

No. 865,474.

PATENTED SEPT. 10, 1907.

J. ASHURST.
TROLLEY.

APPLICATION FILED MAR. 25, 1907.

2 SHEETS—SHEET 1.

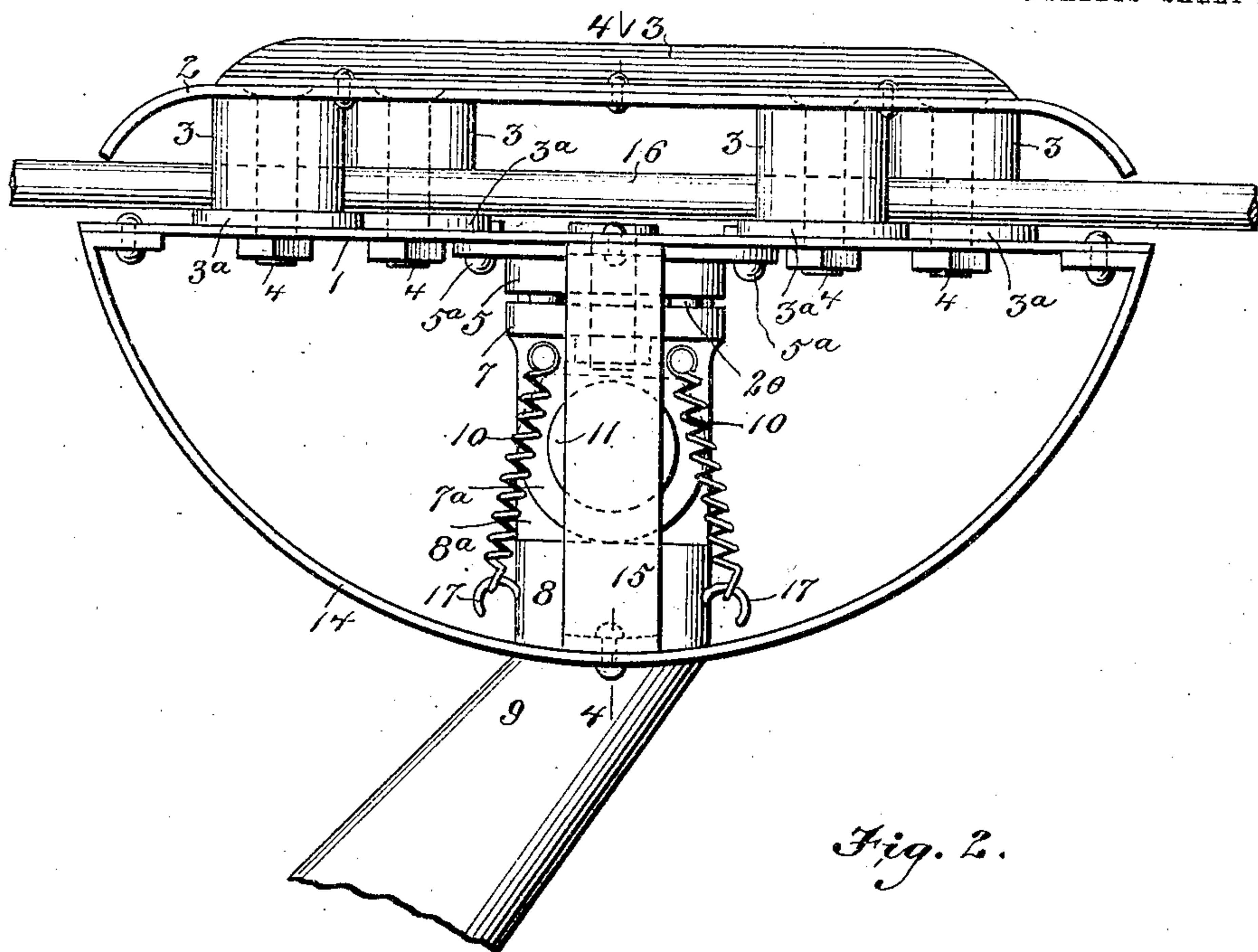


Fig. 2.

