

No. 813,144.

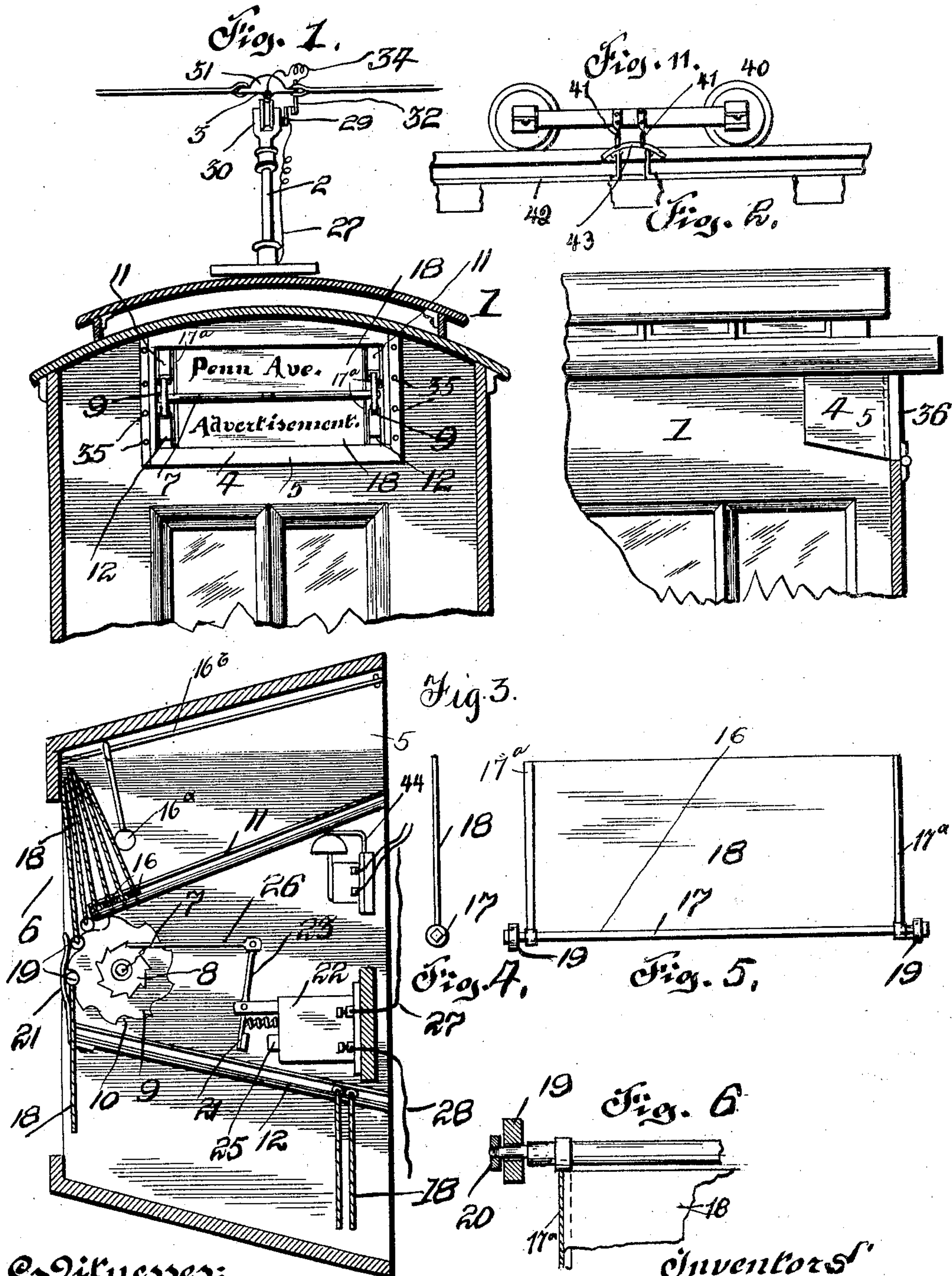
PATENTED FEB. 20, 1906.

D. C. EVANS & O. Q. PATTERSON.

STREET CAR INDICATOR.

APPLICATION FILED SEPT. 6, 1905.

