

J. M. WHITING.

Carriage Hub.

No. 93,259.

Patented Aug. 3, 1869.

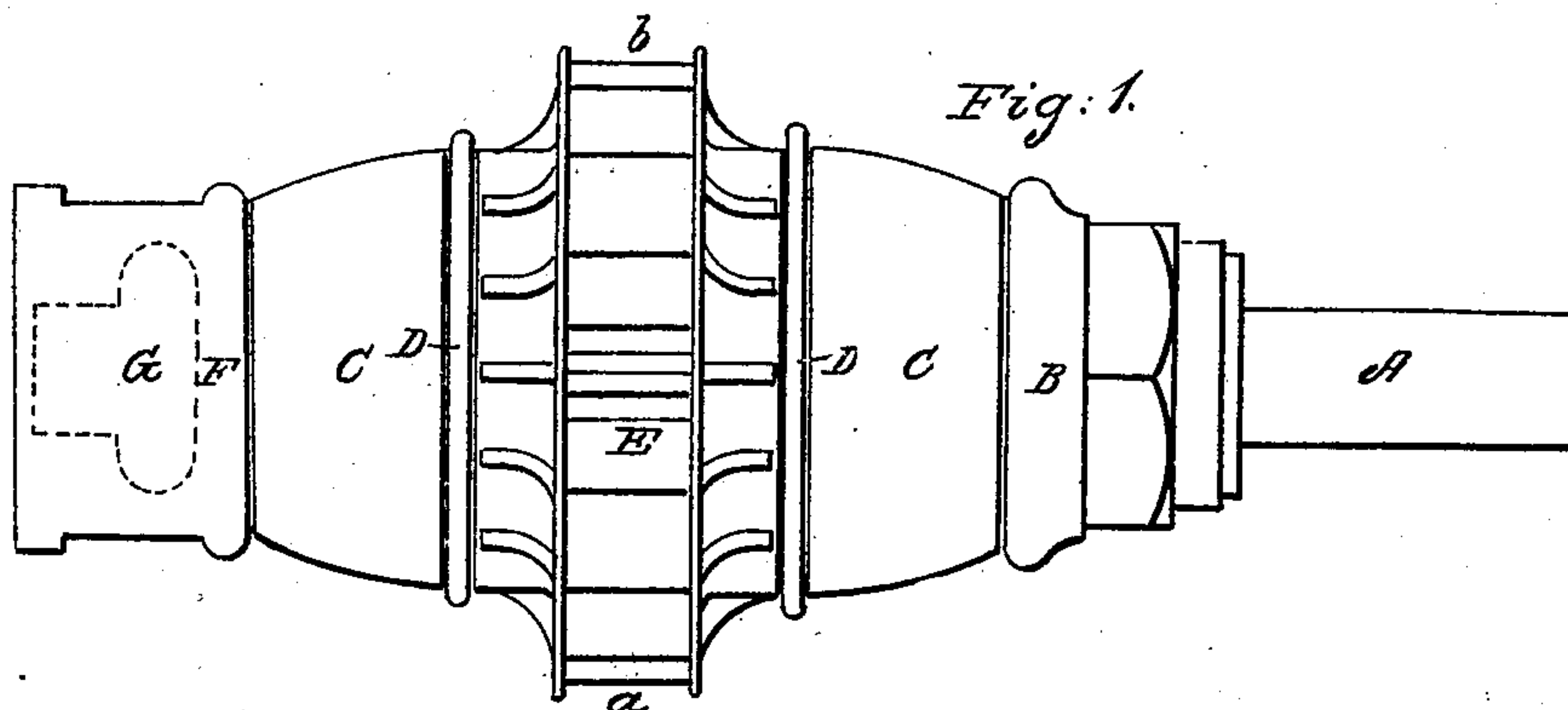


Fig. 2.

Fig. 3.