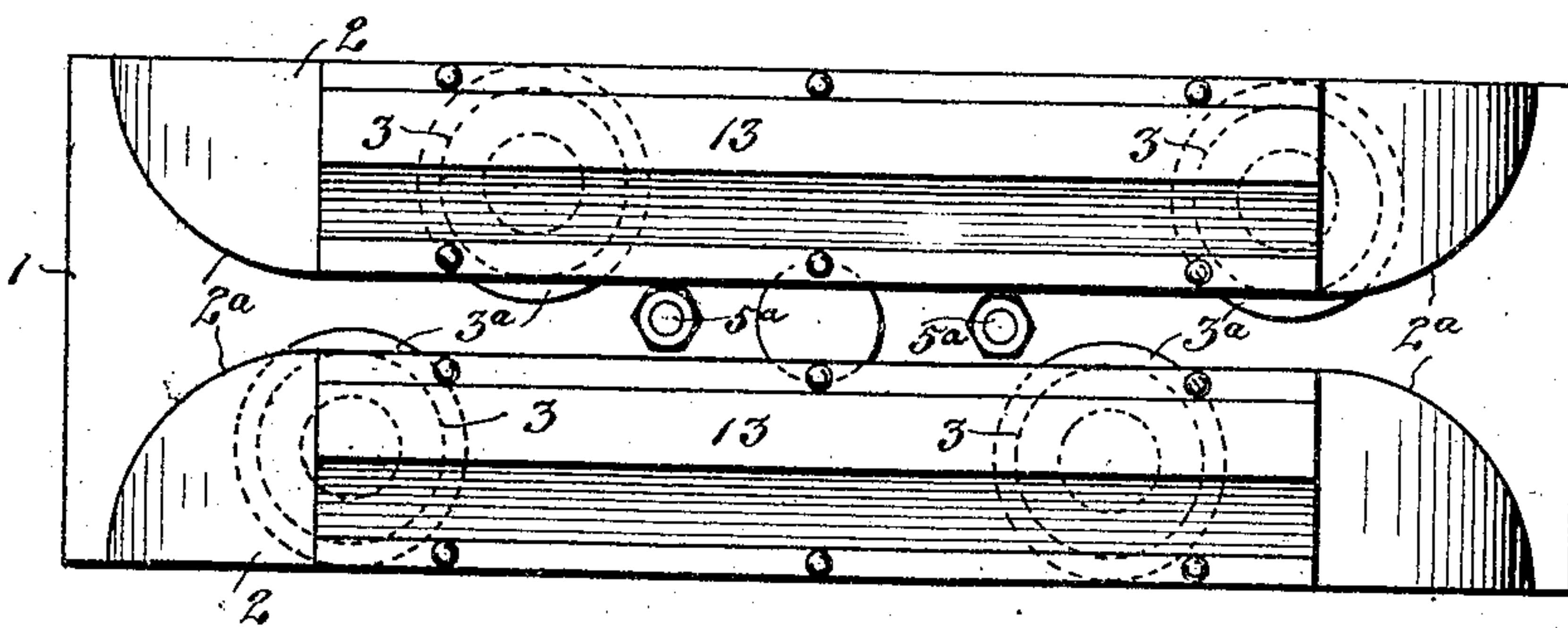


Fig. 1.

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2 SHEETS—SHEET 2.

