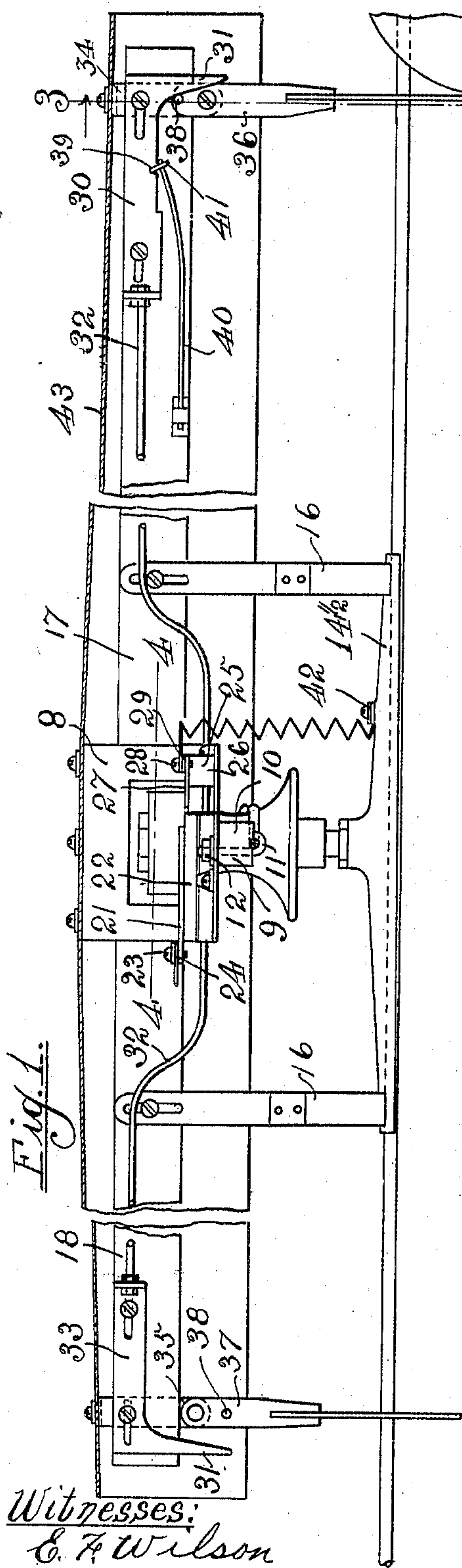


I. J. BRADSHAW.

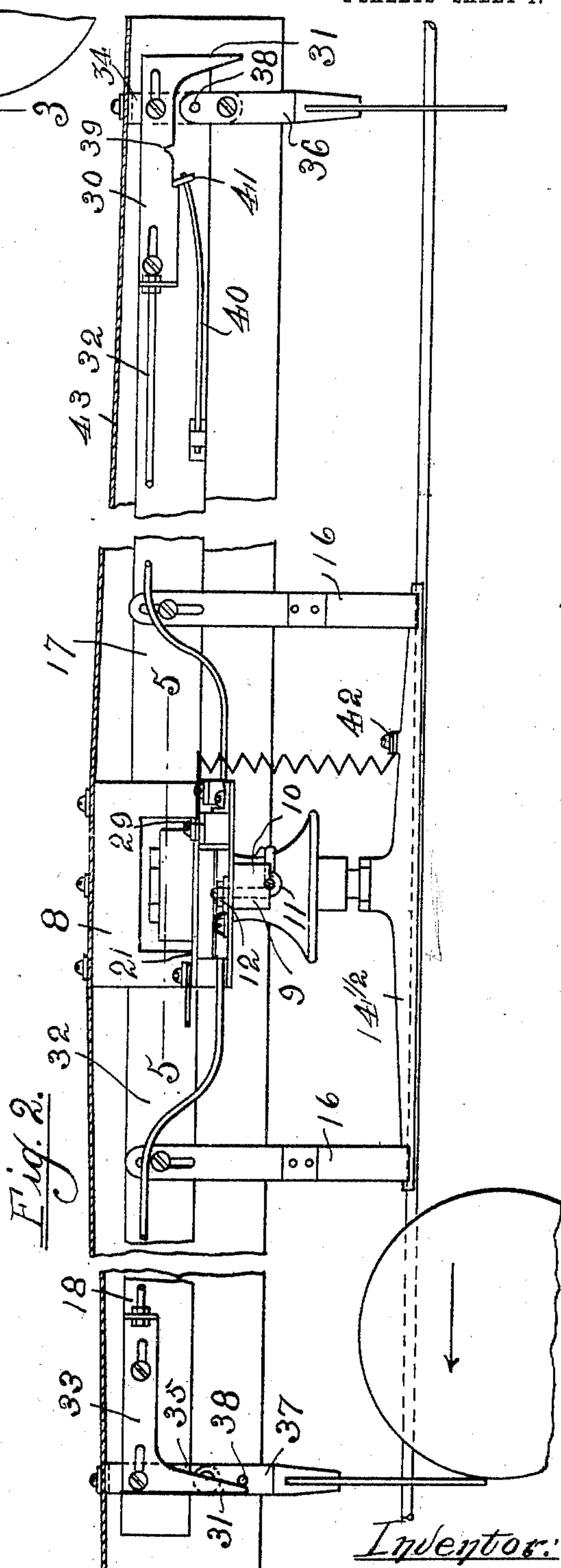
ELECTRICAL ANNUNCIATOR FOR TROLLEY CARS.

