

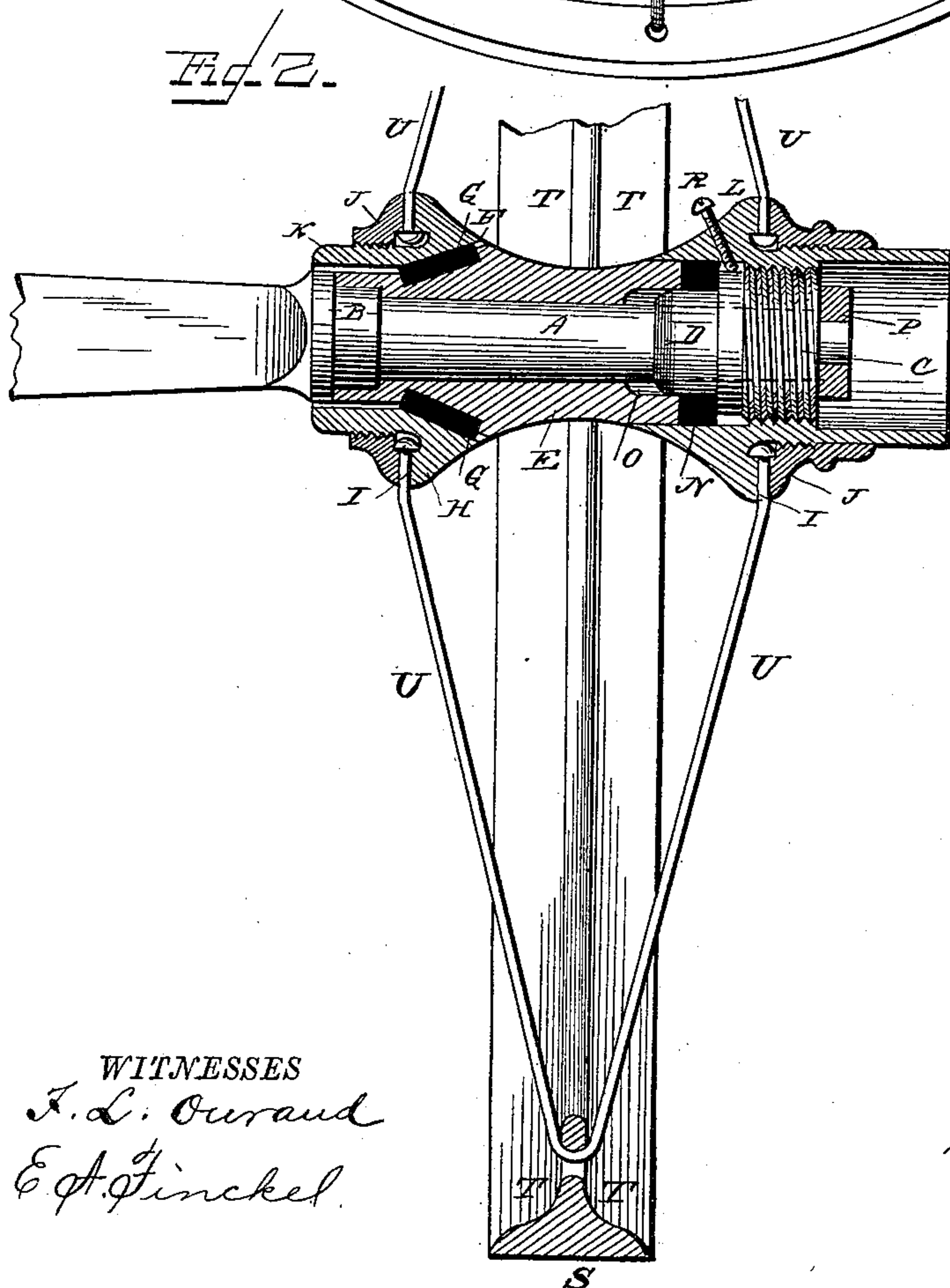
