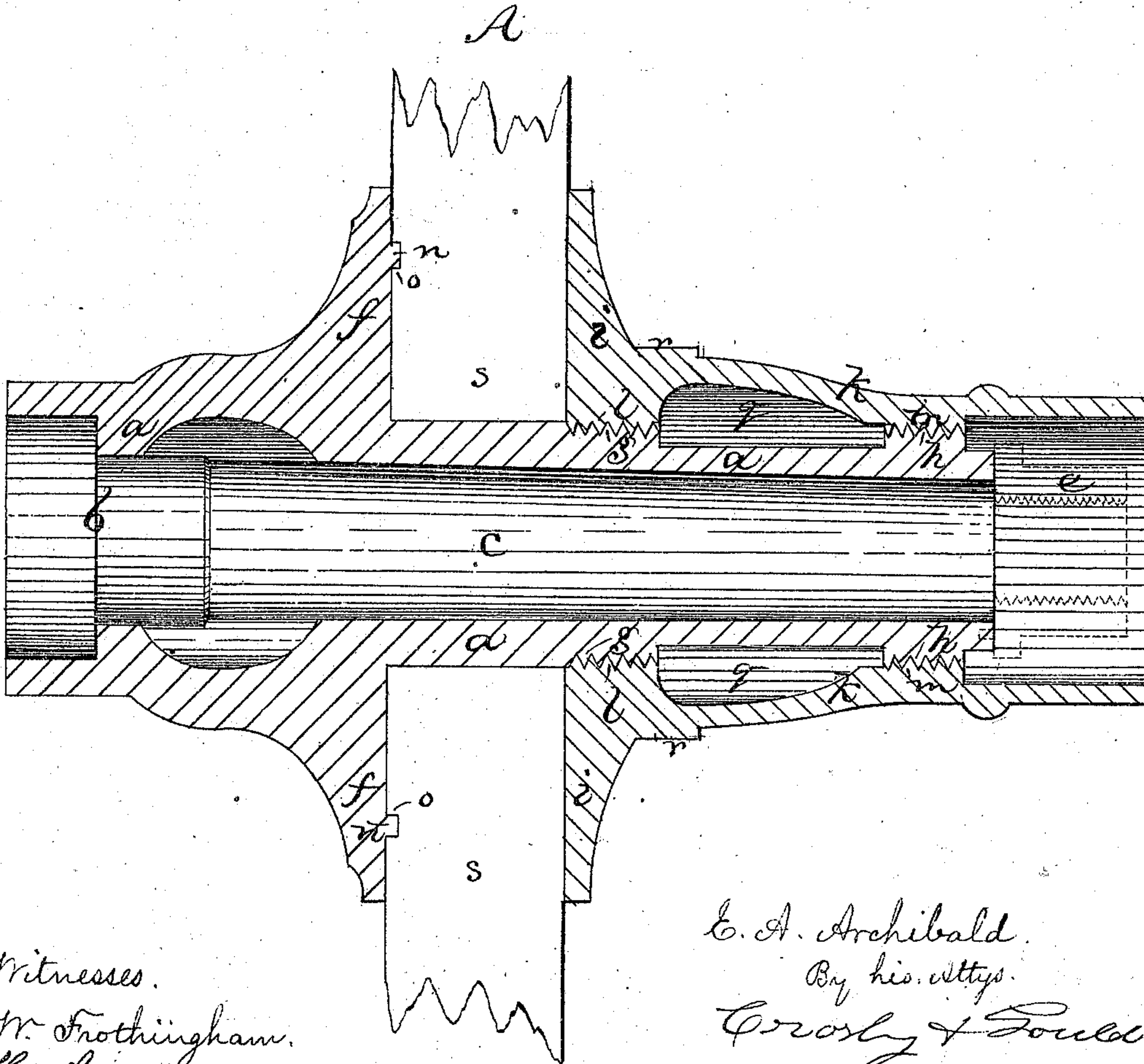


E. A. ARCHIBALD.

## Improvement in Hubs for Carriage Wheels.

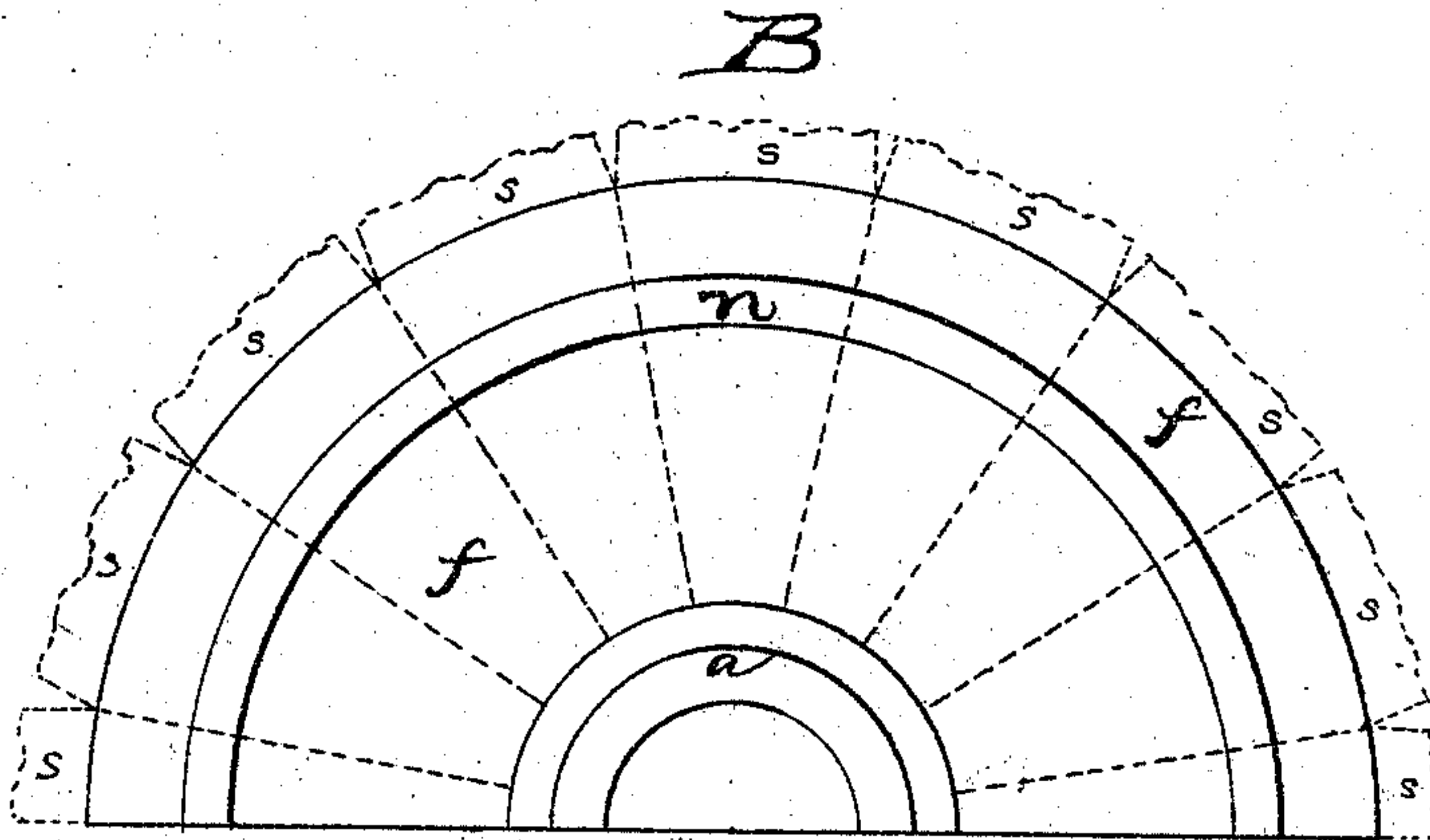
No. 120,845.

Patented Nov. 14, 1871.



Witnesses.  
 M. W. Frothingham.  
 L. H. Latimer.

E. A. Archibald.  
By his attys.  
Crosby & Gould.





# UNITED STATES PATENT OFFICE.

EDWARD A. ARCHIBALD, OF METHUEN, MASSACHUSETTS.

## IMPROVEMENT IN HUBS FOR CARRIAGE-WHEELS.

Specification forming part of Letters Patent No. 120,845, dated November 14, 1871.

