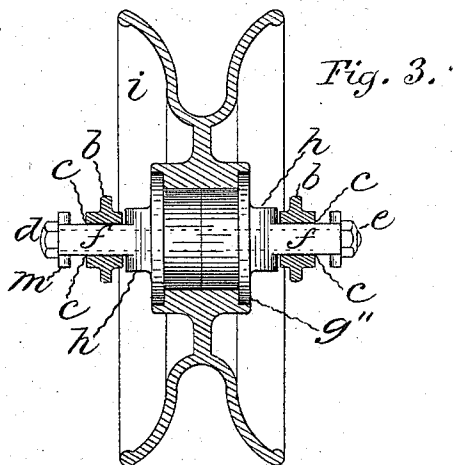
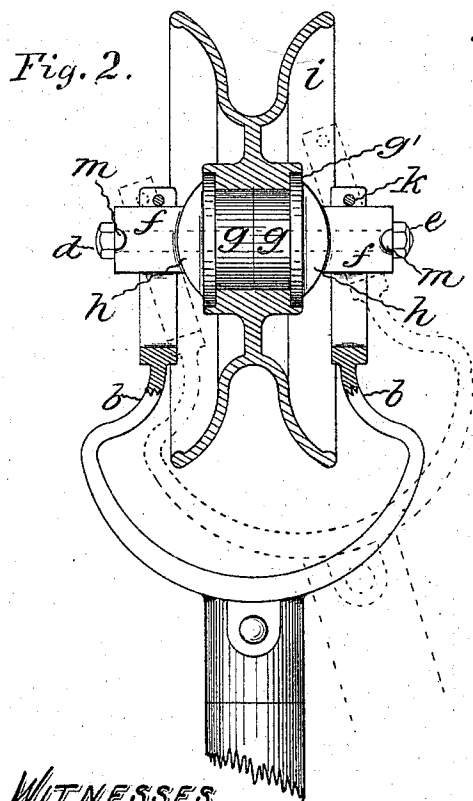
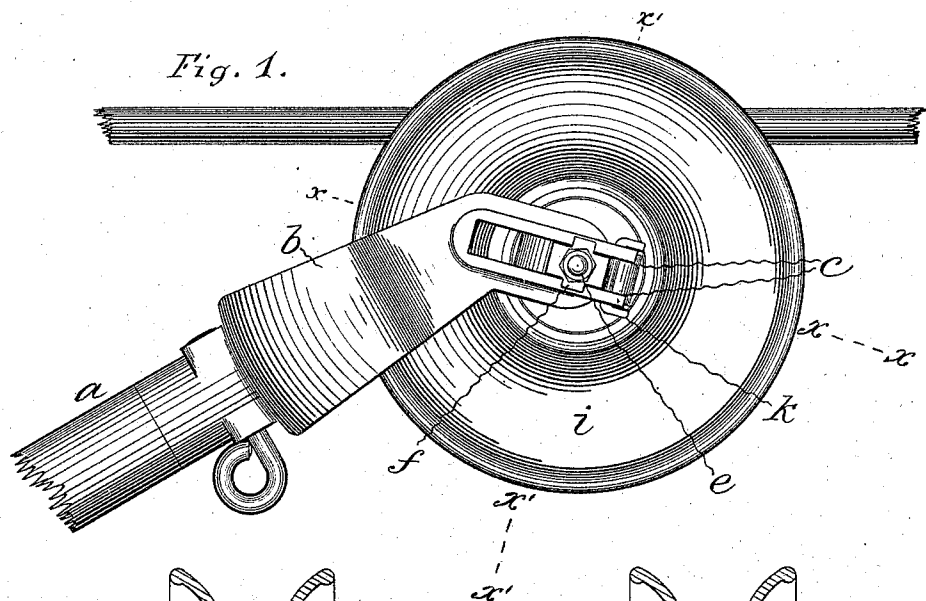


(No Model.)

H. N. GALE.
TROLLEY FOR ELECTRIC RAILWAYS.

No. 577,741.

Patented Feb. 23, 1897.



WITNESSES.

Andrew Ferguson
C. E. Bruchman

INVENTOR.

Herbert N. Gale
By W. E. Simonds
Att'y

UNITED STATES PATENT OFFICE.

HERBERT N. GALE, OF BRISTOL, CONNECTICUT.

TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 577,741, dated February 23, 1897.

Application filed October 16, 1896. Serial No. 609,064. (No model.)

