

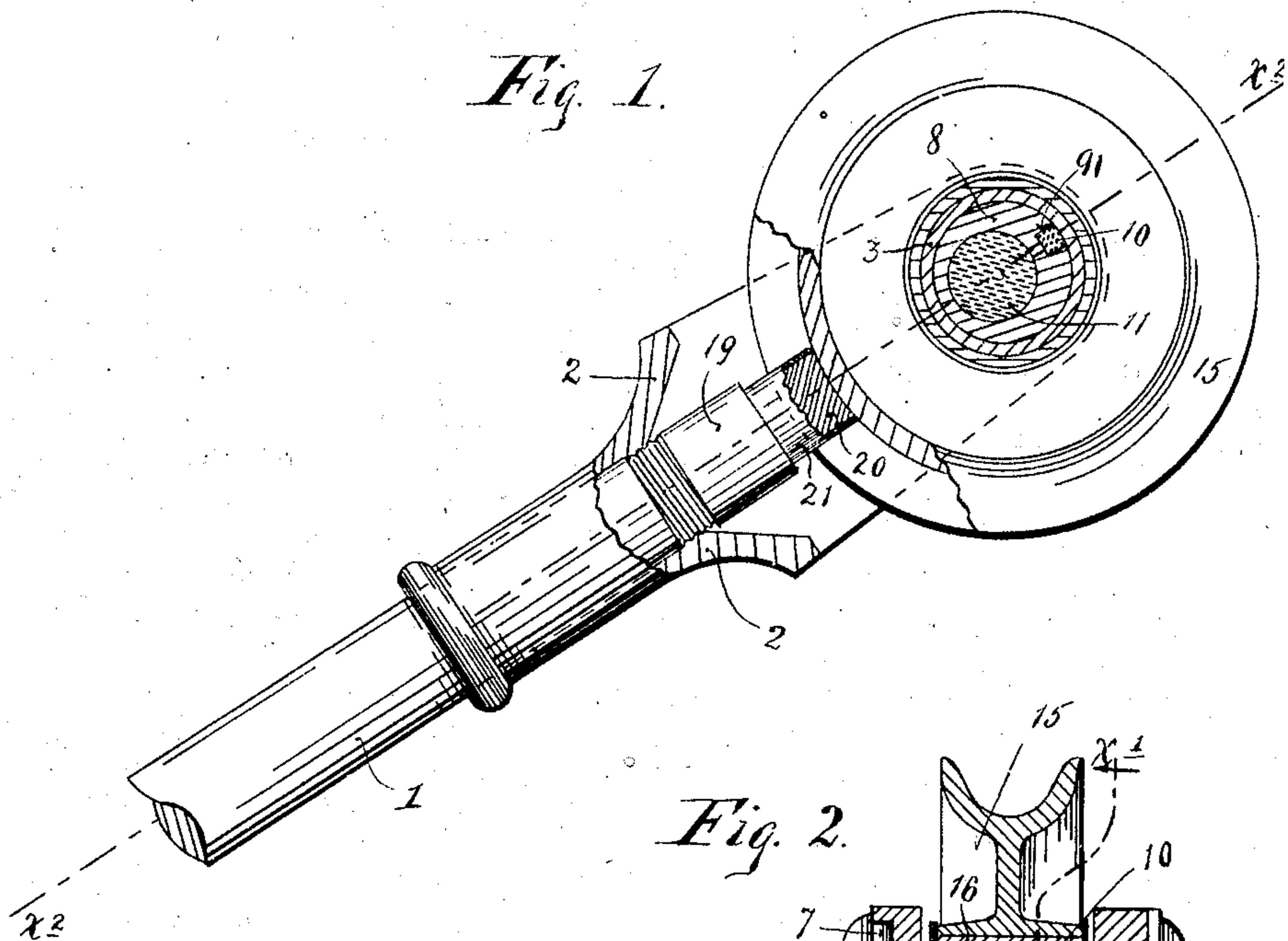
No. 768,121.

PATENTED AUG. 23, 1904.

