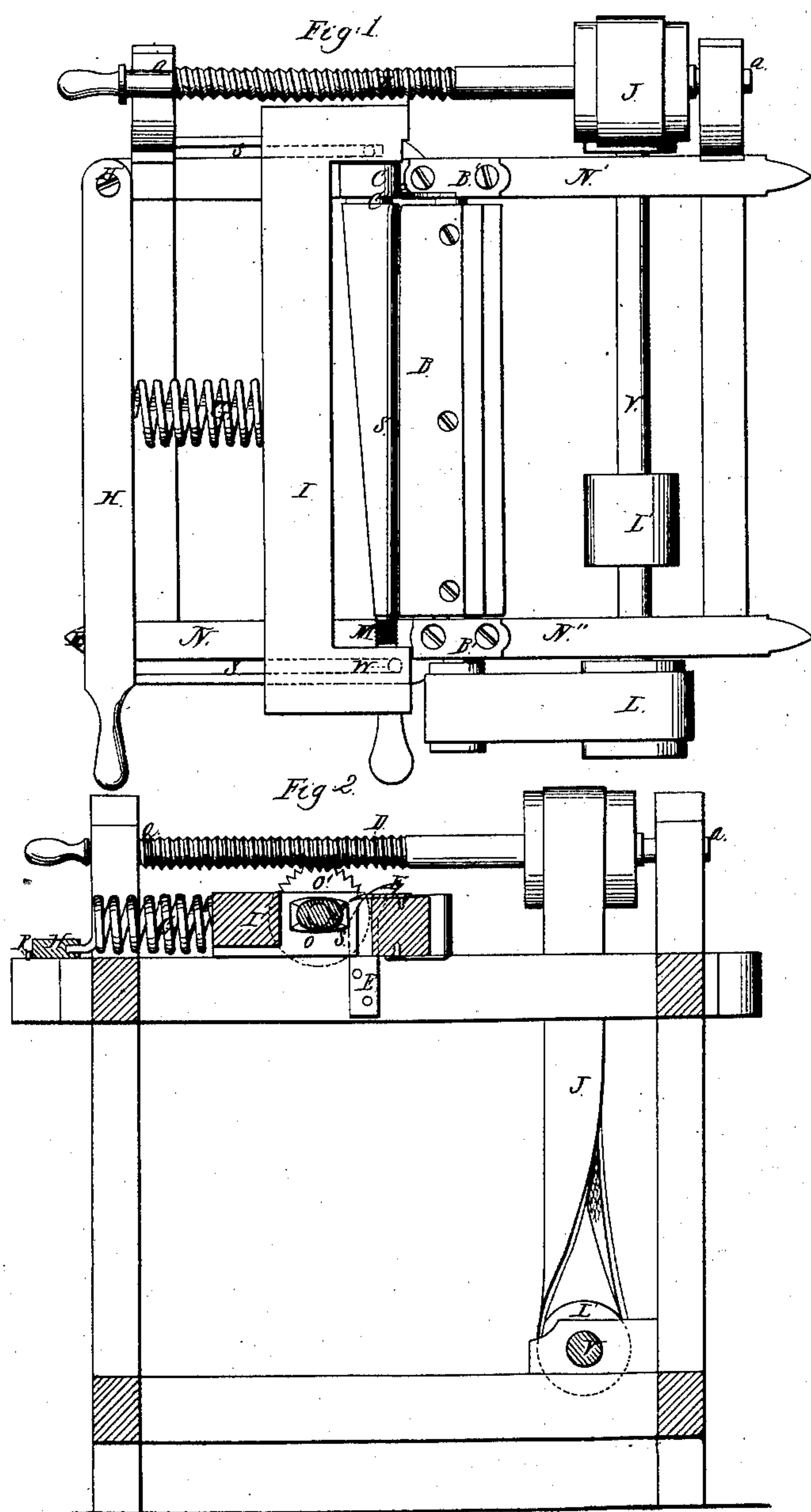


*J. Gilchrist,
Spoke Lathe.*

N^o 30,474.

Patented Oct. 23, 1860.



UNITED STATES PATENT OFFICE.

JOHN GILCHRIST, OF BERLIN CITY, WISCONSIN.