To all whom it may concern:

Be it known that I, HERBERT N. GALE, a citizen of the United States of America, residing at Bristol, in the county of Hartford and State of Connecticut, have invented a certain new and useful Improvement in Trolleys for Electric Railways, of which the following is a description, reference being had to the accompanying drawings, wherein—

Figure 1 is a side view of a trolley-wheel and line-wire. Fig. 2 is a view in cross-section on the plane indicated by the dotted line *x x*, looking downward. The dotted lines indicate the swinging of the trolley-pole to one side, as, for instance, in the passing of the trolley-car from the main line to a diverging line. Fig. 3 is a view in cross-section on the plane indicated by the dotted line *x' x'*.

The object of the improvement is the production of a trolley-pulley—such as is used for contact with the overhead line-wire on an electric street-railway—which has a certain kind of freedom of movement specially useful on curves and in passing from a main line-wire to a diverging side wire.

In the accompanying drawings the letter *a* denotes the trolley-pole, to be borne by the trolley-car in the ordinary fashion. It bears the two forks *b b*. These two forks bear slots or mortises *c*, which are “ways” to support and permit a certain motion of the trolley-wheel shaft. The trolley-wheel shaft is made up of two corresponding parts screwed together (not tightly) by the bolt and nut *d e*. Each of these corresponding halves of the trolley-wheel shaft is made up of a plain shaft *f*, cylinder *g*, and curved cheek-piece *h*, the latter of which takes bearing against the inner surface of one of the forks and permits the desired freedom of the trolley-wheel shaft in the said ways.

The letter *i* denotes the trolley-wheel itself, rotarily hung upon the cylindrical part of the trolley-wheel shaft and held in place laterally by the flanges *g'* appurtenant to the cylindrical part of the trolley-wheel shaft. The pins *k* prevent the trolley-wheel shaft from escaping out of the otherwise open ends of the ways; and it is desirable and advantageous that the ways *c* should incline downward a little rearwardly, as shown, in order that there may be a constant tendency of the

trolley-wheel shaft to keep in contact with the pins *k*. While the permissible movement of the trolley-wheel shaft in its ways allows that freedom of motion in position to the trolley-wheel which facilitates the passage thereof around curves and in the passage of the car from a main track to a diverging side-track, the construction described is such that it is the constant tendency of the trolley-wheel to follow the trolley-pole in any divergencies it may make.

By making the parts *f* of the trolley-wheel shaft of rectangular or equivalent shape in cross-section, with ways therefor of corresponding shape, the trolley-wheel shaft is held from rotation, with resulting advantages. For instance, the parts *f* will not, like a rotary shaft, wear a corresponding seat in the ways, and it becomes practicable to insert rolls between the cylinder *g* and wheel-body *l*, to get thereby a roller-bearing. The bosses *m* prevent the trolley-wheel shaft from losing out of the forks *b*, if by accident those forks become spread apart unduly.

I claim as my improvement—

1. In combination, the trolley-pole, the forks borne by the trolley-pole, having ways for the trolley-wheel shaft, the trolley-wheel shaft hung in said ways and the trolley-wheel rotarily hung on said shaft, all substantially as described and for the purposes set forth.

2. In combination, the trolley-pole, the forks borne by the trolley-pole, having ways for the trolley-wheel shaft, the trolley-wheel shaft hung non-rotarily in said ways, and the trolley-wheel rotarily hung on said shaft, all substantially as described and for the purposes set forth.

3. In combination, the trolley-pole, the forks borne by the trolley-pole, having ways for the trolley-wheel shaft, said ways being inclined downwardly toward the rear, the trolley-wheel shaft hung in said ways and the trolley-wheel rotarily hung on said shaft, all substantially as described and for the purposes set forth.

4. In combination, the trolley-pole, the forks borne by the trolley-pole, having ways for the trolley-wheel shaft, the trolley-wheel shaft detachably divided at the center into two similar halves and hung in said ways, means for holding said halves together and the trol-

ley-wheel rotarily hung on said shaft, all substantially as described and for the purposes set forth.

5 5. In combination, the trolley-pole, the forks borne by the trolley-pole, having ways for the trolley-wheel shaft, the trolley-wheel shaft detachably divided at the center into two similar halves held together by nut and bolt traversing the same longitudinally, and the
10 trolley-wheel rotarily hung on said shaft, all substantially as described and for the purposes set forth.

6. In combination, the trolley-pole, the

forks borne by the trolley-pole, having ways for the trolley-wheel shaft, the trolley-wheel 15 shaft detachably divided at the center into two similar halves, each formed with a curved cheek adapted to bear against one of said forks, means for holding said halves together and the trolley-wheel rotarily hung on said 20 shaft, all substantially as described and for the purposes set forth.

HERBERT N. GALE.

Witnesses:

WILLIAM L. NEUBAUER,
CARLOS V. MASON.