

Metallic Hub.

Patented June 30, 1868.

Fig. I.

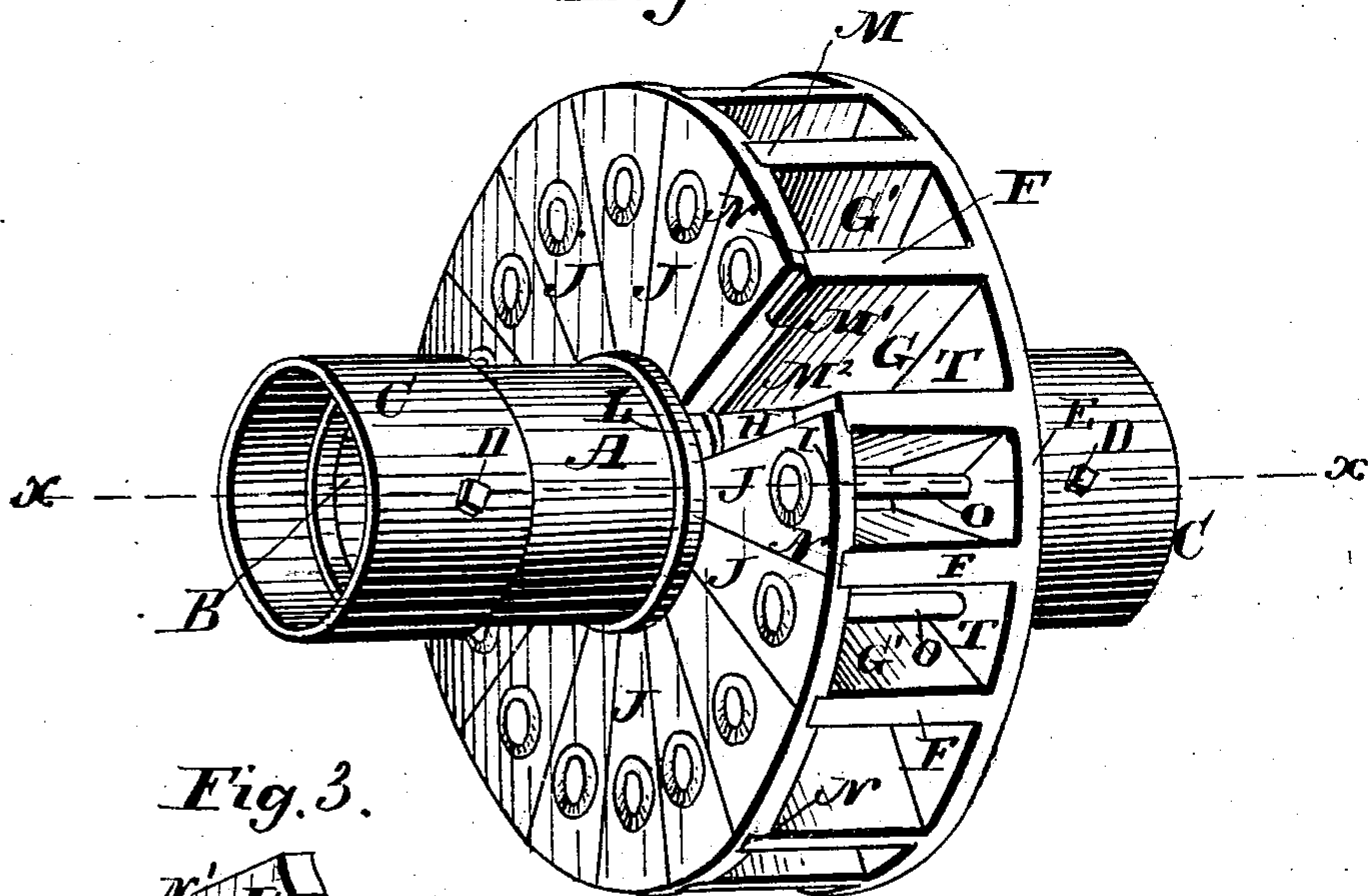


Fig. 3.