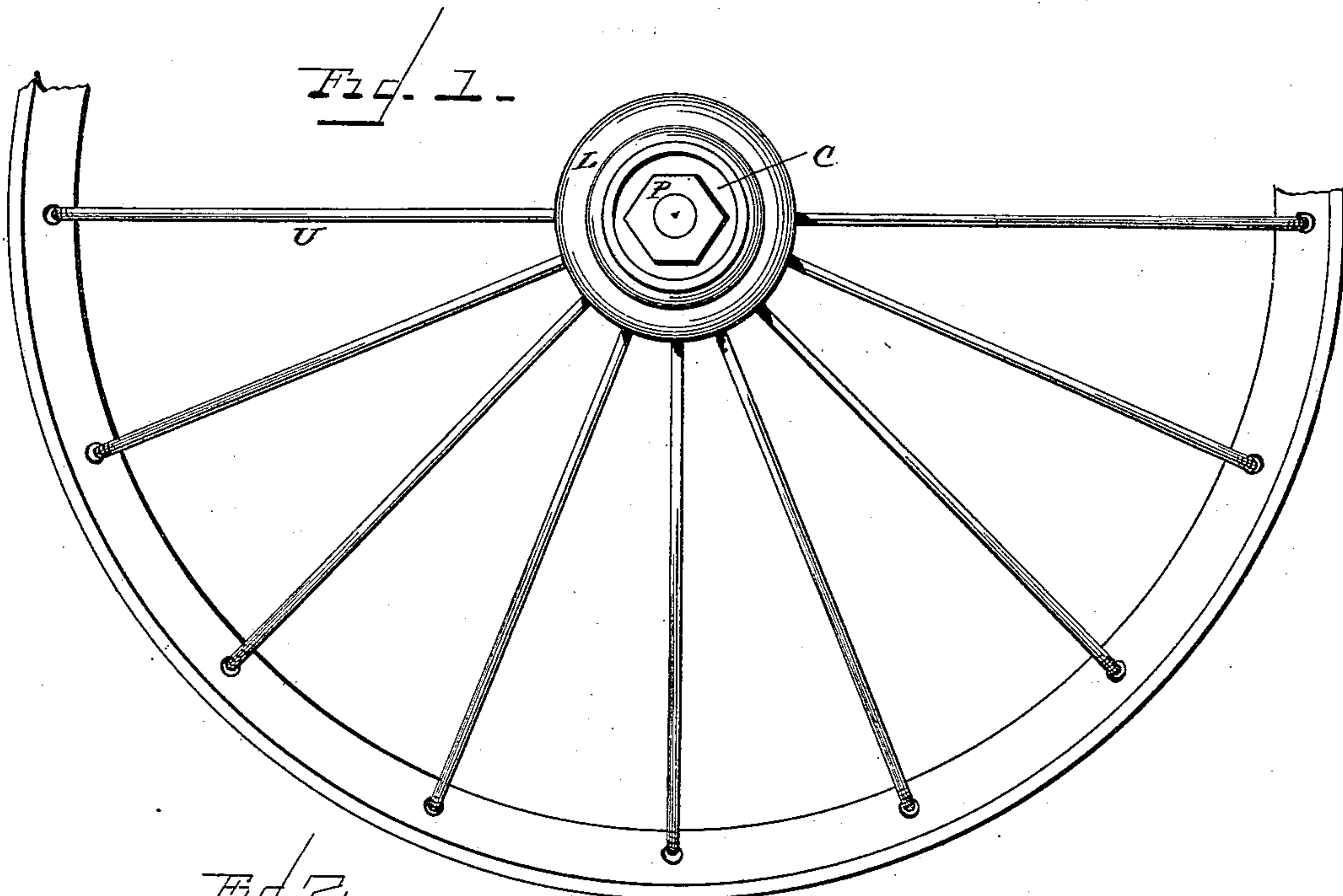
(No Model.)

