

No. 770,744.

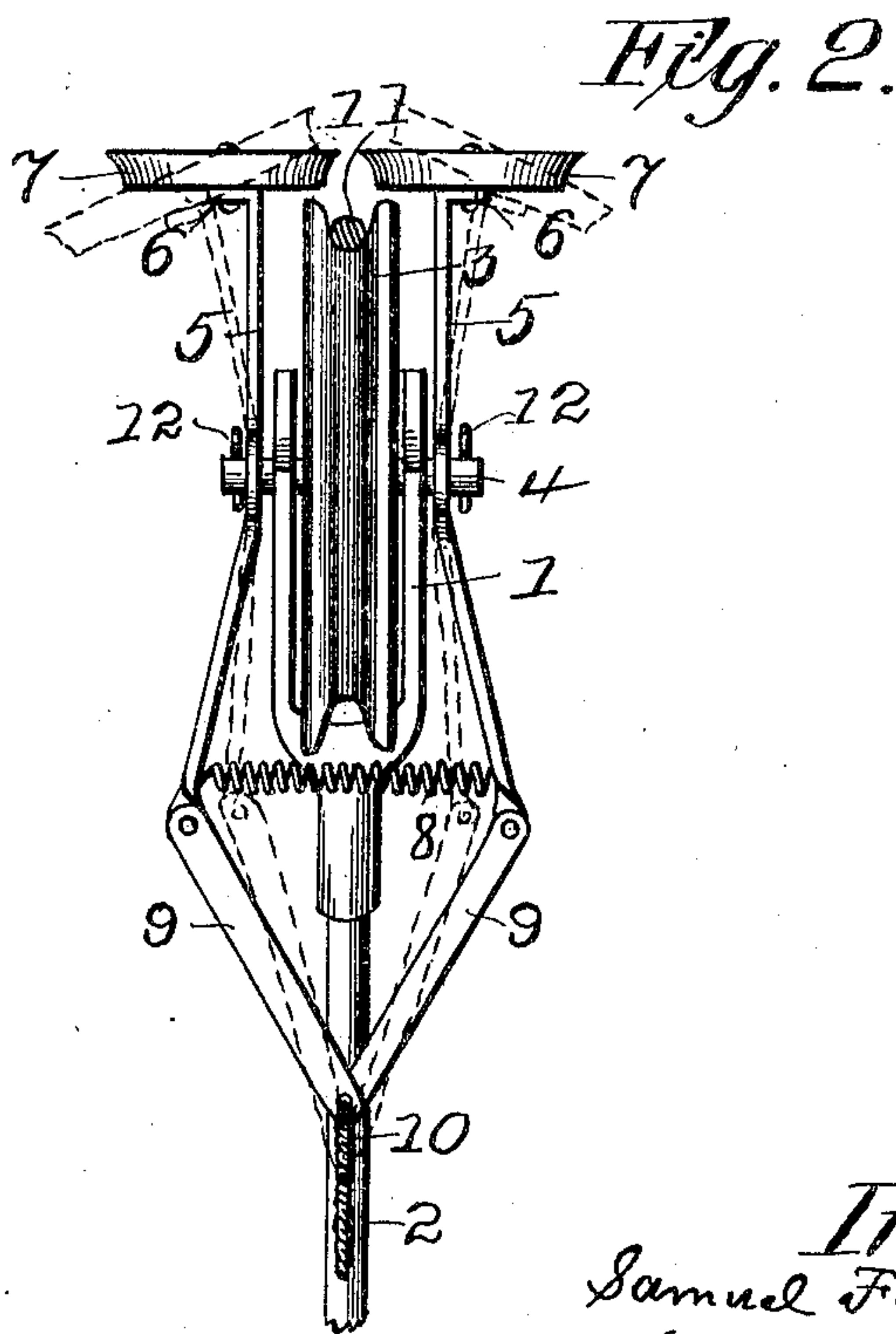
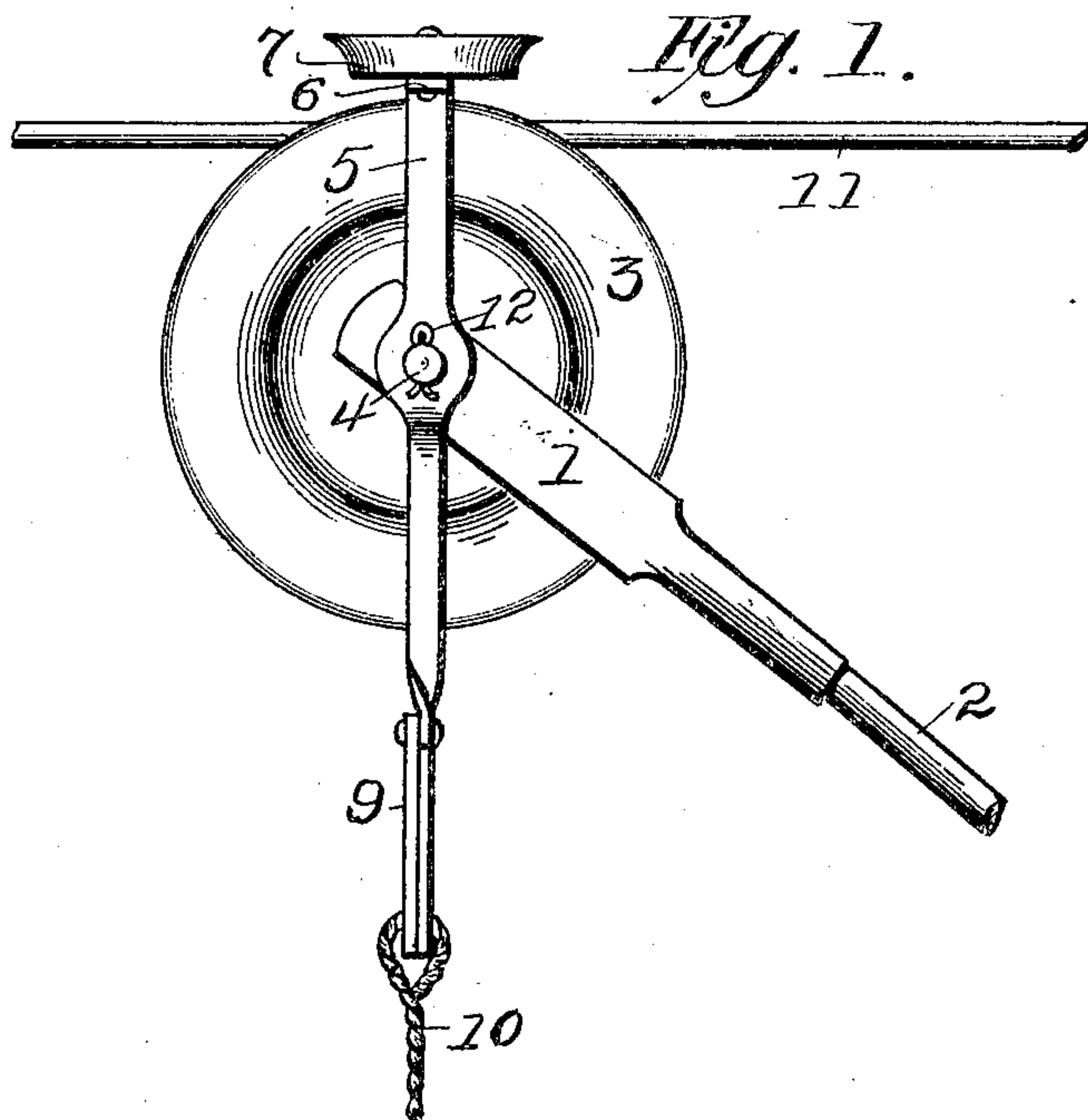
PATENTED SEPT. 27, 1904.

