

R. F. HENNE.
TROLLEY HEAD.

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1,050,652.

Patented Jan. 14, 1913.

Fig. 1.

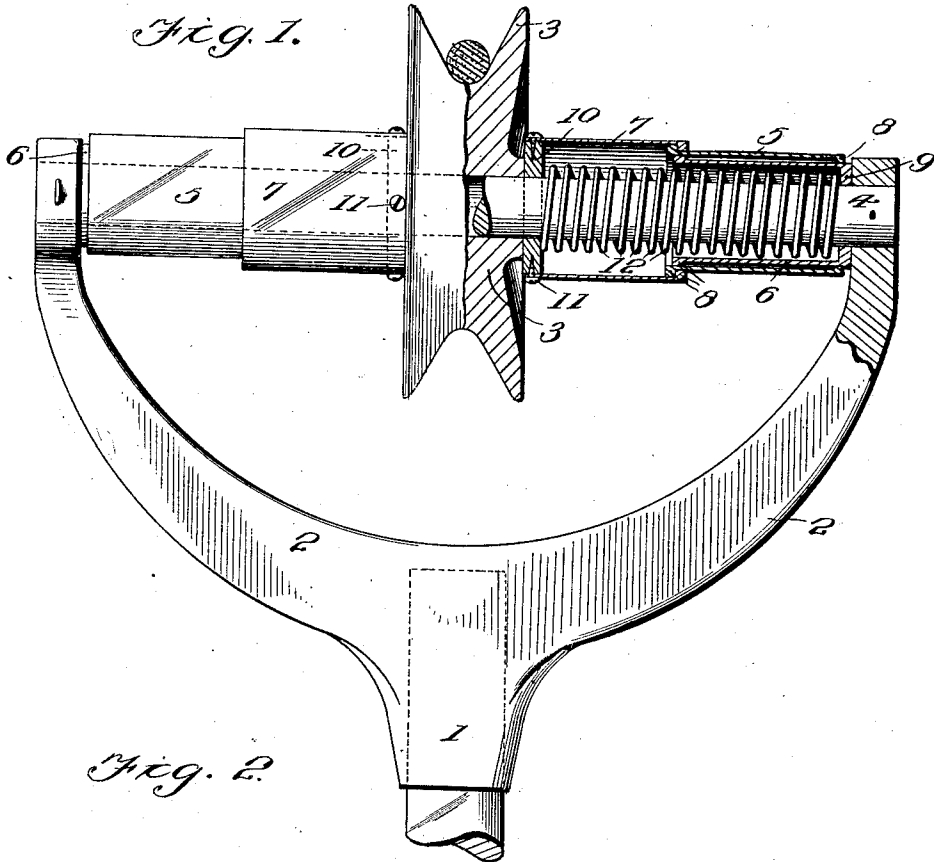
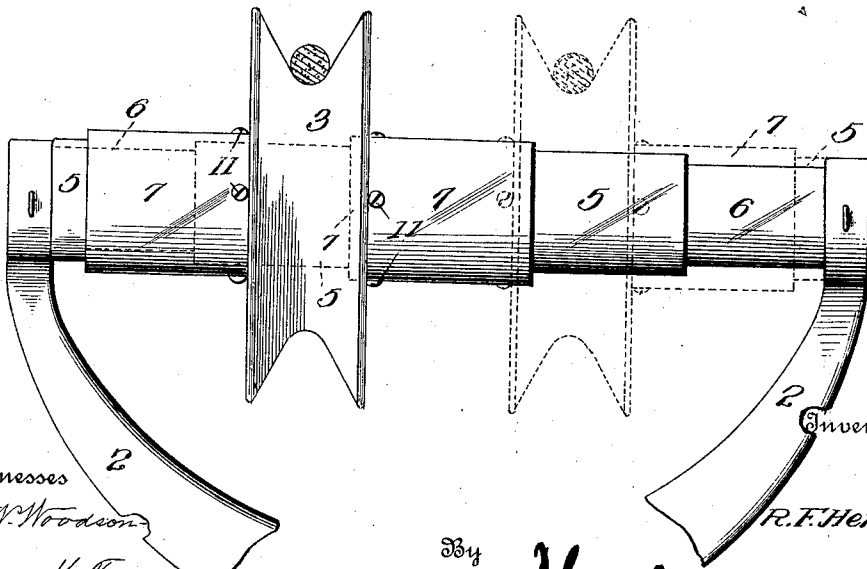


Fig. 2.



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ROBERT F. HENNE, OF MAMARONECK, NEW YORK.

TROLLEY-HEAD.

1,050,652.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT F. HENNE, citizen of the United States, residing at Mamaroneck, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Trolley-Heads, of which the following is a specification.

The present invention comprehends certain new and useful improvements in trolley heads of that type wherein the trolley wheel is confined on its supporting shaft between opposed expansion springs in order to be capable of moving laterally against the force of one or the other of these springs, to accommodate itself to the trolley wire.

