

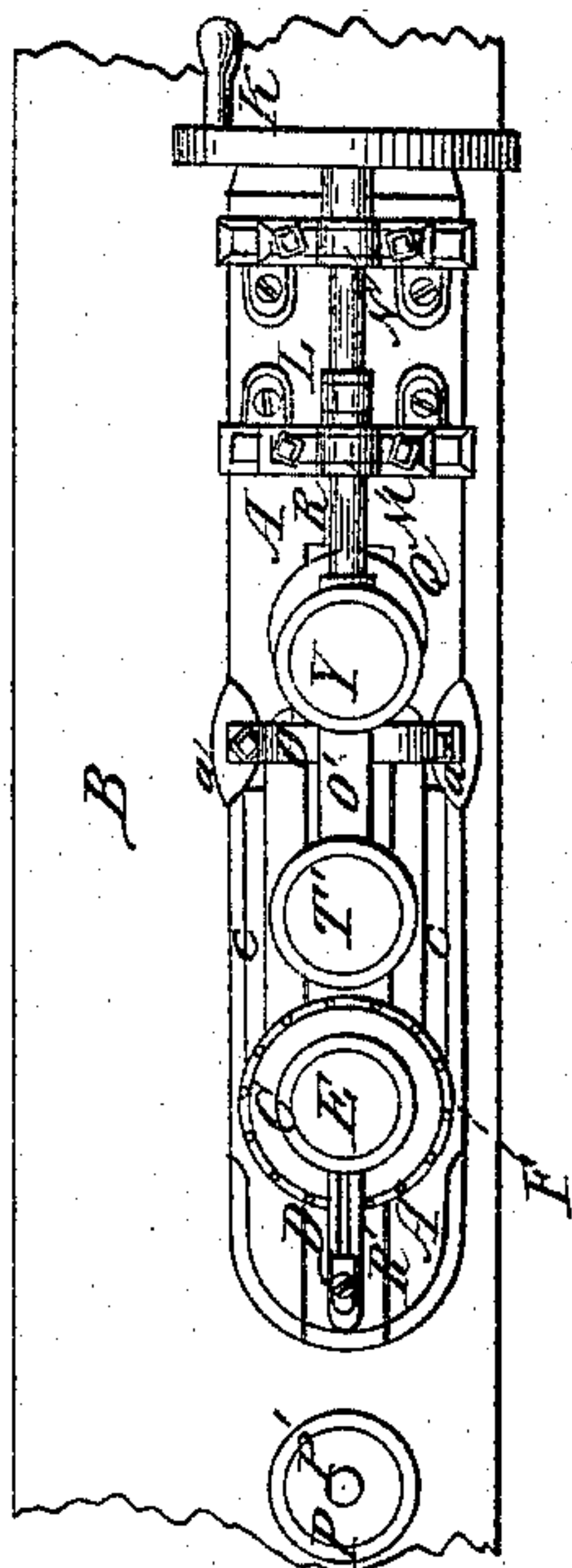
*C. Luther,*

*Tenoning and Boring Machine.*

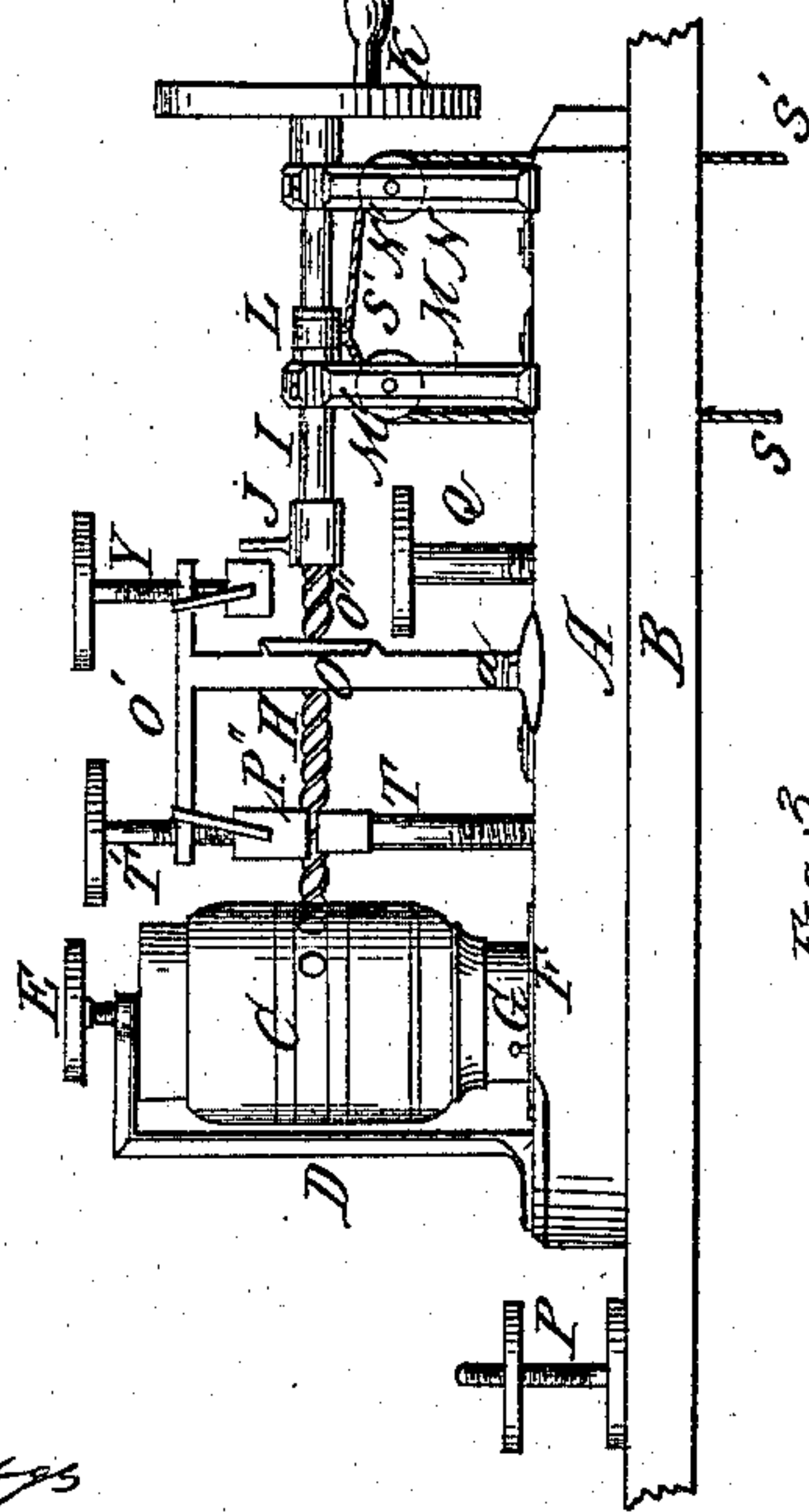
*N<sup>o</sup> 32,072.*

*Patented Apr. 16, 1861.*

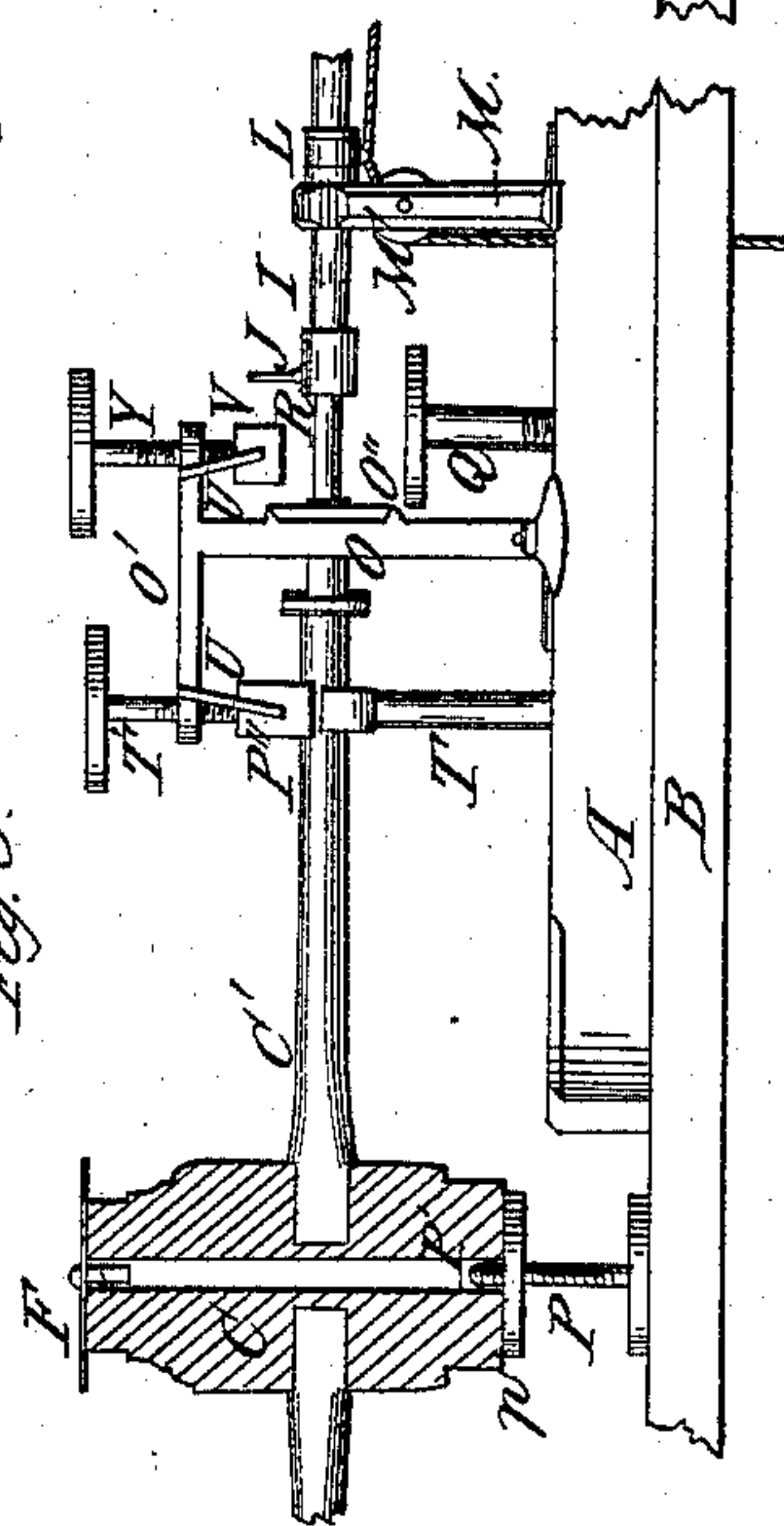
*Fig. 2.*



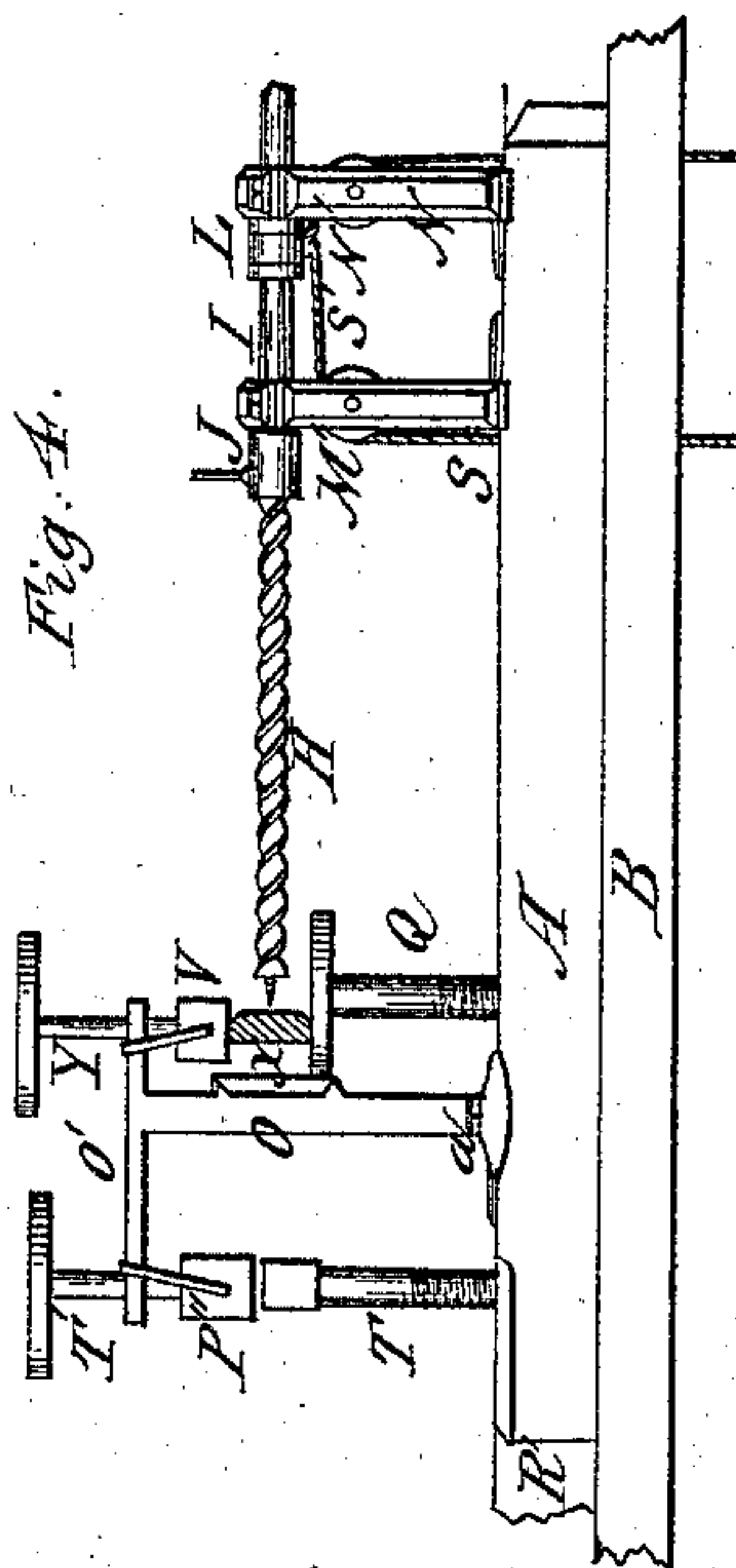
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



*Witnesses:*  
*W. H. Burdick*  
*C. W. Barnes.*

*Inventor.*

*C. Luther*



# UNITED STATES PATENT OFFICE.

CURTISS LUTHER, OF NEWBURY, OHIO.

## WHEELWRIGHT'S MACHINE.

Specification of Letters Patent No. 32,072, dated April 16, 1861.

