No. 720,633. PATENTED FEB. 17, 1903.

J. SPENA.

TROLLEY.

APPLICATION FILED AUG. 4, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

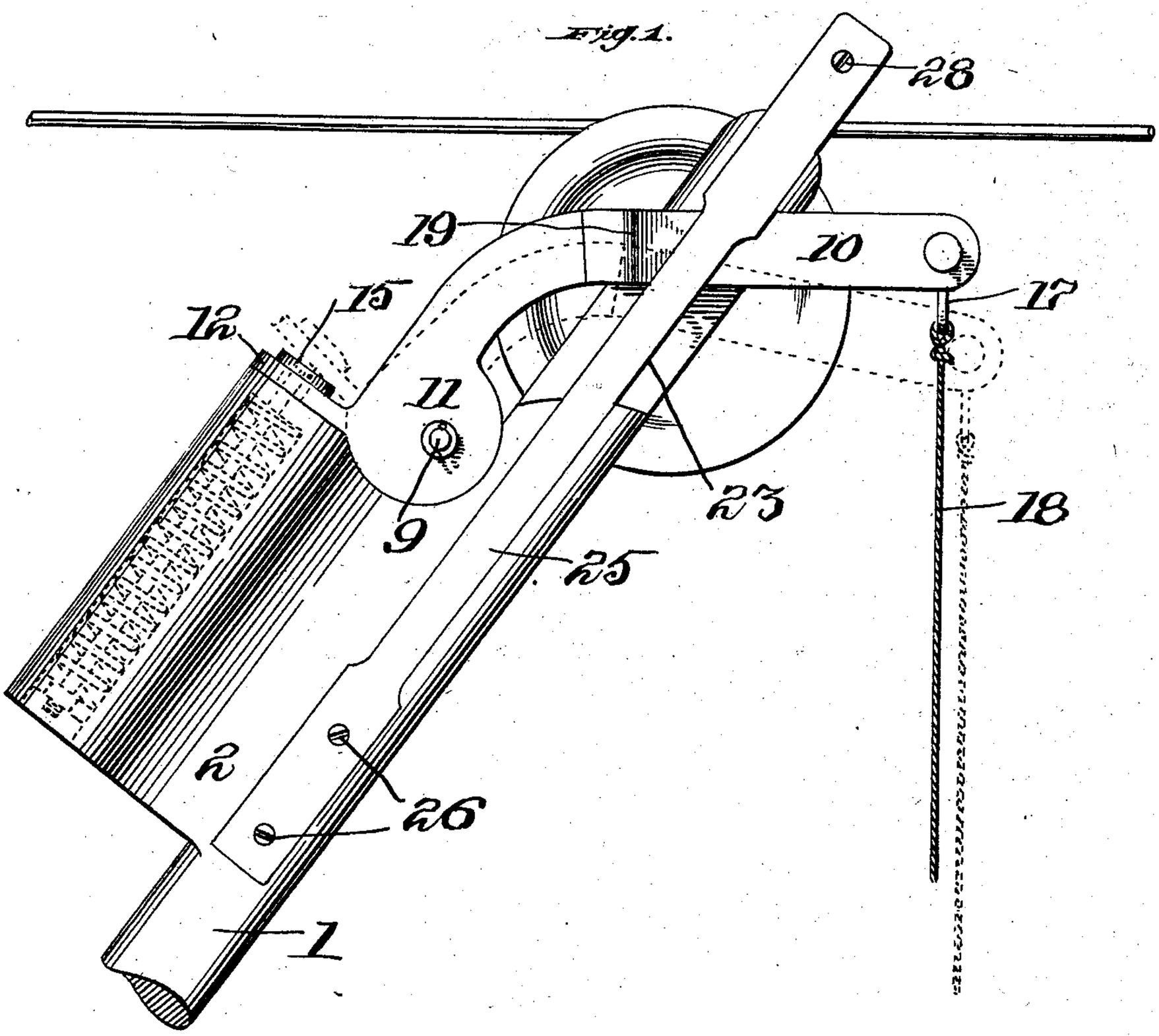
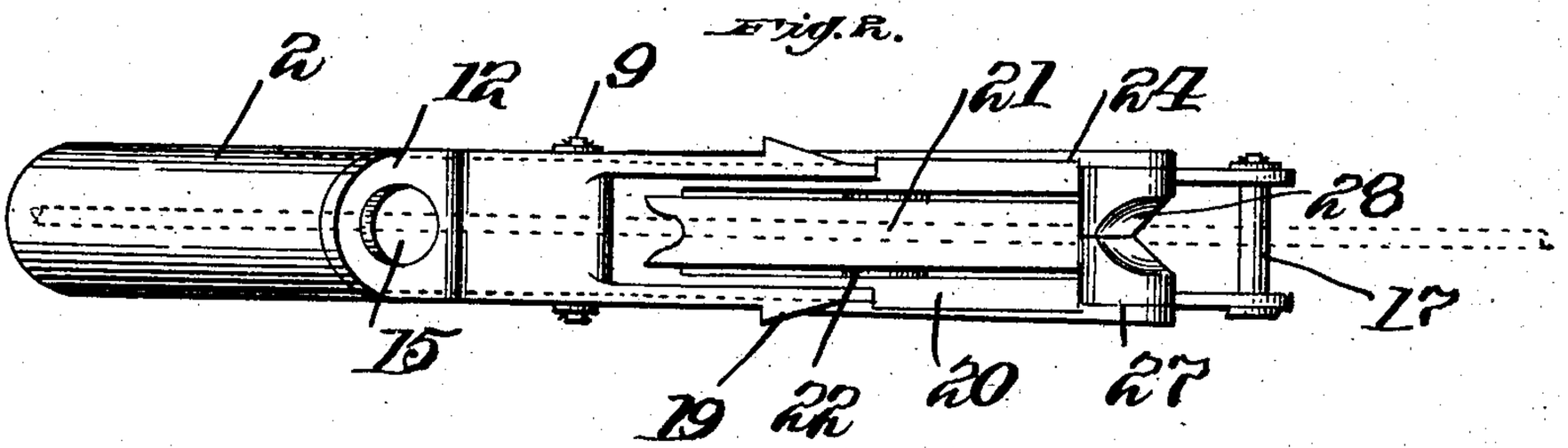


