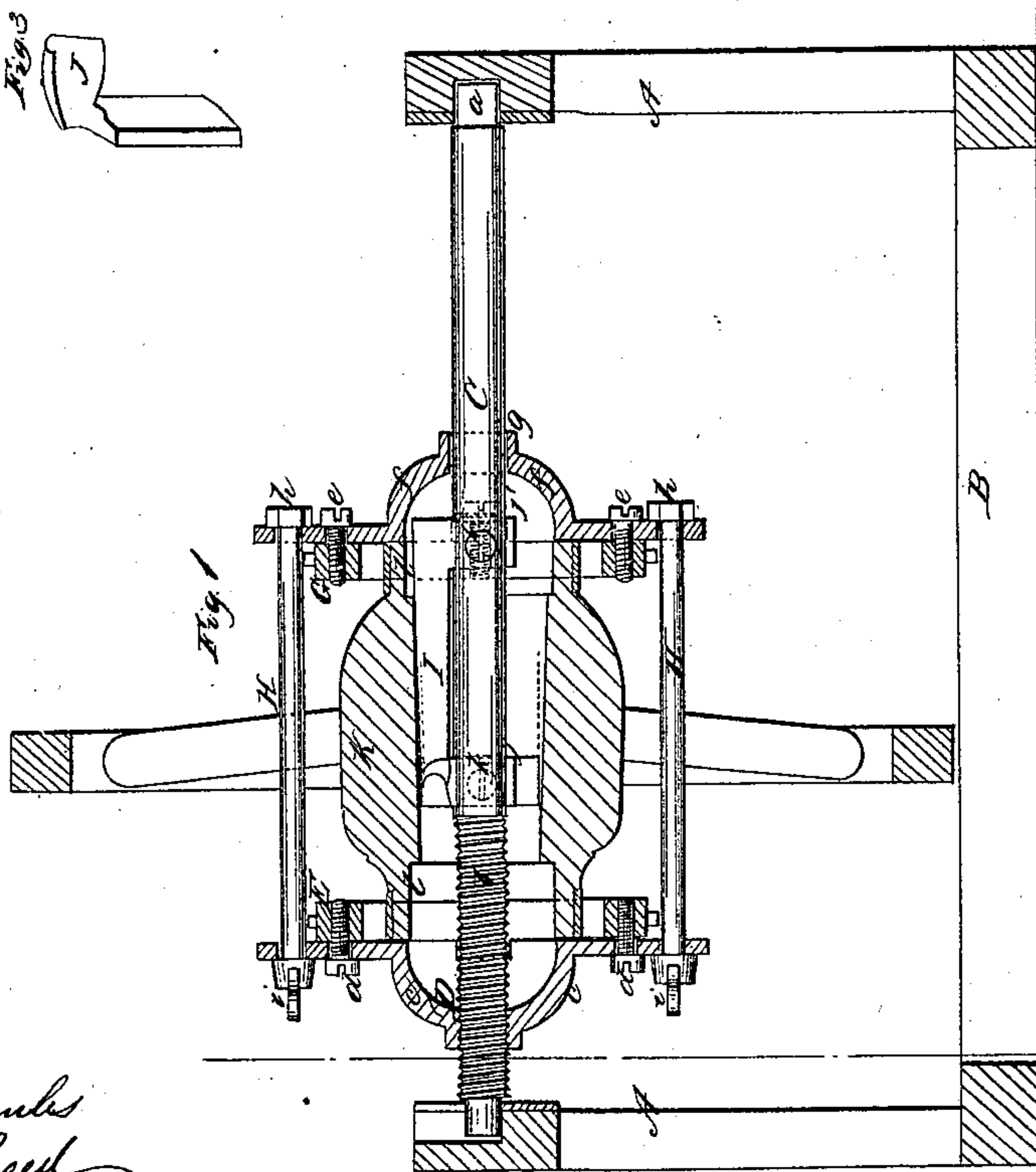
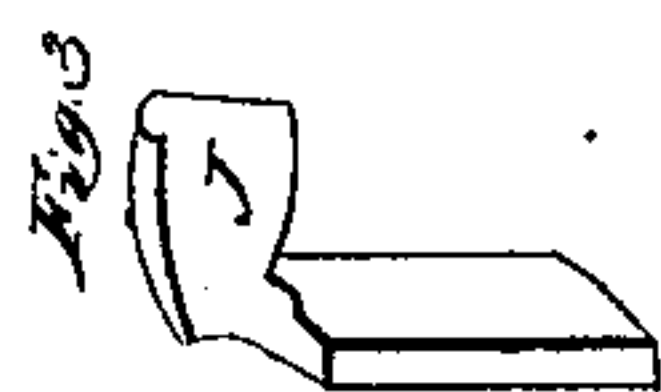
