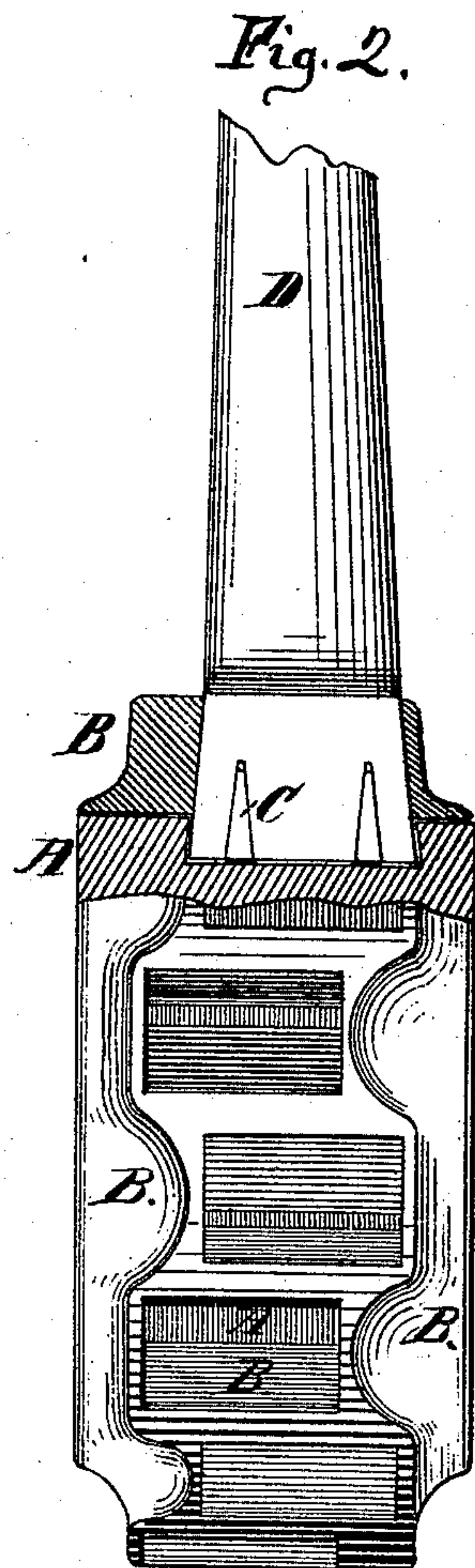
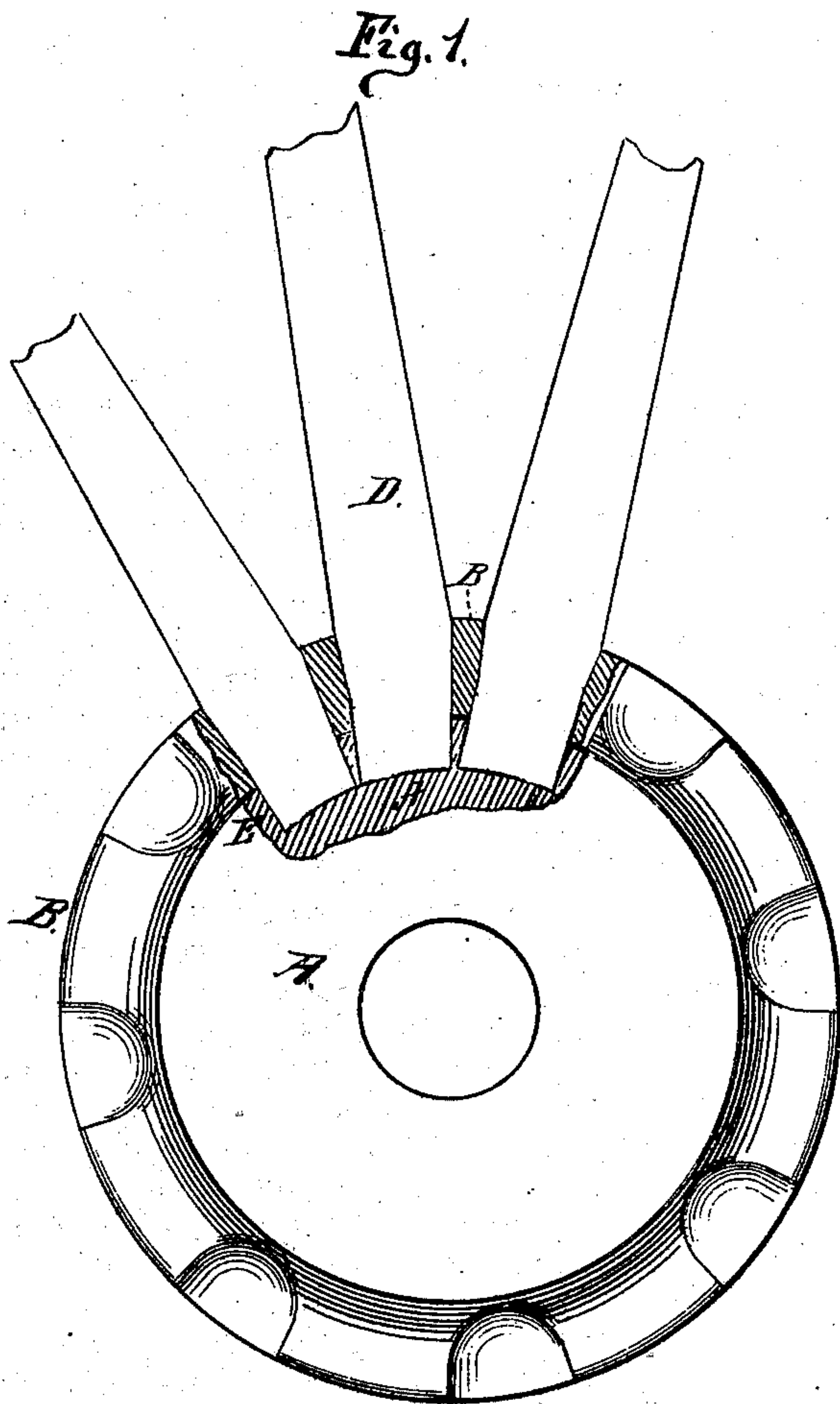


