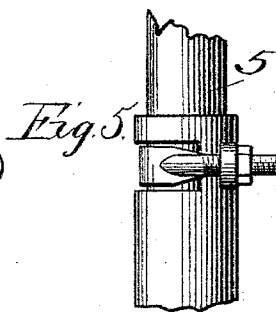
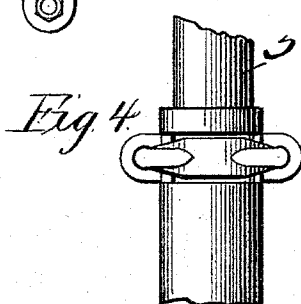
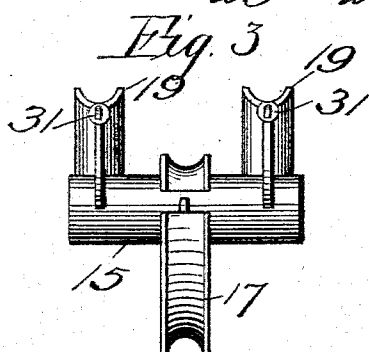
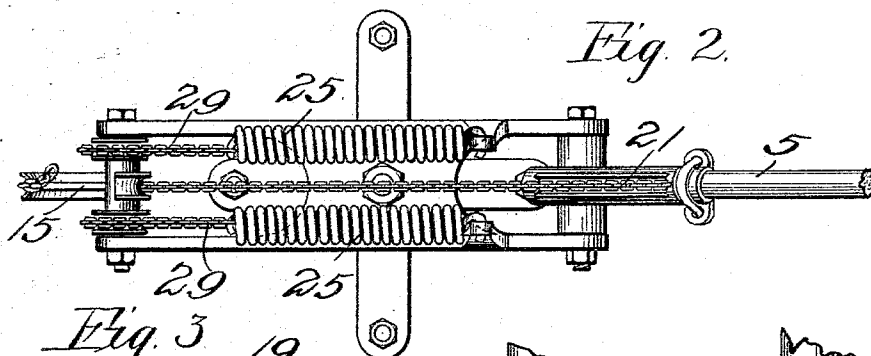
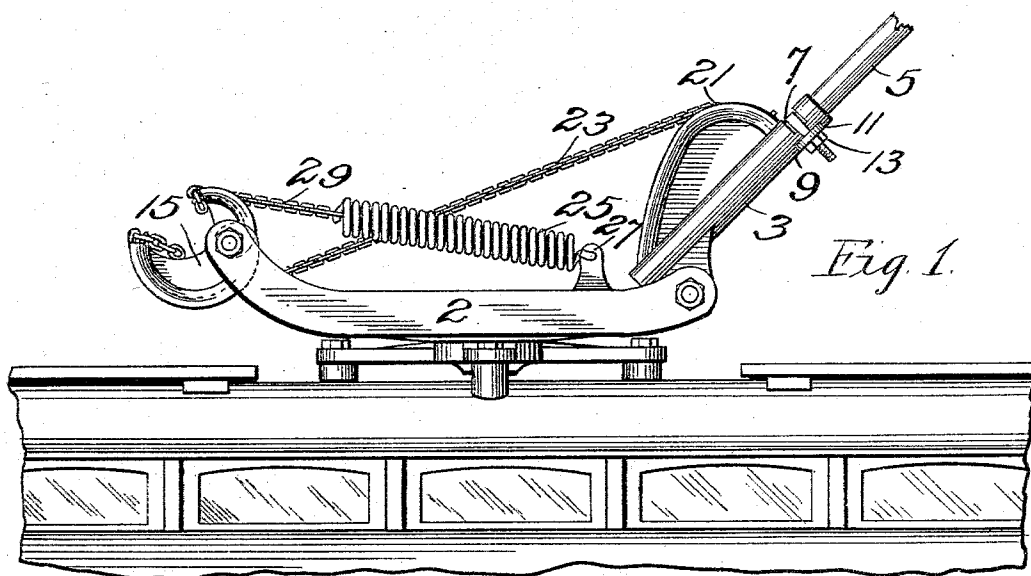


(No Model.)

