

No. 667,336.

Patented Feb. 5, 1901.

E. S. REED.
TROLLEY HEAD.

(Application filed June 20, 1900.)

(No Model.)

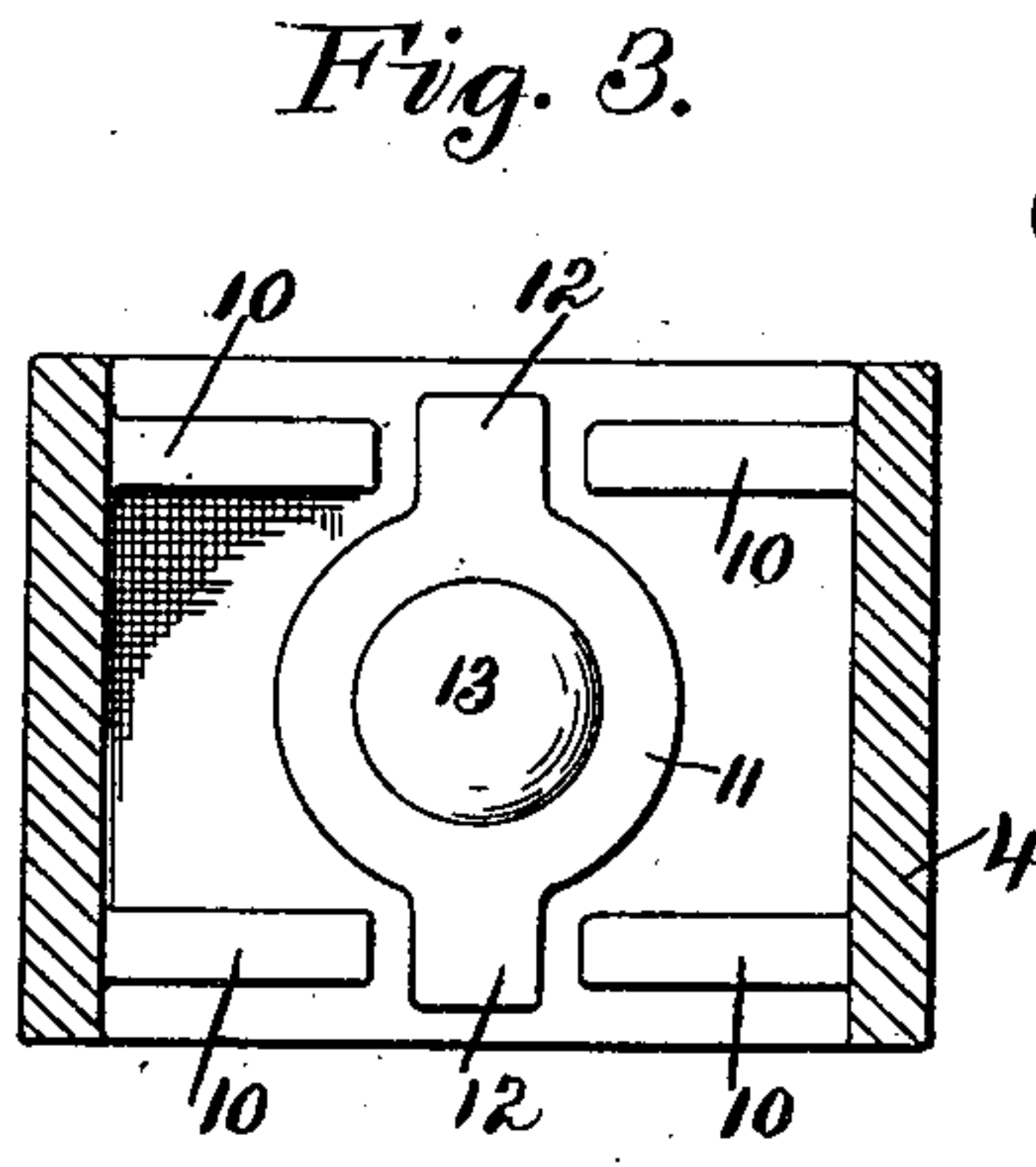
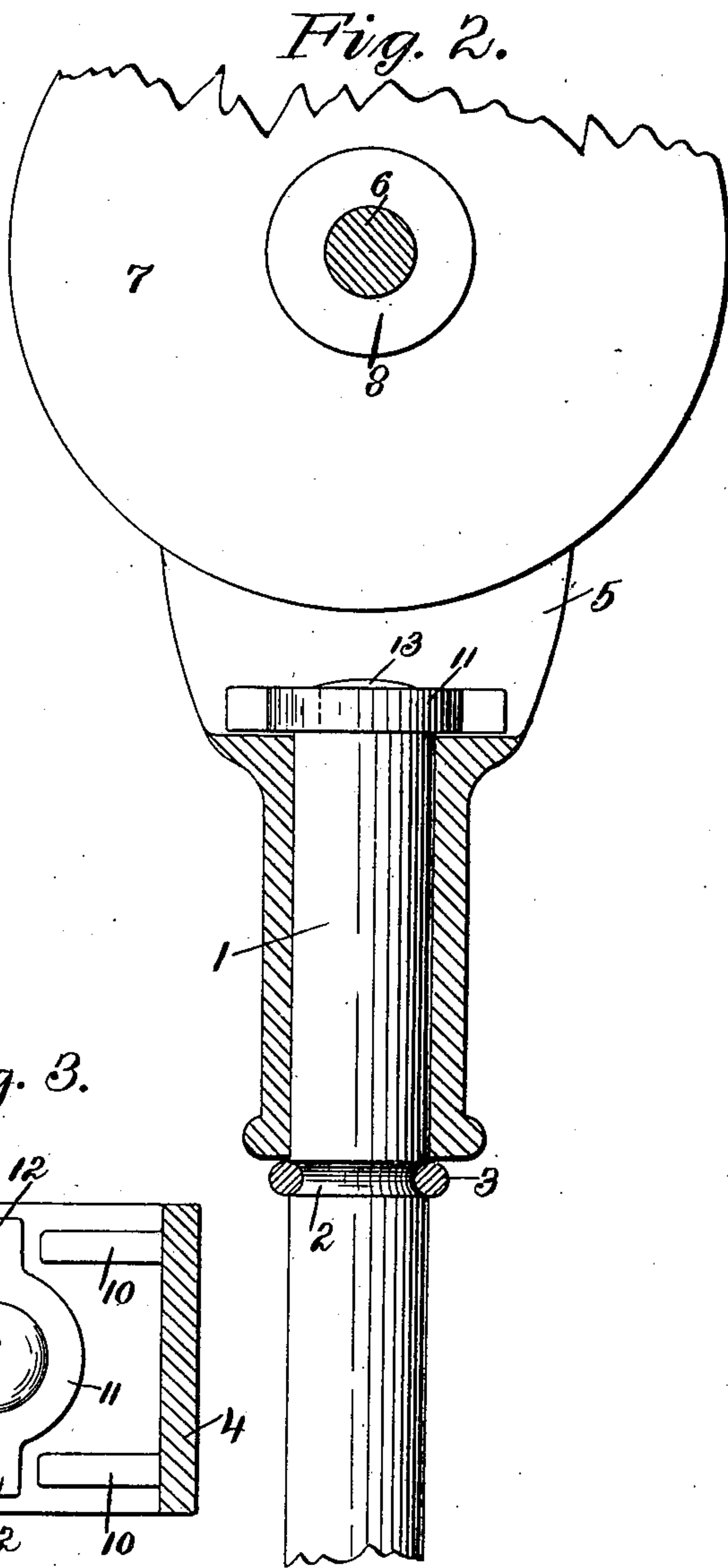