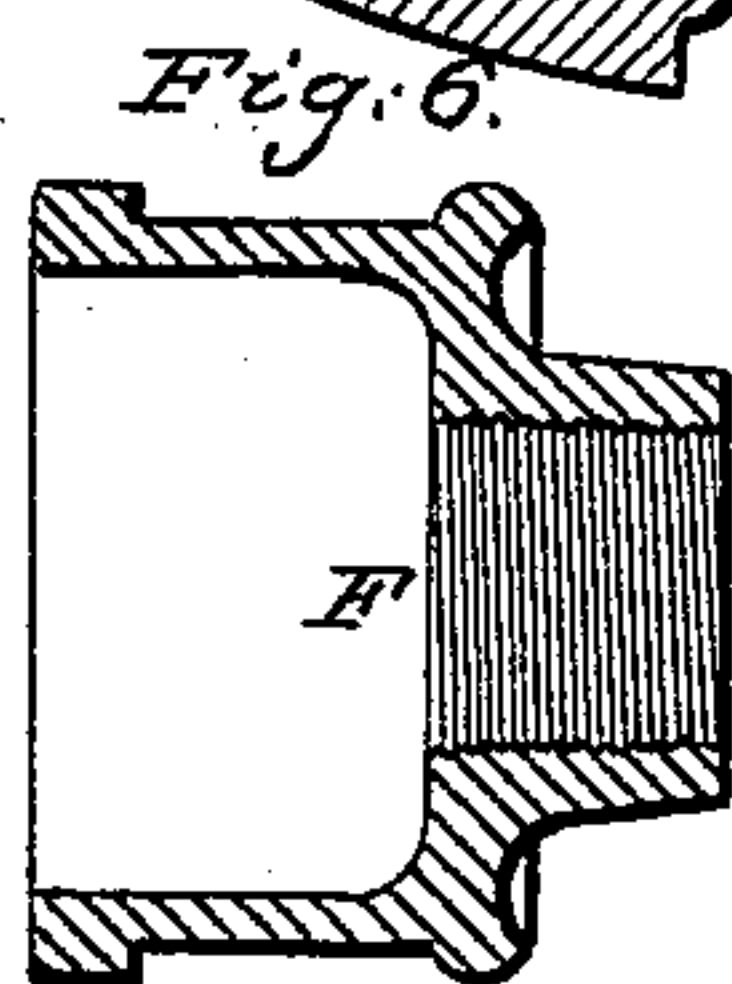
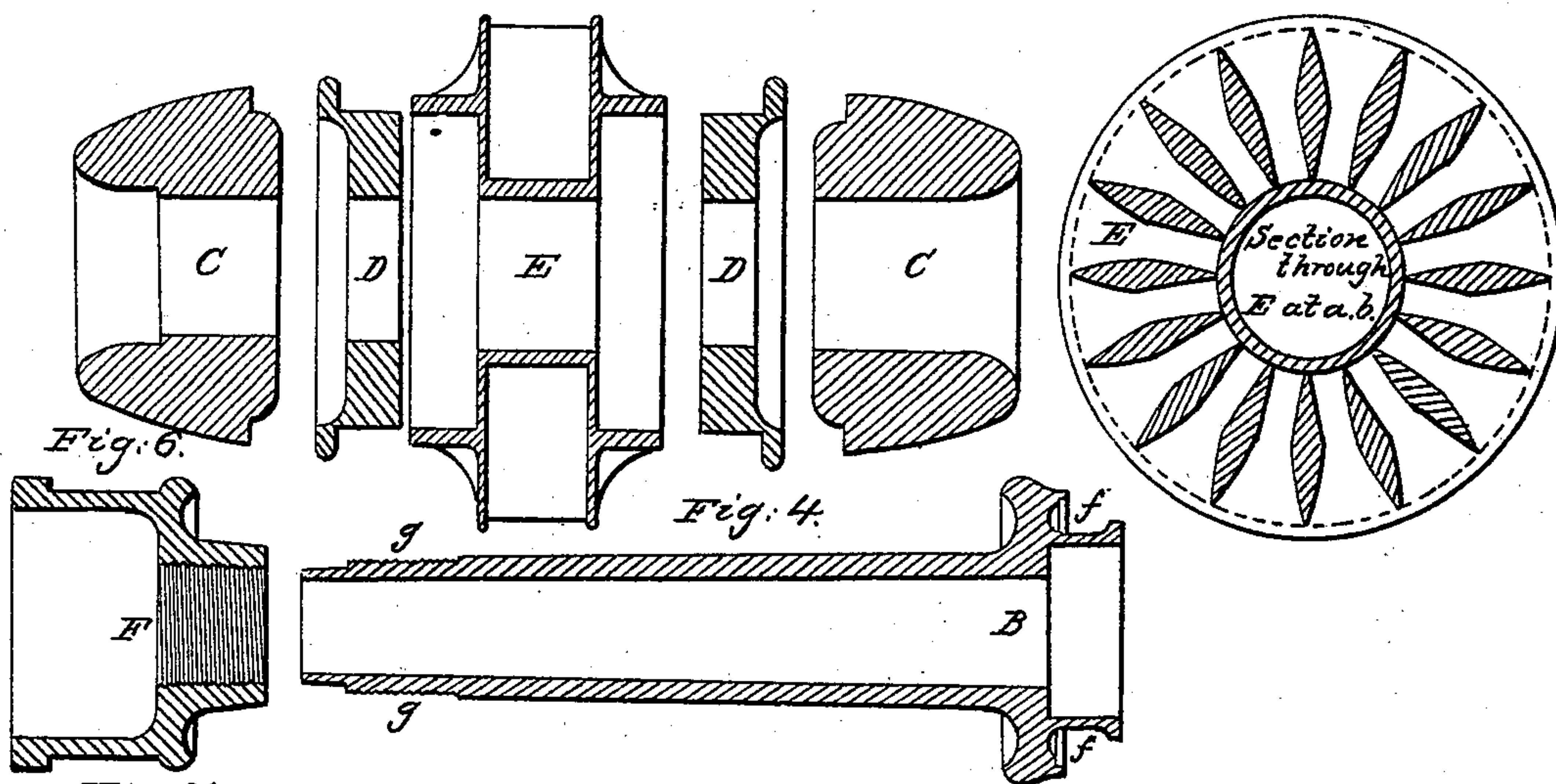