APPLICATION FILED JUNE 29, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

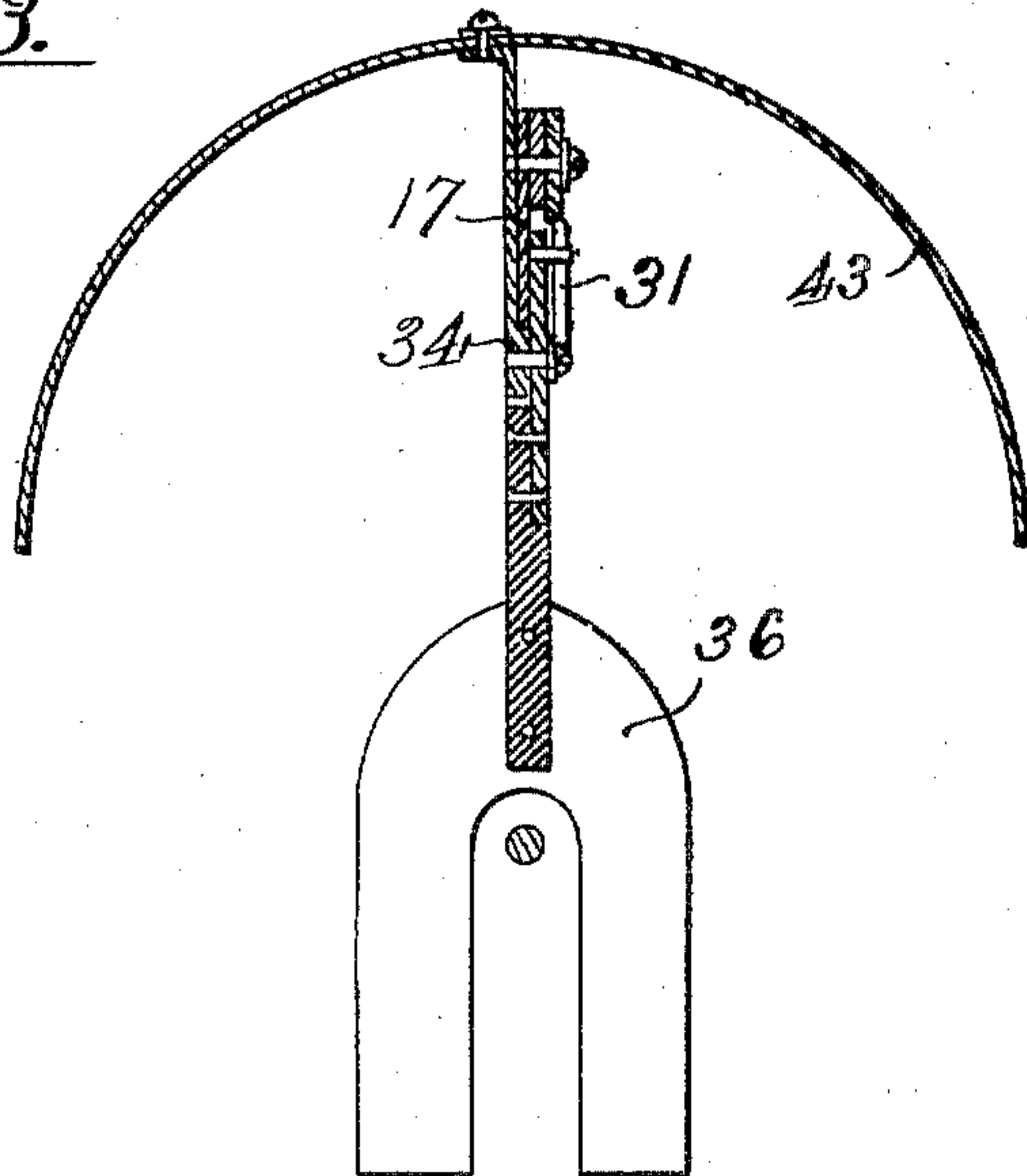
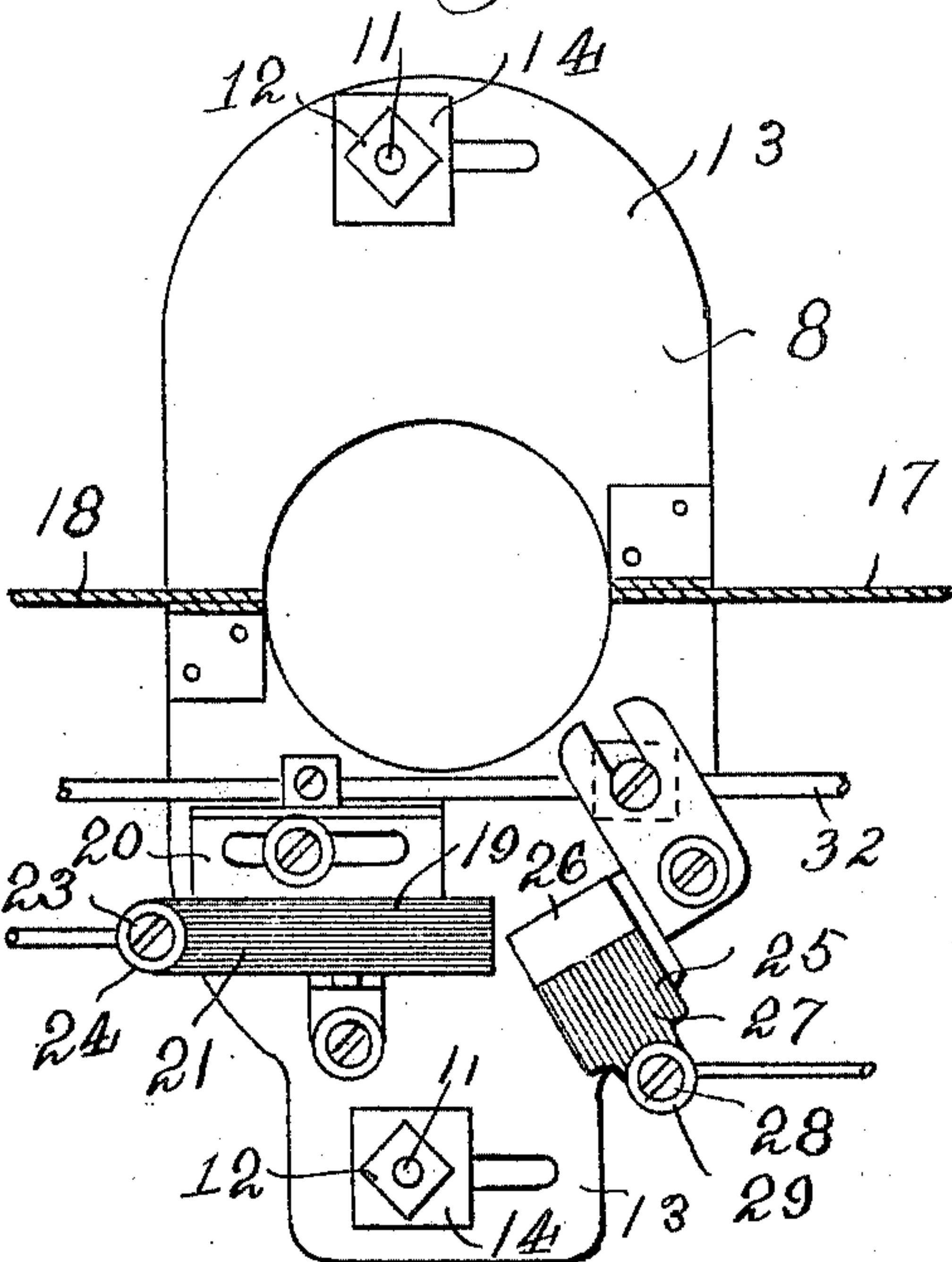


