No. 816,415. PATENTED MAR. 27, 1906.

H. ZANDER & G. HAHN.

TROLLEY.

APPLICATION FILED SEPT. 25, 1905.

Fig. 1.

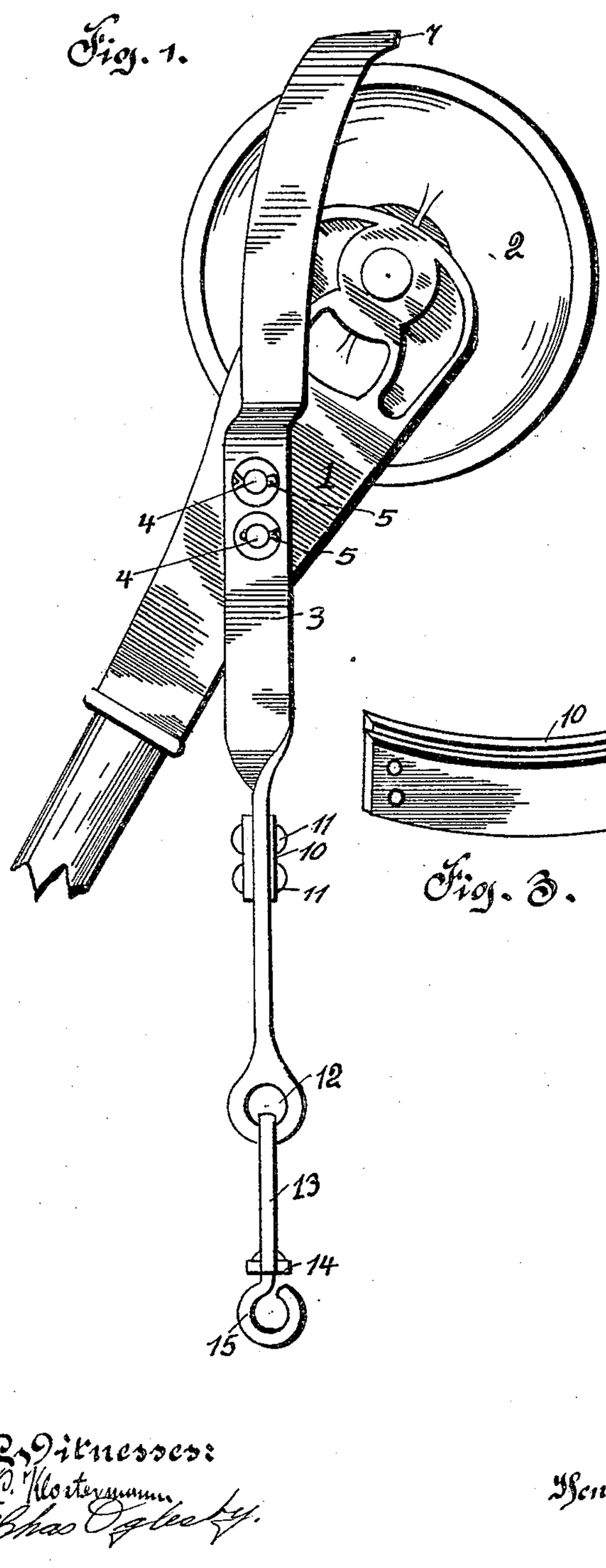

Fig. 2.

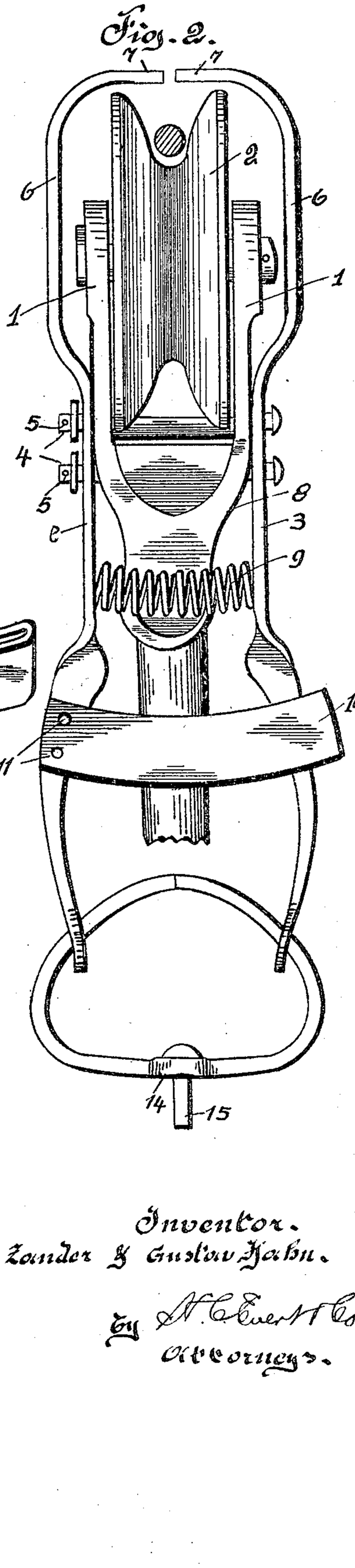

Fig. 3.

