

(No Model.)

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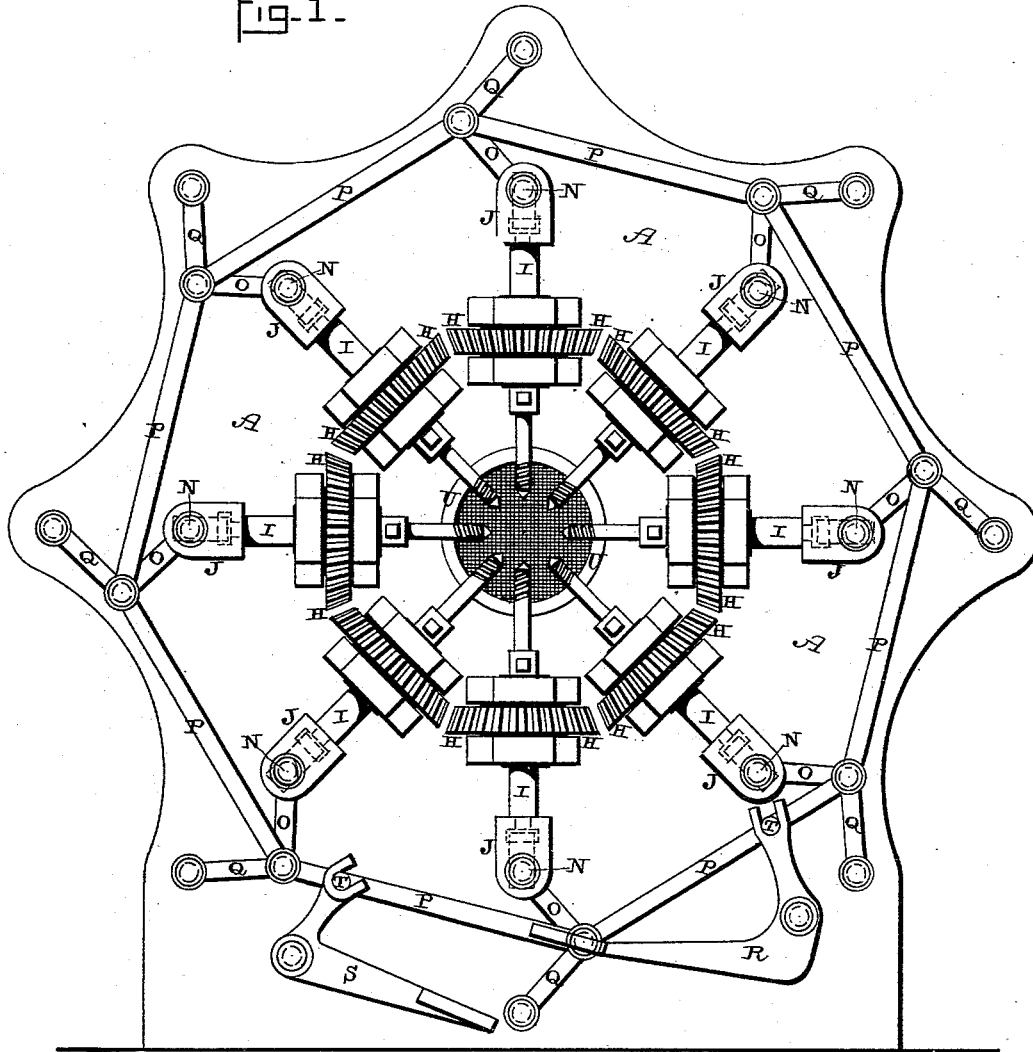
G. H. EVERSON.

MACHINE FOR BORING METALLIC HUBS.

No. 420,339.

Patented Jan. 28, 1890.

Fig-1.



Witnesses:

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Inventor:

Geo. H. Everson,  
per  
J. A. Lehmann,  
att'y

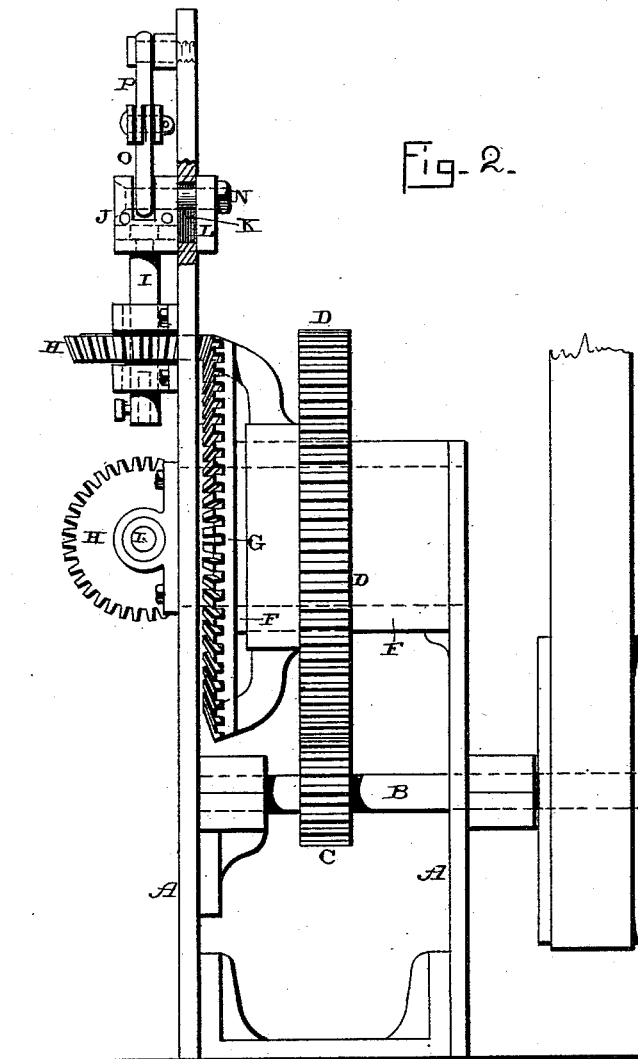
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

GEORGE H. EVERSON, OF PITTSBURG, PENNSYLVANIA.