F. HEATH.
ELECTRIC RAILWAY TROLLEY.

No. 495,035.

Patented Apr. 11, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK HEATH, OF MINNEAPOLIS, MINNESOTA.

ELECTRIC-RAILWAY TROLLEY.

SPECIFICATION forming part of Letters Patent No. 495,035, dated April 11, 1893.

Application filed July 11, 1892. Serial No. 439,606. (No model.)

To all whom it may concern:

Be it known that I, FRANK HEATH, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain improvements in Trolley-Bases, of which the following is a specification.

This invention relates to improvements in trolley bases designed for use in connection with electric cars, and the objects I have in view are to provide means by which the trolley pole will be held up against the wire with a substantially constant pressure and in which the same amount of pressure will be applied to the pole in whatever position it may be.

The invention consists generally in the combination with the base and the pivoted pole, with the cam device connected to the pole and having springs connected to it whereby the forward force applied to the pole is substantially equal at all times or if desired made greater as the pole approaches the perpendicular.

In the accompanying drawings forming a part of this specification, Figure 1 is a side elevation of my improved device. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the cam device. Figs. 4 and 5 are details of the pole clamp.

In the drawings, 2 represents a suitable base plate pivotally supported upon the top of the car. Pivoted in springs upon this plate is the pole socket 3 into which the pole 5 is adapted to fit. This socket is provided with the slot 7 near its end and a clamp 9 is adapted to fit into this slot and engage the surface of the pole. This clamp is provided with threaded ends and passes through the plate 11 and is provided with the nuts 13 arranged upon said threaded ends. By tightening these nuts the clamp is brought solidly against the surface of the pole and said pole is thereby secured firmly in its socket. Pivoted in the other end of the base 2 is the double cam 15 provided with the cam surface 17 and with the oppositely arranged cam surfaces 19. The socket 3 is also preferably provided with a cam 21 formed upon its upper surface and a chain 23 is connected to the cam surface 21, passes under the cam surface 17 and is secured thereto. Springs 25 are connected to suitable lugs 27 arranged upon the base 2 and suitable

chains 29, and said chains 29 pass over the cam surfaces 19 and are secured thereto preferably by engaging the hooks 31.

It will be seen that the springs 25 tend to rotate the cam 15 and thereby to wind the chain 23 upon the cam surfaces 17, at the same time unwinding it from the cam 21.

The chains it will be seen engage the grooved surfaces in the cams and they are arranged so as to be adjusted by engaging any desired length with the pins at the ends of the cams.

By so adjusting the chains the ratios of movement and leverage of the several cams may be varied with the result that the trolley is held up against the wire with about the same pressure at all positions. In practice, however, the pressure should decrease as the pole is lowered and increase as it nears the vertical position, the tendency of the trolley to jump the wires being greater at such times. My trolley base is constructed with a view to such adjustment and is ordinarily so used.

I claim as my invention—

1. The combination with the base and the pivoted pole socket, of the pivoted cam 15, a chain connecting said cam with the pole socket, and springs also connected to said cam.

2. The combination with the base and the pole socket provided with a cam, of the cam 15 having the cam surfaces 17 and 19, the chain 23 connected to the pole cam and also to the cam surface 17, and suitable springs 25 connected to the base plate and also connected by chains 29 with the surface 19, substantially as described.

3. The combination with the base 2 provided with the pivoted pole socket 3 having the cam surface 21 of the pivoted cam 15 provided with the surfaces 17 and 19, chains 23 connected to the cam 21 and adjustably connected to the cam 15, springs 25 connected to the base plate 2, and chains 29 connected to said springs and adjustably connected to the cam 15, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of June, 1892.

FRANK HEATH.

In presence of—

A. C. PAUL,
FREDERICK SAXTON LYON.