(No Model.) 2 Sheets—Sheet 1.

G. H. EVERSON.

MACHINE FOR DRILLING HOLES IN METALLIC WHEELS.

No. 420,379. Patented Jan. 28, 1890.

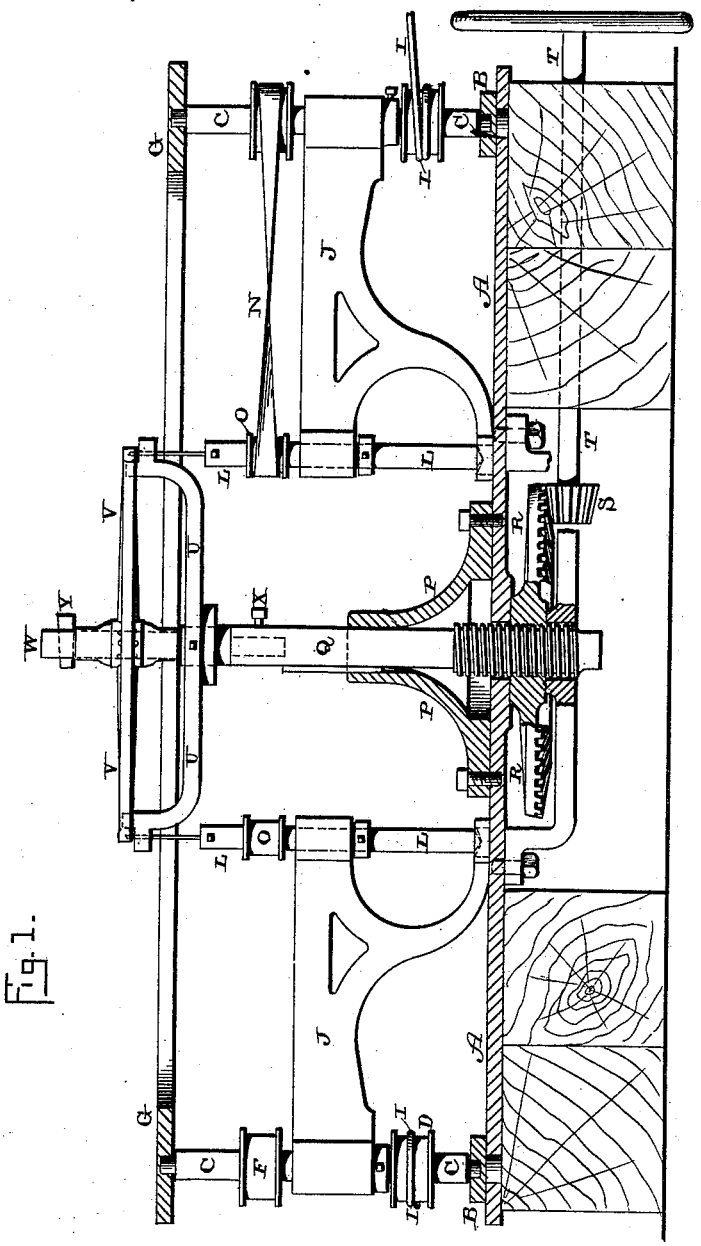

Fig. 1.

Witnesses:
E. P. Ellis,
L. L. Burket.

