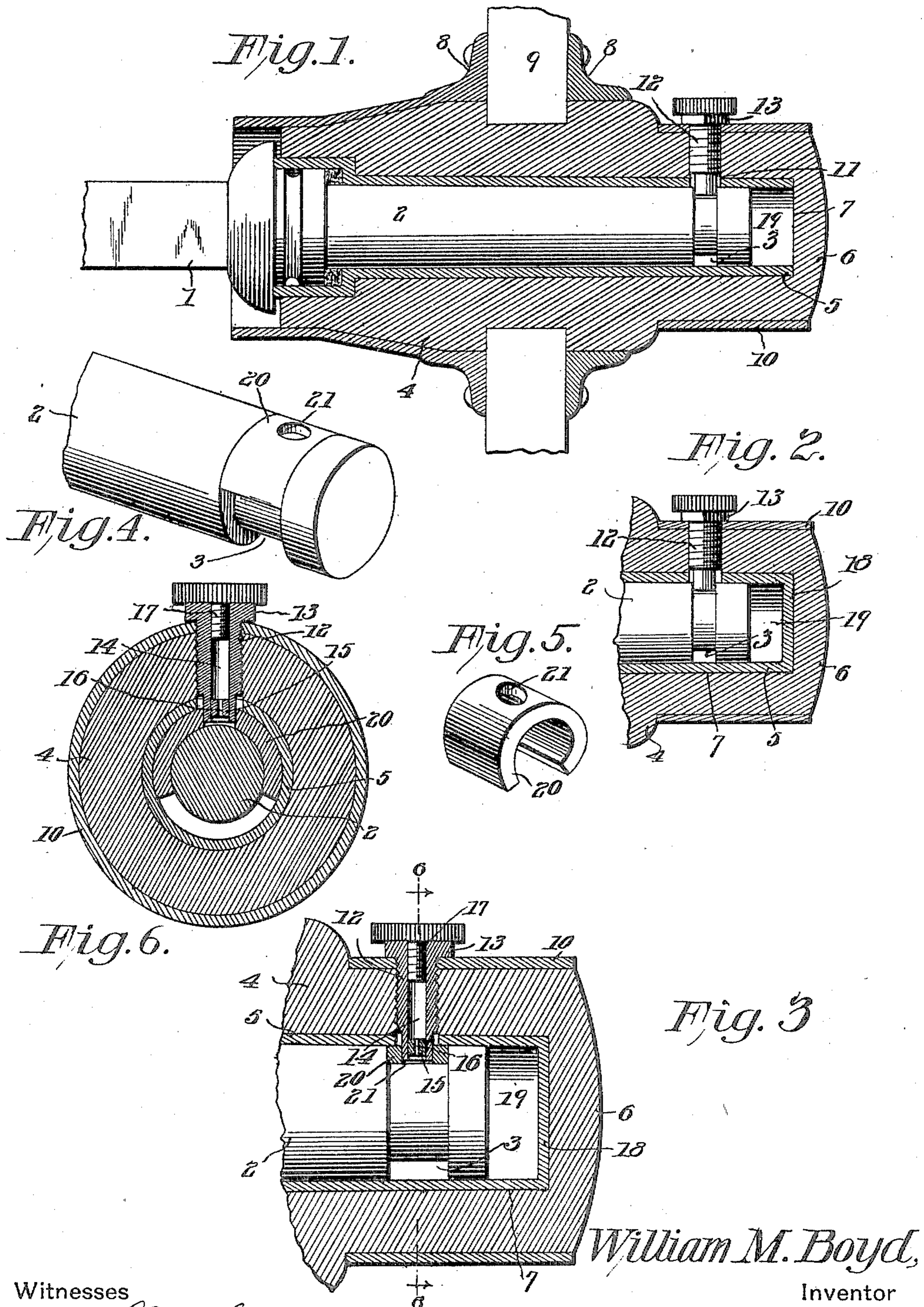


No. 811,615.

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W. M. BOYD.
MEANS FOR LUBRICATING VEHICLE WHEELS.
APPLICATION FILED MAY 29, 1905.



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UNITED STATES PATENT OFFICE.

WILLIAM M. BOYD, OF CONNERSVILLE, INDIANA, ASSIGNOR OF ONE-THIRD TO CHASE BOYD AND ONE-THIRD TO ERNEST I. BOYD, OF CONNERSVILLE, INDIANA.

MEANS FOR LUBRICATING VEHICLE-WHEELS.

No. 811,615.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed May 29, 1905. Serial No. 262,879.

To all whom it may concern:

Be it known that I, WILLIAM M. BOYD, a citizen of the United States, residing at Connorsville, in the county of Fayette and State of Indiana, have invented a new and useful Means for Lubricating Vehicle - Wheels, of which the following is a specification.