2 SHEETS—SHEET 1.



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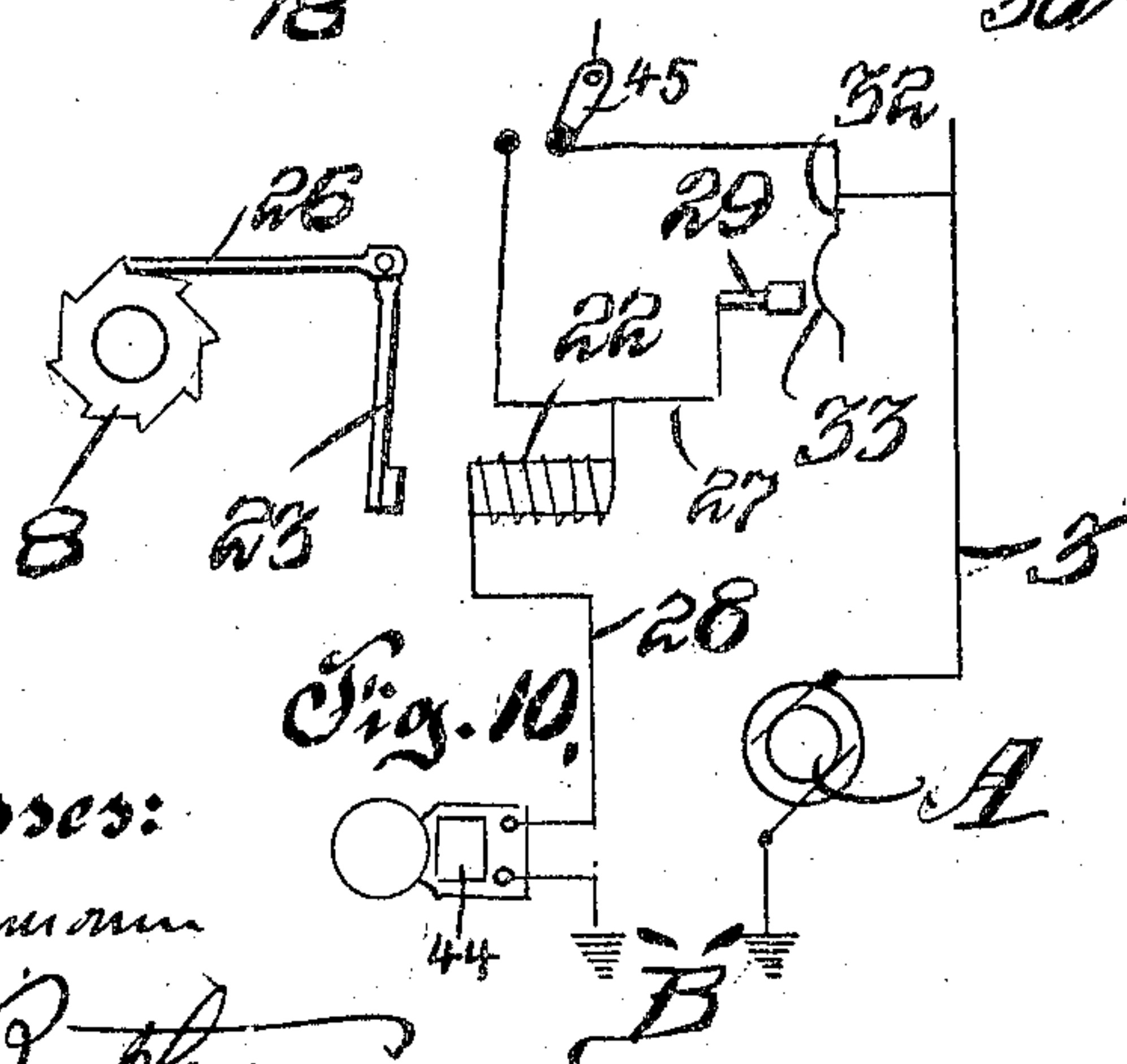