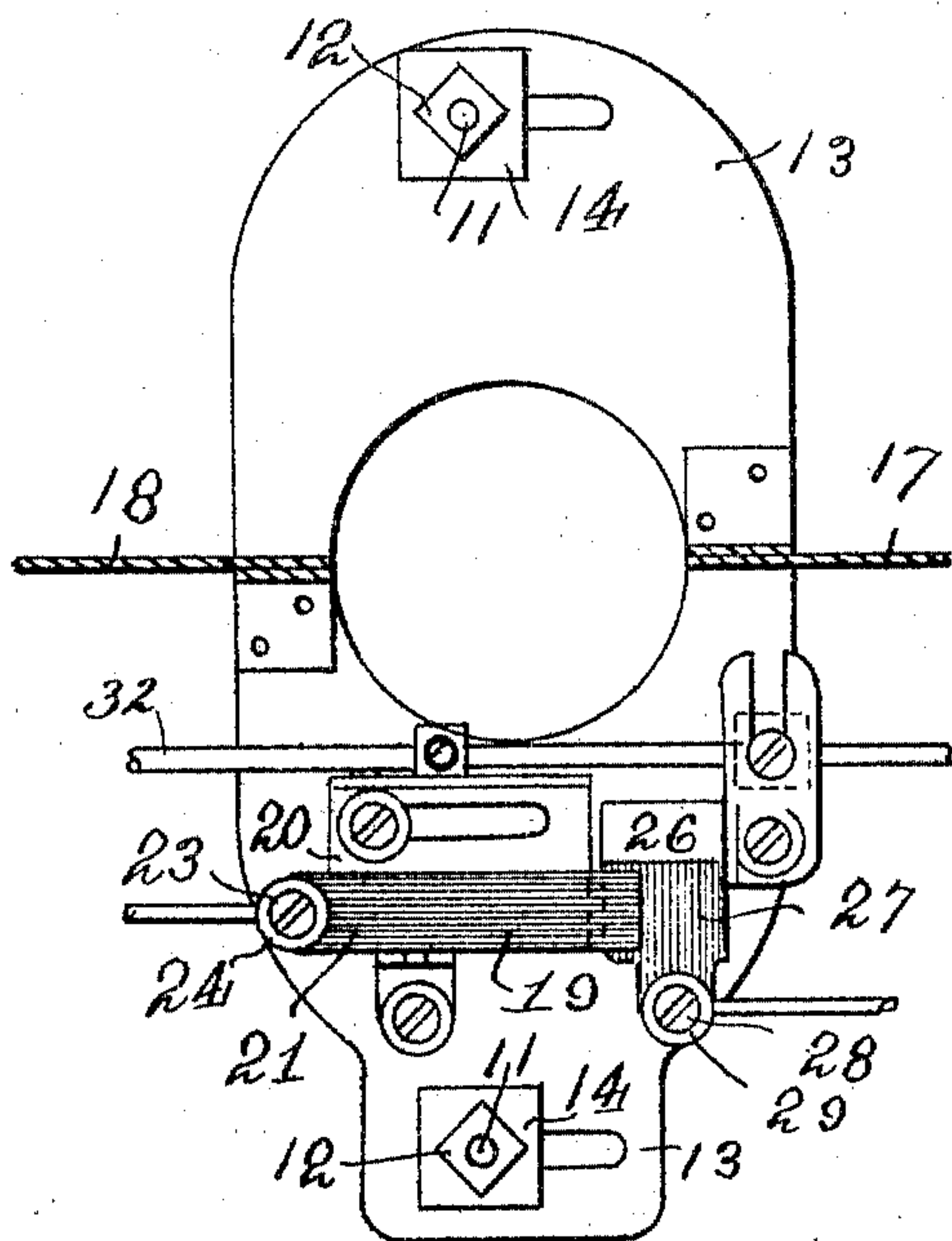
Fig. 4.



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Fig. 5.



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UNITED STATES PATENT OFFICE.

IRA J. BRADSHAW, OF WAUKEGAN, ILLINOIS, ASSIGNOR OF ONE-HALF
TO JACOB J. DIETMEYER, OF WAUKEGAN, ILLINOIS.

ELECTRICAL ANNUNCIATOR FOR TROLLEY-CARS.

SPECIFICATION forming part of Letters Patent No. 784,139, dated March 7, 1905.

Application filed June 29, 1904. Serial No. 214,575.