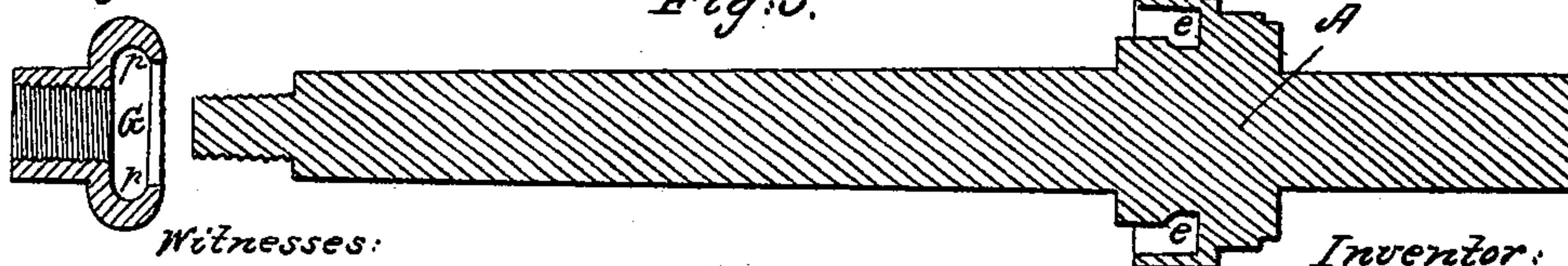


