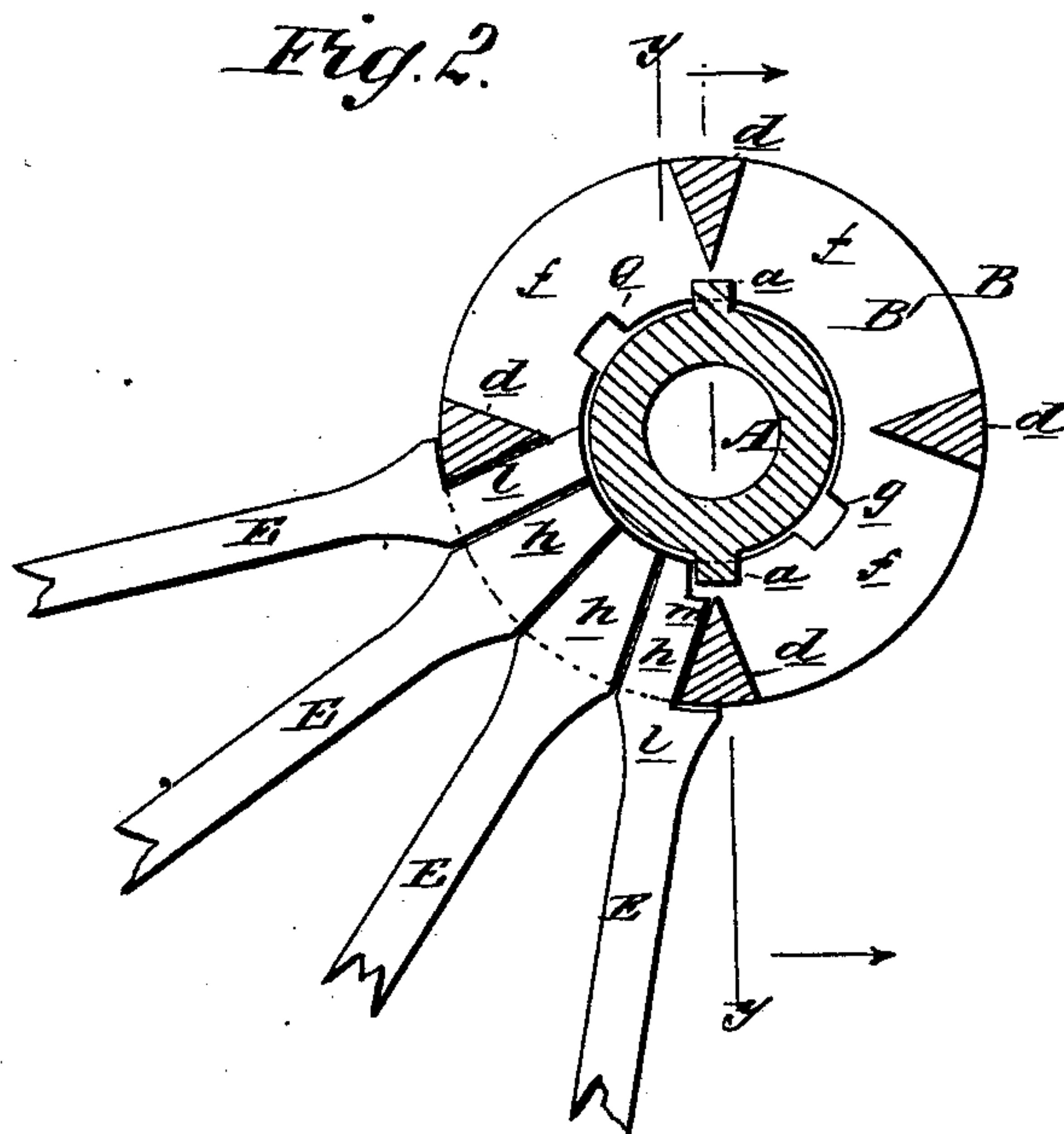
