





# UNITED STATES PATENT OFFICE.

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## EXPANDING VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 781,076, dated January 31, 1905.

Application filed August 12, 1904. Serial No. 220,562.

*To all whom it may concern:*

Be it known that I, JAMES LARENCE ORR KING, a citizen of the United States, residing at Tokeena, in the county of Oconee and State of South Carolina, have invented certain new and useful Improvements in Expanding Vehicle-Hubs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in expanding hubs for vehicle-wheels; and the object of the invention is to produce a simple and efficient device whereby the spokes of a vehicle-wheel may be easily and quickly tightened without the necessity of sending the wheel to a wheelwright or machinist.

The invention consists in various details of construction and in combinations and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claim.

My invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts in the views, in which—

Figure 1 is a vertical sectional view through a hub of a wheel embodying my improvements. Fig. 2 is a cross-sectional view on line 2 2 of Fig. 1. Fig. 3 is a sectional view of a modified form, and Fig. 4 is a side elevation of the modified form shown in Fig. 3.

Reference now being had to the details of the drawings by letter, A designates an axle of a wheel having a threaded end A' and an axle-nut A<sup>2</sup>.

B designates one of the hub-sections, having a shoulder B' adapted to abut against a shoulder C of a box C', which fits upon the axle. The flanged end of the hub-section B has a recess b formed therein and projects over the circumference of the expanding-ring D, against which spokes E bear. A washer F,

having elongated slots F' therein, is positioned against the face of said flange and is positioned about the circumference of the expanding-ring D.

The outer sectional hub of the wheel (designated by letter H) has a flanged portion H', and the face of said flanged portion is recessed, as at h, and is adapted to receive the enlarged end of a conical expanding member K. A washer J, having radial slots therein, is interposed between the flanged end of the hub-section H and the outer edges of the spokes and is similar to the washer F. Bolts O are passed through the registering radial slots in the two washers and are positioned intermediate the spokes, and the said slots are elongated for the purpose of allowing the bolts to move slidably with the spokes as they are expanded.

Referring to Fig. 3 of the drawings, it is seen that I have slightly modified the form of the expanding member, (designated in the drawings by letter K,) in which the shanked portion of said member is of cylindrical shape, provided with circumferential threads, K' and adapted for engagement with the interior threads of the hub-section H, and the outer end of said shanked portion is adapted to be engaged by a wrench for the purpose of rotating the same for tightening a spoke. In this form the axle-nut A<sup>2</sup> fits against the end of the axle-box, and the interior portion of the shanked portion of the expanding member K is chambered for the reception of said nut, as shown. By this means it will be observed that the spokes may be tightened without the necessity of first removing the outer section of the hub, which in some instances is considered a desideratum.

By the provision of the apparatus described a simple and efficient means is provided for conveniently tightening spokes by the simple manipulation of the parts herein described.

I am aware that it is common in the art to construct expanding hubs of various kinds, and hence I make no particular claim for such construction.

While I have shown a particular detailed construction of apparatus illustrating the features of my invention, it will be understood that I may make alterations, if desired, in

the detailed construction of the same without in any way departing from the spirit of my invention.

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

An expanding hub comprising, in combination with an axle and box therefor, a hub-section having a shoulder fitting over a shoulder upon said box, a conical-shaped member having a central threaded aperture adapted to fit threads upon said box, and a chambered portion beyond the threaded portion of said aperture, a spoke-expanding ring engaged by said conical-shaped member, washers surrounding said expanding-ring and having radial slots therein, bolts passing through said slots, spokes intermediate said washers and between which said bolts pass, an axle-nut fitted upon said axle and adapted to turn within the chambered portion of said conical-shaped member, and a second hub-section fitted about the threaded circumference of said conical-shaped member, as shown and described.

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In testimony whereof I hereunto affix my signature in presence of two witnesses.

JAMES LARENCE ORR KING.

Witnesses:

J. W. STRIBLING,  
F. S. HALLEMAN.