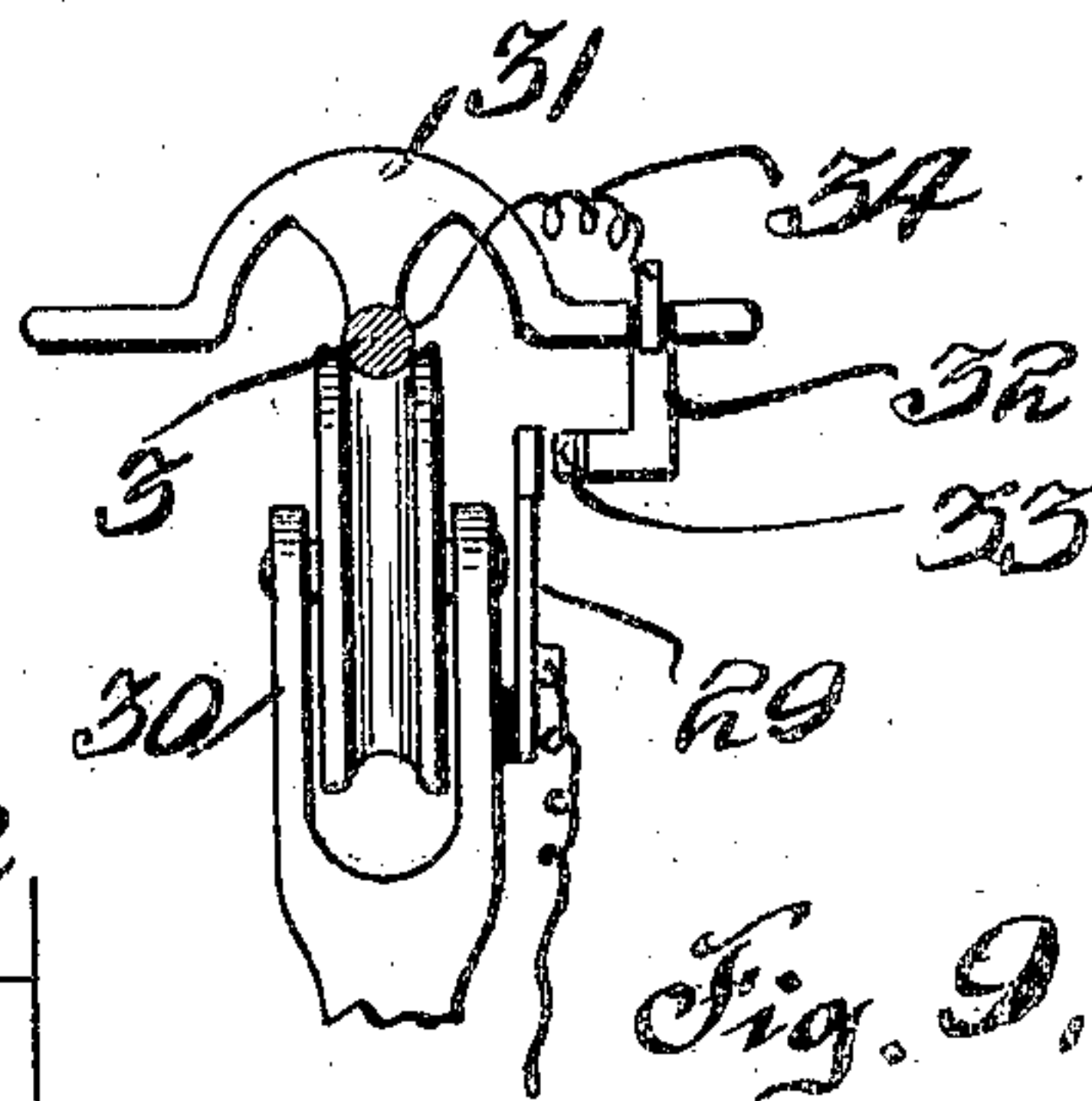
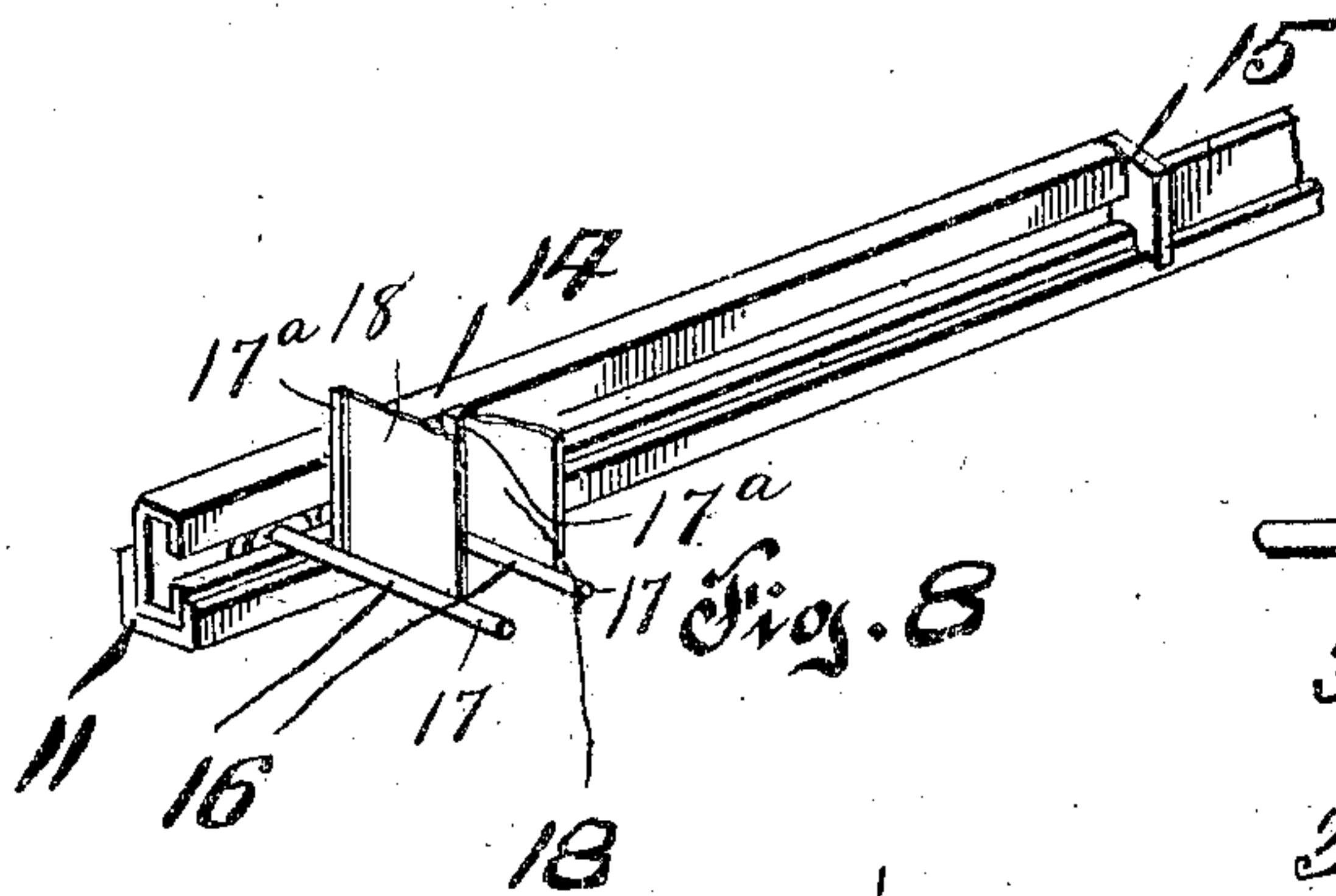
