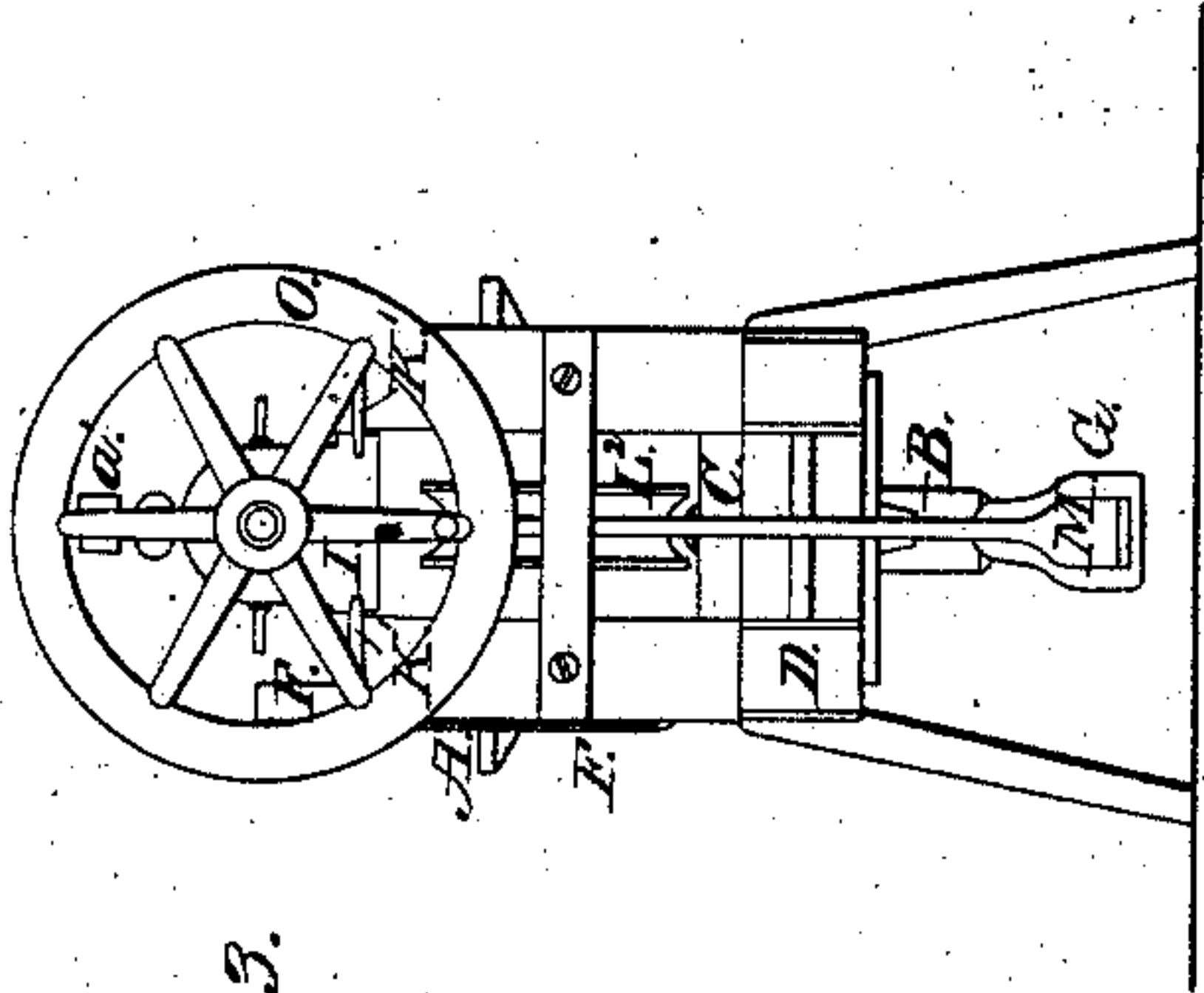


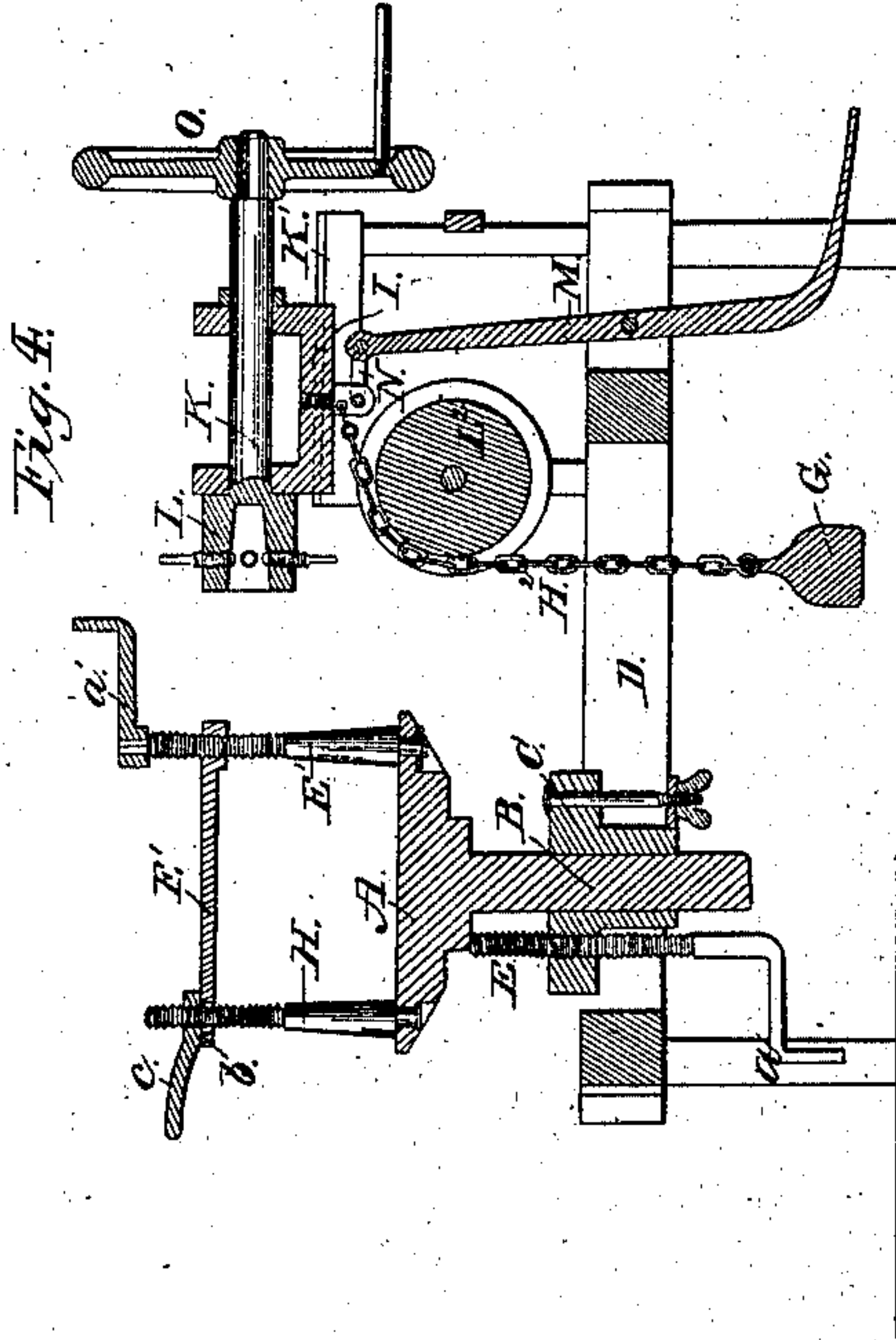
*J. Wharff,  
Boring Wheel Hubs.*

*No 78,246.*

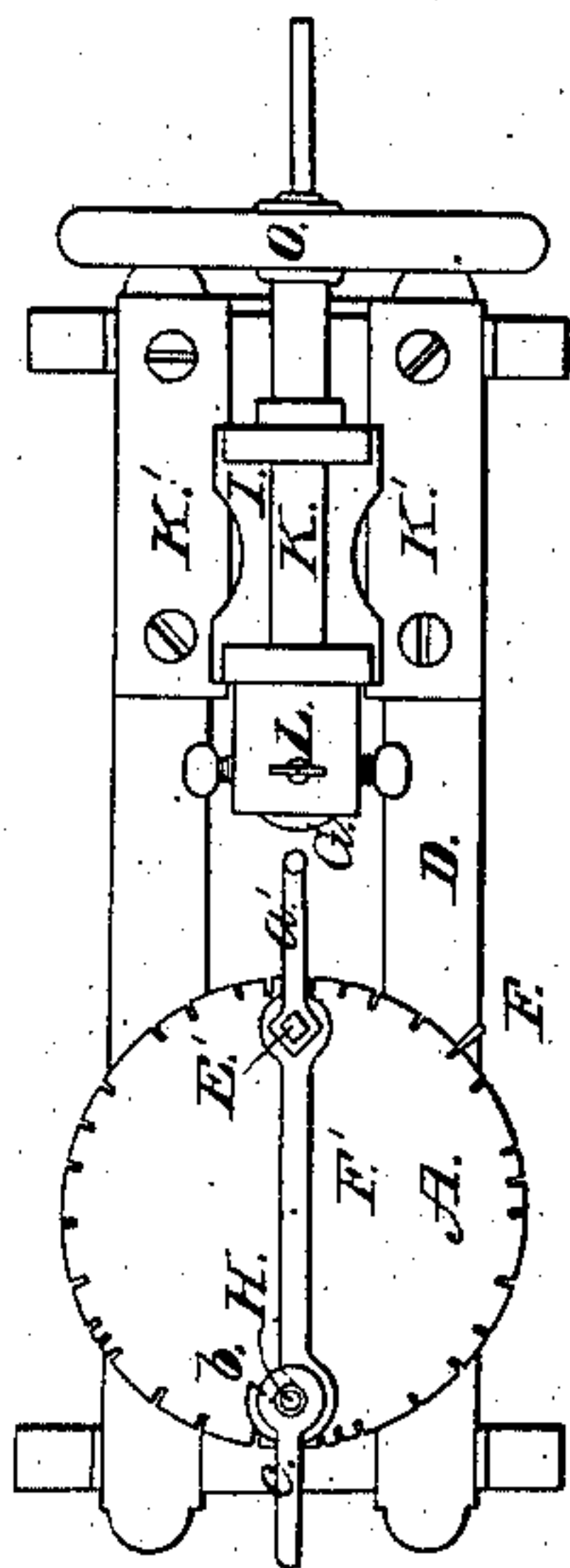
*Patented May 26, 1868.*



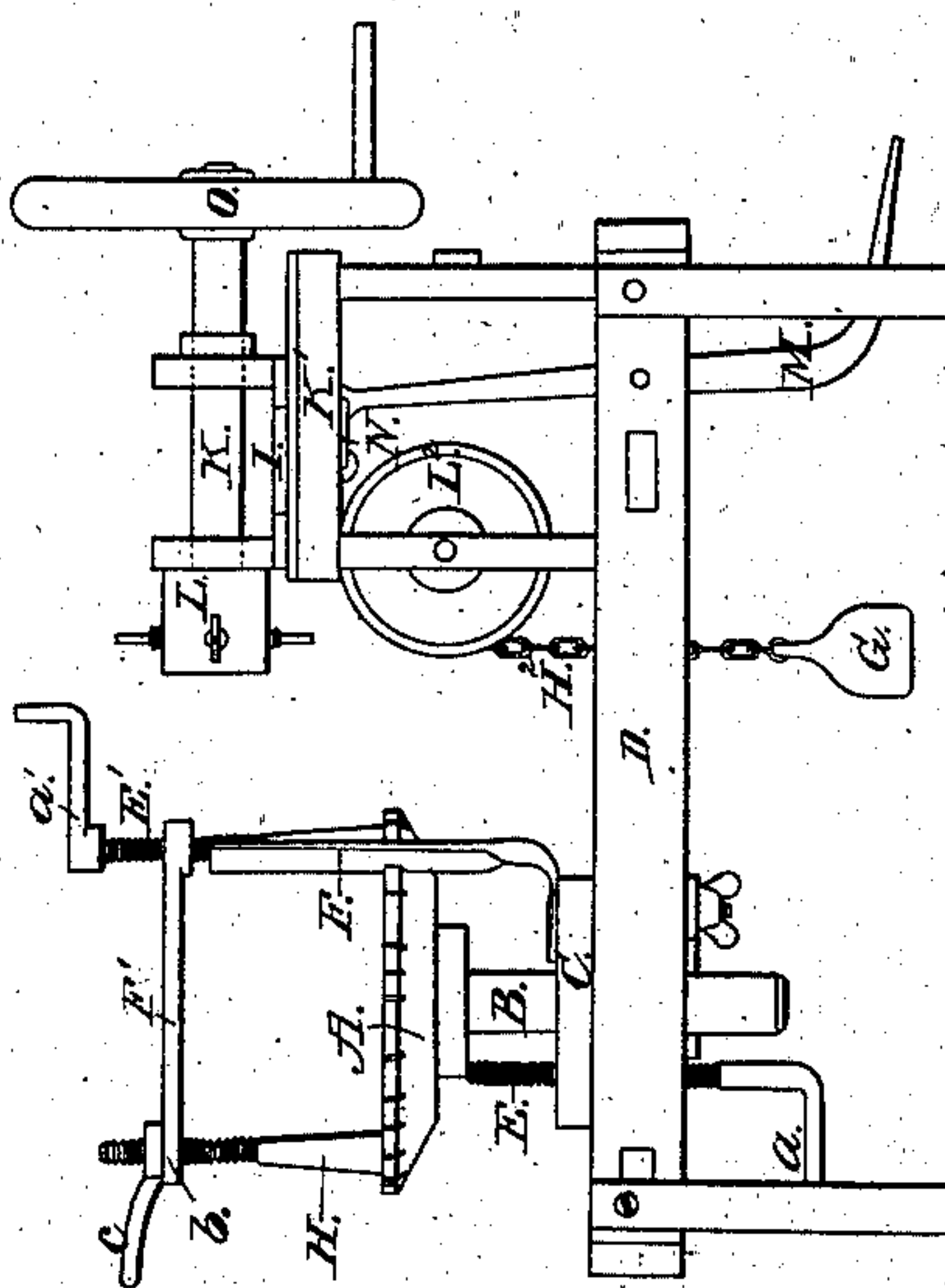
*Fig. 3.*



*Fig. 4.*



*Fig. 1.*



*Fig. 2.*

*Witnesses:*

*L. R. Piper  
J. B. Snow.*

*Inventor:*

*Joseph Wharff.  
by his attorney  
R. H. Ledy*

# United States Patent Office.

JOSEPH WHARFF, OF BANGOR, MAINE.

*Letters Patent No. 78,246, dated May 26, 1868.*

## IMPROVEMENT IN MACHINES FOR BORING HUBS FOR WAGON-WHEELS.

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

TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that I, JOSEPH WHARFF, of Bangor, in the county of Penobscot, and State of Maine, have invented a new and useful Improvement in Machines for Boring a Wheel-Hub and Tenoning the Spokes thereof; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view,

Figure 2 a front elevation,

Figure 3 an end elevation,

Figure 4 a vertical and longitudinal section of it.

