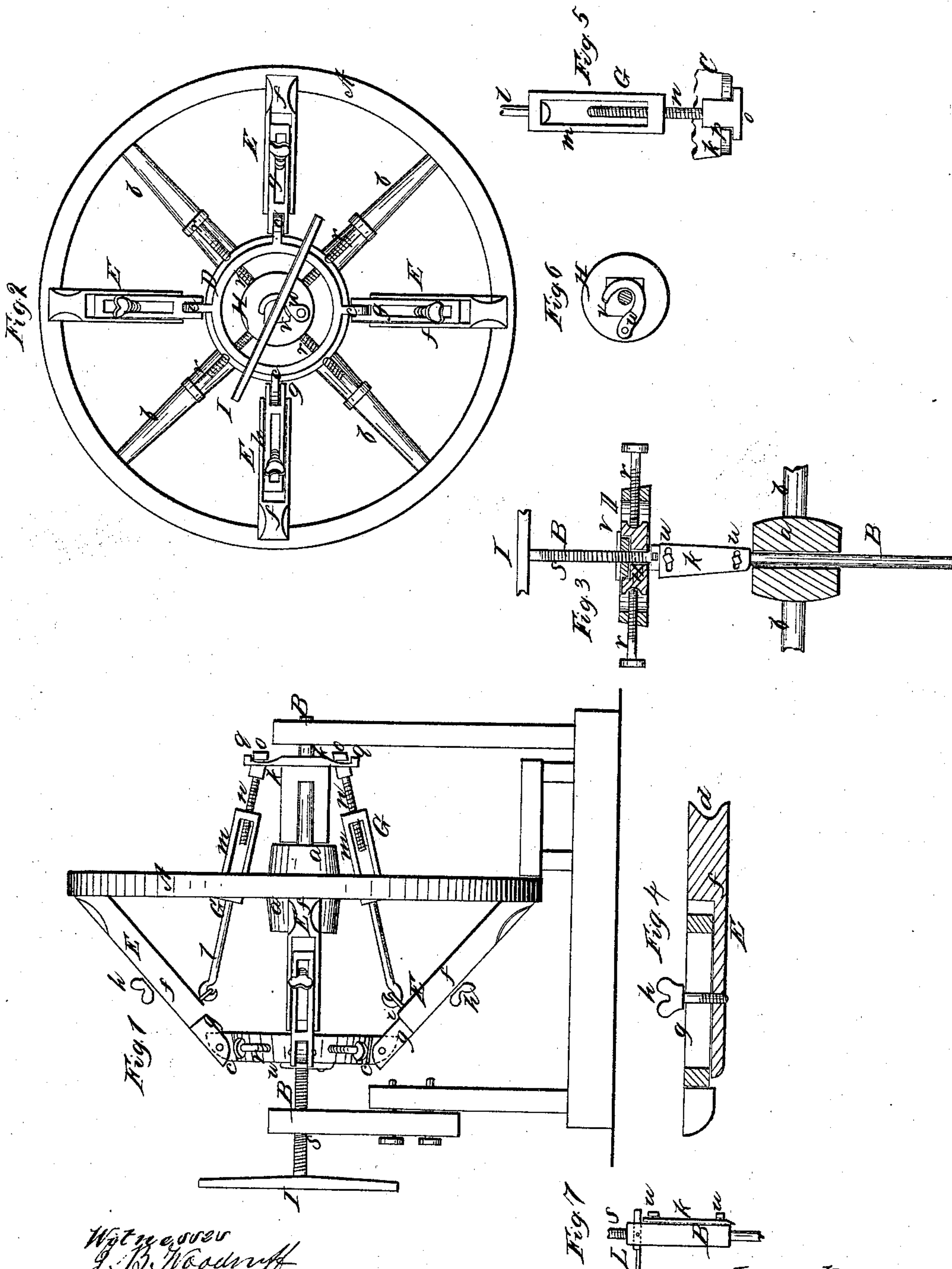


*J. B. Ripsom,
Boring Hubs.*

N^o 39,675.

Patented Aug. 25, 1863.



*Witnesses
J. B. Woodruff
Elihu Fitzgerald*

*Inventor
J. B. Ripsom
By J. Fraser & Co.
Attys*

UNITED STATES PATENT OFFICE.

J. B. RIPSOM, OF EAST KENDALL, NEW YORK.

IMPROVED HUB-MACHINE.

Specification forming part of Letters Patent No. 39,675, dated August 25, 1863.

To all whom it may concern:

Be it known that I, J. B. RIPSOM, of East Kendall, in the county of Orleans and State of New York, have invented certain new and useful Improvements in Machines for Centering and Boring Hubs; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is an elevation of my improved arrangement applied to a wheel, the whole being represented as mounted in a frame for the purpose of centering; Fig. 2, a plan of the same removed from the frame; Figs. 3, 4, 5, 6, and 7, views of parts detached.

Like letters of reference indicate corresponding parts in all the figures.

The design of my improvement is to render the centering of the hub, with the wheel secured thereto, expeditious and easily accomplished, and when thus arranged to bore the conical hole for the reception of the box so truly that little or no wedging of the same is required, and it fits centrally and accurately.

