

H. H. RICHARDS.

Improvement in Wheels for Vehicles.

No. 132,107.

Patented Oct. 8, 1872.

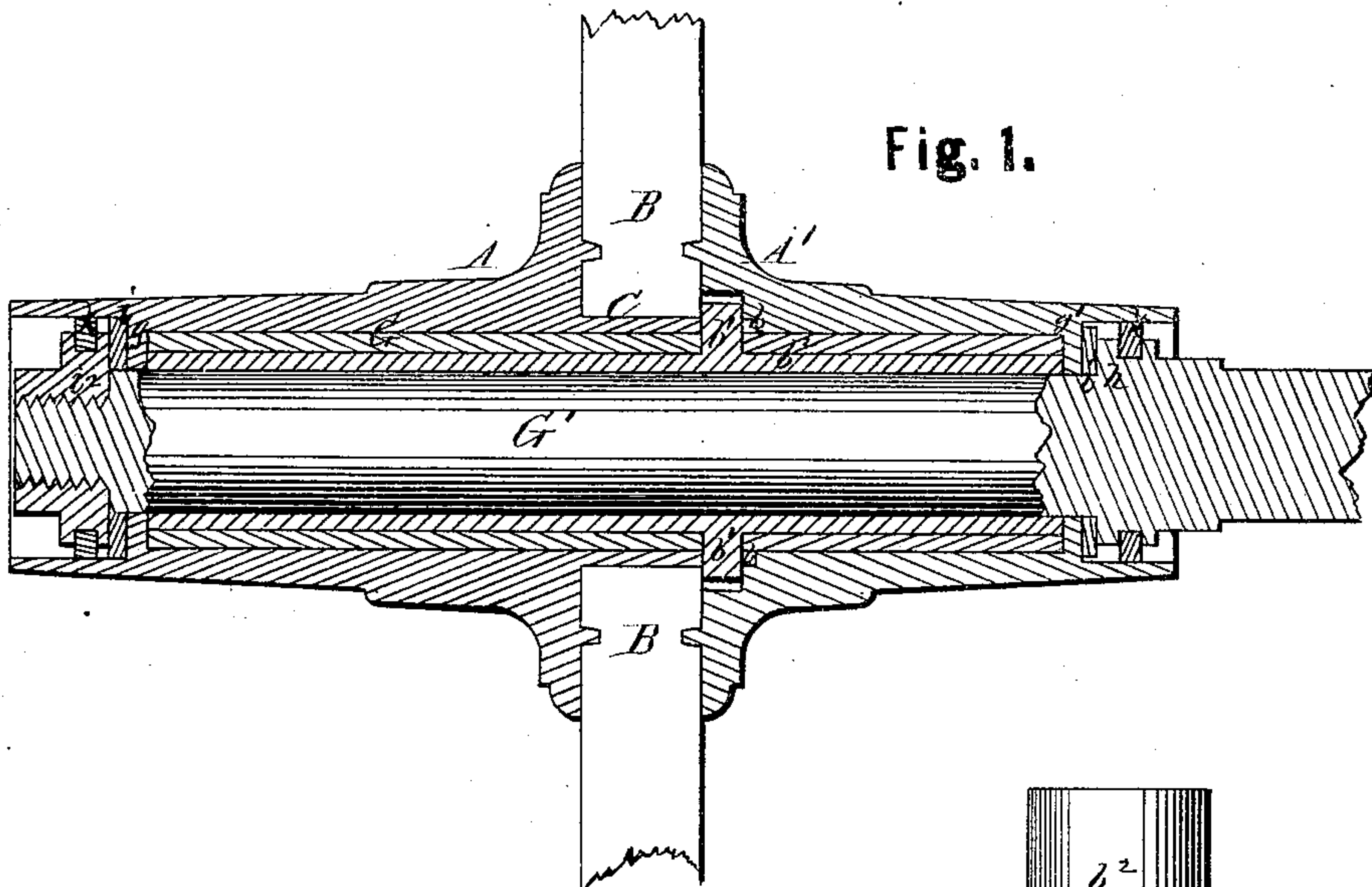


Fig. 1.

Fig. 2.