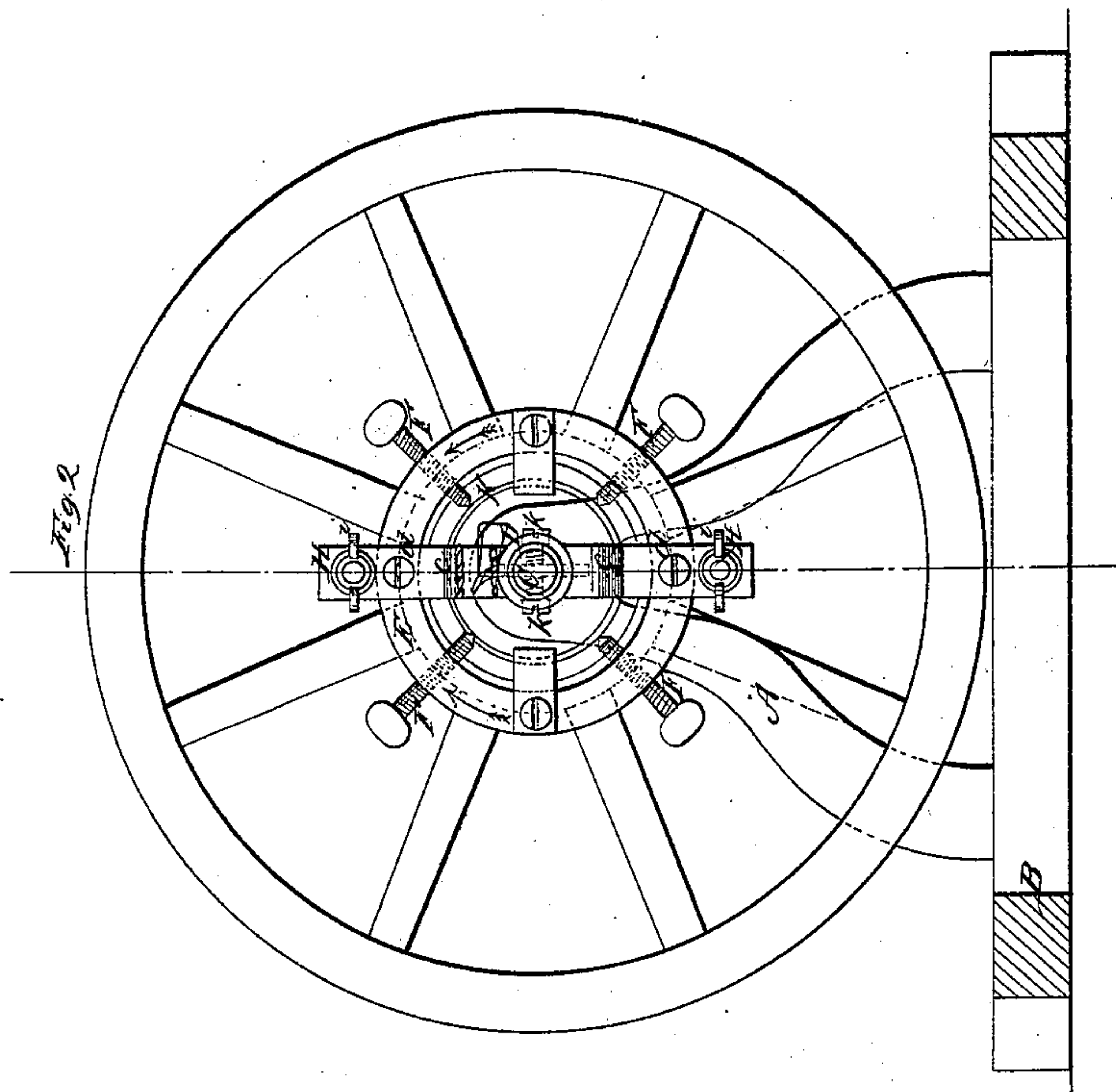


