(No Model.)

A. S. McBEAN.

TROLLEY POLE.

No. 522,915. Patented July 10, 1894.

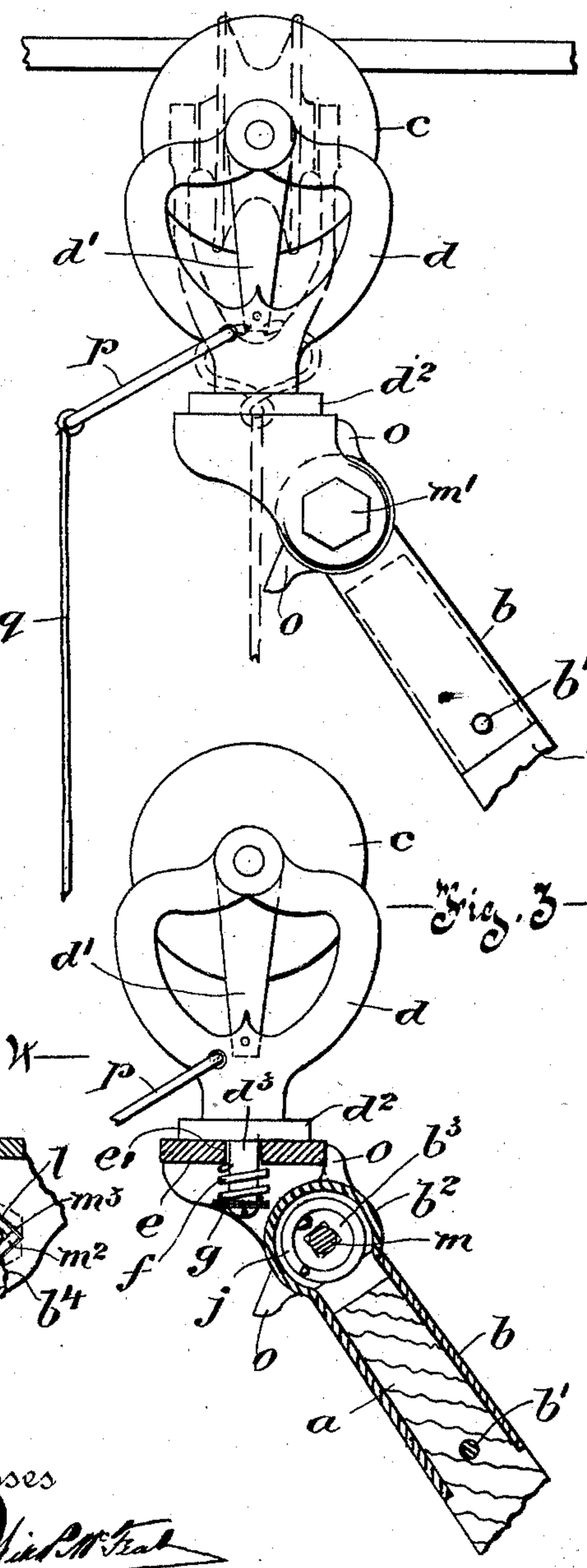

Fig. 1.

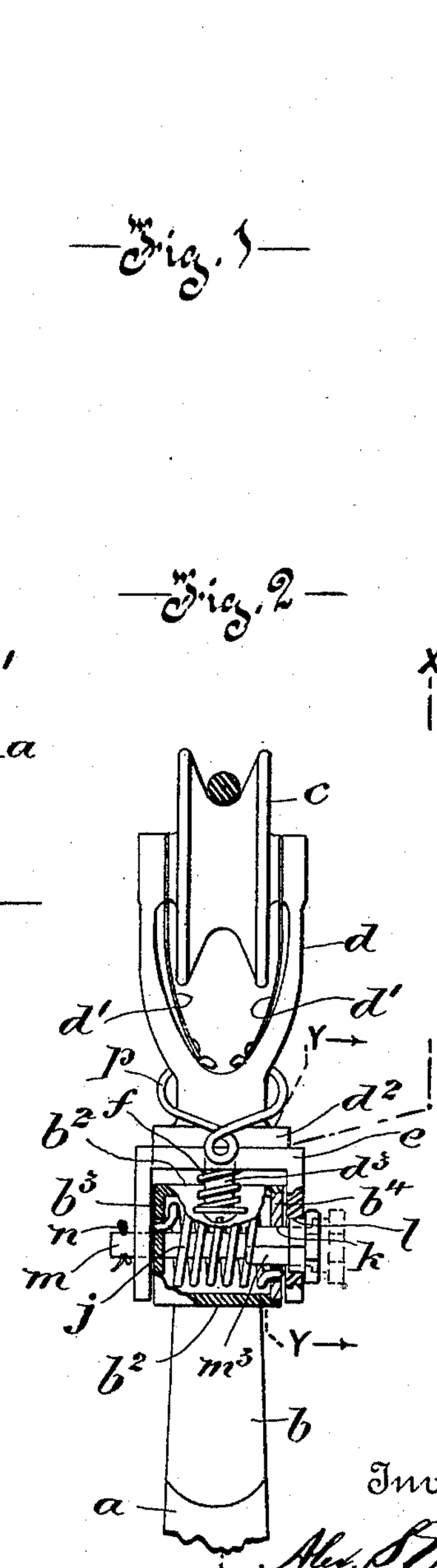

Fig. 2.

Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE.

ALEXANDER S. McBEAN, OF MONTREAL, CANADA.