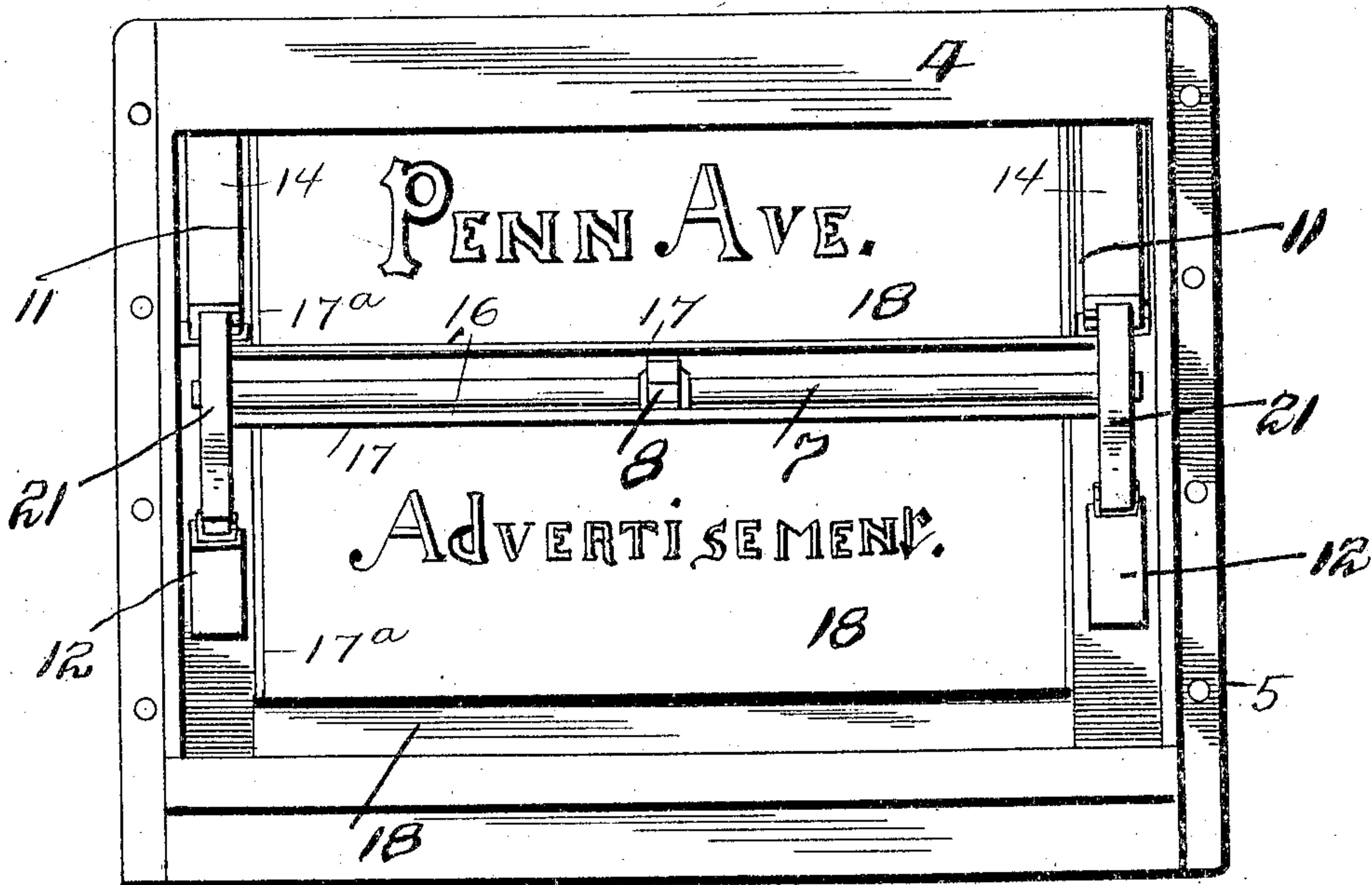
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2 SHEETS—SHEET 2.