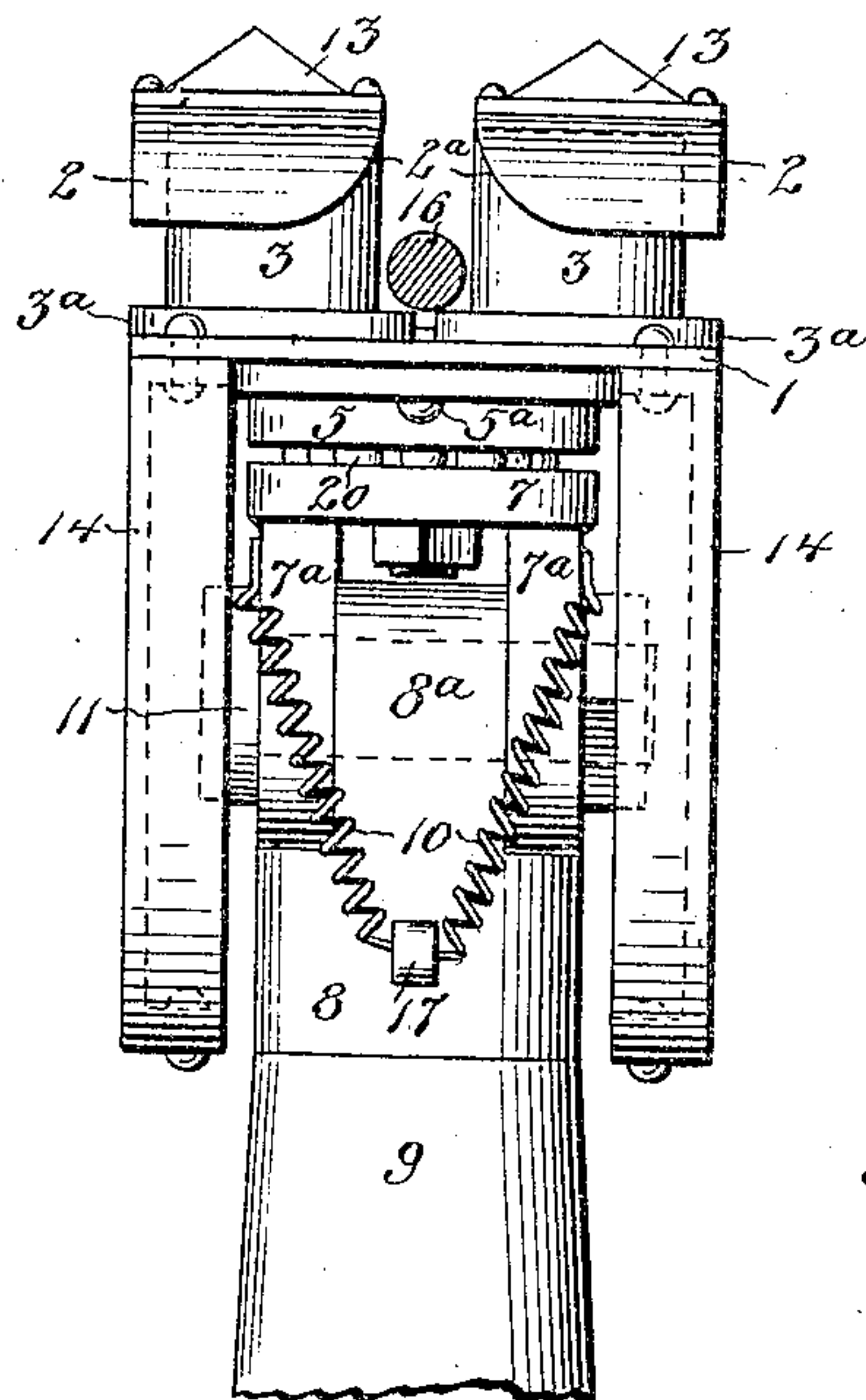


Fig. 3.

