

No. 735,568.

PATENTED AUG. 4, 1903.

G. B. McWILLIAMS.

VEHICLE AXLE.

APPLICATION FILED NOV. 14, 1902.

NO MODEL.

Fig. 1.

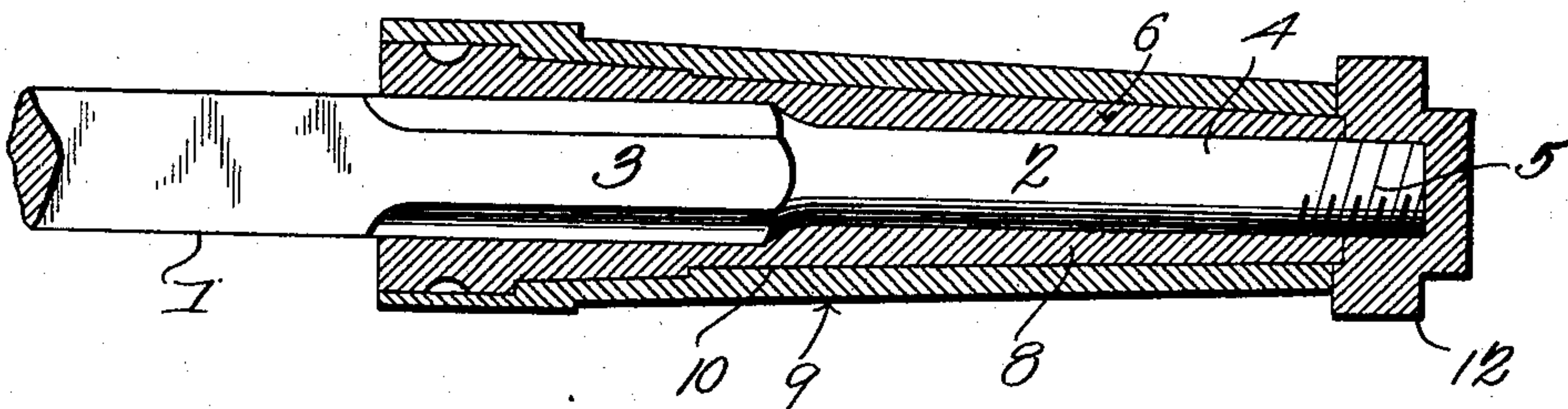


Fig. 2.