Fig. 7.



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UNITED STATES PATENT OFFICE.

DAVID C. EVANS AND OLIVER Q. PATTERSON, OF UNIONTOWN, PENNSYLVANIA.

STREET-CAR INDICATOR.

No. 813,144.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed September 6, 1905. Serial No. 277,254.

To all whom it may concern:

Be it known that we, DAVID C. EVANS and OLIVER Q. PATTERSON, citizens of the United States of America, residing at Uniontown, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Street-Car Indicators, 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 indicators, and more particularly to that type of indicators adapted to be electrically actuated in connection with street and railway cars.

The primary object of this invention is the provision of novel means for indicating the different streets and stations which a car approaches during the entire route of the car. In this connection we have devised novel and positive means for displaying the name of each street or station a car approaches, and to accomplish this we have provided a plurality of plates upon which the names of the streets or stations which a car passes are placed, and by electrically-actuated means the name of each street or station is displayed prior to the arrival of a car at said place.

In constructing our improved indicator we have employed novel means whereby the indicator will be automatically actuated, and the means which we have employed is constructed whereby it will not interfere with the general construction of a railway, and the simple construction of the same reduces the expense of maintenance to a minimum.

The construction of our invention will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like characters of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a vertical cross-sectional view of a street-car equipped with our improved indicator. Fig. 2 is a vertical sectional view of a portion of the street-car, illustrating the indicator in side elevation. Fig. 3 is a vertical sectional view of the indicator proper. Fig. 4 is an end view of one of the plates employed in connection with our improved indicator. Fig. 5 is a front view of the same. Fig. 6 is a fragmentary sectional view of one

of the plate-holders. Fig. 7 is an enlarged detail front elevation of the indicator. Fig. 8 is a perspective view of one of the guidetracks employed in connection with the same. Fig. 9 is a front elevation of a contact carried by the trolley of the car equipped with our improved indicator. Fig. 10 is a diagrammatic view of the electrical connections of the indicator. Fig. 11 is a side elevation of a car-truck equipped with a contactarm.