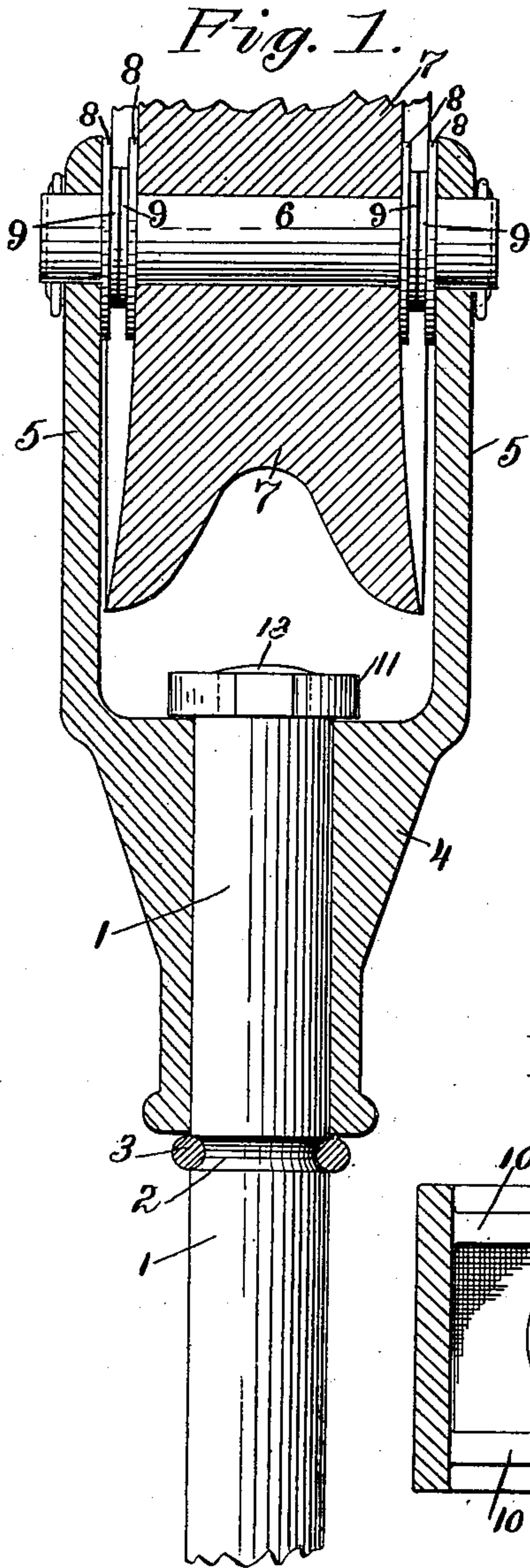
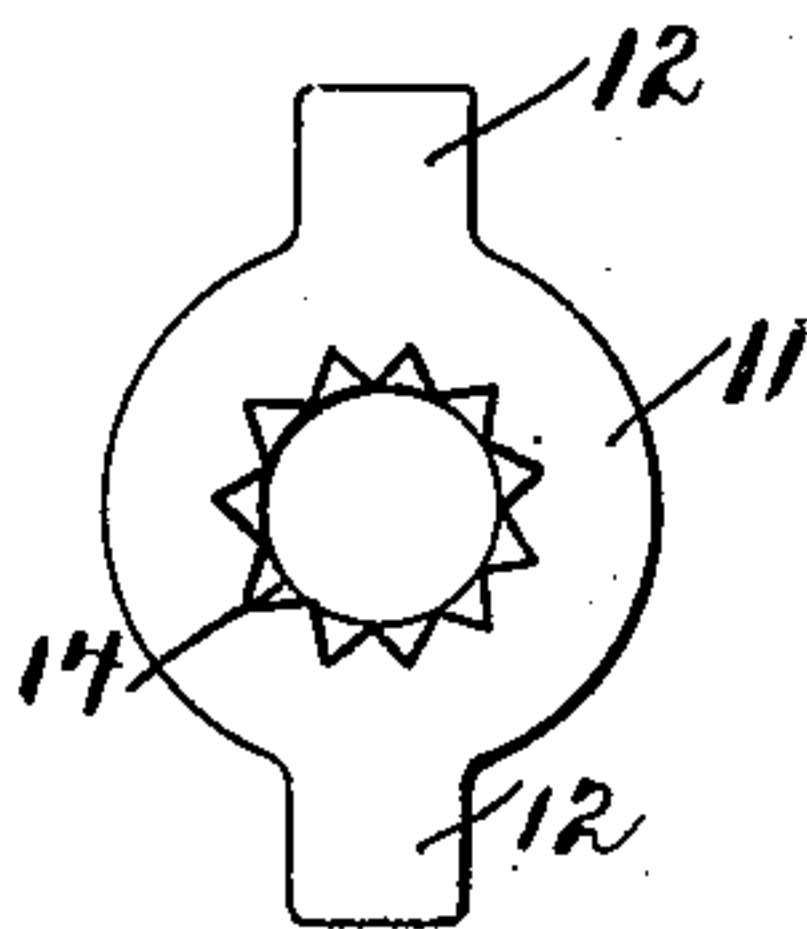