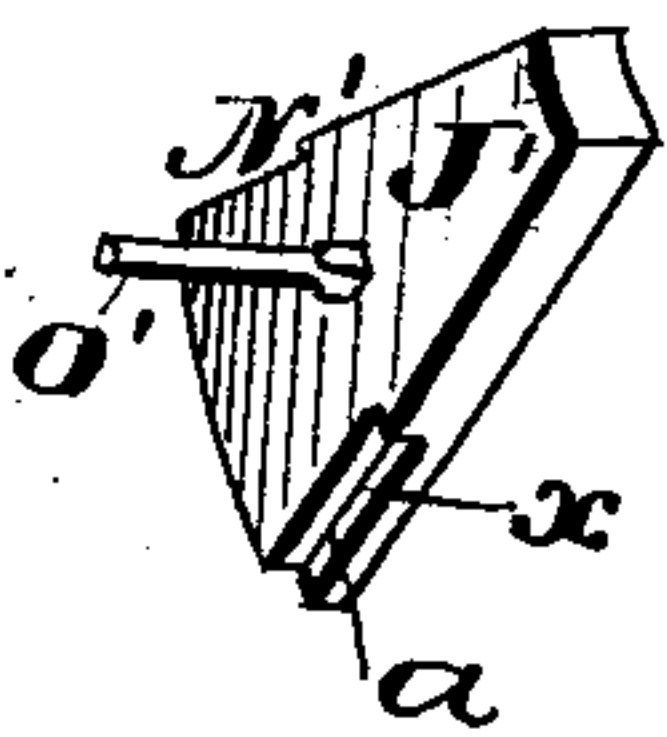
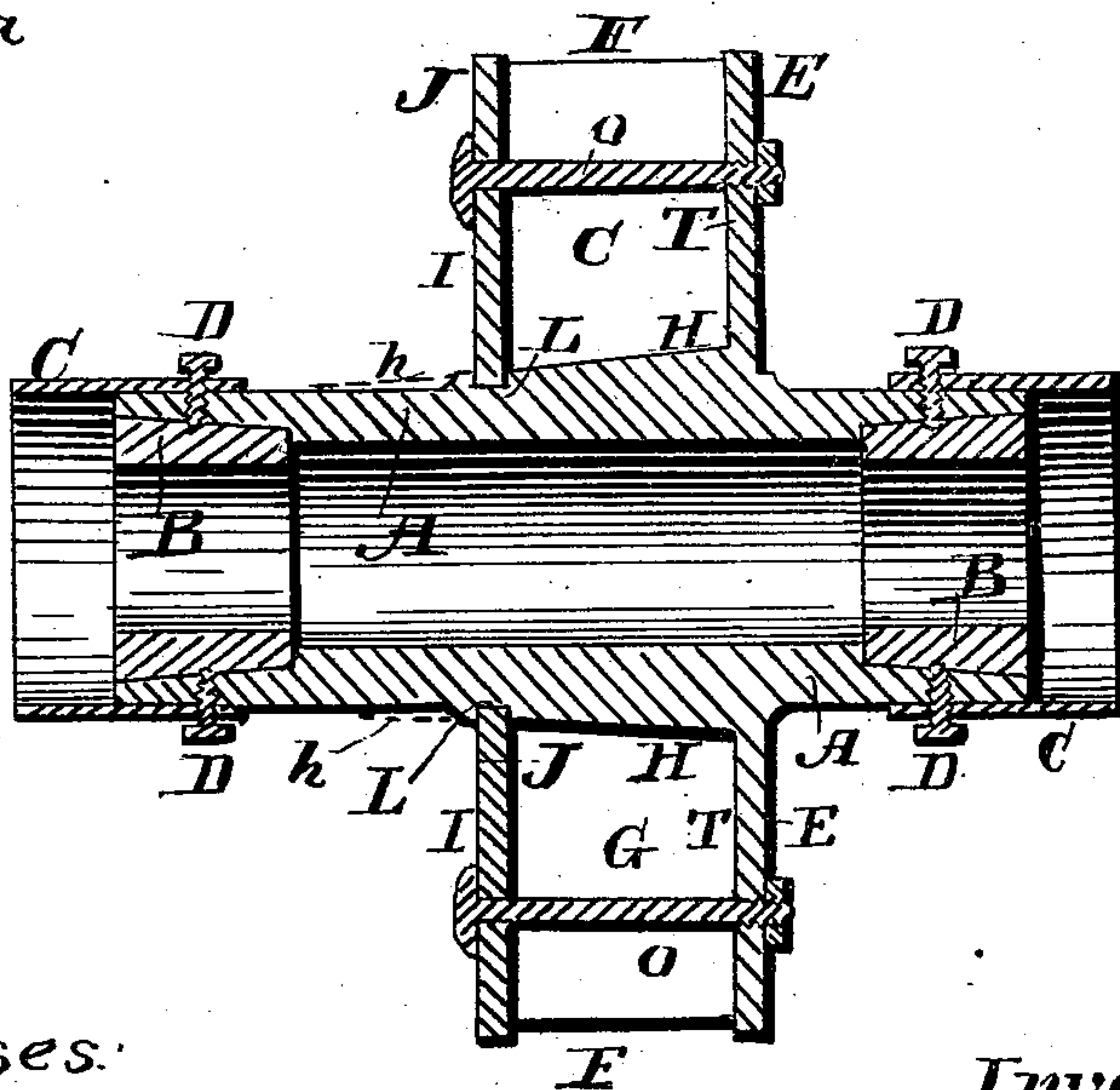


Fig. 2.