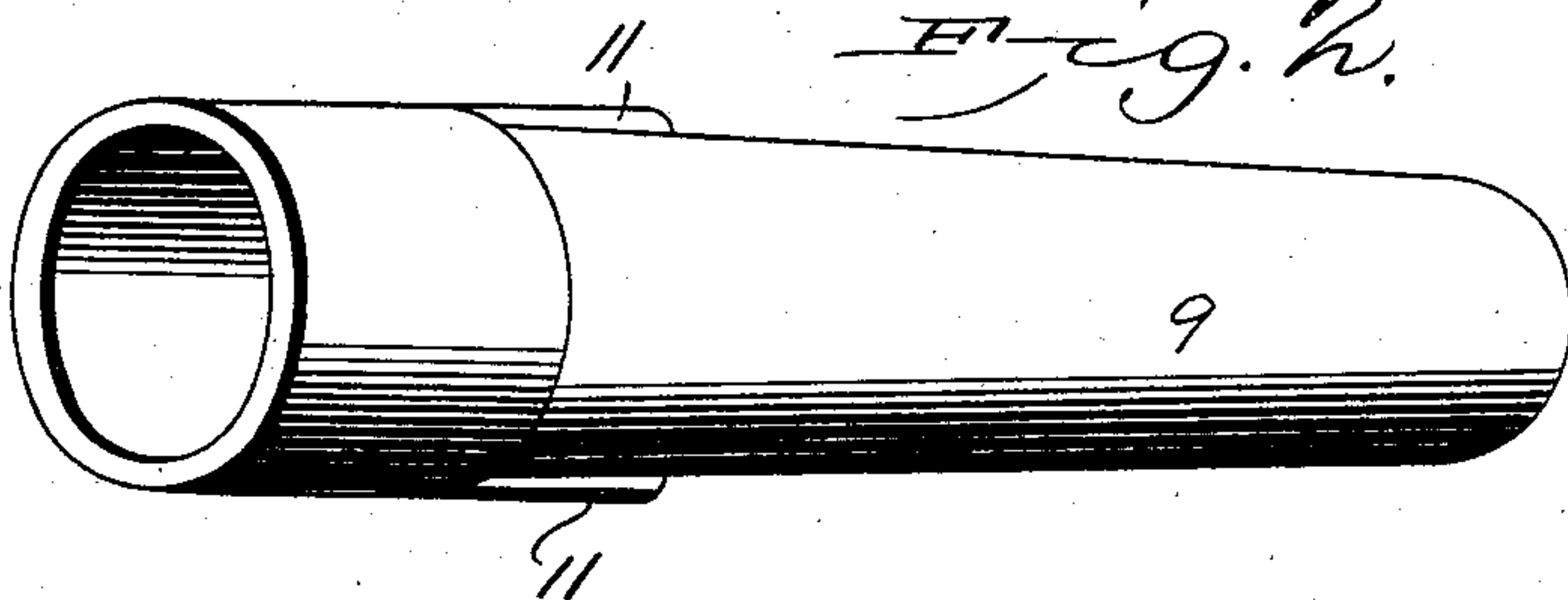


Fig. 3.

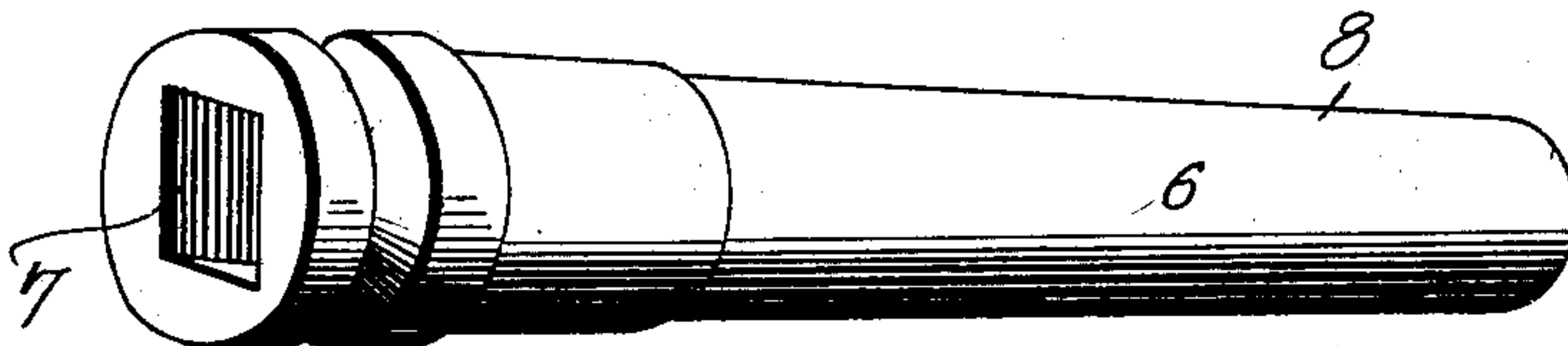
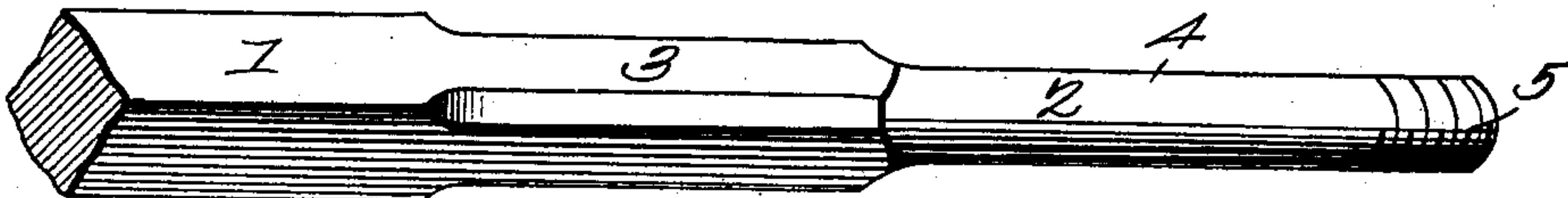


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE BERNARD McWILLIAMS, OF OLNEY, ILLINOIS.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 735,568, dated August 4, 1903.