In such drawings, A denotes a rotary disk or platform, mounted on a vertical shaft, B, which slides freely up and down within the platform C, extending across, and being supported by a frame, D. A screw, E, screws into and through the platform C, and is provided with a crank, *a*, and is employed to effect the elevation of the disk A. There is also attached to the platform C a spring-catch, F, in the form of a knife, or as represented. This catch engages with or is to be inserted in either of a series of notches made in the periphery of the disk A, the same being to hold the disk in different positions as occasion may require.

A screw, E', projects upward from the disk A, and is so applied thereto as to be capable of being revolved within it by means of a crank, *a'*, fixed to the upper end of the disk. The said screw goes or is screwed through a cross-bar, F', which is provided with a hook, *b*, to hook upon another screw, H, projecting upward from the disk, and having a lever-nut, *c*, screwed upon it, the whole being as represented.

Near the rotary disk A is a puppet-head, I, which supports a mandrel, K, provided with a socketed clamp, L, for holding either a boring-tool, or auger, or a cutter for forming cylindrical tenons.

A cranked wheel, *o*, fixed on the outer end of the mandrel, serves to enable a person to revolve the mandrel.

A weight, G, suspended from a chain, H<sup>2</sup>, attached to the puppet I, serves to effect the advance of the said puppet on the part K' of the frame D, such chain, H<sup>2</sup>, being carried around a pulley, L<sup>2</sup>, arranged as represented.

A foot-treadle lever, M, arranged in manner as represented, and connected with the puppet by means of a link, N, answers to enable a person to retract the puppet I on its supporter K'.

When a wheel-hub is to be bored for reception of the spokes, it is to be laid centrally on the platform A, and should be confined thereto by means of the bar F' and the two screws E' and H, the boring-tool being fixed in the head L of the shaft K. Such shaft, on being put in revolution, so as to cause the boring-tool to revolve against the wheel-hub, will be advanced by the action of the weight G. After the holes for reception of the spokes may have been bored in the hub, the spokes may be inserted within it, and subsequently have their fellow-tenons formed on their outer ends by means of the cutter-head of the shaft K.

I make no claim to the mechanism for holding a wheel-hub, as represented in the patent, No. 35,015. My mechanism for such purpose contains what is not found in the former, viz, a means of elevating and depressing the bar F' to adjust it to hubs of different lengths. I also have a hooked bar, which screws directly upon its elevating and depressing-screw E'. In consequence of the hook, the bar may be turned around laterally on and be supported by its screw, so as to bring it either into or out of engagement with the screw H and its clamp-nut *c*.

I therefore claim my improved arrangement and application of the hooked bar F', the screws E' H, and the lever-nut *c*, with respect to each other.

JOSEPH WHARFF.

Witnesses:

R. H. EDDY,

SAMUEL N. PIPER.