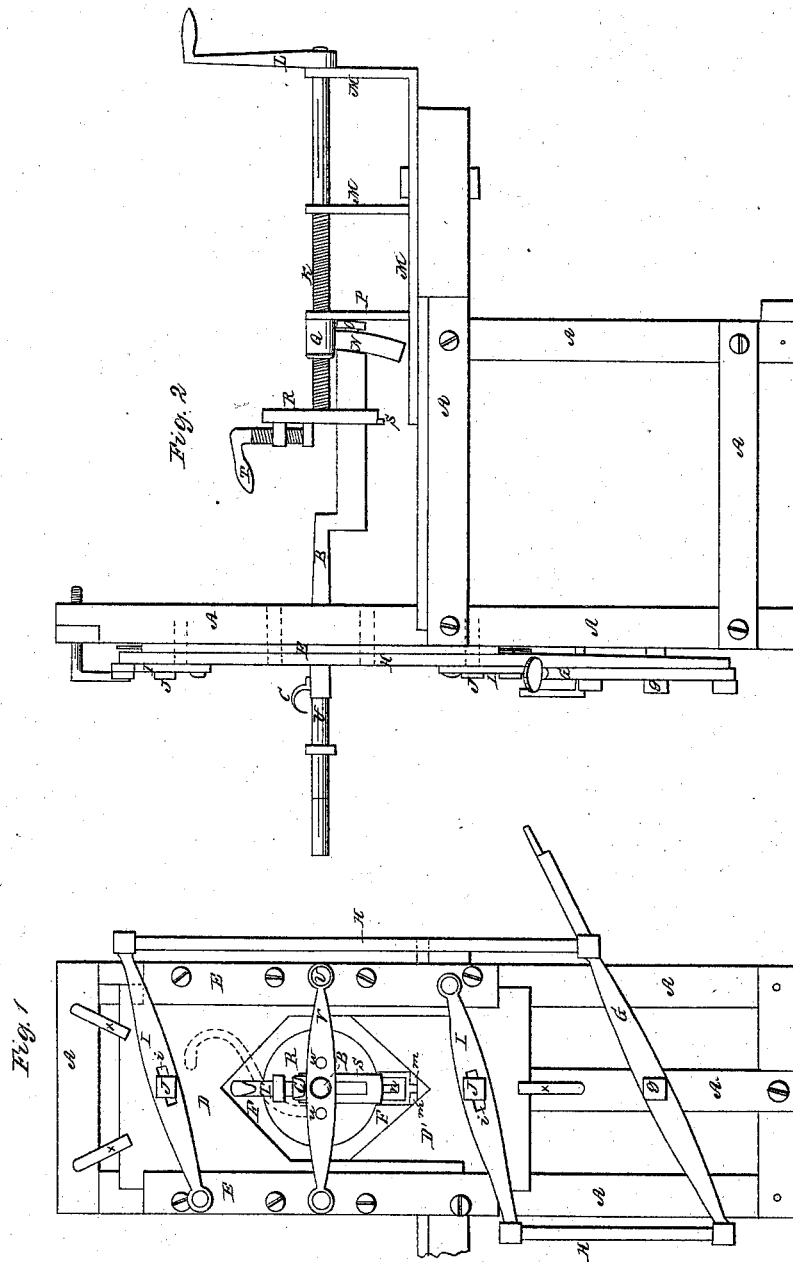


L. Mason,
Boring Hubs,

Nº 54,750,

Patented May 15, 1866.



Witnesses;
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LAWRENCE MASON, OF TURIN, NEW YORK.

IMPROVEMENT IN MACHINES FOR BORING WAGON-HUBS.

Specification forming part of Letters Patent No. 54,750, dated May 15, 1866.

To all whom it may concern:

Be it known that I, LAWRENCE MASON, of Turin, in the county of Lewis and State of New York, have invented a new and useful Improvement in Machines for Boring Wheel-Hubs; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made a part of this specification, and in which—

Figure 1 is a front and elevation of my improved machine, and Fig. 2 is a side elevation of the same.

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

This invention consists in a novel combination of devices for centering the hub during the process of boring it out for the reception of the journal-box; and it also consists in a peculiar arrangement for adjusting the revolving cutter so as to adapt it to bore out the hub on any desired bevel or taper.