Application filed November 14, 1902. Serial No. 131,369. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BERNARD McWILLIAMS, a citizen of the United States, residing at Olney, in the county of Richland and State of Illinois, have invented a new and useful Axle for Buggies, Surreys, &c., of which the following is a specification.

My invention relates to vehicle-axes, and is especially directed to means which permit the ready repairing of the spindle which sustains the wheel when the parts become worn or otherwise impaired, and has for its objects to produce a simple and efficient device adapted to be carried by the axle-spindle to sustain the wear and to be readily removed and replaced by a new part when circumstances may require.

To these ends the invention comprises the novel construction and combination of parts more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved device, illustrating the parts assembled. Fig. 2 is a perspective view of the hub-box. Fig. 3 is a similar view of the removable thimble. Fig. 4 is a similar view of a portion of an axle, showing its spindle formed in accordance with my invention.

Referring to the drawings, 1 indicates a vehicle-axle having a spindle 2, which in accordance with my invention comprises an angular portion 3 and a reduced cylindrical portion 4, which latter is threaded at its outer end, as at 5, for the purpose presently described. 6 indicates a sleeve or thimble removably mounted upon the axle-spindle 2 and which has a central longitudinal bore or opening to receive the spindle. This central bore has, in accordance with my invention, an angular portion 7, which fits snugly upon the angular portion 3 of the spindle, and an annular portion 8, which fits in like manner upon the cylindrical portion of the spindle, the outer face of the thimble being cylindrical throughout its entire length to form the outer bearing-surface upon which the wheel-hub is mounted for rotation. In this connection it is to be noted that owing to the central bore of the thimble having an angular portion which engages with the angular portion 3 of the spindle relative movement of the parts is pre-

vented, thus rendering the spindle absolutely free from wear, and, further, that owing to the part 4 of the spindle being reduced and cylindrical in form a uniform thickness of the thimble, which is of conical form, is preserved. Thus it will be seen that the thimble sustains entirely the wear due to rotation of the wheel.

9 indicates an axle box or shell, which has an inner annular longitudinal bore 10, which conforms to and permits rotation of the box upon the thimble. This box in practice is inserted within and constitutes the inner wearing-surface of the wheel-hub and is provided with longitudinal splines 11, which engage suitable grooves formed in the inner face of the wheel-hub to prevent movement of the box relative thereto.

12 indicates a nut which is tapped upon the screw-threaded end 5 of the spindle, as shown, and which serves to prevent escape of the thimble and the wheel from the axle, as will be readily understood.

In practice the thimble will, as before stated, sustain the wear incident to the rotation of the hub thereon and may when sufficiently worn to be defective be readily removed and replaced by a new one, and owing to the fact that there will be no relative movement of the thimble and axle-spindle the latter will be absolutely free from wear and will be rendered practicably indestructible, and, further, that the thimble will owing to its angular inner portion registering with the like portion of the spindle be at all times maintained in perfect true.

From the foregoing it will be seen that I produce a simple and efficient means whereby an axle-spindle may be readily repaired and by which the life of the axle is materially prolonged, and in attaining these ends it is to be understood that I do not limit or confine myself to the precise details herein shown and described, inasmuch as various minor changes may be made in the details of construction and assemblage of the parts without departing from the spirit of my invention.

Having thus described my invention, what I claim is—

The combination with a vehicle-axle pro-

vided with a spindle, of a wheel-hub jour-
naled for rotation upon the spindle, a thimble
removably mounted upon the spindle between
the same and the hub and lying wholly within
5 the latter, said thimble being of a length equal
to the length of the hub, and means for secur-
ing the thimble upon the spindle, said spin-
dle having an inner angular portion and an
outer and wholly annular portion, and said

thimble having an inner bore provided with 10
an inner angular portion for engagement with
the like portion of the spindle and an outer
annular portion conforming to the like por-
tion of the spindle.

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Witnesses:

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