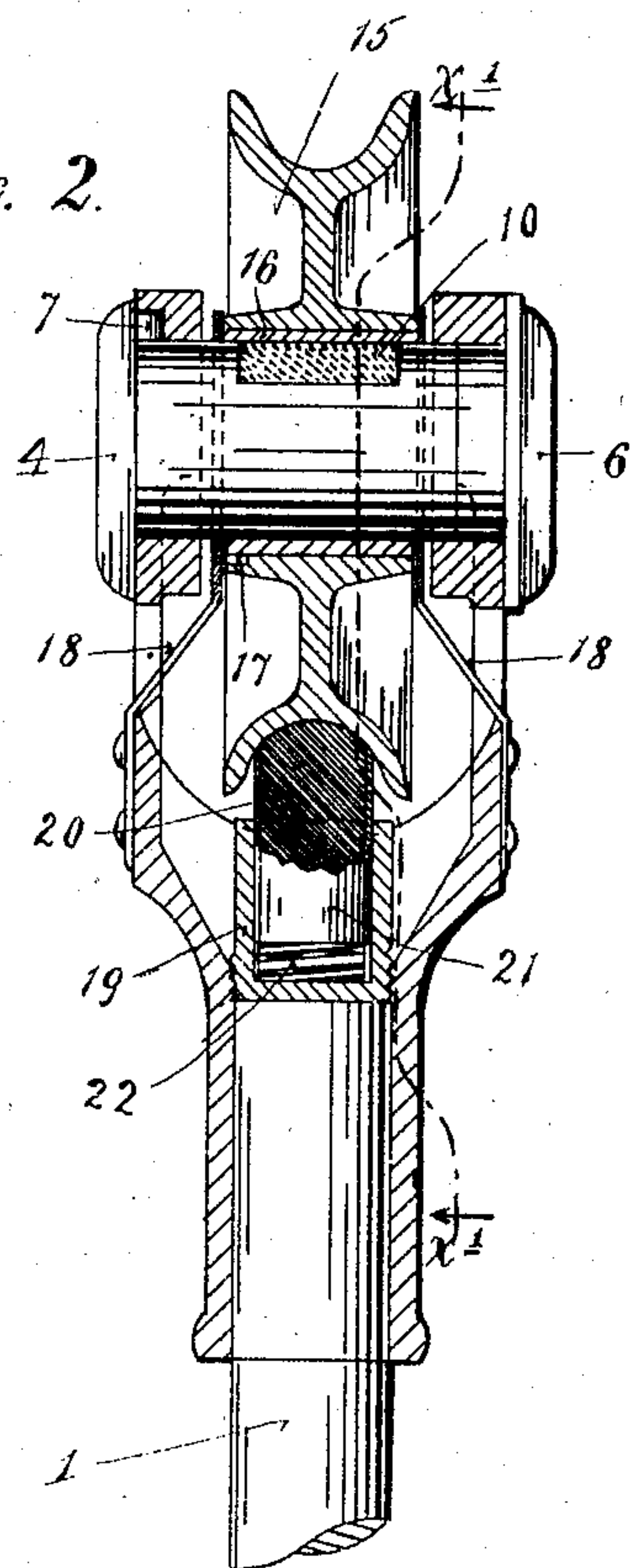
F. HACHMANN.  
SELF OILING TROLLEY.  
APPLICATION FILED OCT. 15, 1903.

NO MODEL.