Inventor:
Geo. H. Everson,
per F. A. Lehmann,
Atty

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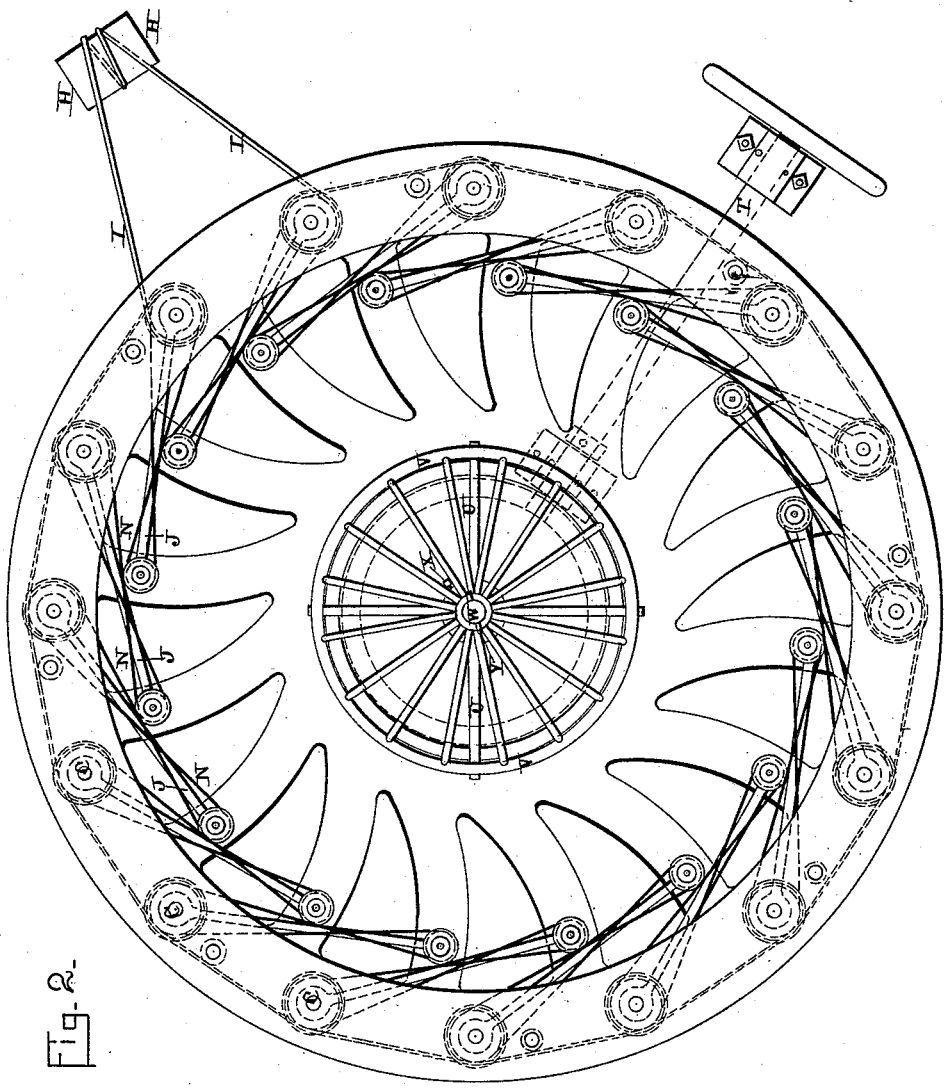

Fig. 2.

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UNITED STATES PATENT OFFICE.

GEORGE H. EVERSON, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR DRILLING HOLES IN METALLIC WHEELS.

SPECIFICATION forming part of Letters Patent No. 420,379, dated January 28, 1890.

Application filed May 31, 1889. Serial No. 312,722. (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 new and useful Improvements in Machines for Drilling Rivet-Holes in Metallic Wheels; 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 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 drilling rivet-holes in the fellies of metallic wheels; and it consists in the combination of a suitable driving mechanism, a series of revolving spindles, which are operated simultaneously, an arm or bearing pivoted upon each spindle, a drill rod or shaft pivoted in the inner end of the arm or bearing, a driving-belt for each drill-rod, and a clamping mechanism for holding the wheel while being operated upon, as will be more fully described hereinafter.

The object of my invention is to produce a machine for boring rivet-holes in the fellies of metallic wheels, and in which all of the drill-rods are journaled in pivoted arms or bearings, whereby they can be adjusted to suit wheels of different diameters, and thus bore all of the rivet-holes at once.

Figure 1 represents a vertical section of a machine which embodies my invention. Fig. 2 is a plan view of the same, showing the drill-rods moved outward and adapted to be used upon a large wheel.

A represents a suitable base-plate, upon the outer edge of which is a circular bearing-plate B, which is provided with recesses in its upper side to receive the lower ends of the journals or bearings of the spindle C, which are arranged in a circle around the central clamping device for holding the wheel to be operated upon. There will be any desired number of spindles C, each of which is provided with a pulley D, around which passes an operating-cord for driving the spindles, and a second pulley F, around which passes a belt for operating the drill-rod, and the upper end of each spindle is journaled in a circular plate G, by means of which the upper ends of the spindles are supported in position.