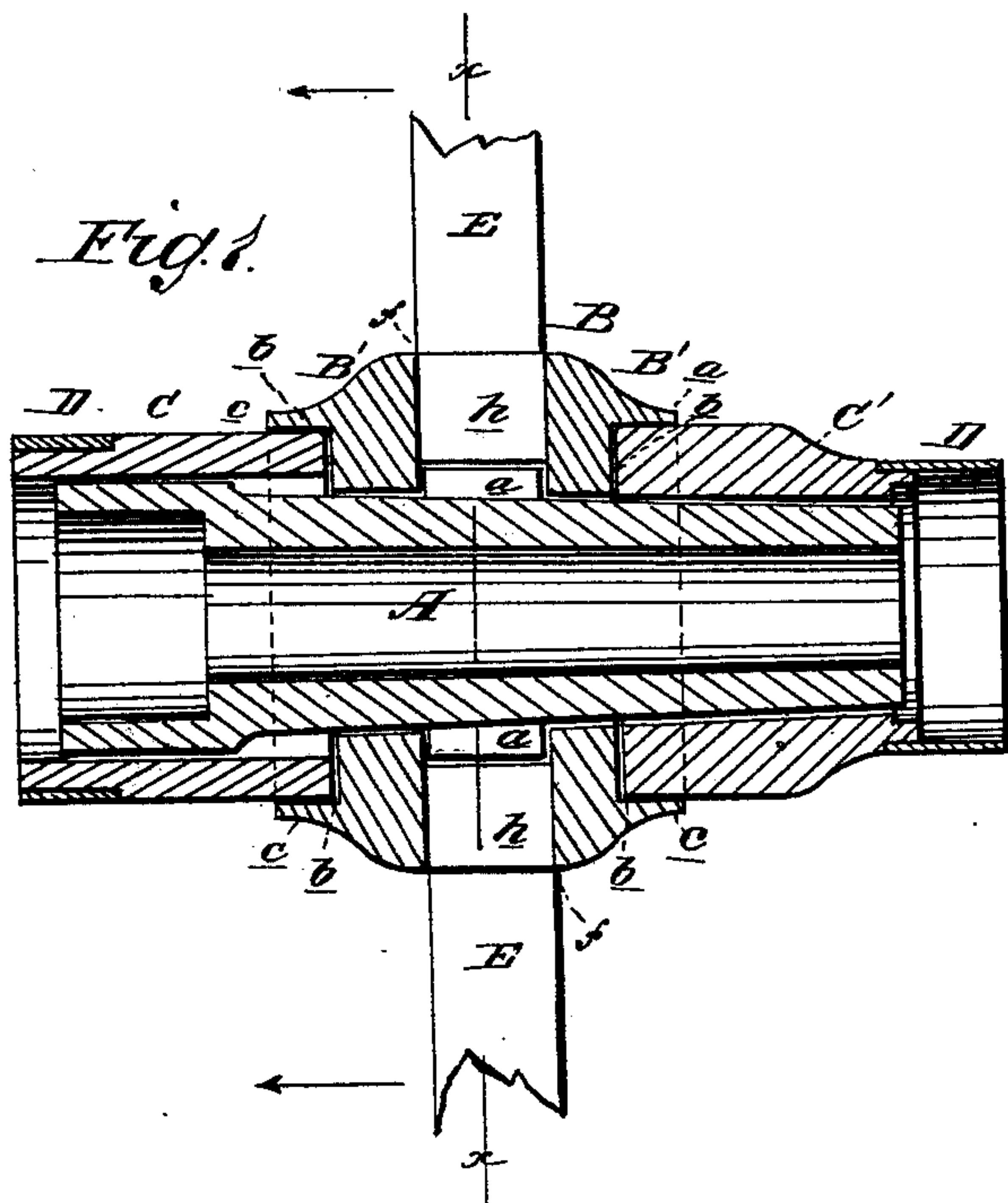