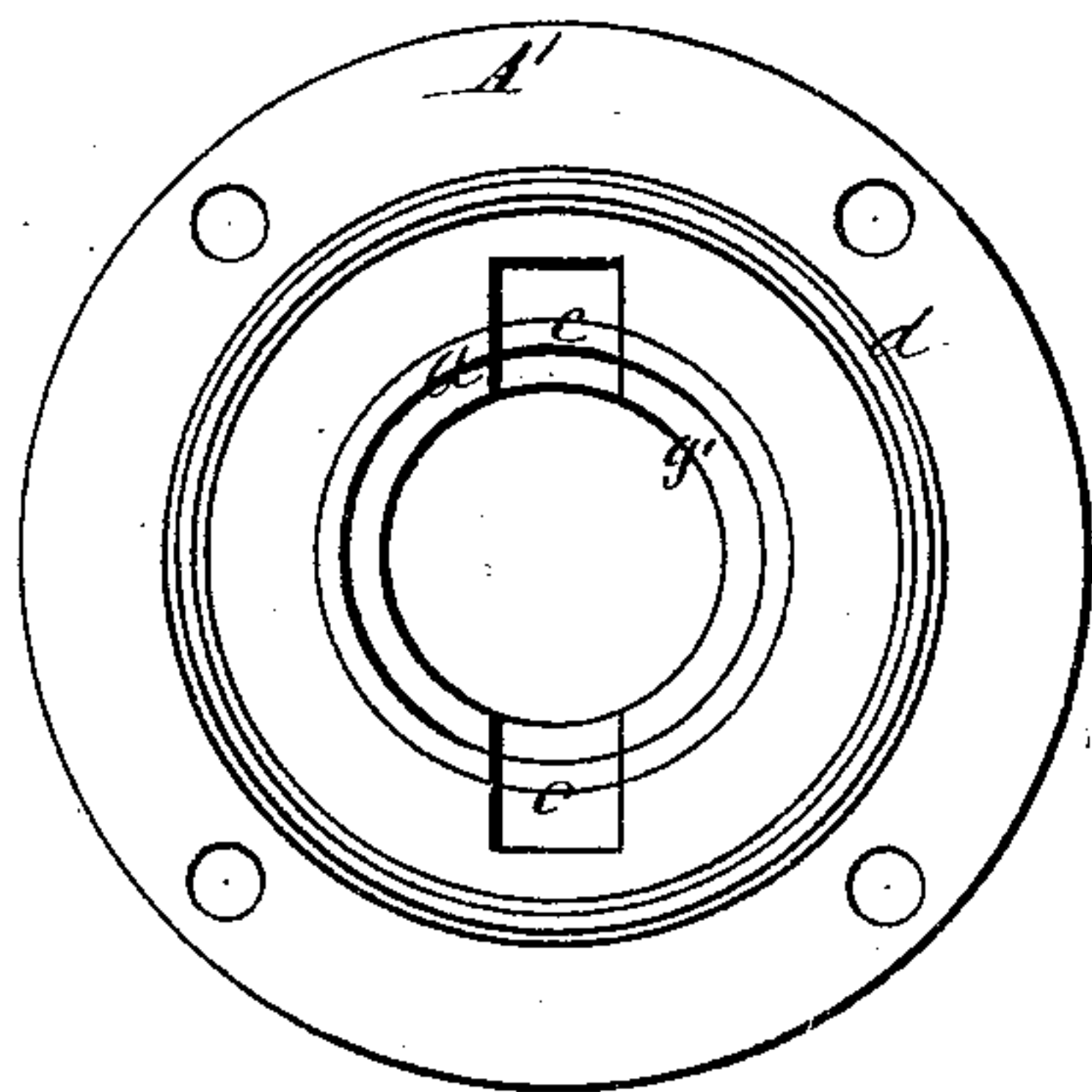


Fig. 3.