Inventor:

Geo. Cliphant

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Letters Patent No. 79,496, dated June 30, 1868.

IMPROVEMENT IN METALLIC HUBS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN OLIPHANT, of Springhill Furnace, Fayette county, and State of Pennsylvania, have invented a new and useful Improvement in Metallic Hubs for Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, and the letters of reference marked thereon, in which—

Figure 1 is a perspective view of the hub.

Figure 2, a longitudinal section through the line $x x$ of fig. 1.

Figure 3 is a perspective view of one of the sections removed from fig. 1.

Like letters refer to like parts in all the figures.

The nature of my invention consists in constructing metallic hubs in such a manner that one or more of the spokes may be removed from the wheel, when broken or injured, and replaced by new ones, in as perfect and substantial a manner as by the usual method, without removing the tire or felloes or displacing any of the other spokes, and also in applying to the hub removable boxes, which may be driven from the hub and their places supplied with new ones, when the old boxes are badly worn.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the tube or body of the hub; B B are the boxes which provide bearings for the axle, and being made separate from the tube A, can be removed when they become worn, and replaced by new ones, the outer surface of the boxes B B being made conical, so as to provide means of their being driven in the tube A in a rigid and secure manner.

C C are mud-bands, which are heated and shrunk on the tube A, which strengthen it and protect it from being broken, either by the driving in of the boxes B B or from other causes.

D D are bolts, which pass through the mud-bands C C, the tube A, and into the boxes B B, and prevent the mud-bands and boxes from working loose.

E is a flange, with the radial partitions F F F cast or welded on the tube A.

T T are bevels on the flange E, to give the wheel the proper dish.

G G G are spaces for the spokes, the bottoms, H H, of which are bevelled, to force the spokes from the centre of the hub.

I is a disk divided into sectors, J J J', forming a cap for each spoke, which are securely bound in the hub by the caps J J J', being retained immovable in their places by the annular groove L in the tube A, the projections M M' M² fitting into the recesses N N¹ N² in the caps J J J', and the bolts O O O' passing through the caps J J J', the spokes and the flange E binding the whole firmly together.

Should it become necessary to remove a spoke from the wheel, unscrew the nut or one of the bolts O' which passes through the spoke to be taken out, and the bolt, and one of the caps J' through which the bolt passes, can easily be removed, as shown in fig. 3. The spoke is then driven from the hub and detached from the felloe. The new spoke can then be placed in the wheel, by first inserting the tenon or the small end of the spoke into the mortise in the felloe, and driving the hub-end of the spoke into one of the spaces G in the hub, the bevel H forcing the spoke out firmly against the felloe, which also tightens the tire. Should the bevels H H be insufficient to force the spokes out the desired distance, their inclination can be increased, and the bevels extended on the tube A, as shown in red outline at $n n$ in fig. 2, till the required distance is obtained. The hole through which bolt O' is to pass is now bored through the spoke, and the cap J' is replaced, by first inserting the smaller end in the groove L, and passing the bolt O' through cap J', the spoke, and flange E. The nut is now screwed on the bolt O', and the spoke is securely bound in the wheel, the cap J' being retained immovable in its place by the groove L, projections M M', and the bolt O'.

This device has been used and thoroughly tested by the inventor on furnace-wagons, which are required to withstand the roughest usage, and after six or eight months' constant use, are in as good condition as when first put together, thus proving them to be a most useful and valuable invention. A great advantage, in addition to

their strength and durability, is the facility with which they are repaired by any one having the slightest mechanical knowledge, thus rendering the expense and trouble incurred by having the wheel taken apart and repaired by a regular mechanic unnecessary.

Having thus described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the disk I, divided into the sectors or caps J J J', the annular groove L, the projections M M¹ M², and the recesses N N¹ N², as and for the purpose set forth.
2. The bevels H H and T T, as and for the purpose set forth.
3. The combination of the boxes B B, tube A, mud-bands C C, and screws D D, substantially as and for the purpose specified.

JNO. OLIPHANT.

Witnesses:

MARSHALL N. LEWIS,
CHAS. H. RUSH.