SPOKE-MACHINE.

Specification of Letters Patent No. 30,474, dated October 23, 1860.

To all whom it may concern:

Be it known that I, JOHN GILCHRIST, of Berlin City, in the county of Green Lake and State of Wisconsin, have invented a new and useful Improvement in Machines for Cutting Spokes; 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, forming a part of this specification, in which—

Figure 1, is a plan view of a machine constructed after my invention, and Fig. 2, a vertical section of the same.

Similar letters of reference, in each of the several figures indicate corresponding parts.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

The cutter of this machine consists of a horizontal shaft, to which are fastened two (or any other suitable number of) blades B. These blades are each as long as the spokes to be cut, so as to cut the whole length of the spoke at one operation. The cutting edge of each blade is slightly curved where it is intended to cut the thicker end of the spoke, in order to produce the slightly curved outline of this end of the spoke.

The cutter shaft has its bearings in the blocks B', B', fastened to the main frame N', N'', of the machine, and has a pulley L', at one end, to which motion is transmitted, from the driving shaft V, by means of a band L, and pulley L² upon said driving shaft.

The piece of wood S, to be cut, is held in a carriage I, between the center screw M, and the sharp edge C', of the pattern C. The pattern C, is fastened to the inner end of a short shaft O, which has its bearing in the carriage I, and on whose outer end is arranged a worm wheel O'. The latter takes into the thread of a long screw D, whose shaft rests in bearings a, a, projecting from the main frame. The screw shaft receives rotary motion from, and is connected with the main driving shaft V, by means of pulleys and belt J.

By tightening the center screw M, the piece of wood to be reduced to a spoke, can be firmly fastened between the point of the center screw, and the sharp edge C', of the pattern.

A guard E, is fastened to the main frame at one end of the cutters, and is arranged so as to be in line with the pattern C'.

The carriage slides on ways N', N'', and is guided, at the end where the center screw is, by a pivot W, projecting from the bottom of the carriage underneath the center screw, into a groove S, cut into the way N''. From this, it will be seen that the carriage, while it slides on the ways N', N'', can also swing around pivot W.

One end of a strong spiral spring G, is fastened to the middle portion of a lever H, which is pivoted to the main frame at H'. The other end of the lever can be confined by pin R, projecting from the main frame.

When the lever is brought into this position, the spiral spring G, is made to bear against the back of the carriage I, and pushes the latter forward until the pivot W, rests against the forward end of the groove S, and the pattern C, against the guard E.

After the spoke has been cut, the lever end can be liberated from the pin R, so as to relieve the carriage from the pressure of the spring G; the carriage can be withdrawn from the cutter; the center screw M, loosened; and the finished spoke S, be removed; to make room for the insertion of another piece of wood to be cut.

It will be seen that, as the driving shaft revolves, the cutter shaft and the screw shaft D, are also made to revolve. The cutter is made to revolve with great speed, while the screw shaft D, revolves slowly and, thereby, causes the worm wheel O', shaft O, and piece of wood S, to revolve, with like speed. Thus, the whole circumference of the piece of wood will be gradually exposed to the action of the cutter blades.

It will be understood that, as the pattern C, during its rotation, always bears against the guard E, and the pivot W, rests uniformly, against the forward end of the slot S, the pattern end of the carriage will be made to recede from or approach the cutter, as the diameter of that portion of the pattern which is in contact with the guard, increases or decreases. The pivot W, serves as a center of this motion.

As the pattern corresponds to the shape of the thicker end of a spoke, the piece of wood will be accordingly cut at this end, and with a tapering cylindrical form toward the end which is held by the center screw M. Thus, a perfect spoke will be produced during one revolution of the piece of wood.

It will be understood that a weight or weights might be used instead of the spring

G, for the purpose of pressing the carriage I, forward.

What I claim as my invention and desire to secure by Letters Patent, is—

5 The combination and arrangement of the revolving cutter B, spoke carriage I, lever H, spring G, slat S, pivot W, pattern C,

guard E, screw-wheel O', and screw D, substantially in the manner and for the purposes herein described.

JOHN GILCHRIST.

Witnesses:

JOHN BROWN,
GEO. COOPER.