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

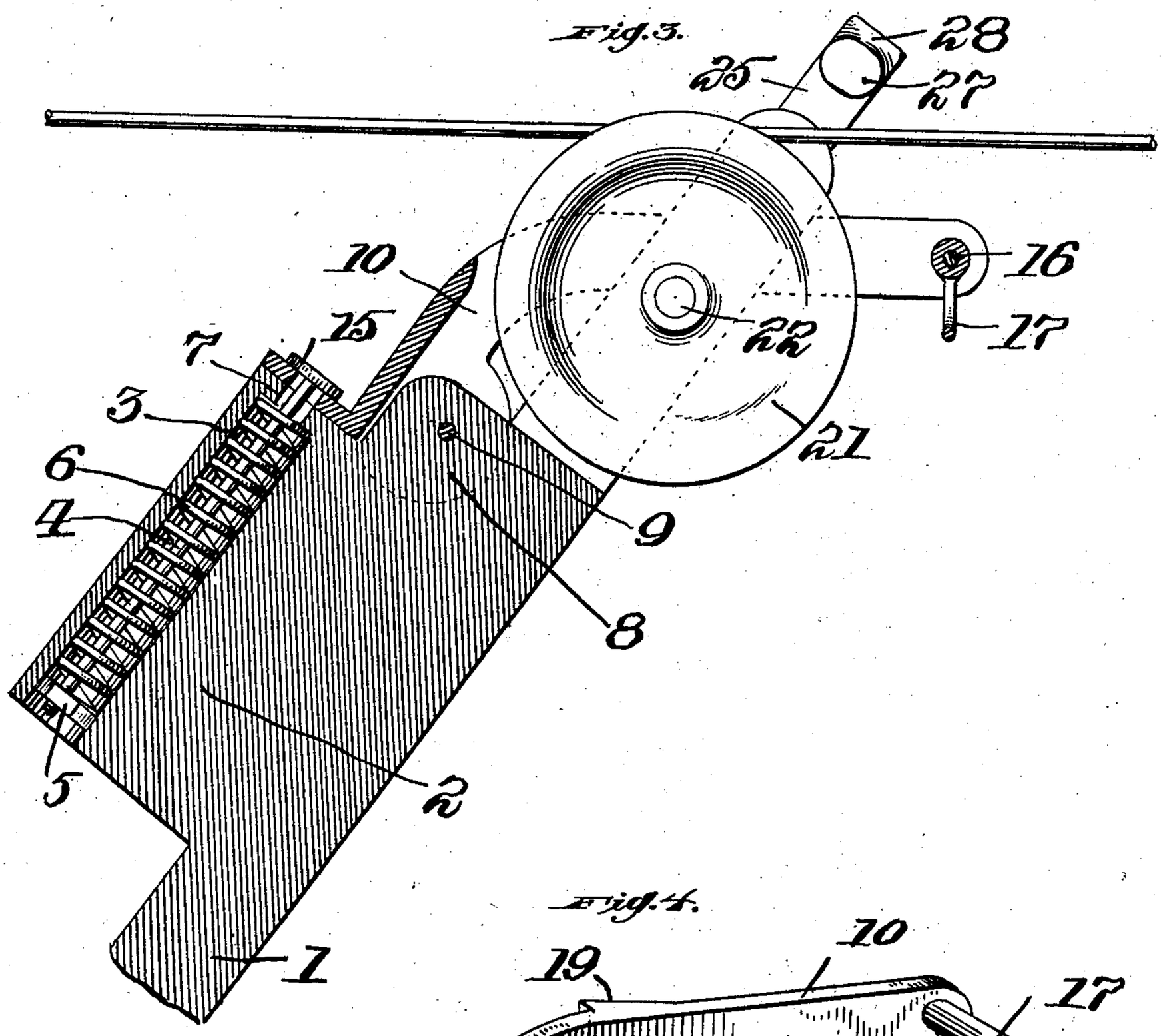
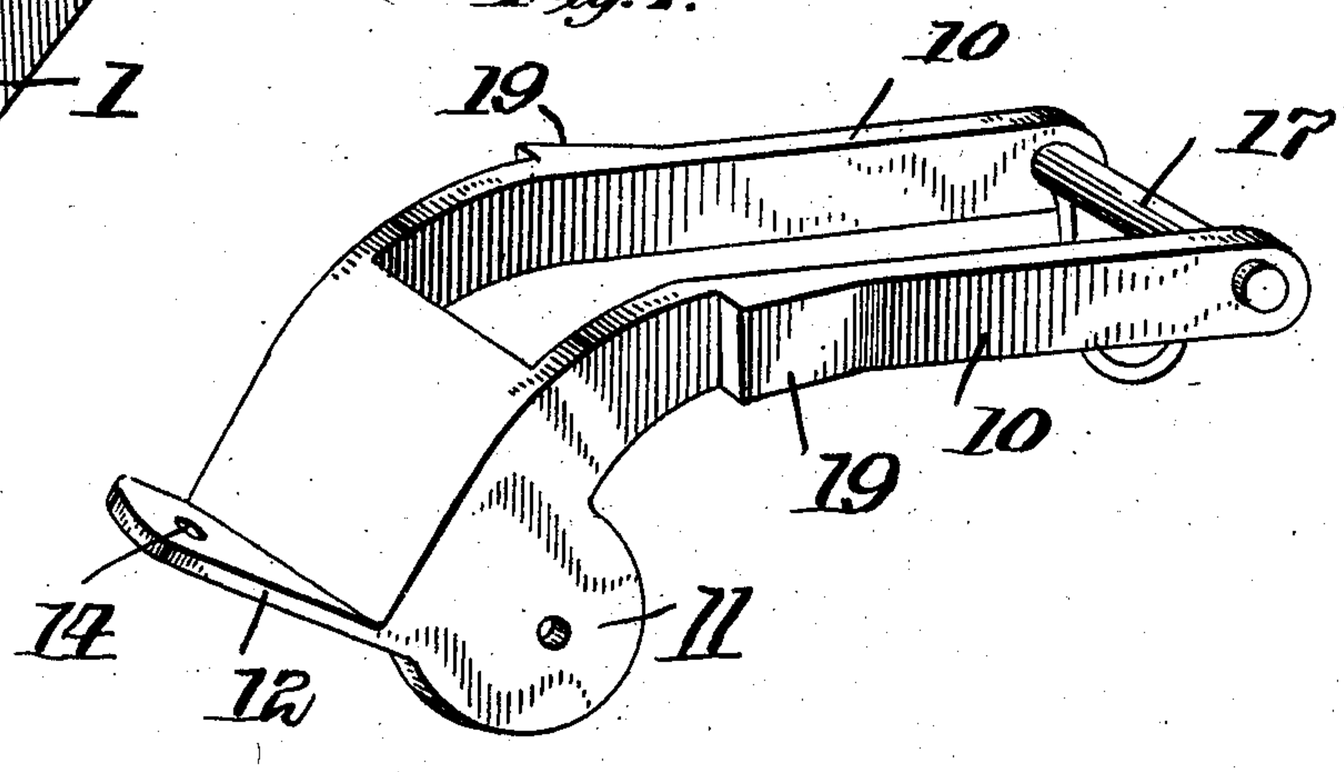


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH SPENA, OF LILLY, PENNSYLVANIA.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 720,633, dated February 17, 1903.

Application filed August 4, 1902. Serial No. 118,260. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SPENA, a citizen of the United States, residing at Lilly, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Trolleys, of which improvement the following is a specification.

This invention relates to certain new and useful improvements in trolleys and their attachments, and more particularly to a trolley that will not come off the wire when the same is in use.