To all whom it may concern:

Be it known that I, IRA J. BRADSHAW, a citizen of the United States, residing at 139 Genesee street, Waukegan, Lake county, Illinois, have invented a new and useful Improvement in the Electrical Annunciator for Trolley-Cars for which Patent No. 746,001, dated December 8, 1903, was issued to me, with Jacob J. Dietmeyer as assignee.

The following is a specification of my said improvement on said electrical annunciator.

My invention relates to annunciators for trolley-cars designed to be located in waiting-rooms for passengers of same and is an improvement on the mechanism shown in the above-named patent hitherto issued.

The object of my present invention is to provide a switch intended to be a new means of establishing electrical connection between the trolley-wire of an electric railway and the electromagnet, which is a part of my electrical annunciator shown in my said above patent. I attain this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved switch for establishing electrical connection between the trolley-wire and my said electrical annunciator described in my patent aforesaid. Fig. 2 is similar to Fig. 1, but showing the levers designed to be operated by contact with the trolley at the limit opposite that shown in Fig. 1. Fig. 3 is a vertical section of above on the line 3 3 in Fig. 1. Figs. 4 and 5 are detailed horizontal sections of the same, showing the switch mechanism in plan and taken on the lines 4 4 and 5 5 in Figs. 1 and 2, respectively.

Like numerals refer to like parts throughout the several views.

Referring to the drawings, 8 is a bracket to which is secured certain parts of my improved switch. This bracket is secured upon the span-wire of the electric railway by means of grooved clamps 9, being made with an opening through which will pass the head of the hanger of the span-wire. Each of the clamps consists of the grooved block 10, with a vertical hole through it, the hook

11, threaded on its straight section, and the nut 12. In each outer end of plate 13 of the bracket a slot is made, and in this is secured the clamp, with the washer 14 between the nut and plate 13. It is evident that the parts of this clamp can be separated when it is desired to secure the bracket on the span-wire, the hook be caught on the wire, and the clamp be tightened, so securing the bracket upon the span-wire.

To securely keep the bracket in horizontal position above the span-wire, the grooved guides 16 16 are secured upon the bars 17 and 18 and rest by their grooves on the extensions of the hanger 14½, which supports the trolley-wire. These guides are slotted, so the bolt passing through them and securing them to the bars may be loosened by unscrewing its nut and the height of the guides be thus adjusted. Of course these guides must terminate in some insulating substance. The bars 17 and 18 are designed to be secured at one end to the bracket and at the other to have secured to them certain parts of my switch.

The switch-block 19 is secured by a screw-bolt upon the plate of the bracket, the block having a slot through its base 20, so it can be adjusted as desired upon the plate of the bracket. Its metallic cap 21 is secured upon the insulating-block 22, which in turn is secured to the base of the switch-block. A screw 23 passes through the metallic washer 24 into the cap, where it extends beyond the block 22. Between this washer and the cap an electric wire can be secured and led to connection with the electromagnet shown in the mechanism in my aforesaid patent.

The switch-lever 25, consisting of the insulating-block 26 and the metal cap 27, is pivoted on the plate of the bracket near to the switch-block. The screw 28 passes through the metal washer 29 and the cap 27 where the latter extends beyond the block 26. Between this screw and washer can be fastened an electric wire connecting by any suitable means with the hanger of the trolley-wire, as shown at 42 in Figs. 1 and 2.

It is evident than when the switch is closed

the caps 21 and 27 being in contact a circuit will be established between the electromagnet and the trolley-wire. To close the switch, I have devised the mechanism shown as secured
 5 to the right-hand end of the bar 17 and the rod connecting this mechanism with the switch-lever and switch-block, and to open the circuit I have provided like mechanism at the left-hand end of the bar 18, secured in like
 10 manner to the end of the rod at such point.

30 is a metallic slide provided with two slots and having at one end a lug 31 to extend downward, which is beveled or graduated on its inner edge, and bent at a right angle at the
 15 other end, so as to permit the rod 32 to be bolted in such part. This rod thus secured at such end extends to and is bolted fast in a corresponding section of a like metallic slide 33. This slide is secured upon the bar 18 in
 20 like manner to that securing the slide 31 to the bar 17 and has also the lug 31 and is designed for use in opening the switch.

The slides 30 and 33 each have two slots through which bolts secure them upon their
 25 bars, so that the slides are movable by the length of the slots.