*E. Caswell,*

*Boring Hubbs,*

*Nº 42,075,*

*Patented Mar. 29, 1864.*



*Witnesses*  
*J. W. Coombs*  
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# UNITED STATES PATENT OFFICE.

EZRA CASWELL, OF NEWPORT, MICHIGAN.

## IMPROVEMENT IN MACHINES FOR BORING WAGON-HUBS.

Specification forming part of Letters Patent No. 42,075, dated March 29, 1864.

*To all whom it may concern:*

Be it known that I, EZRA CASWELL, of Newport, in the county of St. Clair and State of Michigan, have invented a new and Improved Machine for Boring Hubs; 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, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, an end sectional view of the same, taken in the line *y y*, Fig. 1; Fig. 3, a detached perspective view of one of the cutters pertaining to the same.

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

This invention relates to a new and improved machine for boring the hubs of wheels for vehicles, in order to adjust the metallic boxes within them; and it consists in the employment or use of a screw rod provided with adjustable knives, and having rotating concentric clamps placed or fitted upon it, and all arranged in such a manner that a very durable, simple, and economical machine is obtained for the purpose specified.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A A represent two supports, which are attached to a suitable base, B. In the upper part of these supports a horizontal rod, C, is fitted, one end, *a*, of which is of square form to prevent the rod from turning. This rod C has a screw, *b*, cut on it, and on this screw *b* a nut, D, is fitted, said nut having two bow-shaped arms, *c c*, attached to it, to which there is secured by screws *d* a ring, E. The ring E has a series of set-screws, F, passing through it at equal distances apart.

G is a ring precisely similar to E, and which is secured by screws *e* to bow-shaped arms *f f*, which are attached at their inner ends to a collar, *g*, the latter being fitted loosely on the rod C. The ring G also has set-screws F passing through it, and the two rings E G are connected by screw-rods H H, which pass through the outer ends of the arms *c c f f*, one end of the said rods being provided with heads *h*, and the opposite ends provided with thumb-nuts *i*.

The rod C has two slots or openings made through it, in which the tangs *j j'* of a knife or cutter, I, are fitted, said slots being suffi-

ciently large to admit of the knife or cutter I being secured in a more or less beveled or diagonal position relatively with the rod C, the knife or cutter being held in position by set-screws *k*.

J, Fig. 3, is a smaller cutter, which is used for enlarging the mandrel-hole of the hub.

The operation is as follows: The hub K, after the wheel is made, is placed on the rod C, which may be raised from its supports A for that purpose, and then adjusted in position. The ends of the hub K are then fitted within the rings E G, and secured concentrically therein by means of the set-screws *k*. The knife or cutter I is not used at first, but the cutter J, which is properly adjusted in one of the holes in the rod C, and secured in such a position as to cut the mandrel-hole of the hub of a diameter equal to that designed for the front edge of the taper hole afterward to be made. When the cutter J is properly adjusted, the hub K is turned and the nut D feeds the hub along until the cutter J reaches the center of the hub. Another cutter, precisely like J, is then fitted in the other hole in the rod C, and the hub K is turned in a reverse direction until the last cutter J enters the enlarged hole made by the first. Shoulders *l* are then made by the cutters J in the ends of the hub. The cutters J are then detached from the rod C, and the knife or cutter I is adjusted to the rod in an oblique position, so as to cut a taper-hole corresponding to the taper form of the boxes which are to be fitted into the hub, and by turning the hub K, the knife or cutter I will cut the hole in the desired taper form.

Thus by this simple arrangement the hub may be bored in taper form to receive the box, and the shoulders formed in the hub at the ends of the taper hole.

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

The screw-rod C, provided with the adjustable and removable cutters I J, in connection with the rings E G, provided with the set-screws F, and connected, respectively, by means of the arms *c c*, nut D, and the arms *f f*, and collar *g*, with the rod C, substantially as and for the purpose herein set forth.

EZRA CASWELL.

Witnesses:

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