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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TROLLEY-HEAD.

SPECIFICATION forming part of Letters Patent No. 667,336, dated February 5, 1901.

Application filed June 20, 1900. Serial No. 20,944. (No model.)

To all whom it may concern:

Be it known that I, ELI SAMUEL REED, a citizen of the United States of America, and a resident of Hill City, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Trolley-Heads, of which the following is a specification.

My present invention has reference to an improvement in trolleys, and has for its principal object the combination of a wheel with its mounting in the fork, so that friction may be avoided and ease and facility of movement promoted, while another object which may be stated is to so connect with the upper end of the spindle a stop-cap as that the union of the two may be of great strength, durability, and efficiency.

The invention consequently consists, essentially, in the construction, combination, and arrangement of parts, substantially as will be hereinafter more fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a vertical section of a trolley-head embodying my present improvements, the spindle as well as the wheel-axle being shown in side elevation. Fig. 2 is a side elevation of my improved trolley-head, certain parts being shown in section. Fig. 3 is a horizontal sectional plan view. Fig. 4 is a detail plan view of the cap on the upper end of the spindle and shows the corrugated or notched edge of central orifice therein.

Like numerals or symbols of reference denote like parts throughout all the different parts of the drawings.

1 denotes the spindle, the lower end of which is designed to be attached to the trolley-pole, (not shown,) which may be of any of the usual or well-known constructions and mounted in any approved way. At a suitable distance from the upper end of spindle 1 is a horizontal encircling groove 2, which is adapted to receive a stationary ring 3, which serves as a flange or projection on which to support the trolley-head proper. I do not wish to be restricted, however, to a wire ring partially embedded in a groove as a means for supporting the head, but reserve the liberty of sub-

stituting for this particular device any other equivalent means which may subserve the same purpose.

4 denotes the head proper, having therein a vertical passage designed to receive the spindle 1, so that in this way the head is mounted in an upright position upon the spindle and is susceptible of a greater or less amount of axial shifting upon said spindle, the lower end of head 4 resting, as we have seen, upon the projecting wire ring 3. Head 4 is provided with the integral upright forks 5 5, in which, near their upper ends, is supported the stationary shaft or pin 6, which serves as a journal or axle on which the wheel 7 is revolvably mounted, said pin 6 being provided with suitable pins at each end which retain it in its position, securing it not only against endwise, but also against rotary movement. The wheel 7 is of the usual trolley variety, having a peripheral groove and being of suitable size to adapt it to lie operatively between the forks 5 5 and to be effectively mounted upon the pin 6. Between the central portion or hub of the wheel 7 and each fork 5 is situated a pair of washers 8 8, having shoulders 9. Said shoulders 9 are of considerably less diameter than the disks 8. All these disks are supported loosely on the pin 6. The members of each pair of disks lie with their shoulders 9 in proximity to each other, the result being that of each pair of disks one disk is in contact with the hub of the wheel 7 while the other disk is in contact with the adjoining fork 5, while the shoulders 9 9 of these two disks are in proximity to each other, and when the trolley is in operation and is rapidly revolving one disk 8 will adhere to the wheel 7 and rotate rapidly, while the other will adhere to the fork 5 and remain stationary, and whatever friction there is between the two disks will consist in the rubbing together of the shoulders 9 9, which I have already said are of considerably less diameter than the disks, so that in this way the hub of the wheel and also the trolley-forks 5 5 are saved from wearing, all the wear being upon the shoulders of the disks and said wear being comparatively unimportant, owing to the small diameter of said shoulders.

ders. These shouldered disks are readily and easily removable from their places in connection with the wheel while the trolley is on the car, thereby making it a very convenient thing to readjust the parts when needed, inasmuch as these various features which I have described can be taken apart or put together in a very few minutes and with very little trouble.

Although it is essential that a trolley-head should have a certain amount of wrist or axial movement, yet it is likewise necessary that means be provided to restrict such movement within certain positive and definitely-marked limits, and consequently in the present invention in casting the head 4 I preferably form upon the upper surface thereof, between the forks 5 5, projecting ribs 10 10, that run from the fork 5 on one side to the fork 5 on the other side, except at the central portions thereof, where they are omitted to leave recesses for receiving lugs or projections 12 12 on the ring-cap 11, which is riveted or otherwise firmly secured to the upper end 13 of the spindle 1. The arrangement of the stop-ribs 10 is shown in Fig. 3, as is also the location of the stop-lugs 12, and by reference to said figure it will be seen what is the extent of movement of said lugs as they oscillate between the ends of the ribs 10. The cap 11 consists simply of a brass or other metal ring having the projecting lugs 12, of which I have just spoken. The central opening in said ring 11 is notched around its periphery at 14, on the upper side, in order that the upper end 13 of the spindle 1 may be riveted into the notches and the cap 11 may be more firmly connected to the spindle 1. The cap 11 may be very firmly secured to the spindle 1 by hammering sufficiently upon the upper end 13 of said spindle 1 to flatten down said end and cause the material thereof to effi-

ciently engage the several notches 14 around the inner periphery of the central opening to ring 11.

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

1. The combination in a trolley, of the spindle, the head connected therewith so as to be capable of an axial rotation, and a lug-provided ring riveted to the upper end of the spindle and engaging the head so as to limit the axial movement thereof.

2. In a trolley, the combination of the spindle having means thereon for supporting the trolley-head, of a lug-provided ring having a central orifice formed with a notched periphery, said ring being riveted to the upper end of the spindle by causing the compressed material of the spindle to enter the notch of the ring, as set forth.

3. In a trolley, the combination of the spindle, the head supported thereon and having forks, the wheel mounted between said forks, and pairs of shouldered disks situated between the wheel and the forks, as set forth.

4. In a trolley, the combination with the forked head, of a wheel, and pairs of disks between the wheel and the forks, said disks having shoulders that are in contact with each other, as set forth.

5. In a trolley, the combination with the trolley-head, of the wheel and the pairs of lateral disks, said disks having shoulders of smaller diameter than the disks and arranged in proximity with each other so as to reduce friction, substantially as described.

Signed at Hill City, Tennessee, this 16th day of June, 1900.

ELI SAMUEL REED.

Witnesses:

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D. L. DUNCAN.