In order that the others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe it in detail in connection with the accompanying drawings.

A represents the frame which supports the various operating parts of the machine. B is a revolving shaft which carries a curved cutter, C, and revolves within the center of the hub when the latter is fixed in position to be operated upon.

D D' are sliding plates confined within the guideways E E, which are fixed to the upright portion of the frame A. In the plates D D' are cut angular openings F F', the edges of which are adapted to clamp or embrace the periphery of the hub in such a way as to retain its center coincident with the axis of the revolving shaft B while the hub is submitted to the action of the revolving cutter C.

The clamping-plates D D' are adjusted toward and away from the center of the shaft B by means of the lever G, one end of which forms a treadle to be held down by the foot when the hub is clamped between the plates D D'. This lever turns upon a pivot, G, and is connected to the plates D D' through the medium of the rods H H and the cross-bars I I, the rods and bars being jointed together

and to the lever at their extremities. The bars I I are slotted at *i i* to permit a limited degree of lateral movement upon the studs J J, whereby they are attached to plates D D'.

The cutter bearing-shaft is moved in the direction of its length and at the same time rotated by means of the threaded arbor K, which is turned by means of the crank-handle L. (See Fig. 2.) The arbor K has its bearing in the frame M and carries a revolving dog, N, which has a longitudinal slot, *n*, Fig. 1, to receive the end of the flattened portion of the shaft B, the shaft B and dog N being connected and caused to move together by means of the nut O. During the rotation of the arbor K the dog N is made to traverse the same longitudinally by the downwardly-projecting arm P and the collar Q, said arm P being prevented from rotating with the shaft by having its lower end fitted in a guiding-slot, *m*, in the base of the frame M. On the inner end of the arbor K is keyed a disk, R, (see Fig. 1,) which is formed with a dovetailed groove, in which is fitted a slotted plate, S, through which the shaft B extends.

The plate S may be adjusted within the disk R by means of the screw-crank T, and thus the shaft B, together with the cutter C, may be made to stand at any angle with the center of the hub, so as to give any desired bevel or taper to the box-seat which the cutter forms therein. The shaft B is revolved with the disk R and plate S.

U U are arms projecting from the upright portion of the frame A and employed to support the removable bar V, the center of which has an aperture which affords a bearing for the shaft B, as shown in Fig. 1. At each side of this central bearing in the bar V is an aperture, and through these apertures keys or wedges W W may be driven into the hub, thus forming an additional means for preventing the wheel-hub from turning while being acted upon by the cutter C.

X X X are hooked-shaped clamps, which assist in centering and retaining the hub in position by confining the rim when the same is applied before the hub is to be treated.

The functions of the several parts have been incidentally referred to in the course of the above description, so that a brief description will suffice to explain the operation.

In placing the hub in position to be acted upon the bar V is first removed, the cutter bearing-shaft B is retracted, and plates D D' adjusted by elevating the lever G, so as to enlarge the opening F F' to permit the hub to be inserted between the contiguous angular clamping-faces of said plates. This having been done, the hub is slid upon the shaft B and between the plates D D', which are now brought together by depressing the lever G, so as to clamp the hub immovably between said plates and at the same time center the hub so as to make it coincident with the axis of the shaft B. The bar V is then applied and the keys W W may be driven into the hub. The foot is placed upon the treadle end of the lever to hold the clamping-plates firmly in position. The shaft B is now advanced and rotated by turning the handle L, and the cutter C enters the opening in the hub, and by revolving and advancing therein cuts out a seat of the proper shape to receive the journal-box. As soon as this boring operation is finished the motion of the handle L is reversed, the knife recedes from the hub, the bar V is removed with the

keys W, the lever G is raised. The hub thus finished and released is removed from the machine.

By the adjustment of the shaft B the cutter C may be made to cut both ways—that is to say, in entering and leaving the hub.

Having thus described my invention, the following is what I claim as new herein and desire to secure by Letters Patent:

1. The arrangement in the hub-boring machine of the adjustable cutter-mandrel B, with its plate S and set-screw T, and the clamping and centering plates D D', with their triangular openings F F', constructed and operated as described.

2. The combination and arrangement of the frame M, arbor K, slotted dog N, arm P, collar Q, disk R, shafts B, and adjustable plates D D', substantially as and for the purpose described.

LAWRENCE MASON.

Witnesses:

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