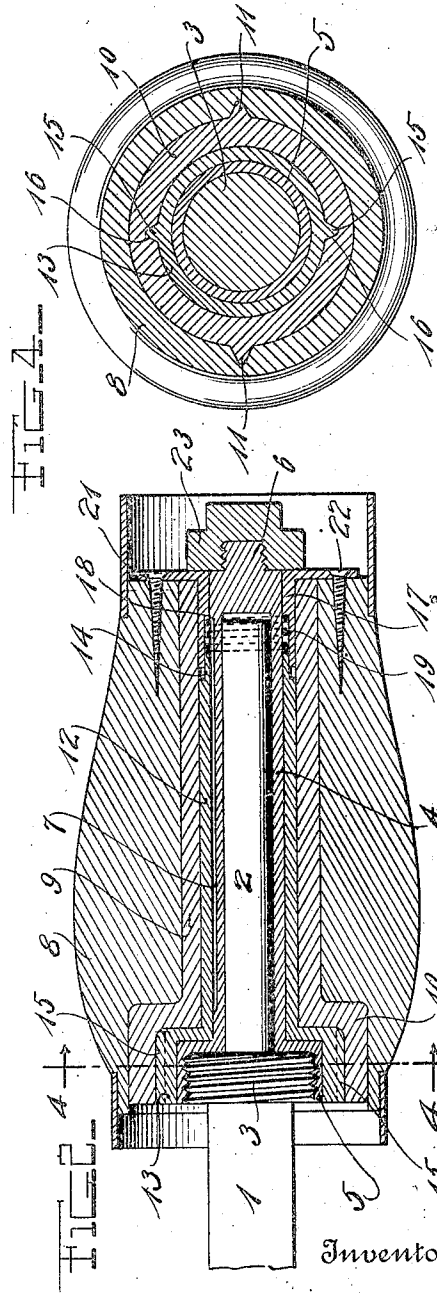
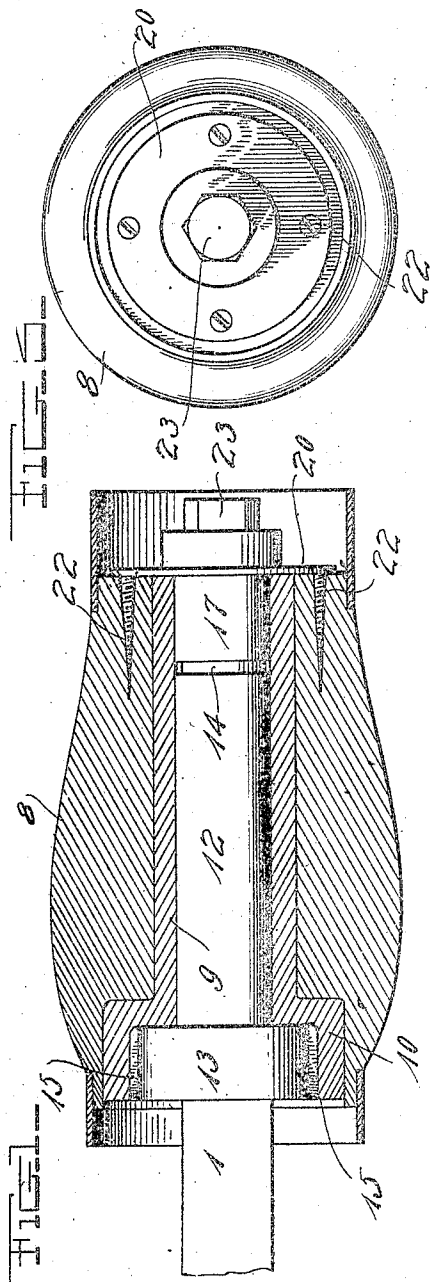


J. T. BROACH.
AXLE BEARING.
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1,047,374.

Patented Dec. 17, 1912.



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UNITED STATES PATENT OFFICE.

JEFFERSON T. BROACH, OF DEEP CREEK, VIRGINIA.

AXLE-BEARING.

1,047,374.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, JEFFERSON T. BROACH, a citizen of the United States, residing at Deep Creek, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Axle-Bearings; 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.

This invention relates to improvements in vehicle axles.

One object of the invention is to provide means whereby all lost motion due to the wear of the parts which protect the axle, spindle and box is taken up.

Another object is to provide simple and efficient means of this character which may be cheaply manufactured and readily applied and removed.

With these and other objects in view, the invention consists of certain novel features of construction, combination and the arrangement of parts as will be more specifically described and claimed.

In the accompanying drawings: Figure 1 is a vertical longitudinal sectional view through a hub and the box therein, showing the hub engaged with the end of an axle, embodying the invention; Fig. 2 is a central longitudinal sectional view of the parts shown in Fig. 1; Fig. 3 is an end view of the hub and outer end of the axle; Fig. 4 is a cross sectional view on the line 4-4 of Fig. 2.