In the drawings, A represents the rim of a wheel, *a* its hub, and *b b* the spokes. A central hole is first bored through the hub, by any ordinary means, of sufficient size to receive a shaft or rod, B, which serves the double purpose of suspending the wheel, together with its apparatus, in a frame, Fig. 1, for centering, and as the operating-shaft of the cutters, as will presently be described. One end of the hub rests against a block, C, which serves as the base of the apparatus. On the opposite side of the wheel, at a suitable distance, is situated a ring, D, or its equivalent, Figs. 1, 2, and 3, provided with three, four, or more lugs, *c c c*, to which are jointed adjusting-bars E E E, diverging as they extend downward, and having suitable notches, *d d*, or some equivalent form, which fit over the edge of the rim of the wheel to brace against the same. These bars are made adjustable, so as to be adapted to wheels of different sizes, and the construction exhibited in Fig. 4 is a convenient one. This consists of a base-piece, *f*, provided with a suitable groove, in which slides a sliding bar, *g*, tightened by a set-screw, *h*, which passes through a longitudinal slot in the sliding bar. By this means the device may be lengthened or shortened at pleasure. Any equivalent ar-

range ment that will secure the same result may be employed. Two of the bars opposite each other have staples *i i*, Fig. 1, secured near their upper ends, into which hook adjustable connections G G, extending downward and connecting with projections *k k* of the block C. These connections consist of three parts—the hook-rod *l*, elongated nut *m*, and screw *n*. The hook-rod forms a swivel-joint with the nut, as shown most clearly in Fig. 5, and the latter turns on the screw, so as to easily adjust the length of the connection. The lower end of the screw-shank is provided with a cross-head, *o*, Figs. 1 and 5, which fits into a notch, *p*, in the end of the projection *k*, so as to retain the parts together. As the angle of the connection G G necessarily changes according to the size of the wheel, to prevent the cross-head being drawn out by reason of the inclination, I provide the projections *k k* with shoulders *q q*, against which the cross-heads rest. By means of this arrangement it is manifest that the wheel is firmly clamped in place by resting against the block C on one side and by the pressure of the adjusting-bars E E on the other, and that the arrangement is equally adapted to large or small wheels. The means employed is very simple, convenient, not liable to disarrangement, and easily adjusted. Within the ring D is situated an independent center, H, Figs. 2, 3, and 6, which forms the bearing of the shaft B. This center is connected with the ring by means of three, four, or more screws, *r r r*, or equivalent, which pass through the ring and adjust against the center, holding it in place firmly. By this means it is obvious that the center H may be adjusted exactly as desired, either to one side or another relatively with the ring, and consequently, as the wheel is connected with the ring alone, and the shaft with the center, the position of the wheel and the shaft (which latter is the axis on which it turns when suspended, as in Fig. 1) can be adjusted so that the rod will pass directly through the center of the hub. Any test of the true position of the wheel when centered may be employed, a convenient one being a block, (shown by red lines at *t*, Fig. 1,) which just touches the rim of the wheel. If the wheel is true, the rim when revolved will touch the block all the way around. By the employment of this arrangement I am enabled to center the wheel truly preparatory to boring, so that the

latter action can be accomplished quickly and exactly. Just above the hub the shaft is provided with a cutter, K, Figs. 3 and 7, of sufficient length to correspond with that of the largest-sized hub to be bored. This cutter is attached to the shaft by means of tightening-screws *uu* at opposite ends, which pass through slots in the cutter, by which means the latter can be adjusted forward or backward to any suitable degree. By adjusting the edge of the cutter at an angle, as represented, it is apparent that it will cut a conical hole in the hub as it is fed down. Above this cutter is situated a small knife, L, whose position is at right angles to the first, and whose office is to cut the opening forming the shoulder at the end of the hub. By adjusting this out or in it is adapted to cutting an opening of a greater or less diameter. The upper end of the shaft is provided with a handle, I, for operating, and is also cut with a screw-thread, *s*, for feeding the cutters to the work; but this screw-thread, instead of acting in the cutter H itself, acts in a removable nut, *v*, Figs. 2, 3, and 6, which fits in a suitable bed in the center, and is held down by a pivoted button or catch, *w*, or any convenient arrangement. When desirable to remove chips, or when the hub is bored entire, by turning the button from over the nut the latter is freed and the cutters may be drawn out without impediment of any kind. This arrangement is very convenient, as by its use the cutters may be withdrawn at any time without the trouble and delay of turning back the shaft.

This machine is very convenient and effective for centering and boring wheels, and saves all the trouble and difficulty of fitting the

boxes in place and wedging them that is usually experienced when the hole is not bored true.

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

1. Clamping and sustaining the wheel in place by means of the adjustable bars E, connected with the ring D or its equivalent, the adjustable connections G, and the block C, arranged, combined, and operating substantially as herein set forth.

2. In combination with the connections G, arranged as described, and the block C, the projections *k k*, provided with notches *p p* and shoulders *q q*, and the cross-heads *o o* of the screw-shanks, for the purpose of retaining said connections in place at any inclination, substantially as herein specified.

3. The combination of the ring D, independent center H, and adjusting-screws *r r r* or equivalent, relatively to the shaft B and the wheel, for the purpose of perfectly centering the latter, substantially as herein described.

4. In combination with the screw-shaft B, provided with cutters K L and the center H, the removable nut *v*, for the purpose of easily removing the cutters from the bore, substantially as herein set forth.

5. The special arrangement and combination of the whole machine, as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

J. B. RIPSOM.

Witnesses:

SUMNER AUSTIN,
OROMEL H. BALL.