S. FISHER & A. SANDERS.

TROLLEY.

APPLICATION FILED JUNE 27, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

SAMUEL FISHER AND ALBERT SANDERS, OF BUTLER, PENNSYLVANIA.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 770,744, dated September 27, 1904.

Application filed June 27, 1903. Serial No. 163,393. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL FISHER and ALBERT SANDERS, citizens of the United States, residing at Butler, in the county of Butler 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, the object of the invention being to provide means for normally maintaining the trolley-wheel in engagement with the trolley-wire and preventing the accidental disengagement thereof.

Briefly described, the invention comprises, in connection with the trolley-harp and trolley-wheel, the extending of the shaft upon which the trolley-wheel is mounted at each end beyond the sides of the harp and the mounting on the extended ends of the shaft of a pair of arms, which at their upper ends carry horizontally-disposed bevel-wheels adapted to act as guards to maintain the trolley-wheel in engagement with the trolley-wire. The arms, which are mounted on the extending ends of the trolley-shaft, have a spring interposed between the same at the lower ends and have these lower ends connected by links to an operating-cord, whereby the lower ends of the arms may be drawn together in order to spread the upper ends thereof and permit the engagement with or disengagement of the trolley-wheel from the wire.

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 both views, in which—

Figure 1 is a detail side elevation of our improved trolley. Fig. 2 is a front view of the same.

In the accompanying drawings, 1 indicates the trolley-harp, mounted on or suitably secured to the upper end of the trolley-pole 2. The trolley-wheel 3 is mounted on a shaft 4, and this shaft is extended at both ends beyond the sides of the harp and has mounted on these extended ends the vertically-disposed arms 5, the upper ends of which are at right

angles, and on these angularly-extending portions 6 are pivotally secured the pivotal guard-wheels 7. The portions of the arms 5 which are below the shaft 4 diverge outwardly and are held normally spread by means of an interposed spring 8, suitably connected to the arms near their lower ends. Pivotaly connected to the lower ends of the arms is a pair of links 9, which are attached to a common cord or rope 10, whereby the arms 5 will both be operated in unison. A convenient method of manufacture is to simply twist the lower ends of the arms 5 whereby to form a flat surface for the pivoting of the upper ends of the links 9 thereto. When a pull is made on the rope or cord 10, it will be evident that the lower ends of arms 5 are drawn together, compressing spring 8 and spreading the upper ends of arms 5, whereby to move wheels 7 away from each other and permit the engagement with or disengagement of the trolley-wheel from the trolley or current wire 11. The keys 12 or other suitable means may be employed in the shaft 4 for securing the arms 5 in position thereon. During the travel of the trolley-wheel as the wheels 7 engage a switch or crossover it will be observed that they will readily spread, so as to permit the passage of the same. When they are in the normal position, as shown in the drawings, the trolley-wheel will be prevented from being disengaged from the wire, as will be apparent.

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

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

In a trolley, the combination with a harp supporting a wheel upon a shaft having projecting ends, and a pole supporting the harp, of a pair of arms loosely secured on the projecting ends of the shaft for rocking movement thereon, pins projecting through the ends of said shaft, and being spaced from said arms, guard-wheels mounted on the upper ends of the arms and projecting toward each other directly above the wheel, links pivoted to the lower ends of the arms and having their

lower ends overlapping, a flexible means passing through the overlapping ends of said links whereby the lower ends of the arms may be drawn together to separate the guard-wheels, and a spring arranged between the lower ends of the arms for returning them to their normal position, substantially as described.

In testimony whereof we have hereunto

signed our names in the presence of two subscribing witnesses.

SAMUEL FISHER.
ALBERT SANDERS.

In presence of—

H. J. LEVIS,
F. O. HENZI.