The driving-power is applied to a shaft or cylinder H, around which the driving-belt I is wrapped one or more times, and then this endless cord, chain, or belt is passed one or more times around each one of the spindles C, as shown in Fig. 2. When the shaft or cylinder H is caused to revolve, the endless belt, cord, or chain I imparts to each of the spindles a continuous rotary motion in the same direction.

Journaled or pivoted upon each spindle C is a casting, arm, or bearing J, which has a free swinging motion through nearly a half-circle, and in the inner end of which is journaled the drill-rod L, which is operated by the driving-belt N from the spindle C, as shown. The drill-rod L is supported at its lower end by a portion of the arm or bearing, while to this spindle above the arm or bearing is secured the driving-pulley O, around which the belt N passes. The arms or bearings J are pivoted upon the spindles C, so that they can be freely adjusted through a portion of a circle, and thus adapted to adjust the drill-rods L into position to operate upon wheels of different diameters. By this construction the wheels of many different sizes can have the holes drilled through their fellies and not require a separate machine for each different size of wheel.

Secured to the center of the base-plate A is a suitable hub P, and passing down through this hub and the base-plate is a vertical shaft Q, which is provided with a screw-thread at its lower end, and upon which screw-threaded portion is placed the beveled gear R. This beveled gear R is operated by the pinion S upon the hand-shaft T for the purpose of adjusting the shaft Q vertically. Placed upon the shaft Q near its upper end is a suitable spider U for supporting the wheel V, which is being operated upon, and which spider also serves as a guide for each of the bits, so as to always hold them in position. Placed in the upper end of the shaft Q is a clamping-rod W, which is secured in position by a set-screw X, and which rod is provided with an opening through its upper end for the purpose of receiving a clamping-key Y. The rod W is made separate from the shaft Q, because a different rod must be used for each different-sized hub. The hub fits snugly upon the up-

per end of the rod W, and thus prevents any lateral movement of the wheel while the rivet-holes are being bored. The rod W is adjusted to correspond to the length of the hub, and then the key is driven through for the purpose of locking the wheel rigidly in position. As the wheel is clamped upon the top of the spider, as shown in Fig. 1, the rivet-holes through the fellies are bored. As the hand-shaft T is turned by the operator the shaft Q is forced downward, so as to feed the wheel to the bits. After the rivet-holes have been bored the wheel is moved above the bits by forcing the hand-shaft T in the opposite direction. A different-sized spider is required for each wheel of different diameter.

Having thus described my invention, I claim—

1. In a drilling-machine, the combination of a series of spindles placed in a circle, a continuous driving cord, belt, or chain, and a driving shaft or cylinder for the belt, cord, or chain, with a pivoted arm or bearing for each spindle, a drill-rod journaled in the inner end of the arm or bearing, and a belt for operating the drill-rod, substantially as shown.

2. The combination of the vertically-adjustable center shaft and a mechanism for moving it, with a clamping-rod W, a spider, a key for clamping the rod in position, and the drill-rods for boring the rivet-holes while the wheel is held rigidly upon the spider, substantially as described.

3. The combination of a vertically-moving shaft, a spider secured to the shaft, and a mechanism for adjusting the wheel vertically after it is clamped in position, with a series of spindles arranged in a circle around the central shaft, the pivoted arms or bearings attached to the spindles, a driving cord or belt for operating all of the spindles together, the drill-rods pivoted in the arms or bearings, the driving-belts N, and the circular bearing-plate G, by which the upper ends of the spindles are held in position, substantially as set forth.

4. In a drilling-machine, the combination of a series of spindles placed in a circle, and means for operating them, with a pivoted arm or bearing for each spindle, a drill-rod for each arm or bearing, and belts driven by the spindles for operating the drill-rods, substantially as specified.

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

GEORGE H. EVERSON.

Witnesses:
PHILIP MAURO,
F. A. LEHMANN.