

J. J. BENNETT.
TROLLEY HEAD.
APPLICATION FILED DEC. 3, 1907.

939,658.

Patented Nov. 9, 1909.

Fig.1.

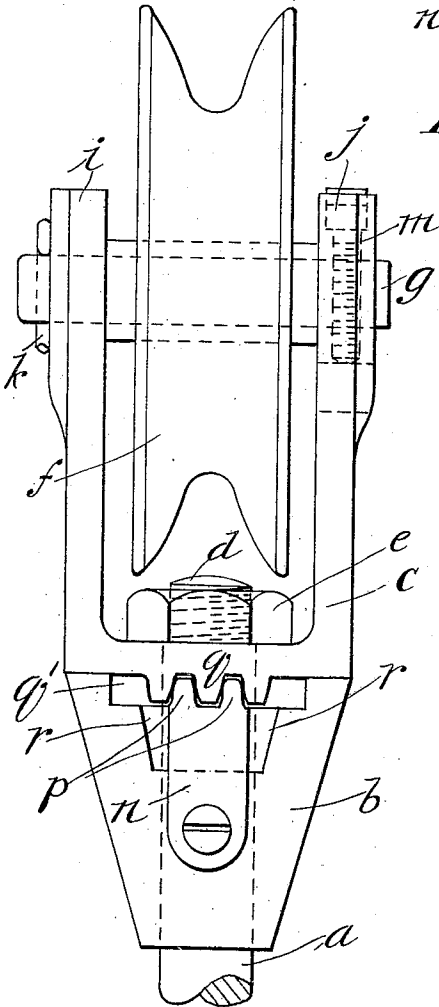
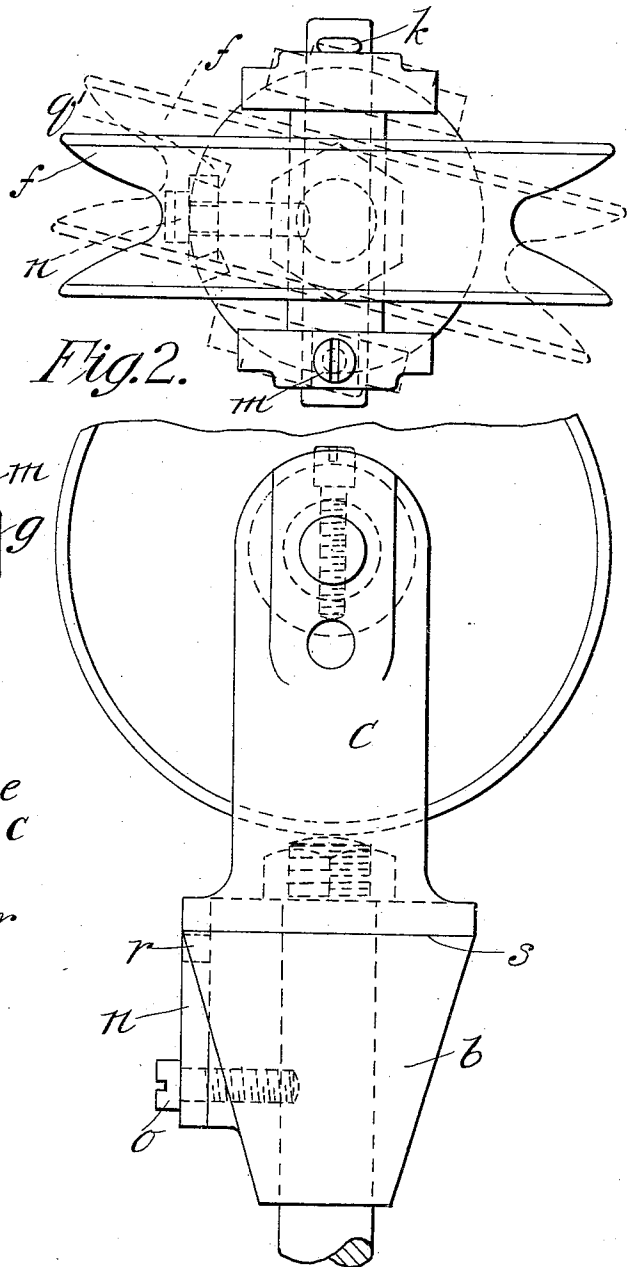


Fig.2.



