

Machines for Turning Wheels.

Patented September 16, 1873.

Fig. 1.

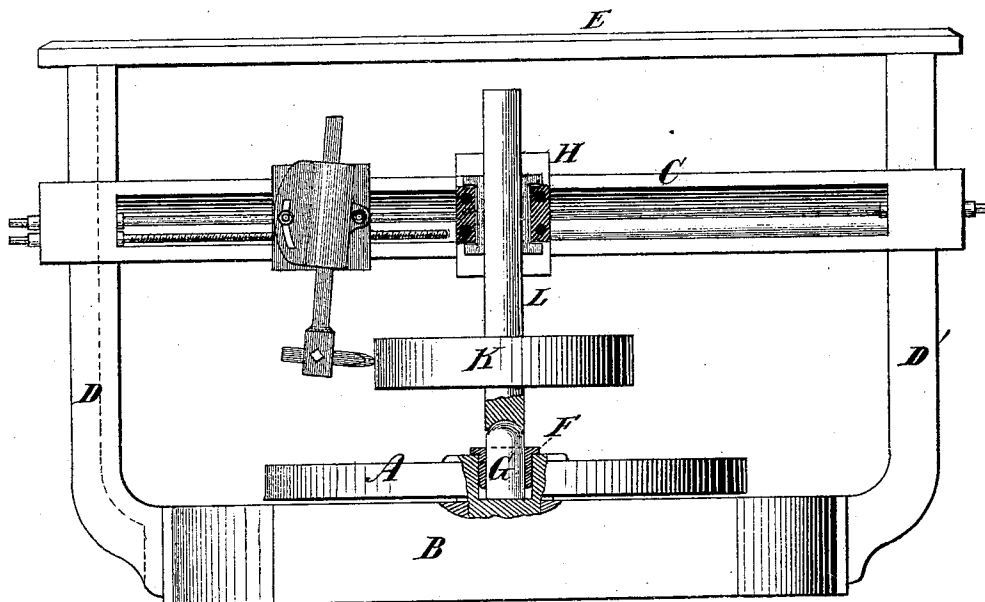
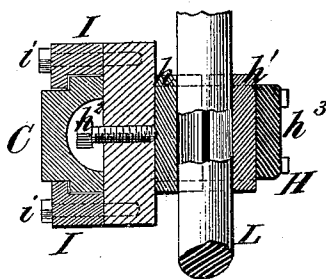


Fig. 2.



Witnesses.
A. Ruppert.
H. E. Dinn

John H. Hill
Inventor,
per C. C. & J. E. C. Co.
his Atty

UNITED STATES PATENT OFFICE

JOHN W. HILL, OF DAYTON, OHIO, ASSIGNOR TO HIMSELF AND CHRISTIAN HERCHELRODE.

IMPROVEMENT IN MACHINES FOR TURNING WHEELS.

Specification forming part of Letters Patent No. 142,912, dated September 16, 1873; application filed August 20, 1873.

To all whom it may concern:

Be it known that I, JOHN W. HILL, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Boring-Mills; 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.

The boring and turning mills now generally employed for turning turbine water-wheels compel the machinist to chuck the wheel on the face-plate of the mill and turn it to fit the case or curb before it is keyed on its shaft. By this method it is next to impossible to get the united wheel and shaft concentric with each other, so that the wheel can turn true in its curb. This is, however, of great practical importance, and my invention is designed to supply the means of turning a turbine water-wheel after it has been keyed on its shaft, and in such a manner that it must of necessity be turned concentric therewith. To this end my improvement consists in the employment, in combination with a center attached to the face-plate of the boring-mill, of an adjustable bearing, fastened to the rail on which the tool-stocks travel, plumb above the center, so that the united wheel and shaft can be readily centered on the mill by centering the shaft on the face-plate center and supporting it in the bearing overhead. In consequence of the use of a bearing for the support of the upper end of the shaft the length of the latter can offer no impediment to its proper mounting.

Figure 1 of the annexed drawings is a sectional front elevation of a boring and turning mill with my improvement attached. Fig. 2 represents on an enlarged scale the bearing for the support of the upper end of the wheel-shaft, and the manner of connecting its parts to the sliding rail.

The same letters of reference are used in both figures in the designation of identical parts.

The face-plate A is mounted on the bed-plate B of the boring-mill in the usual manner, and driven by belt or gearing. The rail C, on which the tool-stocks travel, is arranged to slide vertically on the guides D and D' of the frame, which are connected at the top by the stringer E. The face-plate has a central aperture in which a thimble or bush, F, is inserted to receive a suitable center, G. A bearing, H, is fixed on the rail C plumb above this center, by means of L-shaped irons I, which, hooking over the rail, are screwed to the base of the bearing by bolts *i*, in the manner clearly shown in Fig. 2. The journal-boxes *h* and *h*¹ of the bearing are, after adjustment by the screw *h*² and the insertion of the wheel-shaft, secured by the cap *h*³. The wheel K, having been bored, is keyed on its shaft L, previously turned, and the united wheel and shaft are centered on the mill by setting the lower centered end of the shaft on the center G of the face-plate, and placing the upper end of the shaft laterally in the bearing H. The wheel-shaft thus serves virtually as a mandrel, and the wheel must of necessity be turned concentric with it.

Various sizes of journal-boxes will be provided for each bearing to fit shafts of different diameters.

The wheel and shaft, after having been centered on the mill, can be made fast to the face plate, and driven by any suitable dog.

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

The face-plate A and rail C of a boring and turning mill, in combination with a center, G, and bearing H, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of August, 1873.

JOHN W. HILL.

Witnesses:

C. HERCHELRODE,
O. P. RUSSELL.