## MACHINE FOR BORING METALLIC HUBS.

SPECIFICATION forming part of Letters Patent No. 420,339, dated January 28, 1890.

Application filed June 21, 1889. Serial No. 315,106. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. EVERSON, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain  
5 new and useful Improvements in Machines for Boring Metallic Wheel-Hubs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art  
10 to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in machines for boring metallic wheel-hubs; and  
15 it consists in the combination of a suitable supporting-frame and a driving mechanism with a series of bits arranged radially around a common center, and which are geared together with a number of connecting rods or  
20 links, which form toggle-joints for the purpose of moving the drills forward and backward and treadles for operating the rods and links, as will be more fully described hereinafter.

25 The object of my invention is to produce a machine for boring the holes in metallic hubs for the inner ends of the spokes, and in which one half of the holes are bored simultaneously, and then the wheel is readjusted and  
30 the other half bored.

Figure 1 is a side elevation of a machine which embodies my invention. Fig. 2 is a side elevation of the same, only a portion of the operating mechanism being shown for the  
35 sake of clearness.

A represents a suitable metallic frame of any desired shape or construction that may be preferred, the outer face-plate of which extends up above the rear plate any suitable  
40 distance, and is planed off upon both of its sides. Journaled in this frame A is a driving-shaft B, which is provided with a pinion C, which meshes with the large gear-wheel D, which is placed loosely upon the bearing F,  
45 which extends horizontally across the upper end of the frame A. Secured to or cast with the wheel D is a large beveled wheel G, which drives the miter-wheels H, arranged concentrically around a common center, as shown.  
50 Each one of these wheels H projects partially through a slot in the front of the frame A, so

as to mesh with the wheel G, which is placed in the rear of the front plate. Passing through each one of these wheels H, and loosely keyed therein for the purpose of conveying the rotary motion, is a drill-rod I, in which the  
55 boring-bit, of any suitable description, is placed, and which drill-rods are swiveled at their outer ends in the sliding cross-heads J, which are held loosely in contact with the  
60 front plate of the frame by means of the plates L, placed against the rear side of the front plate, and the clamping-bolts N, which pass through sliding cross-heads J and slots K, made in a direct line with the drill-rods I and  
65 the plate L, as shown in Fig. 2.

The plate L and clamping-bolt N are used for the purpose of holding the sliding cross-heads J in position, and yet allow them a  
70 free movement in a direct line with the drill-rod, for the purpose of moving the drill-rod back and forth for the purpose of feeding and retracting the bit.

Loosely connected to each of the sliding cross-heads J by means of the clamping-bolts  
75 N is a link O, which is pivoted at its outer end both to the connecting-rods P and a supporting-link Q, which is pivoted to the front plate of the machine. The connecting-rods  
80 P extend around the front plate of the machine, as shown in Fig. 1, and the links O Q are moved thereby for the purpose of forcing the drills either forward or back, as may be desired by the operator. When the connecting-  
85 rods are moved in one direction, the links O Q are made to straighten out more or less into a line with each other and force the drill-  
90 rods forward, and when the rods P are moved in the opposite direction the links are forced backward at their outer ends, and thus draw  
the drill-rods I and their bits backward.

Pivoted near the lower edge of the front plate of the machine are the two treadles R  
S, which have their upper ends forked, so as to catch over studs or projections T, formed  
95 upon the connecting-rods P. When the lower ends of the treadle R are depressed, the rods P are moved so as to force the drill-rods I inwardly, and when the lower end of the treadle  
100 S is depressed this motion is reversed. Eight drill-rods are here shown, and these rods are made to drill eight holes in the hub simulta-

neously. After these eight holes have been drilled the hub is readjusted and the other eight holes are bored. The number of drill-rods which can be used, however, may be varied, according to the number of holes it is desired to bore. There will be secured to the base-plate around the central opening U a suitable die for holding the hub which is to be bored, and these dies can be changed at the will of the operator.

Having thus described my invention, I claim—

1. In a machine for boring spoke-holes in hubs, the combination of the radial endwise-moving drill-rods, the wheels H, loosely keyed thereon, sliding cross-heads J, to which the rods are swiveled or otherwise loosely attached, the links O Q, the connecting-rods for

operating the links, the treadles, and the operating mechanism for revolving the wheels H, substantially as described.

2. The combination of the frame A, provided with a series of slots through its front plate, the cross-heads J, the plates L, and the clamping-bolts N, with the swiveled drill-rods, the wheels H, loosely keyed upon the rods, the wheel G, arranged in the rear of the front plate for driving the wheels H, the links O Q, the connecting-rods P, and the treadles, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE H. EVERSON.

Witnesses:

PHILIP MAURO,  
F. A. LEHMANN.