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UNITED STATES PATENT OFFICE.

JOSEPH J. BENNETT, OF PITTSFIELD, MASSACHUSETTS.

TROLLEY-HEAD.

939,658.

Specification of Letters Patent.

Patented Nov. 9, 1909.

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To all whom it may concern:

Be it known that I, JOSEPH J. BENNETT, a citizen of the United States of America, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Trolley-Heads, of which the following is a specification.

My present invention relates to improvements in trolley-heads and is particularly designed to permit the wheel to rotate in a horizontal plane about a vertical axis when the car passes around a curve, thereby permitting the wheel to readily follow a corresponding curve in the overhead trolley wire; a further object of the invention being to provide a limiting or stop device so that the wheel can only turn or operate through a predetermined arc in either direction from a vertical plane, considered as passing through the vertical axis of the trolley-head, said plane being located at right angles to the front or face edge of the harp; a further object of the invention is to provide a structure that is simple in construction and one that can be produced at low cost; also one that will prevent the wheel jumping off the wire and reduce the wear of the wheel and tire.

In the drawings forming part of this application,—Figure 1 is a front elevational view of my improvement showing an edge view of the trolley-wheel and the rack and pinion construction between the harp and head proper. Fig. 2 is a side elevational view of Fig. 1, and Fig. 3 is a top plan view of Fig. 2 showing, in full lines, the wheel in its normal position and in dotted lines after the same has been rotated about its vertical supporting axis.

Referring to the drawings in detail, *a* designates the trolley-pole that extends in the usual manner from the roof of the car to the trolley-head *b* to which it is secured in any suitable manner.

c designates the U-shaped supporting element or "harp" of the trolley-head which is rotatably connected to the head *b* by means of the extended end of the pole *a* and the nut *e*.

f designates the trolley-wheel which is rotatably supported on the pin or shaft *g* and is securely held in the upper ends of the arms *i* and *j* of the harp *c* by means of the cotter-pins *k* and screw *m*, or any equivalent means, as a cotter-pin.

Pivottally mounted on the side of the trolley-head *b* is an arm *n* by means of the machine screw *o*, the upper extremity of the arm *n* being provided with teeth *p* that are adapted to mesh with the rack *q* on the lower edge of the harp *c*. The upper edge of the teeth is flush with the upper surface of the trolley-head *b*.

It will be noticed that the trolley-head *b* is provided with projecting lugs or extensions *r* against which the arm *n* strikes when the harp is rotated about the pivotal connecting means *d*, thus limiting the rotary movement of the harp in a horizontal plane. Fig. 3 clearly indicates this position after the harp has been rotated so that the wheel *f* assumes the dotted line position.

It will be noticed that the teeth of the rack *q* are located in an arc-shaped recess *q'* of the trolley-head *b*, as clearly shown in plan view of Fig. 3.

The upper end of the head piece is machine finished so as to provide a smooth horizontal surface *s*, and the lower end of the harp *c* is also machine finished so that the contacting lower portion of the harp and the upper end of the trolley head *b* will be even throughout, thus permitting the harp *c* to readily rotate on the trolley-head *b* without causing any undue binding or danger of breaking the device in passing around curves.

What I claim, is:—

1. As an improvement in trolley-heads having, in combination with the pole thereof, a head-piece proper, a harp, means for rotatably securing the one to the other, the lower edge of the harp being provided with a rack, an arm pivottally secured to the head and provided with teeth at its upper extremity meshing with the rack of the harp, and means located in the path of movement of the arm for limiting the rotary movement of the harp.

2. As an improvement in trolley-heads in combination with the head portion proper, a pivotal element secured thereto and provided with gear teeth at its upper end, the upper edge of the teeth being in the plane of the upper edge of the trolley-head, a harp pivottally secured to the head portion and provided with teeth on its lower edge for engagement with the teeth of the pivotal element, and means on the head portion for limiting the movement of the pivotal element, as described.

3. In a trolley-head construction, the combination with a trolley-pole terminating in a head element, as *b*, and provided with a recess portion as *q*¹, a harp pivotally secured to the head element and provided with
5 teeth at its lower portion and located in the recess portion of the head, an arm pivoted to the head and provided with teeth at its upper extremity and meshing with the teeth

of the harp, and stops, as *r*, for limiting the rotary movement of the harp as described, whereby breakage of the teeth on the harp is prevented. 10

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