D. J. Owen.

Boring Hubs.

No. 72887 Patented Dec. 31, 1867.

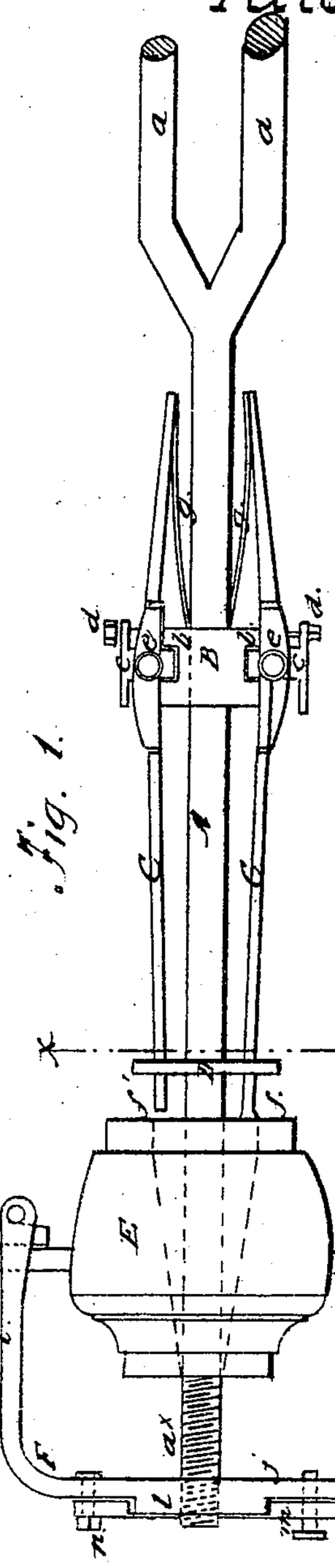

Fig. 1.

Fig. 2

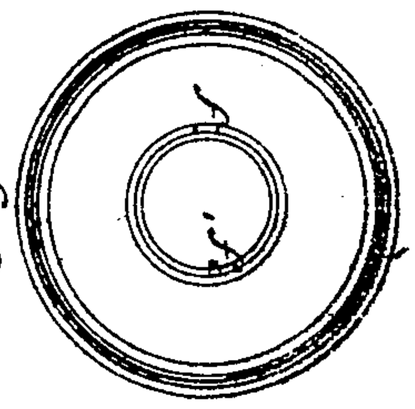

Fig. 3.

Witnesses
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D. J. OWEN, OF SPRINGVILLE, PENNSYLVANIA.

Letters Patent No. 72,887, *dated December* 31, 1867.

IMPROVEMENT IN MACHINE FOR BORING HUBS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, D. J. OWEN, of Springville, in the county of Susquehanna, and State of Pennsylvania, have invented a new and improved Device for Boring Hubs to receive the boxes thereof; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

This invention relates to a new and improved machine for boring taper holes in hubs, and has for its object simplicity of construction with facility of manipulation, so that any person of ordinary ability may use the device, and bore the hubs very expeditiously and in a perfect manner. In the accompanying sheet of drawings—

Figure 1 is a plan or top view of my invention.

Figure 2, a transverse section of the same, taken in the line *x x*, fig. 1.

Figure 3, a view of the rear side of a hub, showing the hole made by the cutters.

Similar letters of reference indicate like parts.

A represents a shaft or arbor, one end of which is divaricated or forked, so that the prongs *a a* may be inserted in holes in any suitable upright or fixture, and the implement thereby held properly in a horizontal position when in use. The opposite end of the shaft or arbor has a screw-thread, $a^{\times}$, cut upon it. B is a cross-bar, which is firmly secured to the shaft or arbor A, and projects at equal distances from opposite sides of the latter, as shown clearly in fig. 1. This cross-bar has a longitudinal slot, *b*, made in it at each end to receive slides, *c c*, which are adjusted by set-screws, *d d;* and to each slide *c* an arm, C, is attached by a pivot, *e*, as shown clearly in fig. 1. On the front ends of these arms C C, cutters *f f'* are formed or attached. It is designed to have the cutters made separate from the arms, and attached thereto in such a manner that they may be readily detached, when necessary, for sharpening, or for other purposes, and also readily applied to the arms, or new ones substituted for them. The rear ends of the arms C have springs, *g*, bearing against them; and on the arms there is fitted a slide, D, which is simply a plate having two holes, *h h*, made through it for the arms C C to pass through, (see fig. 2.) The holes *h h*, in the plate or slide D, are rather nearer together than the pivots *e e* of the arms C C. E represents the hub to be bored, which is fitted on the outer end of the shaft or arbor A. It will be understood that the hubs are not bored to receive their boxes until the wheel is fully completed, the hubs, of course, having the usual mandrel-holes, which admit of them being fitted on the shaft or arbor A, and to turn thereon without any unnecessary play or looseness. F represents a yoke, which may be constructed out of a single bar or piece of metal, bent so as to form three sides, *i i j*, of a quadrangle, as shown in fig. 1. The ends of the sides *i i* of this yoke are clamped to two opposite spokes, *k k*, of the wheel, and the side *j* has a hole made centrally through it for the shaft or arbor A to pass through. To this side *j* of the arbor there is secured, concentrically with the hole through which the shaft or arbor passes, a nut, composed of two parts, *l m*, the part *l* being rigidly attached to the side *j* of the yoke, and the other part, *m*, connected to it by a pivot, *n*, and secured in position by a pin, *o*. This nut, when the pivoted part *m* is secured in position, fits snugly on the screw $a^{\times}$ of the shaft or arbor.

The implement is used as follows: The conical holes in hubs which are designed to receive the boxes are not taper at the rear end of the hub. They are made perfectly cylindrical for a short distance, and then commence to taper. The slide D is adjusted on the arms C C at such a distance from the cutters *f f'* as it is designed for the box-hole to be cylindrical; and, by turning the wheel, the screw $a^{\times}$ on the shaft or arbor, and the nut of yoke F, feeds the hub E to the cutters *f f'*, one cutter, *f*, being slightly in advance of the other cutter *f'*, and the latter being within the path of the rotation of *f*, so that the cutters will make an annular groove in the hub equal to their combined width, and thereby afford room for the arms C C to enter, (see fig. 3.) When the hub E reaches the plate or slide D, the latter is shoved back on the arms C C, and the cutters *f f'* are gradually made to approach each other, and cut the remainder of the hole in taper form. After the hub is bored, the pivoted part *m* of the nut is raised, and the hub may be drawn directly off from the shaft or arbor A, the yoke detached from the wheel, and applied to another one, the hub of which is to be bored. The slides *c c*

are adjusted at a greater or less distance apart, according to the required diameter of the rear end of the hole to be bored.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

The stationary screw-shaft A, bearing the slide D and adjustable cutters *f f'*, in combination with the yoke F, bearing the hub, composed of two parts, when such yoke is adapted to revolve carrying the hub, the latter being fed to the stationary cutters by means of the screw *a*× and the double nut *l m*, as herein described for the purpose specified.

Witnesses:

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