

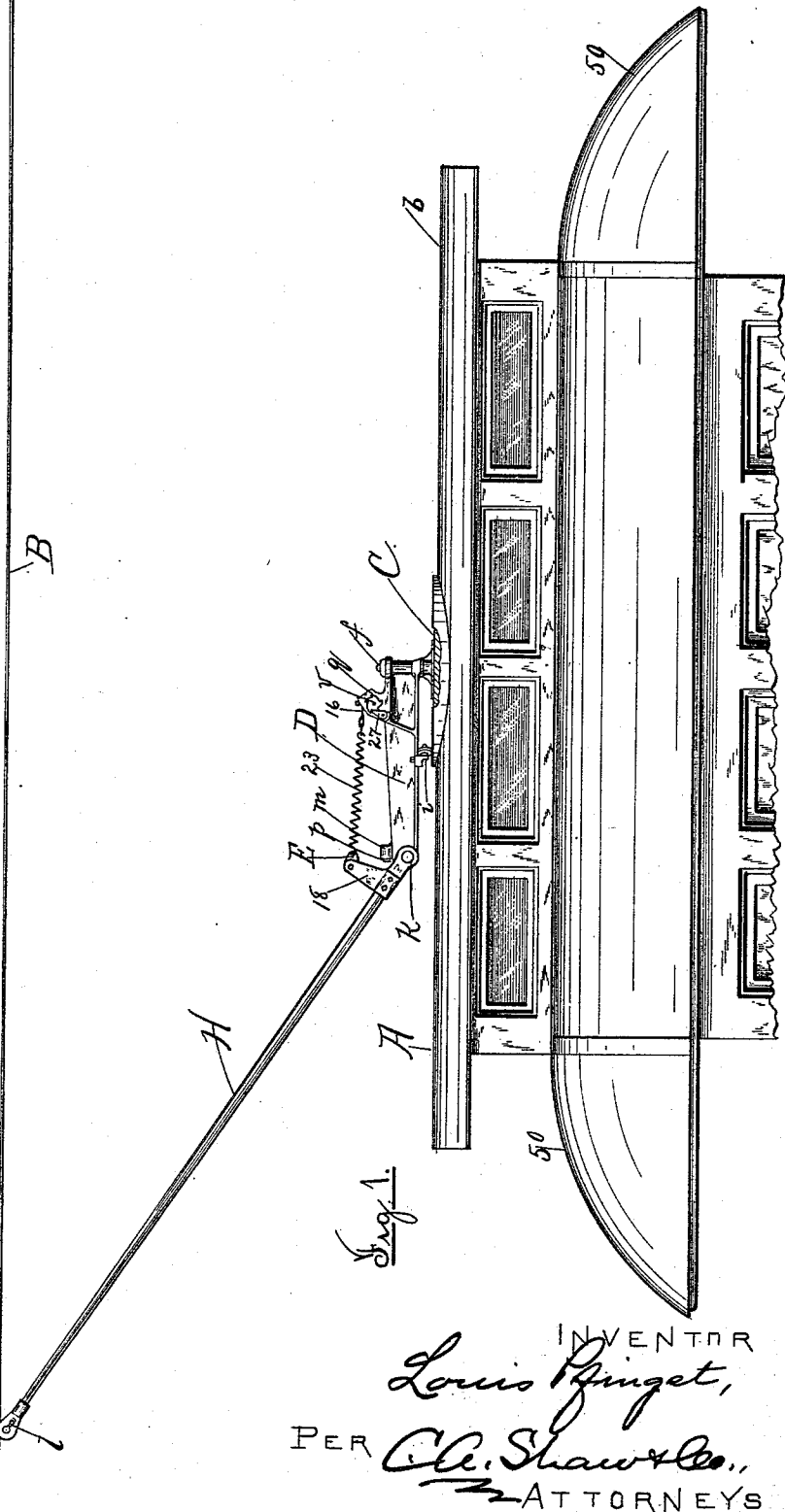
(No Model.)

2 Sheets—Sheet 1.

L. PFINGST.
TROLLEY POLE.

No. 439,182.

Patented Oct. 28, 1890.