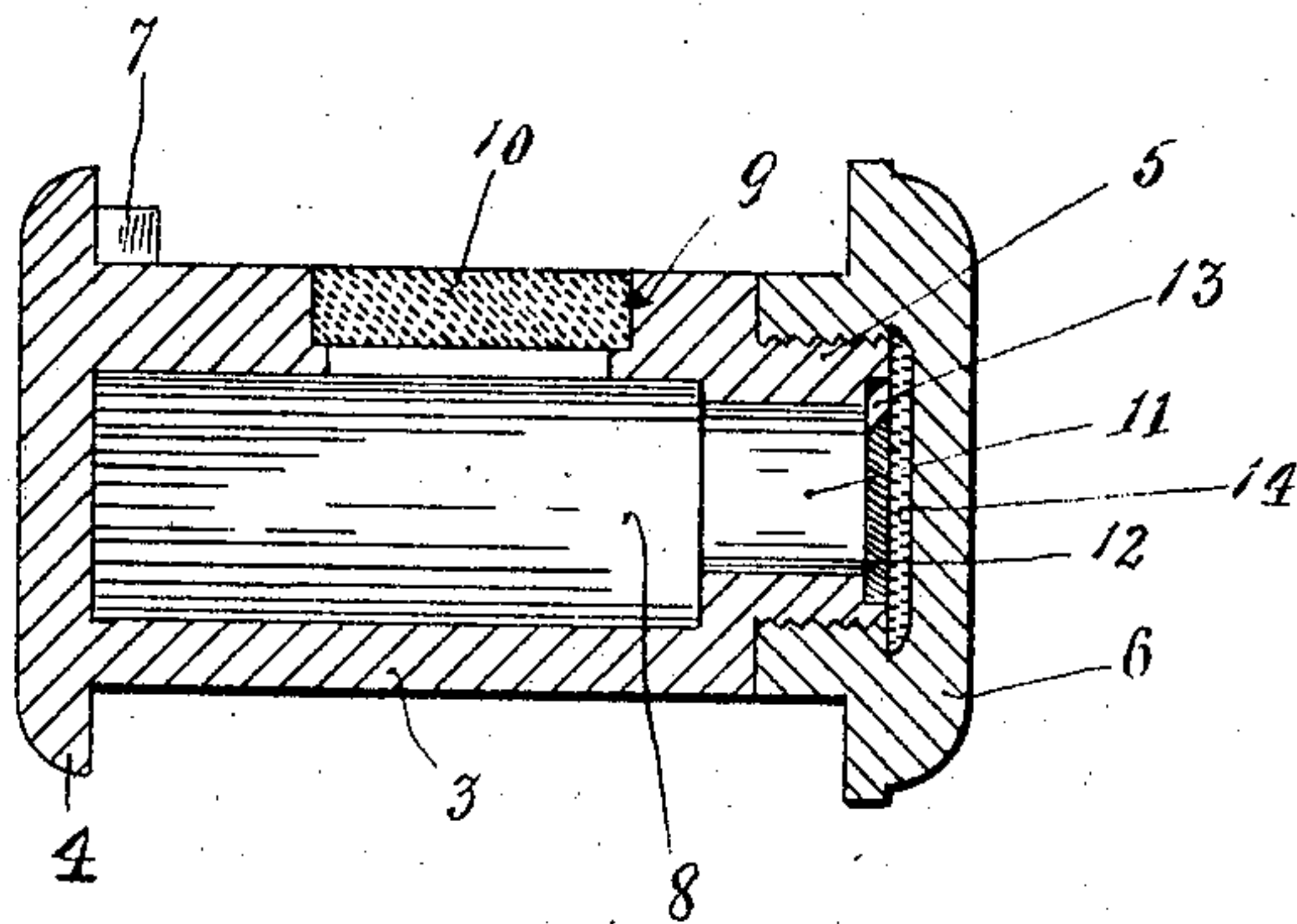
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses,*

*R. L. Mabry.*  
*A. H. Opsahl.*

*Inventor,*

*Frederick Hachmann,*  
*By his Attorneys,*

*William M. Merchant*



# UNITED STATES PATENT OFFICE.

FREDERICK HACHMANN, OF ST. PAUL, MINNESOTA, ASSIGNOR OF THIRTY THIRTY-SECONDS TO FRANK L. GAZZOLO, JOHN R. PATTY, THOMAS BILLINGSLEY, STUART B. SHOTWELL, OTTO MULLER, AND CHARLES BRECK, OF ST. PAUL, MINNESOTA.

## SELF-OILING TROLLEY.

SPECIFICATION forming part of Letters Patent No. 768,121, dated August 23, 1904.

Application filed October 15, 1903. Serial No. 177,125. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK HACHMANN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Self-Oiling Trolleys; and I do hereby 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.

My present invention relates to trolleys for electric railways, and has for its object to provide automatic oiling device therefor.

The invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view, principally in side elevation, but with some parts sectioned on the lines  $x' x'$  of Fig. 2, showing a trolley pole and wheel equipped in accordance with my invention. Fig 2 is a section on the line  $x^2 x^2$  of Fig. 1, some parts being left in full; and Fig. 3 is a detail showing the hollow journal or bearing shaft of the trolley, the same being sectioned in the line  $x^2 x^2$  of Fig. 1.