34 and 35 are bearings bolted on the bars 17 and 18, near the outer ends of the latter. The levers 36 and 37 are pivoted on these
 30 bearings, respectively, at their ends in such position that the lugs 38, formed on the respective levers near their upper ends, will come into contact with the beveled side of the lugs 31 when the levers are swung toward the left.

35 The rod is secured to both the switch-lever and the switch-block at their inner ends. As the switch-lever is pivoted on the bracket within contact distance of the switch-block, any force which moves the rod to and fro will
 40 open and close the switch. Hence when the trolley coming from the right-hand direction passes into the fork of the lever and swings the lever 36 upward the lug 31 is forced toward the right, thus actuating the rod 32
 45 and turning the switch-lever on its pivot closes the switch, so making a complete electric circuit between the said electromagnet and the trolley-wire, and thus operating the electrical annunciator, as described in my said patent.
 50 As the trolley passes on it actuates the lever 37, and this actuating the rod 32 the switch is opened.

The slide 30 has a notch 39 in its lower edge. The spring 40 is secured to the bar 17 and has
 55 secured on its outer end the lug 41. The spring is secured at such a point that when the lever 37 has opened the switch the lug 41 will be swung up by the spring 40 into the notch in the slide 32, so as to hold the switch
 60 open until another trolley comes and again closes it.

It is evident when the trolley comes from the direction opposite to that above shown that it will not disturb the switch.

65 Where there is a double track, I use two

switches in reversed positions, one for each wire, at the necessary distance from the station in opposite directions.

Where the track is single, I use two switches in reversed positions over the single wire at
 75 the proper distance in opposite directions from the station.

To protect the switch from the weather, I have the roof 43, which is preferably made of galvanized iron, secured upon the top of the
 75 bracket and the tops of the bearings 34 and 35 thereon.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States, 80 is—

1. An electric switch consisting of the bracket, 8, secured on the span-wire, the switch-lever pivoted on the plate of the bracket 8, the switch-block screwed on said plate, the
 85 rod 32 secured to the inner end of the switch-lever, the bars 17 and 18, secured to the bracket, 8, the slides 30 and 33, slotted, and bolted on the bars, and respectively secured to the ends of the rod 32 substantially as and
 90 for the purpose specified.

2. In an electric switch; the combination; of the bracket, 8, secured on the span-wire; the bars, 17 and 18, secured to the bracket; the switch-block secured on the bracket; the
 95 switch-lever pivoted on the same; the slide 30, secured to the bar 17; the slide, 33, secured to the bar, 18, by bolts through its slots, allowing it to be moved back and forth; the lug, 31, formed at the right-hand end of the slide,
 100 30; the rod, 32, bolted to the slide, 30; and the levers, 36 and 37, pivoted, respectively, on the bars, 17 and 18, and having the lugs, 38, arranged so as to contact with the lugs, 31; substantially as and for the purpose specified.
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3. In an electric switch, the combination of the bracket having its plate slotted transversely near its outer ends, clamps, each consisting of the grooved block, 10, threaded
 110 hook, 11, and the nut, 12, said clamps being secured to the bracket through its slots; the span-wire of the electric railway, securing the bracket in its place and the grooved guides, 16, resting on the extensions of the hanger
 115 of the trolley-wire, substantially as and for the purpose specified.

4. In an electric switch, the combination of the bracket 8 secured on the span-wire, the bars 17 and 18 secured to the bracket, the
 120 switch-block 19 secured on the bracket, the switch-lever 25 pivoted on the same, the slide 30 secured to the bar 17, the slide 33 secured to the bar 18 by bolts through its slots, allowing it to be moved forward and back, the
 125 rod 32 bolted to the slide 30 and to the slide 33, the lug 31 formed on the right-hand end of the slide 30, the slide 30 having the notch 39 on its lower edge, the spring 40 secured on the bar 17, and the lug 41 formed on the said
 130

spring so as to engage with the notch 39, substantially as and for the purpose specified.

5 In an electric switch, the combination of the bracket 8, the switch-block, 19, having its base and cap insulated, from each other, the switch-lever, 25, having its base and cap insulated from each other, both secured on the bracket, 8, the rod, 32, connected with both, the slide, 33, secured to the rod and the electric wires leading from the caps of the switch-block and the switch-lever respectively

to an electric magnet of well-known construction, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed 15 my name to this specification in the presence of two subscribing witnesses.

IRA J. BRADSHAW.

Witnesses:

GILES S. FARMER,
J. LEO MOHUNANN.