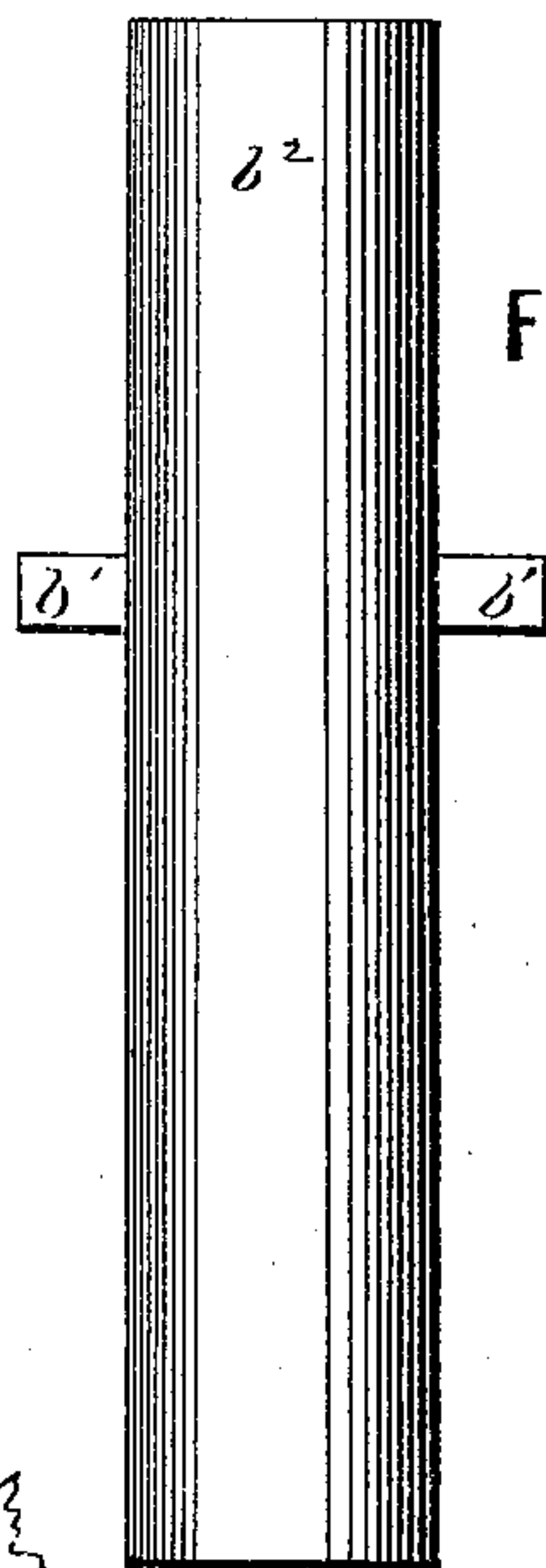
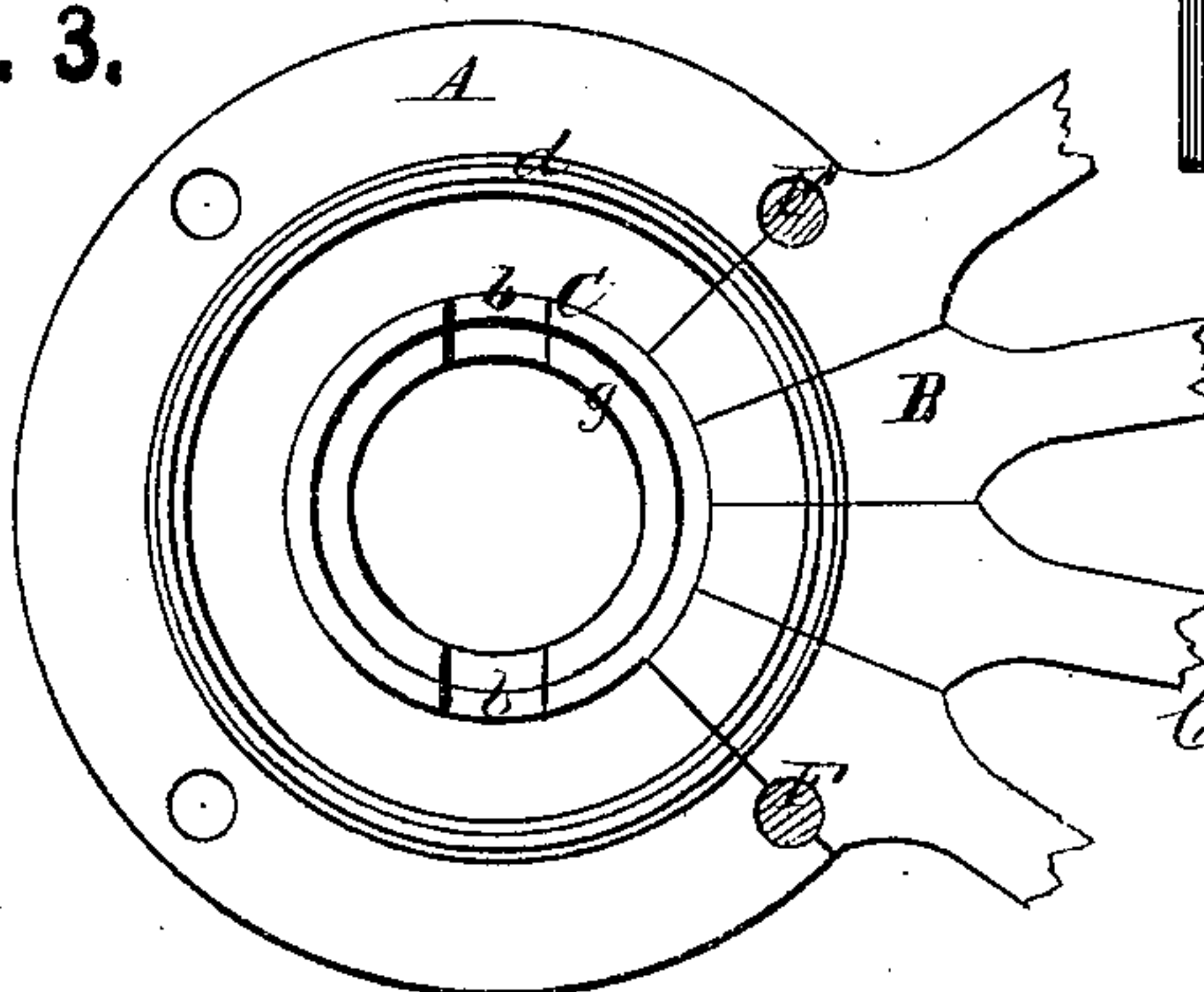