The primary object of the present invention is to improve the construction of the trolley head for which Letters Patent No. 889,463 were granted to me on June 3, 1908. In that patent plungers are slidably mounted on the shaft between the springs and the trolley wheel, and carry hoods that extend over the springs and arms of the trolley harp. It is necessary that the hoods project laterally beyond the arms of the harp in order to be of sufficient length to protect the springs at all times during the lateral movement of the trolley wheel. However such an arrangement has been found objectionable in practice on account of the fact that the projecting portions of the hoods tend to catch into guide wires and the like and are liable to become broken off.

The present invention aims to obviate the objections above noted, and to this end provides telescopic casings in lieu of the plungers and hoods. The casings are interposed between the trolley wheel and the adjacent arms of the harp and are thus entirely housed between the arms of the harp. Inasmuch as the ends of the casings are closed around the shaft, the springs which are mounted within the casings are well protected from the elements.

With these and other objects in view, as will more fully appear as the description proceeds, the invention consists of certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a front elevation, partly in

section, of a trolley head constructed in accordance with my invention; and, Fig. 2 is a fragmentary front elevation illustrating the operation of the invention.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

The invention includes a trolley harp which is substantially of well known form and comprises a stem 1 and a pair of diverging arms 2 which constitute the usual fork or yoke. The trolley wheel 3 may be of any suitable construction or design and is rotatably mounted on a shaft 4 that extends transversely between and is supported in the outer ends of the arms. The shaft is of sufficient length to enable the wheel to have lateral play between the arms.

A tube or casing is loosely mounted on the shaft 4 on each side of the trolley wheel and is interposed between the trolley wheel and the corresponding arm of the harp. As the casings are substantial duplicates only one of the same will be specifically described. The casing is adapted to collapse in the direction of the length of the shaft, and for this purpose is constructed in a plurality of substantially cylindrical sections that are of different diameters in order to fit telescopically one within the other. In the present instance there are three of these sections, the middle section being designated 5, and the end sections being designated 6 and 7 respectively. Annular beads 8 are formed at the meeting ends of the sections and coact to limit the expansion of the tube and to prevent the separation of the sections. The end section 6, which is the smallest of the three sections, is arranged in proximity to the corresponding arm 3, and is formed with an integral annular flange 9 that projects inwardly to fit the shaft 4. The largest section, designated 7, is located adjacent to the trolley wheel and receives at its inner end an annular disk 10 that fits snugly around the shaft, the disk being rigidly attached to said casing section through the instrumentality of screws 11 or like fastening devices. A coiled expansion spring 12 encircles the shaft within the casing and is confined between the flange 9 and the disk 10, whereby to exert its force to expand the casing to press the opposite ends thereof against the hub of the trolley wheel and the arm of the harp.

In practice, the trolley wheel is normally maintained midway between the ends of the shaft on account of the fact that the two springs 12 are of substantially the same strength. However the wheel is free to slide along the shaft toward either side of the harp so as to accommodate itself to the trolley wire, as for instance, when rounding a curve. Of course the lateral movement of the wheel compresses one of the springs and permits the other to expand. It will be seen that the casings follow the movements of their springs and are automatically telescoped and expanded, as required. By virtue of this construction the casings are prevented from projecting beyond the sides of the harp and a more durable and efficient structure is provided. The casings effectually prevent the springs and shaft from coming into contact with the line wire, and in addition, serve to protect the parts from the weather. As the ends of the casings are closed around the shaft, all foreign matter is positively excluded.

From the foregoing description in connection with the accompanying drawing, it will be seen that I have provided an improved trolley head which is thoroughly reliable and efficient in operation, which is simple, durable and strong in construction, and which reduces to a minimum the liability of the trolley wheel jumping the trolley wire. Furthermore, the parts of the device are capable of being easily and cheaply manufactured, and of being readily assembled, this being quite important from a prac-

tical standpoint and enhancing the commercial value of the invention.

What I claim is:

1. In a trolley head, the combination of a harp, a transverse shaft supported in the harp, a trolley wheel mounted on and slidable along the shaft, springs coiled about the shaft on opposite sides of the wheel and acting on the wheel to yieldably maintain the same against sliding movement, and telescopic casings inclosing the springs.

2. In a trolley head, the combination of a harp, a transverse shaft supported in the harp, a trolley wheel mounted on and slidable along the shaft, springs disposed on opposite sides of the wheel and acting thereon to yieldably maintain the wheel against sliding movement, and telescopic members confined between the wheel and the sides of the harp and housing the springs.

3. In a trolley head, the combination of a harp, a transverse shaft supported in the harp, a trolley wheel mounted on the harp and slidable along the shaft, a telescopic casing encircling the shaft on each side of the trolley wheel, the ends of the casings being closed around the shaft, and expansion means mounted within and interposed between the ends of each casing.

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

ROBERT F. HENNE. [L. S.]

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."