TROLLEY-POLE.

SPECIFICATION forming part of Letters Patent No. 522,915, dated July 10, 1894.

Application filed April 10, 1894. Serial No. 507,072. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER STEWART MCBEAN, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Trolley-Poles; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to the trolley poles of electric cars and has for its object to improve the construction of the mounting at the trolley carrying end thereof whereby the trolley wheel or runner will be at liberty to adapt itself better to the curves and other divergences of the overhead wire along which it travels.

The invention consists of the devices and arrangements hereinafter described and claimed. For full comprehension however of the invention, reference must be had to the annexed drawings forming a part of this specification, in which like symbols indicate corresponding parts and wherein—

Figure 1 is a side elevation of the parts carried by the upper end of the trolley pole and a portion of the latter. Fig. 2 is a rear end view of same partly broken away; Fig. 3 a longitudinal vertical section on line *x x* Fig. 2, and Fig. 4 a section on line *y y* Fig. 2 looking in the direction indicated.

In carrying out my invention as applied to trolley poles in use on cars of a uniform build and where the system as a whole is uniform, I can modify somewhat the construction of the mounting so as to simplify the parts to some extent which modification will be hereinafter more specifically alluded to.

I will first describe what I consider the preferable form of my invention which is one applicable to systems in which there is great likelihood of differences in the height of the overhead wires and also in the length and resilience of the poles themselves.

a is the upper part of the usual wooden trolley pole carrying at its end a tubular casting or sleeve preferably of T-form and having the longitudinal part *b* fitting over the pole and secured in place by bolt or rivet *b'*, while the cross piece b^2 is closed at one end as at b^3, and open at the other to receive a separate disk b^4 for the purpose to be presently mentioned.

The trolley wheel or runner *c* is mounted in the usual forked standard or frame *d* provided with contact strips *d'*, and this frame instead of being in one with the usual sleeve section and constituting a single integral mounting to fit over the end of the pole is cut away at its neck portion and formed with an extended annular bearing plate or base d^2 and a central spindle projection d^3 extending below same. This construction of the frame *d* is to allow of its being carried by an intermediate supporting platform or bracket *e* with which it has a swiveling connection by means of the spindle projection d^3 passing down through an opening *e'* in the platform; a coiled spring *f*,—encircling the projection and bearing at one end against the under side of the platform and at the other end upon a washer *g*, which is suitably secured to the end of the projection,—being preferably employed for holding the base of the frame *d* in good contact with the platform to insure proper current transmission. The platform *e* is connected with the cross piece b^2 of the sleeve section so as to swing vertically on a horizontal axis and be maintained by means to be presently described, in a horizontal position, notwithstanding the variations in the angle of inclination of the pole, preferably in the following manner.

The tubular cross piece b^2 contains a coiled spring *j* one end of which is secured to the closed end of the cross piece and the other to the separate disk b^4. This disk has a square central opening *k*, and the arm of the platform *e*, adjacent to such disk, also has a square opening *l*, but larger than that in the disk, while the other arm of the platform has a circular opening. The cross piece fits in between the arms of the platform and the two are connected together by a bolt *m* and cotter pin *n*, the bolt having a head *m'*, a large squared section m^2 contiguous to the head to fit the square opening *l* in the arm of the platform, and a smaller squared section m^3 to fit the smaller square opening *k* in the disk b^4. By this construction, I can tighten up the spring should it weaken or lose its resilience

at all, it being only necessary to remove the cotter pin *n*, withdraw the bolt to the position shown by dotted lines in Fig. 2, or until the squared section m^2 is free of the squared opening *l* in the arm of the platform *e* and then rotate it, the squared portion m^3 of the bolt being small enough to rotate freely in such opening *l*, after which it will be re-set in place so that the squared part m^2 of the bolt will be again located in the squared opening *l* and thereby retain the spring after having been tightened.

o o are lugs or stops on the exterior of the cross piece b^2 to limit the movement of the swinging platform and prevent any abnormal displacement.

p is a finger or other extension from the rear side of the oscillating frame *d* to which the usual adjusting line *q* is attached and by which the frame can be turned to its proper position should it become displaced by accident.

It is not necessary in all cases to arrange the yielding resistance for the platform *e* so that it can be regulated as above mentioned as such an arrangement depends largely upon the quality of spring attainable, and furthermore in systems of a uniform character where any necessity for an adjustment device in the form of the swinging platform and its operating spring is reduced to a minimum, I can modify the construction above described by dispensing with such means of adjustment and simply form the mounting in two parts with the swiveling connection between.

What I claim is as follows:

1. A trolley wheel support composed of a metal section rigidly secured to the trolley pole, an adjusting platform and a frame piece, the latter carrying the trolley wheel or runner, with a swiveling connection between the adjusting platform and the frame piece for the purpose set forth.

2. A trolley wheel support composed of a metal section rigidly secured to the trolley pole, a swinging platform pivotally connected to such fixed section with means acting upon and having a tendency to maintain it in a normal horizontal position and the trolley carrying frame piece supported by said platform and having a swiveling connection with same, for the purpose set forth.

3. In a trolley pole, the combination with the pole *a* of the mounting for the upper end of same composed of the fixed tubular part *b* b^2 secured to such pole and containing the coiled spring *j* with means for regulating the tension thereof, the frame *d* carrying the trolley wheel, the intermediate swinging platform *e* pivotally connected with said fixed part *b*, as and for the purpose set forth.

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