*To all whom it may concern:*

Be it known that I, EDWARD A. ARCHIBALD, of Methuen, in the county of Essex and State of Massachusetts, have invented an Improved Metal Hub for Carriage-Wheels; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates particularly to the manufacture of metal hubs for that class of carriage-wheels in which the nave-ends of the spokes are confined between hub-plates or flanges, one of which plates or flanges is integral with the axle-box, while the other is removable from said box, the box having an external screw-thread, upon which the removable hub-plate or flange works to confine the spokes between the flanges.

In my improved construction, instead of making the outer or removable flange as a mere clamp-plate or flat ring to screw over the box, with the end of the box forming a protruding tube extending from the flange, I form said flange with a hub-sleeve or box-encompassing sleeve, extending from the flange to the end of the box, or to the cap or ring that encompasses the end of the box, thereby securing a construction which braces and strengthens the box and flange, relatively, and adds to the symmetry of the hub. The spokes of the hub are made with radial faces at their inner or nave-ends, so that the adjacent sides of the hub-ends of the series of spokes match or fit tightly together. To secure the spokes from possibility of starting outward I make on the inner face of one of the hub-plates or flanges a circular projection, or a series of pins or spurs, which, when the hub-plates are screwed against the spokes, will fit into a concentric groove formed in each spoke, or into a series of sockets formed in the spokes, and will thus lock the inner ends of the spokes in position.

The drawing represents a central or axial section of a metal-hub embodying my invention, and a view of the inner face of one half of the main hub-plate or flange.

*a* denotes the axle-box or bushing, having an enlarged part, *b*, at one end, fitting over the axle-

shoulder, and a long slightly-tapering bore, *c*, into which the end of the axle fits, the box being confined in position upon the axle (when mounted) by a nut, *e*, in the ordinary manner. From the box *a*, near its large or inner end, a circular flange or plate, *f*, extends, said plate being integral with or a part of the box. At a distance from the inner face of said flange equal to or a little less than the thickness of the nave-end of spokes a screw-thread, *g*, cut on the box *a*, begins, (said thread extending toward the end of box, as seen in the drawing,) and near the end of the box is another screw-thread, *h*, matching with the thread *g*. Upon these two threads screw the removable hub-plate or flange *i* and its projecting sleeve *k*, the two nut-threads *l m* fitting upon the two male threads *g h*. The nave-ends *s* of the spokes being assembled (as seen by the dotted lines at B) between these two plates or flanges, the flange *i* is screwed up against them and clamps them between the two plates. One of the hub-flanges is preferably made with the projecting circular lip *n*, and each spoke with a corresponding recess, *o*, into which said lip extends, and when the plates are clamped tightly upon the spokes this lip serves as a bolt to lock the spokes in place.

Instead of the lip, spurs or pins may extend from the plate and enter sockets in the spokes; but I prefer the circular lip, and the circular groove in the face of the assembled spoke-ends. Instead of leaving the box *a* an unencompassed projection from the clamp-plate *i*, I cover the part of the box beyond the plate with the sleeve *k*, which sleeve may be formed integral with the clamp-plate *i* and extend to and encompass the nut-end of the box, or may extend from the clamp-plate or flange to a ring encompassing the end of the box, or may be nut-threaded at its inner end and be connected with the flange-plate by screwing over a screw-thread cut on the angles of the eight-square wrench-head *r* of the flange-plate. In either case, it forms a cover to the otherwise naked part of the box, and also forms a brace that strengthens and supports the flange, the metal being preferably cored out, as seen at *q*, to obtain desirable lightness and endurance.

This construction not only increases the strength

of the plate and its sleeve, but improves the shape of the hub, especially when made enlarging from the bead *t* to the flange plate, as seen in the drawing.

I claim—

In combination with the flange *f*, integral with the box *a* and provided with ring *n*, the removable nut-threaded flange *i* having a plain surface

to press against the spokes, and sleeve *k*, formed with the hollow *g*, and secured upon the box by the screw-threads *g h*, substantially as shown and described.

E. A. ARCHIBALD.

Witnesses:

FRANCIS GOULD,

M. W. FROTHINGHAM.

(31)