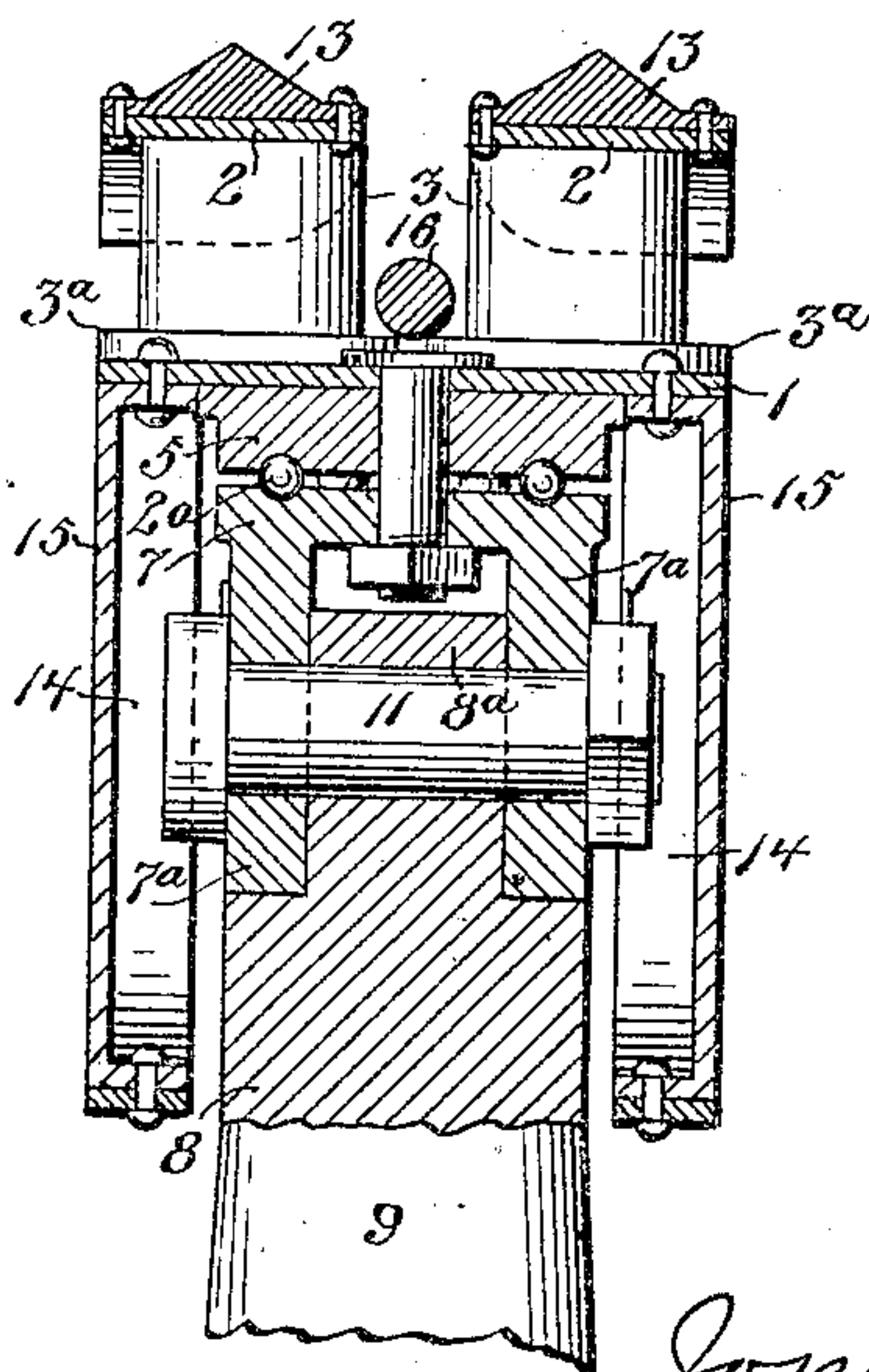


Fig. 4.

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UNITED STATES PATENT OFFICE.

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TROLLEY.

No. 885,474.

Specification of Letters Patent.

Patented Sept. 10, 1907.

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To all whom it may concern:

Be it known that I, JOSEPH ASHURST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Trolleys, of which the following is a specification

This invention relates to trolleys or current collectors for electric railways to which the current is supplied through overhead wire.