S. T. WILLIAMS.

WHEEL.

No. 337,223.

Patented Mar. 2, 1886.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

SAMUEL T. WILLIAMS, OF RED BANK, NEW JERSEY.

## WHEEL.

SPECIFICATION forming part of Letters Patent No. 337,223, dated March 2, 1886.

Application filed July 1, 1885. Serial No. 170,349. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL T. WILLIAMS, a citizen of the United States, residing at Red Bank, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Wheels, of which the following is a full, clear, and exact description.

This invention is one of a series having for its object the production of efficient means for applying tension to that class of wheels using metallic spokes. Such wheels are commonly provided with a metallic rim, a series of spokes arranged in pairs or made duplex, and a hub or equivalent part having a movable or adjustable member, whereby the spokes may be spread apart to increase the tension upon them.

The present invention consists in an axle-box provided with a holder for one end of the spokes at the inner end of the box, and by friction held on the box, and a second holder for the other ends of the spokes adjustable on the axle and box, all substantially as and for the purposes hereinafter particularly set forth and claimed.

In the drawings, in which like parts are designated by similar letters of reference, Figure 1 is a side elevation of half of a wheel embodying my invention, and Fig. 2 is a longitudinal section of the hub and a quarter of the wheel, the scale being enlarged over Fig. 1.

A is the axle-nib, provided with one or more shoulders or collars, B, and the nut C, screw-threaded or otherwise constructed to engage the axle-nib, and also screw-threaded on a portion of its external surface. This nut has an inner sleeve, D, which extends into the box around the axle-nib. The axle-box proper, E, is recessed to fit the collars or shoulders B, and has a beveled portion, F, in which is a cavity or groove fitted with a rubber or leather or equivalent gasket, G. The holder for the inner ends of the spokes consists of the annulus H, provided with a radially-grooved annular projection, I, to receive the inner headed ends of the spokes, which are secured therein against lateral displacement by the annular face-plate J, having a screw-thread to engage a screw-thread on the annulus H, as in a concurrent application. The outer interior surface of the annulus H is beveled to correspond with the bevel F of the box, which latter, or its elastic cushion G, forms a friction-

seat for said annulus. The inner end, K, of annulus H is extended to cover and protect the shoulders of the axle-nib and their joint with the box, to exclude dust and dirt. The holder for the outer ends of the spokes consists of an annulus, L, in which the spokes are held as in the other spoke-holder just described; but this holder has its end next the box seated flat thereon, so as to be moved longitudinally of said box, and its outer end is extended to form the axle-nut chamber referred to in my other cases. This extension is provided with an internal screw-thread, which is engaged by the external screw-thread of the nut C, but is of less extent than the latter. The space between the rear end of the nut C and the forward or outer end of the axle-box is provided with a compressible packing, N. The axle-box E is recessed at O to receive the sleeve D of the nut C. The packing N may be rubber, leather, or a metallic spring. Now, it will be seen that if the nut C be moved rotarily on the axle it will run out the outer spoke-holder, and so increase the distance between the ends of the spokes, and hence render them taut or strain them. This movement of the nut may be accomplished by a suitable wrench, and the nut may either engage a screw-thread on the axle, as described, to fit it in adjusted position, or it may rotate loosely on the axle-nib, and be held in adjusted position by a separate nut, P, on the nib and the packing N; and an additional safeguard may be used in the shape of a set-screw, R, tapped through the outer spoke-holder and bearing on the nut in the rear of its thread. The bearing of the nut C against the packing N serves to increase the frictional hold of the rubber G on the annulus H, and the wedge-like joint then adds to the security of fastening, and prevents the inner spoke-holder from slipping rotarily on the box.

The tire S is of metal and has its surface next the axle made convex, to throw off laterally mud and dirt.

The spokes U are of a construction usual in this class of wheels.

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

1. A tension-wheel comprising a tire, spokes, and an axle-box having a friction-gasket, G, applied to one end, a holder for one end of

the spokes seated upon said gasket, and a holder for the other end of the spokes longitudinally adjustable on the axle-box, substantially as described.

- 5 2. The combination of an axle-box having its inner end beveled and provided with a friction-gasket, a holder for the inner ends of the spokes seated on said gasket, and a holder for the outer ends of said spokes movable on  
10 said box and provided with internal screw-

threads engaged by a threaded nut rotarily connected with the axle-nib, substantially as set forth.

In testimony whereof I have hereunto set my hand this 6th day of November, A. D. 1884.

SAMUEL T. WILLIAMS.

Witnesses:

ARTHUR C. WEBB,  
ERNEST C. WEBB.