In the accompanying drawings we have illustrated a conventional form of street-car 1, which is electrically operated, a trolley-pole 2 and a trolley-wire 3 being employed for this purpose. Our invention resides in the indicator 4, which we preferably mount in the forward end of the car 1, whereby it may be easily observed by the occupants of the car. The indicator is constructed of a casing 5, having an open front 6, and transversely of the casing adjacent to the open front we journal a shaft 7, upon which is mounted a ratchet-wheel 8, and upon this shaft is mounted at each end of the casing a toothed wheel 9, the teeth of said wheels forming recesses or grooves in the periphery thereof, as at 10. At each end of the casing we mount two tracks 11 and 12, the track 11 inclining from the rear of the casing to directly above the toothed wheel 9, while the track 12 inclines from the toothed wheel to the rear of the casing, as clearly illustrated in Fig. 3 of the drawings. Each track is substantially channel-shaped, and in each track is mounted a guide 14, this guide being substantially C-shaped in cross-section. The rear end of each guide is closed by a plate 15, and between the tracks 14 14 are mounted plate-holders 16, the number of plate-holders employed depending upon the number of streets along the route of the car equipped with our improved indicator. Each plate-holder consists of a shaft 17, which carries depending grooved rods 17^a 17^a, and between these rods are mounted plates 18, upon which the name of a street or station is placed, as illustrated in Fig. 7 of the drawings, the name of the street being placed upon one side, while upon the reverse side of the plate a suitable advertisement is placed. To retain the plate-holders 16 in position to be engaged by the wheels 9, we suspend a weight 16^a in the rear of the plate-holders 16, said

weight being suspended from a track 16^b, mounted in the top of the casing 4. The weight 16^a is adapted to bear against the rear side of the plate-holders and force them to-
 5 ward the forward side of the casing. The end of each shaft is provided with a revoluble roller 19, which is retained upon the ends of the shafts by nuts 20 or the like fastening means.

10 The track 12 at each end of the box is provided with an upwardly-extending spring or resilient strip 21, which is adapted to lie in engagement with the toothed wheels 9 9. The strips 21 are pivotally mounted adjacent
 15 to the wheels 9 9, so they can be swung outwardly to remove any plate-holder that may be retained by said holder. In the casing 5 we mount an electromagnet 22, said magnet carrying a pivoted arm 23, the one end 24 of
 20 said arm lying in close proximity to the core 25 of the said magnet, while the opposite end of said arm is connected to the plunger 26, which normally lies in engagement with the ratchet-wheel 8 of the shaft 7. The electro-
 25 magnet is connected by wires 27 and 28 with the electrical circuit which operates the street-car 1, the wire 27 passing upwardly through the car and along the trolley-pole 2 to an insulated contact-arm 29, carried by
 30 the harp 30 of said pole, while the wire 28 is grounded by connecting it to one of the axles of the car or the like piece of mechanism which will insure a positive circuit, as will be presently described.

35 At each street along the route of a car-line we provide the trolley-wire support 31 with a depending insulated arm 32, having a spring-contact point 33. The arm 32 is connected by a wire 34 with the trolley-wire 3, and the
 40 operation of our improved indicator is as follows: We will first assume that a street-car is at the terminal of a line and it is about to traverse the route over which it travels. The plates 18, carrying the names of the streets
 45 along the route, are placed in the tracks 11 11, this being accomplished by placing guides 14 14 in the tracks 11 11, which carry the plates, and the plates are preferably arranged in a vertical position, as illustrated in Fig. 3
 50 of the drawings, whereby the one side of each plate will be displayed through the open front of the casing. When the plates are carried by the tracks 11 11, the names of the streets are displayed—as, for instance, in
 55 Fig. 7 of the drawings we have illustrated the street "Penn Ave"—and owing to the inclination of the tracks 11 11 these plates, which are carried by the rollers 19 19, will gradually travel down toward the toothed wheels 9 9
 60 and eventually drop into one of the recesses or grooves of said wheels. By referring to Fig. 3 of the drawings it will be observed that the top edges of the plates engage the front of the casing 5, and when the toothed
 65 wheels are actuated by the electromagnets 22

