 3, and 4, detached views.

This invention relates to an improvement in that class of spoke-turning machines which are designed to completely dress the spokes from end to end without removal from the machine; and it consists in the peculiar arrangement of the spoke-holding device, combined with cams to give the required shape, as more fully hereinafter described.

A is the frame which supports the mechanism; B, the shaft, arranged in suitable bearings C, and caused to revolve rapidly by the application of power to the pulley D in the usual manner. On the shaft B the cutter-heads E are arranged, which act together to dress the cylindrical part of the spoke; and F F, the cutter-heads for throating or cutting the square part of the spoke. G is the carriage, in which the spoke H is arranged in the usual manner to be presented to the cutters. On the mandrel which supports the lower or larger end of the spoke I arrange a square cam, *a*, and a second cam, *d*, of the form required to give thedesired shape to the cylindrical part of the spoke, these cams shown enlarged in Figs. 3 and 4. This carriage G is arranged upon a principal carriage, I, which last-named carriage is movable on guides *b* at right angles to the shaft by means of a lever, L. Near the cam end of the carriage a spring, N, is arranged, one end attached to the carriage I and the other end to the carriage G, as seen in Fig. 4, the tendency of the spring being to force this end of the carriage G and its cams *a* and *d* forward toward the cutters. On the carriage I an arm, *i*, extends up upon the cutter side of the cam *a*, as seen in Fig. 3, enlarged, against which the cam *a* will work. Between the two carriages a lever, P, is arranged, pivoted at *n* to the carriage I, one arm extending toward the cam end of the carriage, and the other turned up, forming a vertical arm, R, as seen in Fig. 4, and against this arm the cam *d* works. Toward the other end, at *t*, the lever P is attached to the carriage G, and at the extreme end of the carriage I a crank, S, is arranged, and from this a connecting-rod, T, attaches the crank to the lever P, so that by turning the crank from the position in Fig. 1 to that in Fig. 2 that end of the lever P will be drawn back from the position in Fig. 1 to that in Fig. 2.

As in the position denoted in Fig. 1, the spoke is in position for dressing the cylindrical portion, the cam *d* bearing against the arm R of the lever P, the spring N yielding to the irregular form of the cam, so that the spoke and the carriage will be forced toward or from the cutters, as may be required, to give the desired form. This part of the spoke having been dressed, the crank S is turned over to the position denoted in Fig. 2, drawing that end of the lever and carriage back; they, turning upon the pivot or fulcrum *n*, throw the other end of the carriage forward, bringing the square cam *a* against the arm *i*, as seen in Fig. 2. The arm R passing on out of reach of its cam *d*, the spring N yielding for this purpose, allows the movement of the carriage G to be arrested so soon as the cam *a* strikes its arm *i*, in order that the arm R may pass beyond or out of the way of its cam. In this position the cylindrical part of the spoke is drawn back out of the way of the cutters which dressed it, and the remaining portion is brought into contact with the cutters of the heads F F and there dressed to the shape of the cam *a*, which completes the dressing of the spoke.

The necessary revolution is imparted to the cams *a* and *d* and to the spoke through gears U, in the usual manner.

I do not wish to be understood as broadly claiming a series of cutters combined with a carriage supporting the spoke, and the neces-

sary cams to give the various forms, as such is not new; but

I claim as my invention—

The carriage G, upon which are arranged the cams *a* and *d*, combined with the lever P with its arm R and the carriage I with its arm *i*, the said lever pivoted to both carriages, and the whole constructed and arranged to operate substantially in the manner specified.

NELSON H. DAVIS.

Witnesses:

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