

No. 756,675.

PATENTED APR. 5, 1904.

P. MEYER.
SELF LUBRICATING AXLE.
APPLICATION FILED MAR. 10, 1903.

NO MODEL.

FIG. 1.

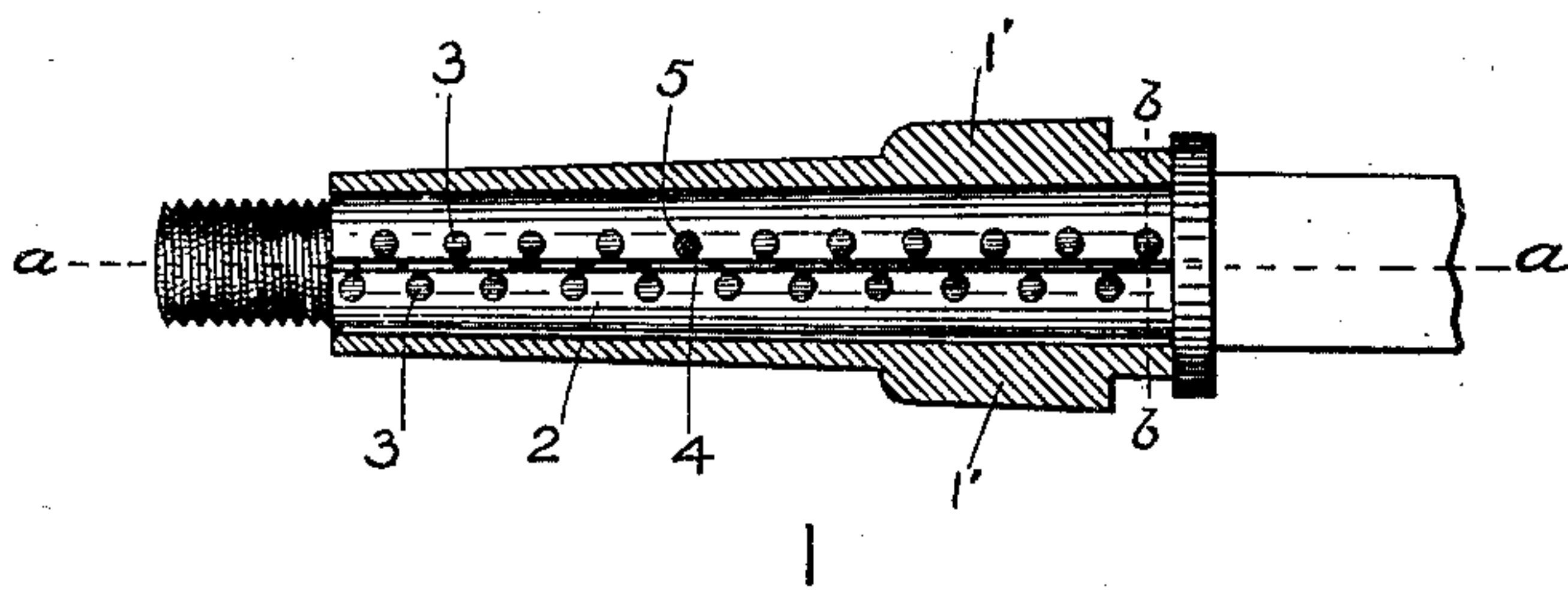


FIG. 2.

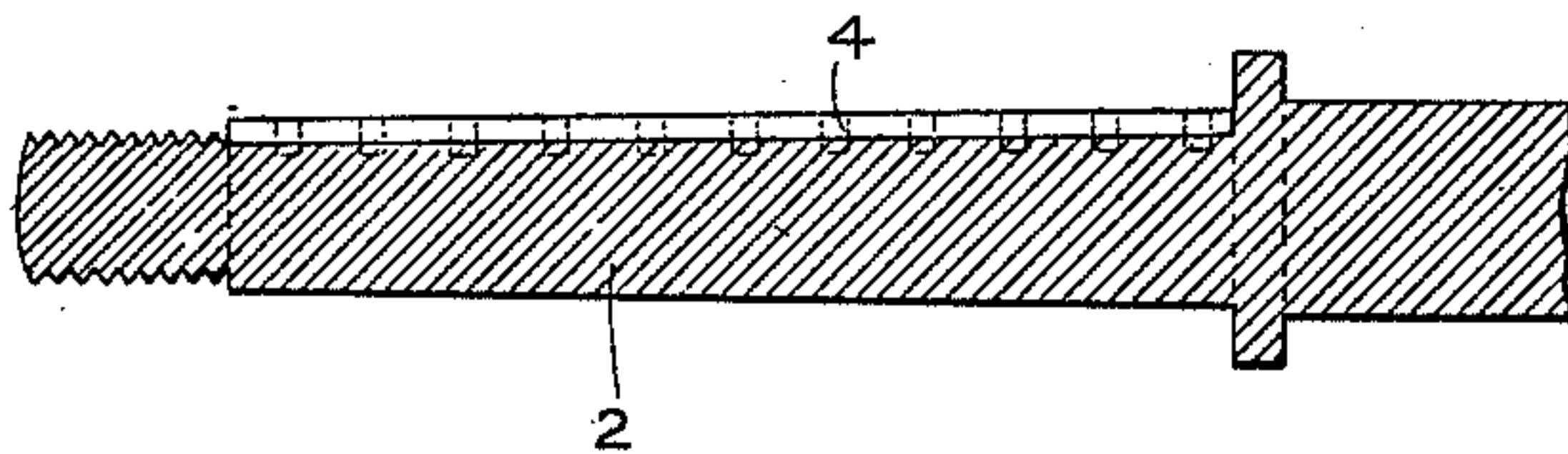
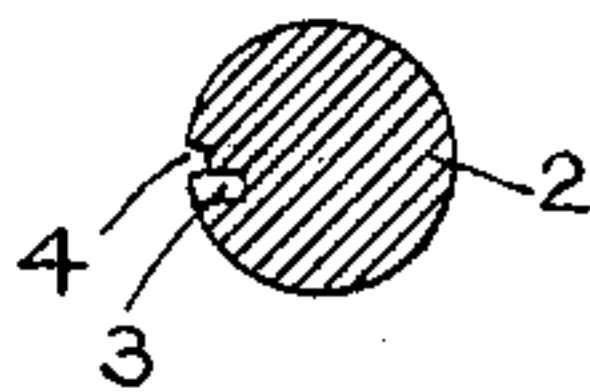