the plates will be released and permitted to drop by gravity to a position which will display the reverse side of the plate, as illustrated in Figs. 1, 3, and 7 of the drawings. In
 70 this manner first one name of the street will be displayed, and upon the car traveling to the next street the advertisement which was carried by the rear side of the plate will be displayed. The springs 21 21 serve to re-
 75 tain the rollers 19 in engagement with the toothed wheels 9 9, and after these wheels have rotated sufficient to release said rollers they are engaged by the tracks 12 12, which convey them to the rear side of the casing 5,
 80 assembling the plates in the order in which they were placed in the tracks 11 11. When the terminal has been reached by the street-car, the guides 14 14, retaining the plates, are removed from the tracks 12 12 and replaced
 85 in the tracks 11 11 in order to be used again when the car traverses its route. As each car approaches the street the contact-arm 29, carried by the trolley, will engage the spring-
 90 contact 33, carried by the depending arm 32 of the trolley-wire support, and a circuit will be completed through the trolley-wire 3 to the source of electrical energy A, through the
 95 ground B, wire 28 to the electromagnet 22, and through wire 27 to the arm 29, which will energize the electromagnet 22 and attract the pivoted arm 23 and rotate the ratchet-
 wheel 8, which will in turn rotate the toothed wheels 9 and display the name of a street each time the electromagnet is actuated.

In Fig. 11 we have illustrated a truck 40 of
 100 an ordinary railway-car in connection with which our indicator may be used to designate the various stations along the railroad. The truck is provided with depending arms 41 41, representing the positive and negative poles
 105 of the electrical circuit used with our indicator. The track 42 adjacent to each station is provided with a resilient contact-strip 43, adapted to complete the circuit of the indicator and actuate the same to display the
 110 name of a station. In each indicator we arrange an alarm 44, such as an electric bell, and this bell is cut in upon the indicator-circuit to sound an alarm at each station or
 115 street approached by a car. In connection with the electrical circuit of the indicator we may employ a button or switch 45, located convenient to the operator of a car, whereby
 120 when a street or station is passed by without stopping and track or trolley contact should fail to work the operator can easily close the indicator-circuit, actuate the same, and thus
 125 insure a perfect operation of the indicator.

The indicator may be suitably supported within the car by any desired means, in the
 130 present instance we having illustrated screws 35, which secure the ends of the indicator to the body of the car. The indicator is preferably provided with a hinged door 36, whereby the indicator can be conveniently opened
 135

from the platform of a car and the plates 18 transferred from the tracks 12 to the tracks 11 or additional plates placed therein, according to the route over which the car passes.

5 It will be observed that we have provided an inexpensive and easily-operated street-indicator, which can be also used as an advertising medium, and while we have herein described the preferred manner of operating our
10 improved indicator it is obvious that various changes may be made in the details of construction without departing from the spirit of the invention as defined by the appended claims.

15 What we claim, and desire to secure by Letters Patent, is—

1. In an indicator, the combination with a street-car, of a casing mounted within said car, inclined tracks carried at each end of
20 said casing, guides mounted in said tracks, movable plates carried by said guides, toothed wheels revolubly mounted in said casing, and adapted to engage said plates, means for sustaining said plates in engagement with said
25 toothed wheels, means for temporarily holding said plates in vertical position while engaged by the wheels, said last-named means being adapted to permit the plates to be successively released so as to turn over by gravity and reverse their position, an electromag-

net mounted in said casing and adapted to actuate said wheels, means to intermittently energize said electromagnet, means for causing said plates to move into engagement with said wheels and means arranged within the casing to sound an alarm each time the indicator is actuated. 35

2. An indicator of the type described, comprising in combination a casing having an open front, inclined tracks mounted in said casing, guides carried by said tracks, plates
40 movable by gravity in said guides, toothed wheels journaled in said casing and adapted to successively engage each of said plates, means to hold said plates in engagement with said wheels, means to sustain each plate temporarily in vertical position while engaged by the wheels, said last-named means being adapted to permit of the plates being successively released so as to permit them to reverse their positions by gravity while engaged by said wheels and means to actuate said wheels. 45 50

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

DAVID C. EVANS.

OLIVER Q. PATTERSON.

Witnesses:

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CLARENCE E. HAGERTY.