This invention relates to means for lubricating vehicle-wheels; and the objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a longitudinal sectional view illustrating the hub of a wheel mounted upon an axle-spindle and embodying a lubricating device constructed in accordance with the principles of the invention. Fig. 2 is a sectional detail illustrating a modification. Fig. 3 is a sectional detail view illustrating another modification in the attaching means. Fig. 4 is a perspective detail view showing the end of a spindle in accordance with the construction shown in Fig. 3. Fig. 5 is a perspective detail view of the washer used in connection with the construction illustrated in Figs. 3 and 4. Fig. 6 is a transverse sectional view taken on the plane indicated by the line 6 6 in Fig. 3.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

A portion of an ordinary axle has been shown at 1, 2 designating the spindle, which is of ordinary construction, except that the screw-threaded portion ordinarily found at the extremity of the spindle is dispensed with and the spindle is provided near its outer end with an annular groove 3. A wheel-hub 4, of any suitable or well-known construction, is provided with an axle-box 5, which engages the spindle for rotation. The outer extremity of the hub is closed or imperforate, as shown at 6, the bore in which the axle-box is seated extending only part way through said hub. The dimensions are preferably such that the outer extremity of the axle-box

will be in contact with the bottom of the bore, the latter being designated 7. The hub, which has here been shown as of ordinary wooden construction having metallic clamps 8 8, between which the spokes 9 are secured, is preferably provided at its outer end with a metallic sleeve or thimble 10 to prevent splitting. Through the sleeve and hub is formed an aperture 11, into which is threaded a pin 12, having an unthreaded inner portion extending into the annular groove 3 of the spindle, with relation to which latter the pin 12 is radially disposed. The outer end of said pin has a wrench-seat 13, whereby it may be conveniently adjusted or detached, as may be required. The pin 12 has a longitudinal bore or aperture 14, near the inner end of which is seated a plug 15, having a smaller feed-aperture 16, the said pin and plug constituting a lubricant-container from which lubricating material may freely pass to the bearing of the wheel. The outer end of the pin 12 is provided with a readily-accessible screw-threaded plug or closure 17, by removing which the supply of lubricant may be replenished.

Under the modification illustrated in Fig. 2 the outer end of the axle-box is made closed instead of open, the closure 18 being either integral with or separate from the material of which the axle-box is constructed, but in any event of such a nature as to fit tightly and to prevent lubricating material from reaching the outer part of the wooden hub, which would be liable to absorb and to become saturated therewith. The space 19 between the end of the spindle and the axle-box may be filled with lubricating material, forming a storage-reservoir from which the lubricant will gradually become distributed to the bearing, which will thus be kept in good order for a long time.

In Figs. 3, 4, 5, and 6 is illustrated another and important modification under which the groove 3 near the end of the spindle is made wider than before for the reception of a washer 20, which is preferably constructed of resilient metal, so as to enable it to be sprung into the groove, where it occupies more than one-half of the circumference of the spindle. The washer 20 has an aperture 21 for the reception of the inner end of the pin 12, the construction of the latter being

unchanged. It will be seen that when this washer is present there will be no direct frictional contact between the pin 12 and the walls of the groove 3, the washer forming an extended bearing-surface, which is better fitted to receive end thrust than the pin alone. The washer may within the scope of the invention be in the nature of a sleeve entirely encircling the spindle, or the pin 12 may be duplicated and a plurality of the washers be employed.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. The wheel constructed and equipped in accordance with the principles of this invention will be safely mounted for rotation upon the spindle and it will not require to be removed for the purpose of lubricating, such removal being at all times objectionable, not only on account of the work involved, but also by reason of the fact that sand and grit will almost invariably find their way to the bearing when the wheel is removed, thus cutting the spindle and burning out the lubricant. The closed outer end of the hub will readily lend itself to any neat and attractive ornamentation and will never be disfigured by exuding lubricating material. The hub under the present invention is also much shorter than the ordinary hub, and the danger of collision with other vehicles or with obstructions of any kind will therefore be materially reduced.

Having thus described the invention, what is claimed is—

1. A hub closed at its outer end and having a longitudinal bore, an axle-box seated in said bore and contacting with the bottom thereof, said hub and axle-box being apertured near their outer ends; a spindle engaging the axle-box and having an annular groove in registry with said apertures; and a tubular member extending through the apertures into the groove and having a closure at its outer end.

2. A hub, an axle-box closed at its outer end and engaging said hub, said hub and

axle-box being apertured near their outer ends; a spindle engaging the axle-box and having an annular groove in registry with said apertures; and a tubular member extending through the apertures into the groove and having a closure at its outer end.

3. A hub, an axle-box in said hub, a spindle engaging the axle-box and having an annular groove, a washer member engaging said groove and having an aperture, and a tubular member extending through the hub and the axle-box into the aperture of the washer and provided with a closure at its outer end.

4. The combination with a spindle having an annular groove, of a hub having an axle-box, and a lubricating-tube extending beyond the inner surface of the axle-box and engaging the annular groove.

5. The combination with a spindle having an annular groove, of a hub having an axle-box, and a lubricating-tube extending beyond the inner surface of the axle-box and engaging the annular groove; said tube having near its inner end a plug provided with a feed-opening.

6. The combination with a spindle having an annular groove, of a hub having an axle-box, a lubricating member extending through the hub and axle-box, and a washer having a perforation affording a seat for the member engaging the annular groove and inner end of the lubricating member.

7. A hub having an axle-box, a spindle engaging said axle-box and having an annular groove, said spindle terminating short of the outer extremity of the axle-box, a closure for the latter whereby a chamber is formed adjacent to the outer end of the spindle, a tubular member extending through the hub and the axle-box into the annular groove of the spindle, and a closure at the other end of said tubular member.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. BOYD.

Witnesses:

JOHN M. PATTISON,
CHASE BOYD.