L. WARNER.
Vehicle-Wheels.

No. 156,450.

Patented Nov. 3, 1874.



Witnesses.

*E. G. Wainman
J. T. Kern.*

Inventor.

Lyman Warner.

UNITED STATES PATENT OFFICE.

LYMAN WARNER, OF BELVIDERE, NEW JERSEY.

IMPROVEMENT IN VEHICLE-WHEELS.

Specification forming part of Letters Patent No. **156,450**, dated November 3, 1874; application filed December 7, 1872.

To all whom it may concern:

Be it known that I, LYMAN WARNER, of Belvidere, in the county of Warren and State of New Jersey, have invented certain new and useful Improvements in Carriage-Wheels, which are simple in construction, convenient in the manufacture, and durable in use, the object of which is to improve the construction of that class of hubs in which a central wooden hub is used, the same being surrounded by a metallic band; and it consists in the construction of the parts, by which means the spokes are securely fastened, as hereinafter more fully described; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, with letters of reference marked thereon, forming a part of this specification, in which—

Figure 1 represents an end elevation of my invention, partially in section; and Fig. 2 represents a side elevation of the same.

A represents the wooden hub, with a central groove around its face, and provided with recesses upon each side, and so constructed that the recesses upon one side of the groove do not come opposite the grooves upon the other side, but opposite the flush or full part of the groove, so that each recess in connection with the groove receives a spoke. B represents the metallic band made to fit the hub A, and provided with a series of mortises extending entirely through the same. These mortises

are beveled upon one side, and when the band is placed upon the hub the mortises and recesses before described register to receive the spoke. D represents the spoke, the part entering the hub being beveled, as shown, and having slot widthwise of the spoke to receive a wedge, C, by which means the spoke is spread, and, in connection with the bevel in the mortise of the metallic band, forms a dovetail, and the spoke is securely secured.

By this construction the spoke is not driven entirely down upon the bottom of the groove in the wooden hub, so that in case of shrinkage the spoke can settle and become self-tightening. By this construction and arrangement the wooden hub is not necessarily weakened, and the spoke is made to fit closely the metallic band on all sides.

I am aware that a grooved center core and a mortised band flaring inward and wedge-spoke combined have been used, and I do not therefore broadly claim such device; but

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The hub A, having dovetail groove with lateral recesses, and band B, having a series of mortises beveled upon one side, in combination with the slotted spoke D and wedge C, constructed substantially as and for the purpose specified.

LYMAN WARNER.

Witnesses:

E. G. WARMAN,
J. T. KERN.