Fig. 4.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

HEZEKIAH H. RICHARDS, OF FOND DU LAC, WISCONSIN.

## IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. **132,107**, dated October 8, 1872.

*To all whom it may concern:*

Be it known that I, H. H. RICHARDS, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and valuable Improvement in Hubs; and 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 drawing making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a longitudinal central section of my invention; Fig. 2 is a face view of one of my caps; Fig. 3 is a transverse central section of my invention; and Fig. 4 is a perspective view of my hub-box.

This invention has relation to certain improvements in metallic wheel-hubs; and consists in the construction and novel arrangement of parts, as hereinafter described, whereby the hub-box is connected to the hub; the box and spindle secured against the effects of shocks or concussions caused by the passage of the wheel over uneven surfaces, and also against the accumulation of dirt or foreign particles.

In the accompanying drawing, A A' represent the two caps or sections of a metallic wheel-hub, arranged and secured between the inner faces of which are the spokes B. The cap A is constructed with a tubular extension, C, from its inner face, corresponding in internal diameter with that of the bore of the hub. In the edge of said extension are cut two square notches, *b b*, to receive the ends of a metallic key, *b<sup>1</sup>*, projecting radially from the hub-box *b<sup>2</sup>*. The bore of the section or cap A' for a short distance from its face is enlarged, as shown at *a*, to receive the ends of the extension C. Notches *c*, similar to those marked *b*, are also cut in the face of said cap to admit the ends of the keys *b<sup>1</sup>* when the caps and box are properly adjusted. The object of the keys *b<sup>1</sup>* and the notches *b c* is to secure the hub-box from turning or moving in its seat independently of the wheel. The caps A A' are constructed

with the circular ridges *d d*, which enter notches cut in the spokes and serve to hold the spokes in place. The caps A A' are held together by means of transverse bolts F. G designates an India-rubber packing, placed between the hub-box and the interior surface of the hub. This packing is designed to counteract the effects of concussion against the rim of the wheel, and may consist of an India-rubber tube, made in one or two sections, with suitable notches or apertures for the keys *b<sup>1</sup>* to pass through. Near the outer end of each cap A A' an internal flange is formed. These flanges are marked, respectively, *g g'*. The ends of the hub-box and India-rubber packing reach as far as the inner surfaces of said flanges. G' designates the axle-spindle, which passes through the hub-box. The shoulder *h* enters the end of the cap A' and is separated from the flange *g'* by means of a leather washer, *i*. A similar washer, *i<sup>1</sup>*, separates the nut *i<sup>2</sup>* from the flange *g*. The collar of the nut and the shoulder of the spindle are constructed each with an encircling groove wherein fits an India-rubber ring, *k*, projecting sufficiently to press slightly against the inner surfaces of the caps and to exclude all dirt or moisture.

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

1. The combination of the hub-box *b<sup>2</sup>*, having the keys *b<sup>1</sup>*, with the hub having the cap A with notched expansion C, and the cap A' with recess *a* and notches *c*, substantially as and for the purpose specified.

2. The cap A having the tubular expansion C in combination with the cap A' having the recess *a*, the box *b<sup>2</sup>*, and the rubber packing G, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

HEZEKIAH H. RICHARDS.

Witnesses:

GEO. P. KNOWLES,  
D. BABCOCK.