The object of the invention is to form an improved device which will turn or swing in both a vertical and a horizontal plane, so that it will follow the wire easily in all directions, without danger of running off at the curves; and a further object of the invention is to provide a collector having a good contact, by means of a plurality of collecting wheels which travel along the wire.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a top plan view of the trolley. Fig. 2 is a side elevation. Fig. 3 is an end elevation. Fig. 4 is a section on the line 4—4 of Fig. 2

Referring specifically to the drawings, 1 indicates a metal base plate on which the wheels 3 are mounted by means of bearing bolts 4. The wheels are four in number and are arranged in pairs near the front and rear ends of the plate, respectively. The wheels of the respective pairs are not directly opposite each other, but are offset or staggered, and each wheel has at the bottom a flange 3^a. The wire 16 extends between the wheels and rests upon said flanges.

The pivot bolts of the two wheels on each side of the wire are connected by longitudinal upper plates or strips 2 which are turned down at the ends and also beveled or rounded off at the ends, on the inside edge, as indicated at 2^a, to give full clearance for the wire. Each upper plate has thereon a ridge piece 13 extending lengthwise, and serving to direct or guide the trolley wire into the space between the rollers when the trolley is caught or applied to the wire.

On the under side of the plate 1, at about the middle thereof, is a circular bearing member 5, fastened to the under side of the plate by bolts 5^a, and this member has a circular groove opposite a similar groove in the opposite cup or bearing member 7, with balls 20 in the groove, forming a ball bearing between said members. The lower or cup member 7 has depending ears 7^a at each side between which is received the knuckle 8^a projecting from the end piece 8 of a socket 9 which receives the trolley pole.

The hinge is formed between the ears 7^a and knuckle 8^a by means of a horizontal cross bolt 11 extending therethrough, and the head is normally held in level position by means of two spiral springs 10 which are attached at opposite ends to either side of the member

7 and are looped around spurs 17 projecting from the end piece 8.

In order to prevent the guy wire from damaging the head, in case the trolley should run off the current wire, arched guards 14 are provided on each side, consisting respectively of metal pieces riveted at opposite ends to the opposite ends of the base plate 1 and supported at the middle by braces 15 extending from the plate 1 to said arched pieces. In case the trolley should run off the wire the guy, instead of striking the head, will strike the guards and tilt the head, thereby allowing the guy wire to slip or pass over the trolley head, thereby preventing the guy wire from tearing the trolley head off.

The vertical bearing between the parts 5 and 7, and the horizontal bearing at the hinge bolt 11, allow the head to turn in either a horizontal or a vertical plane, and thereby to accommodate itself to all variations in the angle or curve of the wire, so that the head will run freely along the wire with little or no danger of running off. The four wheels provide a large bearing surface, and insures good collection of current at all times.

I claim:

1. A trolley having a vertically oscillating head, and guards extending under the head from front to back thereof.

2. A trolley having a vertically oscillating plate extending lengthwise with respect to the current wire, current collectors mounted on said plate and adapted to contact with the wire, and guards comprising arched pieces extending under the plate from the front to the rear end thereof.

3. A trolley comprising a support, a plate rotatably mounted thereon by a vertical pivot and extending lengthwise under the wire, and a pair of wheels on vertical axes at each end of the plate, the wheels of each pair being spaced apart to receive the wire therebetween.

4. A trolley comprising a support, a lower plate mounted thereon and extending lengthwise under the wire, a pair of wheels on vertical axes at each end of the plate, the wheels of each pair being spaced apart to receive the wire therebetween, and an upper plate at each side, connecting the upper ends of the axes of the wheels on that side.

5. A trolley having a pair of current collecting wheels standing side by side on vertical axes, said wheels being spaced to receive a wire therebetween and having flanges at their lower ends on which the wire rests.

6. A trolley comprising a plate having front and rear pairs of current collecting wheels thereon, an upper bearing member fixed to the under side of the plate, a lower bearing member under the upper member, permitting turn on a vertical axis, a socket piece for the end of the trolley pole, a hinge between the socket piece and said lower member having a horizontal axis, and oppositely acting springs connected between the opposite hinge members and tending to hold the head level.

In testimony whereof I affix my signature, in presence of two witnesses.

JOSEPH ASHURST.

Witnesses:

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