WITNESSES
Livingston Day
R. D. Taylor

INVENTOR
Louis Pfingst,
 PER *Chas. Shaw & Co.,*
 ATTORNEYS

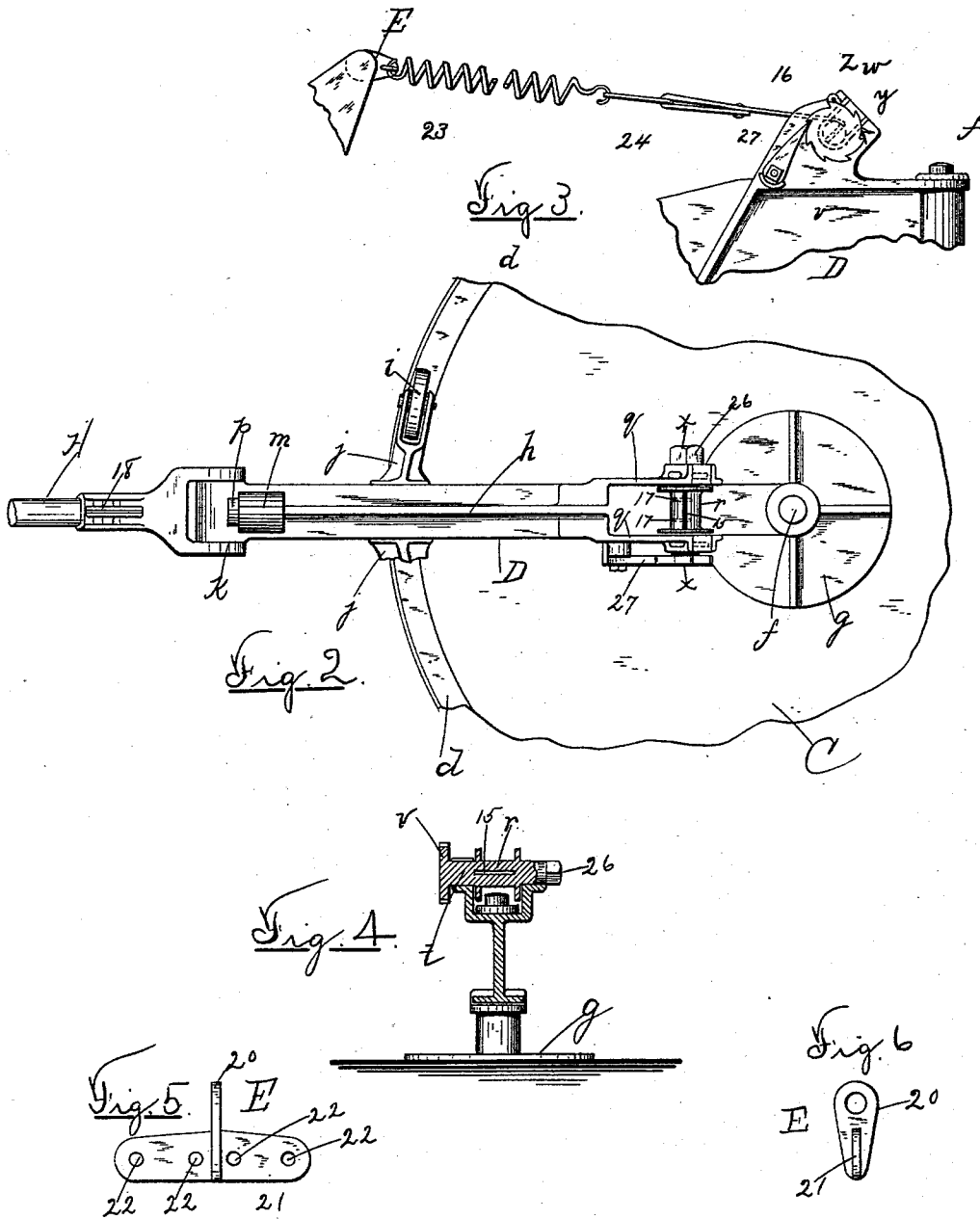
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No. 439,182.

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WITNESSES
Louis Pfingst
N. J. Surfer

INVENTOR
Louis Pfingst
PER *C. A. Shawles*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LOUIS PFINGST, OF BOSTON, MASSACHUSETTS.

TROLLEY-POLE.

SPECIFICATION forming part of Letters Patent No. 439,182, dated October 28, 1890.

Application filed July 14, 1890. Serial No. 358,644. (No model.)

To all whom it may concern:

Be it known that I, LOUIS PFINGST, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Trolley-Poles for Electrically-Propelled Street-Cars, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation showing a car provided with my improved trolley-pole. Fig. 2 is a top plan view enlarged of the trolley-pole base, a portion of the track or disk being represented as broken away. Fig. 3 is a sectional elevation showing the tension mechanism; Fig. 4, a vertical transverse section taken on line *x x* in Fig. 2, and Figs. 5 and 6 elevations illustrating certain details of construction.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to means for mounting a trolley-pole on electrically-propelled vehicles; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the car, which is of the ordinary form and construction of cars of this description, and B the "overhead" conducting-wire. Centrally on the upper face of the monitor-roof *b* of the car a disk or wear-plate C is mounted, on the outer edge of which an annular track *d* (shown in Fig. 2) is formed. A metallic arm D is pivoted by one end on a spindle *f*, mounted in a metallic disk *g* at the center of the disk C, said arm having a longitudinal strengthening web or fin *h*. A trundle-wheel *i* is journaled on an arm *j* at each side of the arm D, and works in the track *d*. The trolley-pole H,