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TROLLEY.

No. 816,415. Specification of Letters Patent. Patented March 27, 1906.

Application filed September 25, 1905. Serial No. 280,093.

To all whom it may concern:

Be it known that we, HENRY ZANDER and GUSTAV HAHN, citizens of the United States of America, residing at Wilmerding, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolleys, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in trolleys, and more particularly pertains to their type, and means are provided for maintaining the trolley upon the wire against all contingencies of displacement.

Novel means are also provided for moving the trolley-holding means from the body of the car when it is desired to change the position of the trolley.

The invention comprises, specifically, the trolley and spring-controlled guard-fingers so mounted upon the harps as to have limited movement toward and from each other.

Detail construction will appear in the course of the following description, in which reference is had to the accompanying drawings, forming a part of this specification, like numerals designating like parts throughout the several views, in which—

Figure 1 is a side elevation of a trolley constructed in accordance with our invention. Fig. 2 is an end view thereof, and Fig. 3 a perspective view of a U-shaped clip for binding the guard-fingers.

In the accompanying drawings, the harp 1 is a conventional form and has mounted therein the trolley-wheel 2. Guard-fingers 3 3 are mounted upon said harp by means of a pair of superposed pins 4, passing through said fingers in said harp and being held by cotters 5. The fingers 3 are formed with the upper portion 6, which is offset in the body of said fingers, but lies in a parallel frame thereto, the upper portion 6 being in turn formed by angular extremities 7, which confront one another and overlie the grooved periphery of the trolley-wheel 2. The harp 1 is formed for a short distance below the trolley 2 with inclined surfaces 8 on each side, and the lowermost pin 4 is inserted therethrough at a point along said surfaces 8. These pins 4 are of such length that there is a slight loose play in a lateral direction between the guard-fingers 3 and the harp, so that the fingers may be drawn together at their lower ends, the sides thereof riding upon the inclined surfaces 8 and the upper ends thereof being forced apart. Said fingers 3 are held in position, with their adjacent ends confronting, so as to have a very small space between, by an expansive spiral spring 9, interposed between said fingers below said pins 4. A U-shaped clip 10 is rigidly secured, as at 11, to one of said fingers 3 at the ends of its legs and embraces the other of said fingers. The lower ends of the guard-fingers 3 are formed with openings 12, which afford eyelets for the reception of the ends of a split ring 13 of substantially triangular contour, but formed with irregular curved surfaces. Said ring 13 is connected at its base, as at 14, with a cord 15, which leads to the car.

In operation the guard-fingers 3 will have their upper ends forced toward each other by the spring 9, the clip 10 limiting their movement under the expansive force of said spring. Thus when the ends are together the fingers always overlie the wire above the trolley-wheel and prevent the displacement of the latter. When it is desired, however, to force said springs apart, the cord 15 is pulled downwardly, thereby moving the ring 13, so that as it travels the degree of space between the fingers 3 and the apex of said ring will decrease, the fingers riding on the curved surface, and thereby being drawn nearer at their base and being spread apart at their top, the movement of the fingers in this operation being in a pivotal lateral direction of travel, the lowermost pin 4 coacting with the curved inclined surface 8 of the harp to afford a fulcrum.

It is obvious that various minor changes may be made in our invention without departing from the spirit or scope thereof as defined in the appended claims.

Having fully described our invention, we claim—

1. The combination with a trolley-harp and a trolley mounted therein of a pair of guard-fingers mounted upon said harp, a pair of bolts passing through said guard-fingers in said harp, said harp being formed with curved inclined sides one of said bolts being passed therethrough at a point along said curved sides, a spring interposed between said fingers below said bolts, and the said fingers being formed at their lower ends with eyes, and a ring held in said eyes.

2. The combination with a trolley-harp and a trolley mounted therein of a pair of

guard-fingers mounted upon said harp, a pair of pins passing through said guard-fingers in said harp, and securing the former to the latter so as to permit of a slight lateral motion, said harp being formed with inclined sides, the lowermost of said pins passing through at a point along said sides, an expansive spiral spring interposed between said fingers, below said pins, a clip for binding said fingers from extreme inward movement under pressure of said spring, the lower ends of said fingers being formed with eyelets and the ring being held in said eyelets.

In testimony whereof we affix our signatures in the presence of two witnesses.

his
HENRY × ZANDER.
mark
GUSTAV HAHN.

Witnesses:
E. E. POTTER,
CHAS. OGLESBY.