*To all whom it may concern:*

Be it known that I, C. LUTHER, of Newbury, in the county of Geauga and State of Ohio, have invented certain new and useful  
5 Improvements in Machines for Making Carriage-Wheels; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying  
10 drawings, making a part of this specification, in which—

Figures 1, 3, and 4, are side elevations, and Fig. 2, is a top view.

The same letters refer to like parts in the  
15 different views.

My improvement, in the first place, relates to an arrangement of devices for boring holes in hubs for the mortises. The hub is placed on a stand and secured in an upright position, having a dial plate attached  
20 to the lower end, that serves as an index, by which the hub is divided off, into equal spaces. The holes are bored by means of a bit operated by a crank, and pressed in and  
25 out by foot power.

My improvement also relates to the manner of tenoning the ends of the spokes, (after they are driven into the mortises formed in the hub), by means of the bit being removed, and the tenoning tool put in its place,  
30 and adjusting the hub on a stand by means of a slide, to suit the length of the spokes. The arrangement for boring holes in the fellies is also new.

35 In the different figures A, represents the stand firmly secured to the bench B.

C, is the hub placed on the stand. To the lower and small end of the hub is attached a dial plate F, that turns with it. In  
40 the center of this plate is a pin, that passes up into the hub, this together with the standard D, and hand screw E, retains the hub in a vertical position, but allows it to be turned around. Around the edge of the dial plate  
45 are a number of holes equally distant apart, as shown in Fig. 2.