which may be of any suitable construction, is pivoted at *k* to the outer end of the arm D, and bears in its upper end a trolley-wheel *l* for engaging the overhead wire B. A socket *m* is formed on the fin *h*, near the pivot *k*, of the trolley-pole, and is provided with an elastic cushion or bunter *p* for engaging said pole when elevated, as hereinafter described. Two vertically-arranged parallel ears or lugs *q* are formed at the opposite edge of the fin near the pivot *f*, and a spool *r*, formed on a shaft *t*, is journaled in said ears, said shaft bearing a ratchet *v* at one end. The ears *q* are slotted vertically at *w*, so that said shaft may be dropped therein, and a block *y* is inserted in said slots and secured therein by a pin Z. The spool *r* has a longitudinal slot 15 in its body to receive one end of a leather strap 16, which is secured therein by screws 17. (Shown in Fig. 2.) Lugs 18 are formed at the base of the pole H, and an angle-iron E is pivoted by means of a centrally-disposed ear 20 in said lug, the body 21 of said iron being provided with a series of holes 22, in each of which one end of a coiled spring 23 is secured. The opposite ends of said springs are secured in a metallic loop 24, fastened to the leather strap 16. A nut 26 is mounted on one end of the shaft *t*, and a gravity-pawl 27, pivoted on the ears *q*, engages the ratchet *b*. By rotating the nut 26 the spool *r* may be turned and the strap 16 wound thereon to adjust the tension of the springs 23 on the pole H, said springs acting contractively to hold the trolley-wheel *l* in engagement with the overhead wire. The conducting-wire is disposed in the pole in the usual manner, the current passing through the arm D and through the car to the underground wires in the ordinary way.

In the usual method of mounting the trolley-pole it is secured directly to the pivot *f*, it being necessary to construct the pole of determined length to render it sufficiently stiff. It is difficult to see the trolley from under the hood 50 of the car when reversing it to drive the car in the opposite direction. By use of the arm D my invention enables the trolley to be in sight at all times from the car-platform, so that when it becomes accidentally disconnected from the wire B it may readily be replaced by means of the ordinary lead-

line without dismantling from the car. The use of the friction-wheels *i* relieves the strain on the pivot *f*.

The tension of the springs 23 on the trolley-pole may readily be adjusted by rotating the spool *r*, and the parts, when broken, can much more readily be replaced or readjusted than in devices of this character of ordinary construction.

Having thus explained my invention, what I claim is—

1. In a device of the character described, the combination of a disk mounted on the car-top with a horizontal arm pivoted at the center of said disk, a trolley-pole pivoted to the free end of said arm, and a tension-spring connecting said pole and arm, said pole being inclined outward toward the car end, substantially as described.

2. In a device of the character described, the disk, in combination with a metallic arm pivoted centrally thereon, a trolley-pole pivoted to said arm to incline outwardly toward the end of the car, a tension-spring connecting said pole and arm, and means, substantially as described, for adjusting the tension of said spring.

3. In a device of the character described, the trolley-pole hinged to a metallic arm pivoted centrally to the car-top, in combination with friction-rolls on said arm, tension-springs connecting said arm and pole, and means for adjusting the tension of said springs, substantially as and for the purpose set forth.

4. In a device of the character described, the trolley-pole hinged to a metallic arm pivoted centrally to the car-top, in combination with friction-rolls on said arm, tension-springs connecting said arm and pole, and elastic bunter for said pole, and means for adjusting the tension of said springs, substantially as and for the purpose set forth.

5. In a device of the character described, the combination of a disk mounted centrally on the car-roof and provided with a track with a horizontal arm pivoted centrally to said disk and provided with friction-wheels bearing on said track, a trolley-pole hinged to the outer end of said arm, and adjustable tension-

springs connecting said arm and pole, substantially as set forth.

6. In a device of the character described, a trolley-pole hinged to a metallic arm pivoted on the car-top, in combination with a spool journaled on said arm, a strap secured to said spool, and tension-springs connecting said strap and pole, substantially as set forth.

7. In a device of the character described, the trolley and pivoted arm, in combination with a rotary spool detachably journaled on said arm and bearing a ratchet, a locking-pawl for said ratchet, a strap secured to the spool, and tension-springs connecting the pole and strap, substantially as set forth.

8. In a device of the character described, the pivoted arm *D*, bearing the friction-wheels *i*, combined with the disk *C*, having the track *d*, and the pole *H*, hinged to said arm, substantially as described.

9. In a device of the character described, the pivoted arm *D* and pole *H*, hinged thereto, in combination with the spool *r*, journaled on said arm and bearing the ratchet *v*, the pawl 27, the strap 16, secured to said spool, and the springs 23, connecting the strap and pole, substantially as described.

10. The pivoted arm *D*, provided with the friction-wheels *i* and bunter *m*, in combination with the disk *C*, the pole *H*, hinged to said arm, and tension-springs connecting said pole and arm, substantially as described.

11. The pivoted arm *D*, the spool *r*, detachably journaled thereon, and means for locking said spool, in combination with the pole *H*, hinged to said arm, and tension-springs connecting the pole and spool, substantially as described.

12. In a device of the character described, a trolley-pole hinged to a metallic arm pivoted to swing horizontally on the car-top, said pole being inclined outwardly, so that its upper or trolley end projects over the car end, substantially as described.

LOUIS PFINGST.

Witnesses:

O. M. SHAW,
K. DURFEE.