Another object of this invention is to provide a trolley-pole to which I attach the mechanism to prevent the same from leaving the wire, the operation of said mechanism being similar to that now employed for withdrawing the trolley from the wire.

To put my invention into practice, I employ a trolley-pole having its upper end enlarged to carry a spring to which I pivotally attach the bell-crank arm, which is pivoted to the trolley, and the other end of said bell-crank arm having the trolley-harp attached thereto. These arms have their outer faces beveled to engage the inner faces of the spring-arms, which I secure to the sides of the trolley, said arms carrying on their upper ends inwardly-projecting lugs, said lugs being held in contact by the spring-arms and out of contact by the downward movement of the bell-crank arms.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation of my improved trolley-pole, showing the same in position on the wire. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal section of the same, partly in elevation. Fig. 4 is a detail perspective view of the bell-crank arms.

In the drawings the reference-numeral 1 indicates the trolley-pole, carrying the enlarged portion 2, which is formed integral with the trolley-pole, said enlarged portion having formed therein a recess 3, in which is secured the stem 4, said stem having on its lower end a washer 5, which supports the coil-spring 6, the upper end of said spring bearing against the shoulders 7 in the upper end of the recess. On the upper face of this enlarged portion I form a lug 8, to which I pivotally secure, by means of a pin 9, the bifurcated arms 10, said arms carrying lugs 11, which engage the lug 8 and are secured in place by the pin 9. On the rear face of these arms and near the lugs 11 I form a projection 12, said projection carrying an aperture 14, in which is secured the stem 4 by means of the nut 15. The forward ends of these arms are connected together by means of the rod 16, said rod carrying a clevis 17, to which is secured the trolley-rope 18. The outer sides of these arms are formed wedge-shaped or beveled, as shown at 19. The upper end of the trolley-pole is bifurcated, as shown at 20, and in these bifurcated arms is mounted a trolley-wheel 21 upon the shaft 22. The outer faces of these bifurcated portions are cut away, as shown at 23 and 24, the cut-away portion 23 receiving the bell-crank arms 10 and the cut-away portion 24 receiving the upper ends of the spring-arms, to be hereinafter described.

Countersunk in the sides of the trolley-pole I secure the spring-arms 25 by means of bolts 26, these arms passing upwardly and resting in the cut-away portion 24. The upper ends of said arms carry lugs 27, secured thereto by means of the screws 28. These lugs are preferably cylindrical in form, the upper faces of said lugs carrying the bevel to facilitate the placing of the trolley-wheel upon the trolley.

The operation of my improved trolley is as follows: It being desirous to place my improved trolley-wheel upon the wire, the same is accomplished by pulling downwardly upon the rope 18, which causes the bell-crank arms to move downwardly, as shown in dotted lines in Fig. 1, the downward movement of these arms spreading the arms 25 by means of the beveled faces 19 upon the bell-crank arms. Upon the separation of these arms 25 the trolley-wire is admitted to the trolley-wheel, and the arms 25 are again brought together

by means of the spring 6 retracting and returning the bell-crank arms to their original position.

It will be noted that when my improved trolley-pole is placed upon the wire it will be impossible for the same to leave the wire without the mechanism heretofore described being operated, which cannot be accomplished unless downward pull upon the trolley-rope is performed.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A trolley-pole having a bifurcated end, a trolley-wheel mounted therein, the trolley-pole carrying an enlarged portion in which is secured a spring, bell-crank arms pivotally attached to the upper portion of said pole, said arms engaging with arms pivotally secured to the sides of said pole, these arms carrying on their inner faces lugs, and means whereby when the lugs are separated, the same will be returned to their normal position, substantially as described.

2. In a trolley-pole having a bifurcated end, a trolley-wheel mounted in said pole, spring-arms rigidly secured to the sides of said pole, said arms carrying inwardly-extending lugs, bell-crank arms having their outer faces beveled, said beveled faces engaging the inner faces of the spring-arms, a lug carried by the bell-crank arms, said lug having a spring attached thereto and said spring being held in the enlarged portion of the trolley-pole, substantially as described.

3. A trolley-pole having its upper end bifurcated, a trolley-wheel mounted therein, the outer faces of said trolley-pole being cut away for the reception of the bell-crank arms and the spring-arms, bell-crank arms being pivotally mounted upon the trolley-pole, said arms carrying a lug which is secured to the spring, said spring being separated in the enlarged portion carried by the trolley, the spring-arms having their forward ends bent at right angles and carrying inwardly-projecting lugs, said lugs being cylindrical in form and having their upper contacting edges beveled, substantially as shown and described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOSEPH SPENA.

In presence of—
EDWARD SWEENEY,
J. P. MCGONIGLE.