The numeral 1 indicates the trolley-pole, having at its free end a pronged bearing-head 2, seated in the prongs of which is a hollow journal or stub shaft 3, having at one end a head 4 and at its other end a reduced threaded portion 5. A flanged cap-nut 6 is screwed onto the threaded portion 5 and completes the reduced end of the said shaft 3. The said cap of course serves to hold the shaft 3 in working position or against endwise displacement. A key-lug 7 on the shaft 3 engages a notch or seat in one of the prongs of the head 2 and holds the said shaft from turning within the prongs of the said head.

The cavity 8 within the shaft 3 is located eccentric to the axis of said shaft, and through the thickest peripheral portion of the said shaft a radial slot 9 is cut through into the

chamber or cavity 8. The slot 9 affords a seat for a rectangular body 10, of absorbent material—such, for instance, as felt or wicking. The oil cavity or chamber 8 has a contracted neck 11, which opens through the reduced threaded portion 5 of the shaft 3. The outer extremity of the neck 11 is closed by metallic washer 12, which is pressed into a seat formed in the outer end of the reduced section 5. The washer 12 is formed with a single oil-hole 13, located at its upper portion. When the cap-nut 6 is removed from the threaded shaft-section 5, oil may be introduced into the oil-receiving cavity or chamber of the shaft 3 by inserting the nozzle of an oil-can through the perforation 13 of the washer 12, and this washer, as is obvious, will cause the said cavity to hold the oil inserted therein.

Within the cap-nut 6 is a gasket 14, of leather or similar pliable material, which when the cap-nut is in working position tightly closes the perforation 13 and cuts off the escape of oil, except such as is carried off by capillary attraction by the absorbent plug or body 10. This absorbent body, it will be noted, is located at a point nearer to the top than to the bottom of the journal. It will, however, be kept saturated with oil from the cavity of the shaft 3 under the vertical movements of the trolley, which will keep more or less of the oil splashing about within the said cavity or chamber.

The trolley-wheel 15 is of course journaled on the intermediate portion of the shaft 3 between the prongs of the trolley-head 2. To increase the life of the trolley-wheel, it is provided with a detachable bushing 16, which loosely fits within the hub thereof, and is provided with a lug or key 17, fitting in a notch of the said hub, to cause the wheel and bushing to rotate together. The trolley-wheel is yieldingly held in an intermediate normal position by a pair of springs 18, secured to the trolley-head 2 and having annular portions that engage the opposite ends of the hub of said wheel.

By reference to Fig. 2 it will be noted that



the absorbent block or packing 10 extends longitudinally of the shaft 3 slightly less than the hub and bushing of the trolley-wheel, so that the entire surface of the bushing will be kept lubricated. I also believe it to be desirable to keep the grooved face of the trolley-wheel coated with graphite, and to this end I provide the trolley-head 2 with a detachable axially-projecting thimble or holder 19, which is preferably screw-threaded into the socket thereof. Within the thimble 19 I place a cylindrical stick 20 of graphite. This stick of graphite is preferably provided with a thin covering of soft lead 21, which holds the same in form. A short spring 22, compressed between the bottom of the thimble 19 and the inner end of the graphite stick 20, keeps the projecting end of the latter lightly pressed against the grooved face of the trolley-wheel.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a hollow shaft adapted to contain oil, said shaft being open at one end and having a radial oil-delivery passage, of absorbent material within said radial passage, a wheel rotatively mounted on said

shaft and running over the exposed portion of said absorbent material, a washer closing the open end of said shaft and having a perforation at its upper portion, and a cap-nut applied to the open end of said shaft and normally closing the perforation of said washer, substantially as described.

2. The combination of the hollow-headed shaft 3, said shaft being open at one end and having the radial oil-feeding passage 9, the absorbent material 10 located in said passage 9, the washer 12 closing the open end of said shaft and having the perforation 13, the cap-nut 6 screw-threaded on the open end of said shaft and provided with the pliable gasket 14 normally closing the perforation 13 of said washer 12, and the wheel mounted on said shaft and running over the exposed surface of said absorbent packing 10, substantially as described.

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

FREDERICK HACHMANN.

Witnesses:

ELIZABETH H. KELIHER,  
F. D. MERCHANT.