Fig. 7.

Fig. 5.



Witnesses:

John Eddy.  
Edw. H. H. H. H. H.

Inventor:

James M. Whiting.



# United States Patent Office.

JAMES M. WHITING, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 93,259, dated August 3, 1869.

## IMPROVEMENT IN CARRIAGE-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, JAMES M. WHITING, of the city and county of Providence, and State of Rhode Island, have made certain new and useful Improvements in Carriage-Hubs; and

In order that others may understand the method and nature of my invention, I give the following description of the same, illustrated by the accompanying drawings, and referred to in these specifications, by letters and figures marked thereon.

The object of my invention is to construct a carriage-hub, in such a manner that it shall combine the greatest possible strength with the least weight and size, to facilitate the repairing of the same; to protect the axle from dust and sand; and to prevent the oil from flying off and being wasted; and, at the same time, to give sufficient elasticity to it to prevent injury from the sharp concussions that necessarily occur in use.

As my improved hub is made in parts, and of different materials, I denominate it "a compound hub."

### Description of Drawings.

Figure 1 represents the hub, as it appears when put together.

E, the central portion, is made of bronze, or other suitable metal, and contains the spokes of the wheel.

The mortises for receiving these are made of peculiar and novel form, in such a manner as to give greater strength to the spoke, by enlarging the tenon of the same at the point where the greatest strain comes.

The peculiar form of these mortises is seen in fig. 3, where this portion of the hub is represented in section through the line *a b* of fig. 1.

C C, fig. 1, are two collars, of wood or metal, which slip upon the axle-box closely.

D D are two collars, of rubber, or other suitable elastic material, interposed between the collars C C and the metal centre E, a suitable recess being made in the central piece, at each side, to receive these elastic collars.

F is a metal screw-collar, threaded to fit the axle-box, and which, when turned up hard, serves to keep the component parts of the hub firmly together.

G, shown in dotted lines, is the nut, which holds the wheel upon the axle.

B is a collar, upon the axle-box, against which the wood collar abuts, the collar B being suitably hollowed out to receive and confine the wood collar C at one end of the hub, and the screw-collar F being hollowed in the same manner, to receive and confine the wood collar at the other end of the hub.

A is the axle.

Figure 2 shows all the parts of the hub proper, the same letters referring to the same parts as fig. 1, being shown in longitudinal section.

Figure 3 is a section of the metal centre E, for holding the spokes.

Figure 4 is a sectional view of the axle-box B and the screw-collar F.

*ff*, at the inner end of the axle-box, represent a recess, for catching the superfluous oil as it works out of the box at the inner end.

The collar F screws on to the axle-box at *g g*.

Figure 5 represents the axle A, and the nut G, which holds on the wheel.

It will be seen, from the above description of the various parts, that the component parts of the hub are all slipped upon the axle-box, and are held firmly in position between the projections at the inner end of the axle-box and the recessed nut F, at the outer end.

It will be seen, also, that the recess and flange, at the inner end of the axle A, fit into and over corresponding recesses in the inner end of the axle-box B, and that the formation gives an annular space, when the parts are together, for receiving waste oil, while the overlapping of the parts excludes dust and dirt; and the nut G, which holds the hub upon the axle, gives, in the part *d d*, a similar annular chamber, at the outer end, for waste oil.

The advantages which I claim for my compound hub are—

First, lightness, combined with great strength, the metal parts being much less in bulk than where the whole hub is formed of metal;

Second, that, in case of breakage of any of the parts, the hub is easily taken in pieces, and the defective part renewed;

Third, the exclusion of dust from the parts liable to be affected by wear by the overlapping parts;

Fourth, the catching of the waste oil;

Fifth, the absence of abrupt shoulders upon the spokes, from the peculiar form of the mortises which receive them; and

Sixth, the elasticity given by the rubber collars D D.

It will be perceived that the exact forms given in the drawings may be departed from without altering the general principles of construction.

I do not claim the making a hub in which the spokes are confined in a metallic flange; nor do I claim, broadly, the use of rubber in a hub, as these have been used before, but in a different manner; but

I do claim—

The packing-nut on the end of the box, in combination with the metallic centre-piece, the wooden sleeve, and the elastic collars.

JAMES M. WHITING.

Witnesses:

JOHN EDDY,

E. J. NIGHTINGALE.