Referring more particularly to the drawings, 1 denotes my improved axle, said axle having on its end a reduced arm or spindle 2, between the inner end of which and the outer end of the main portion of the axle is formed a threaded cylindrical shoulder 3. The axle arm or spindle 2 is preferably of cylindrical form, and with the same is engaged a wear sleeve or skein 4, having on its inner end an interiorly threaded socket 5, adapted to be secured to the threaded shoulder 3 of the axle, as shown. The outer end of the skein 4 is closed and has formed thereon a reduced threaded extension 6, for engagement by the usual wheel securing nut. If desired, the skein 4 may have formed in one side a longitudinal oil-holding groove 7.

The hub 8 of the wheel for which this axle is provided may be of the usual or any

suitable construction, and has arranged therein the usual box 9. The box 9 has on its inner end an enlarged socket 10, and said box is secured in the hub by radially projecting lugs 11, which may be of the usual form. Removably secured to and fitting closely into the box 9 is a lining 12, which is in the form of a cylindrical sleeve having on its inner end an enlarged socket 13, which engages and fits closely in the socket 10 of the box. On the socket 13 are formed radially projecting fastening lugs 15, which are engaged in notches 16 formed in the inner side of the socket 10, as clearly shown in Fig. 4 of the drawings, said lugs thus locking it securely and fastening the lining 12 against turning in the box. The inside diameter of the lining 12 corresponds to the outside diameter of the sleeve 4, with which said lining is revolubly engaged when the wheel is in position on the axle. The lining 12 is somewhat shorter than the box 9 and the sleeve 4 and terminates at its outer end some distance from the outer ends of the box and sleeve, as clearly shown in Figs. 1 and 2 of the drawings. The outer end of the lining 12 is reduced to form an annular extension 14 of less diameter than the body portion of the lining, and with said reduced extension is slidably engaged the inner end of a thimble or ferrule 17, said thimble having its bore at the inner end thereof enlarged to form an annular bearing surface for telescopic engagement with the outer face of the reduced extension 14 on the end of the lining.

Between the end of the lining and the shoulder 18 formed by the enlarged outer portion of the core of the thimble is arranged a coiled spring 19, the pressure of which is exerted to hold the socket on the inner end of the lining in close engagement with the outer surface of the socket 5 on the inner end of the sleeve 4, thus taking up any wear or lost motion which may occur between these parts.

On the outer end of the thimble or ferrule 17 is formed an annular flange 20, having therein a plurality of screw holes through which and into the end of the hub are driven screws 22, whereby said thimble is securely fastened to the outer end of the hub. The flange 20 when thus arranged covers and protects the outer end of the box from being worn by the nut 23 which is secured on to the threaded extension 6

of the sleeve 4 and into engagement with the flange at the end of the thimble 17, and holds the hub in position on the axle.

By providing the wear sleeve 4 for the axle arm, and the lining 12 for the box 9, all wear is removed from the axle and box, to the sleeve and lining, which when worn to a sufficient extent to interfere with the proper running of the wheel, may be removed and replaced by another sleeve and lining, thus saving the expense and labor of cutting off and replacing the axle arms or spindles, as is necessary in the usual form of axle. By arranging the spring 19 between the outer end of the lining and thimble 17, all lost motion due to the wear of the sockets on the inner ends of the sleeve and lining from the inward thrust of the wheel is taken up and the noise or rattling of the wheel on the axle is obviated.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and minor details of construction may be resorted to within the scope of the invention without departing from the spirit of the invention as defined in the appended claims.

I claim as my invention;

1. A wheel hub having a box, a lining having a sliding connection with said box, a socket formed on the inner end of said

lining, a thimble arranged in the outer end of the box, an annular flange formed on the end of the thimble, fastening devices engaged with said flange and the outer end of the hub, whereby the thimble is secured in position, said flange forming a protection for the outer end of the box, a spring arranged between the inner portion of said thimble and the outer end of the lining, whereby lost motion occurring from the wear is taken up.

2. A wheel hub having a box, a lining having a sliding connection with said box and having on its outer end a reduced extension, a thimble arranged on the outer end of said box, said thimble having the inner end of its bore enlarged to receive the extension on the end of the lining, whereby said thimble is adjustably and telescopically engaged with the lining, a coiled spring arranged between the end of the lining and the shoulder at the inner end of the enlarged portion of the bore of the thimble, a flange formed on the outer end of the thimble and covering the outer end of the box in the hub, and means to secure the flange to the end of the hub.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JEFFERSON T. BROACH.

Witnesses:

E. H. MOORE,

E. S. WILLIAMS.