G, Fig. 1, is a pin inserted into one of the holes of the dial plate, and put in a hole in the stand, which keeps the hub in place until a hole is bored for one mortise, when the pin is removed, and the hub turned, the dial plate turning with it, until the next hole in the plate is over the hole in the stand, when the pin G, is again inserted, and so on until  
50 the holes for the mortises are all bored.

H, is the bit secured to the end of the

shaft I, by the thumb screw J. The shaft I, is supported by the stationary bearings M, and N, and is turned by the crank K. On the shaft I, is a loose collar L, placed between two rings on the shaft, with which are  
60 connected the cords S, S', that pass over two pulleys M', and N' in the bearings M, and N, down through holes in the stand, and bench and are connected with a treadle by  
65 means of which the tenoning tool, or bit, is moved either way by foot power, the foot being placed upon the footstep or treadle, to move the bit and tool back and forth, while they are revolved by turning the crank with  
70 the hand. In this way the desired work is soon accomplished.

After the holes are all bored in the hub, it is removed from the stand and mortised, when the spokes are set or driven in. P is  
75 an adjustable stand screwed to the bench B. The hub is then placed on this stand, the large end downward, the screw P', keeping it in place, as shown in Fig. 3. R, is a hollow auger, or tenoning tool, secured to the  
80 end of the shaft I, by the thumb screw J, which passes through an opening in the standard O, at which point there is a box or bearing O'', for the outer end of the tool, to hold it firmly and steadily in place.  
85 The hub is then adjusted upon the stand P, in such a way that the ends of the spokes will be in a line with the tenoning tool.

T, is an adjustable standard or screw, on which the ends of the spokes are placed.  
90

T', is an adjustable thumb screw, passing through the arm O' which presses the block P'', on the spoke C', thus holding it firmly and securely.

U, is an elastic band, attached to the side  
95 of the block, and passes up over the arm O'; that draws the block up as fast as it is unscrewed.

When all the screws are suitably adjusted, the foot is placed on the treadle, and the  
100 crank turned, the spoke will in this way, be speedily tenoned, when the shaft can be slid back, releasing the spoke from the tool. The hub can then be turned around, until another spoke is in the place of the  
105 former one, and so on, until the spokes are all uniformly, as well as rapidly tenoned.

When holes are to be made in the fellies, it is necessary to unscrew the nuts a, a, in the standard O, when it can be moved  
110 along, in the slots c, c, shown in Fig. 2. The standards Q, and T, are moved by



pulling out the slide R', in the stand A, when they are moved a suitable distance, the bit H, is replaced, as shown in Fig. 4, in the shaft I. After the points where the  
5 holes are to be made are indicated on the felly, by placing it around the spokes of the wheel, it is placed on the stand Q, as shown at X, when the block V, is screwed down on the felly, by the hand screw Y, to keep it  
10 firmly in place. A hole is then bored in the way before described, when the block V, is unscrewed, and the felly moved along, and another hole bored in the same way and so on.

15 If the above directions are followed out, a wheel made in this machine cannot be otherwise than perfect in all its parts, besides it is accompanied with less labor and trouble, and does the work much more rap-  
20 idly than in the ordinary way.

The machine is very simple in construction, and consequently cheap; and it is not liable to get out of repair.

25 In the adjustment of the hub, upon the stand P for the purpose of tenoning the spokes as above described I will here state

that the disk p, upon which the hub rests, forms a nut, which works upward and downward upon the screw P of which the stand is in part composed. In this way, the  
30 hub can be adjusted exactly to the point desired—to suit the tenoning tool R. This adjustment is necessary in order to accommodate various lengths of hub.

I do not claim the devices herein named  
35 separately considered, for most of them have been before used in some form; but

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

The special arrangement and combina-  
40 tion of the several parts, in the manner herein set forth, so that the various kinds of work in making carriage wheels, as boring the hub, tenoning the outer ends of the spokes after they are set, and boring the  
45 fellies, may all be performed upon the same machine, placed upon a common work bench and operated by hand, as specified.

CURTISS LUTHER.

Witnesses:

W. H. BURRIDGE,  
G. W. BURNES.