(Model.)

A. GANDY & J. R. SHUGERT.
Hub for Vehicle Wheels.

No. 234,020.

Patented Nov. 2, 1880.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALONZO GANDY AND JOHN R. SHUGERT, OF FREEPORT, OHIO.

HUB FOR VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 234,020, dated November 2, 1880.

Application filed September 16, 1880. (Model.)

To all whom it may concern:

Be it known that we, ALONZO GANDY and JOHN R. SHUGERT, of Freeport, in the county of Harrison and State of Ohio, have invented a new and Improved Hub, of which the following is a specification.

The object of this invention is to construct a hub for a vehicle-wheel so that the box cannot move lengthwise or turn in the hub after the spokes are set, and so that the spoke-tenons shall be protected from the contact of the hub-collars.

The invention consists of an axle-box provided with lateral splines and of a central hub-section consisting of two flanged and recessed rings connected with each other by wedge-shaped bars.

Figure 1 is a longitudinal sectional elevation of the hub on line *y y*, Fig. 2. Fig. 2 is a cross-section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the axle-box, provided with opposite lateral lugs or splines, *a a*.

B represents the central section of the hub, consisting of two rings, B' B', having annular recesses or depressions *b b*, surrounded by annular flanges *c c* on their outer faces, and having plain inner faces, which rings B' B' are set apart the width of the spoke-tenons, and are connected with each other by the wedge-shaped bars *d d*, that radiate from the center of the said section B, and thereby form divisions of the spoke-mortises *f f*. On its inner circumference this hub-section B is provided with keyways *g g*, for the entrance of the splines *a a* of the axle-box A.

C C' are, respectively, the inner and outer end collars of the hub fitted over the ends of the axle-box A, and driven over the said box A, so that their inner ends shall rest against the bottoms of the ring-recesses *b b*, and D D are the usual collar or hub bands, designed to strengthen said collars C C' and prevent their splitting.

E E are the spokes, having beveled tenons *h h*. Those spokes E E that are set next the bars *d d* have their tenons shouldered, as shown at *l*, to fit half-way over the periphery of said bars *d d*, and thereby make said spokes E E set evenly, and certain of the

spokes E E have the extremities of their tenons partly cut away, as shown at *m*, to fit over the splines *a a* of the axle-box A.

It is designed to construct the central section, B, of iron, so that it shall be sufficiently rigid, and so that the axle-box A shall always be held true. The axle-box A is introduced into the section B, so that the splines *a a* shall enter the keyways *g g*, and the said axle-box A is then turned so that said splines *a a* shall be entirely within the spoke-mortises *f f*, with the ends of said splines *a a* bearing against the inner faces of the rings B' B', whereby said axle-box A is prevented from working lengthwise.

In ordinary hubs the spokes are driven before the axle-box is set in place, and hence the axle-box is liable to work loose; but in this hub the spokes E E are driven after the axle-box A is in place, and the spoke-shoulders *m m* serve to prevent the said box A from turning. This device of bringing the spoke-tenons *h* in contact with the axle-box A, in order to hold said axle-box A from turning, is one of the novel and essential features of the invention.

It will be seen that as the collars C C' are driven and rest against the bottoms of the ring-recesses *b b* they cannot, by their accidental contact with other objects, be driven in upon the spoke-tenons, and thereby cause the dishing of the wheel, as not unfrequently occurs in wheels of ordinary construction.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of the axle-box having splines *a*, the wedge-shaped bars *d* of section B, and spokes having shoulders *l m*, as and for the purpose specified.

2. The combination, with the axle-box A, provided with splines *a a*, and central hub-section, B, provided with bars *d d*, mortises *f f*, and keyways *g g*, of the spokes E E, provided with shouldered tenons *l* and *m*, substantially as and for the purpose set forth.

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Witnesses:

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