FIG. 3.



Witnesses,
Adrian Moss,
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Inventor,
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UNITED STATES PATENT OFFICE.

PHILIP MEYER, OF BARDONIA, NEW YORK.

SELF-LUBRICATING AXLE.

SPECIFICATION forming part of Letters Patent No. 756,675, dated April 5, 1904.

Application filed March 10, 1903. Serial No. 147,080. (No model.)

To all whom it may concern:

Be it known that I, PHILIP MEYER, a citizen of the United States, and a resident of Bardonia, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Self-Lubricating Axles, of which the following is a specification.

My invention pertains to axles which are capacitated to contain within themselves a lubricant which will be supplied to the bearing-surfaces of said axles in the quantities required for use thereon.

An object of my invention is to provide in the axles and for the purpose mentioned recesses or cavities which may be supplied with suitable lubricants.

Another object of my invention is to cause said cavities to collect from the surfaces of the axles and from the members which are journaled thereon all extraneous and foreign substances which may either find their way onto or between the surfaces mentioned or be formed by the attrition of said surfaces.

A further object of my invention is to form the cavities mentioned so that a lubricant previously placed in them will be expelled from them by the foreign matter deposited in them and will exude in such quantities only as may be required for lubricating the axles.

I effect these objects by the means hereinafter described and also illustrated in the drawings which accompany and form a part of this specification, in which—

Figure 1 is a top plan view of an axle, a longitudinal section of a wagon hub and box being also shown; and Fig. 2 is a longitudinal section of the axle through the line *a a*, Fig. 1. Fig. 3 is a transverse section of the axle through the line *b b*, Fig. 1.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1' denotes an axle-box which is journaled on an axle 2. In the latter are formed a number of cavities 3, which are circular in cross-section, this particular form being necessary in order to fully meet the requirements of my invention. The cavities 3 are arranged in a plurality of rows, preferably two in number, as shown, and extending longitudinally of the axle 2, and the

adjacent cavities in said rows are respectively zigzagged with the nearest cavities in the other row. A groove 4 extends between the rows of cavities 3, longitudinally of the axle in vertical alinement therewith, the cavities 3 (see particularly Fig. 3) opening into said groove. When the axle 2 is first put in use, the cavities 3 should be filled with a lubricant 5. The groove 4 is made of less depth than the cavities 3, so that the lubricant on being collected therein is immediately returned to the cavities 3.

The operation of my invention may be described as follows: At first the surface of the lubricant 5 will contact the inner surface of the wagon-box 1', and thus effect a sufficient lubrication of the parts. As the box 1' rotates, however, foreign substances, such as those before alluded to, either collect upon or are formed by the bearing-surfaces. These substances either gravitate into the cavities 3 or are forced therein by contacting the curved side walls of said cavities and thereafter contacting the intercepting parts of the circular walls of said cavities are thus prevented from being carried farther by the rotation of the box 1' on the axle 2. It can be demonstrated that the truly-curved surfaces of the cavities 3 effect the before-mentioned result to such an extent as to collect within a cavity 3 all of the foreign substances in line therewith circumferentially of the axle. It therefore follows and can also be demonstrated in practice that a plurality of rows of said cavities zigzagged, as shown herein, will collect all the foreign substances from said axle 2 as the box 1' rotates thereon. As the foreign substances are collected in the cavities 3 the lubricant 5 is forced out thereby in an amount proportionate to the foreign matter collected therein and lubricates the journaled surfaces. Any excessive supply of lubricant which may exude from any of the cavities will be collected in the groove 4 and be forced therefrom into the cavities which are not full.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated as it is manifest that variations and modifications may be made in the features of

construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claim.

Having thus described my invention, I claim and desire to secure by Letters Patent—

An axle, the bearing-surface having circular cavities therein arranged in rows extend-

ing longitudinally thereof, said cavities being zigzagged one with another, and a groove in said bearing-surface of less depth than said cavities extending longitudinally thereof between said cavities and connecting them, substantially as described. 15

In testimony whereof I have signed my name in the presence of the subscribing witnesses. 20
PHILIP MEYER.

Witnesses:

CHAS. H. DAVIDS,
J. C. PYBAS.