

I. J. BRADSHAW.

## ELECTRICAL ANNUNCIATOR FOR TROLLEY CARS.

APPLICATION FILED MAR. 28, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.

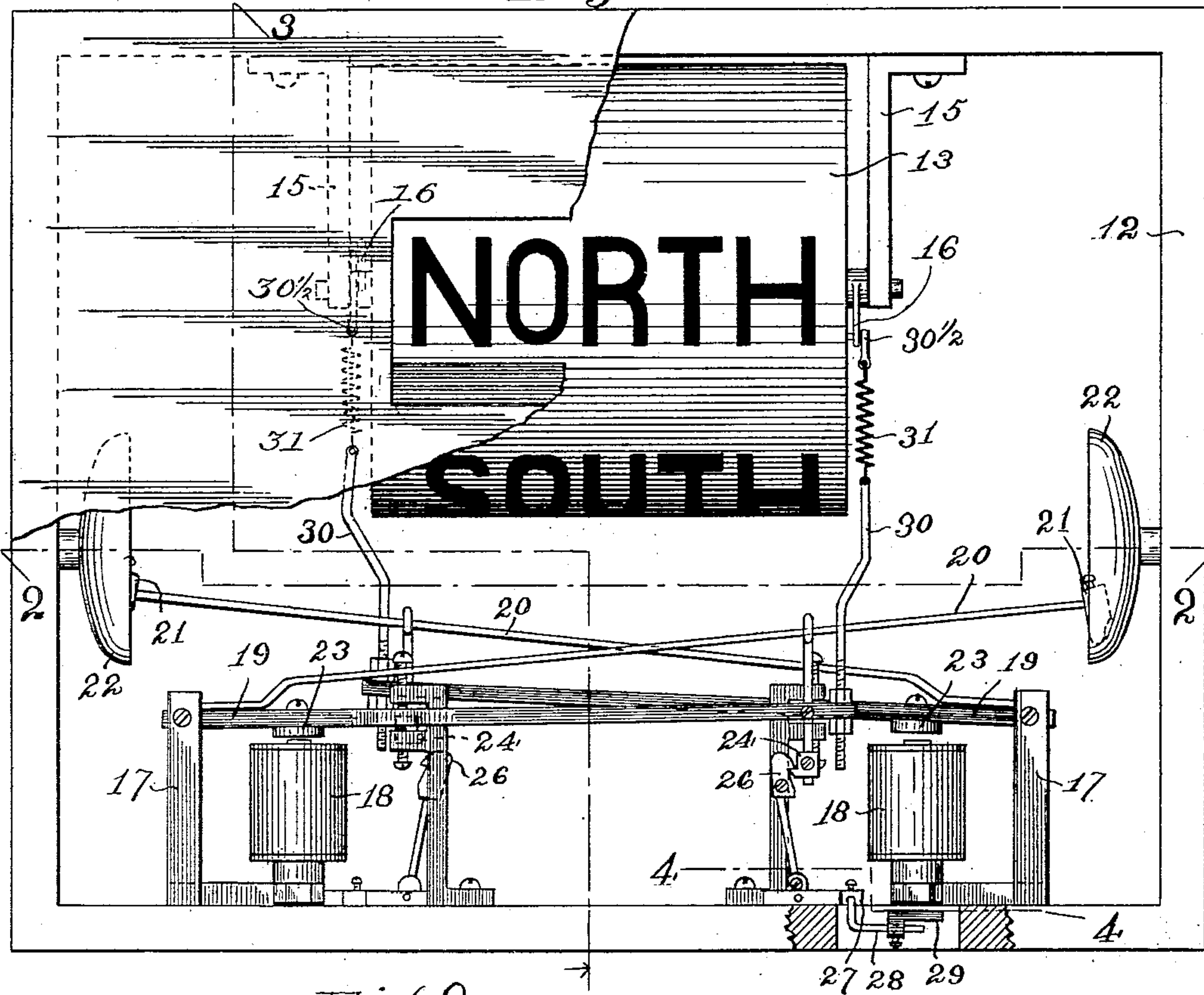
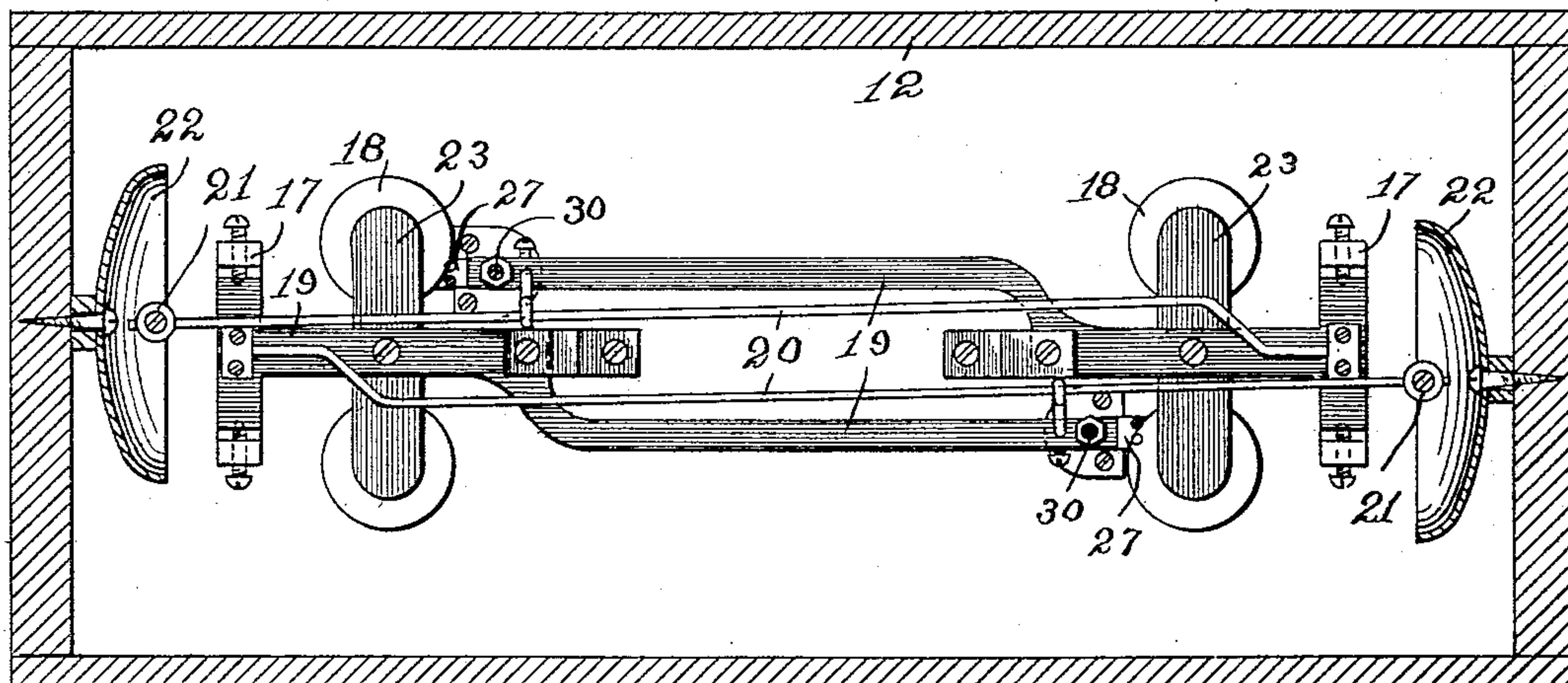


Fig. 2.



Witnesses:

C. F. Wilson  
 W. R. Burleigh

Inventor:

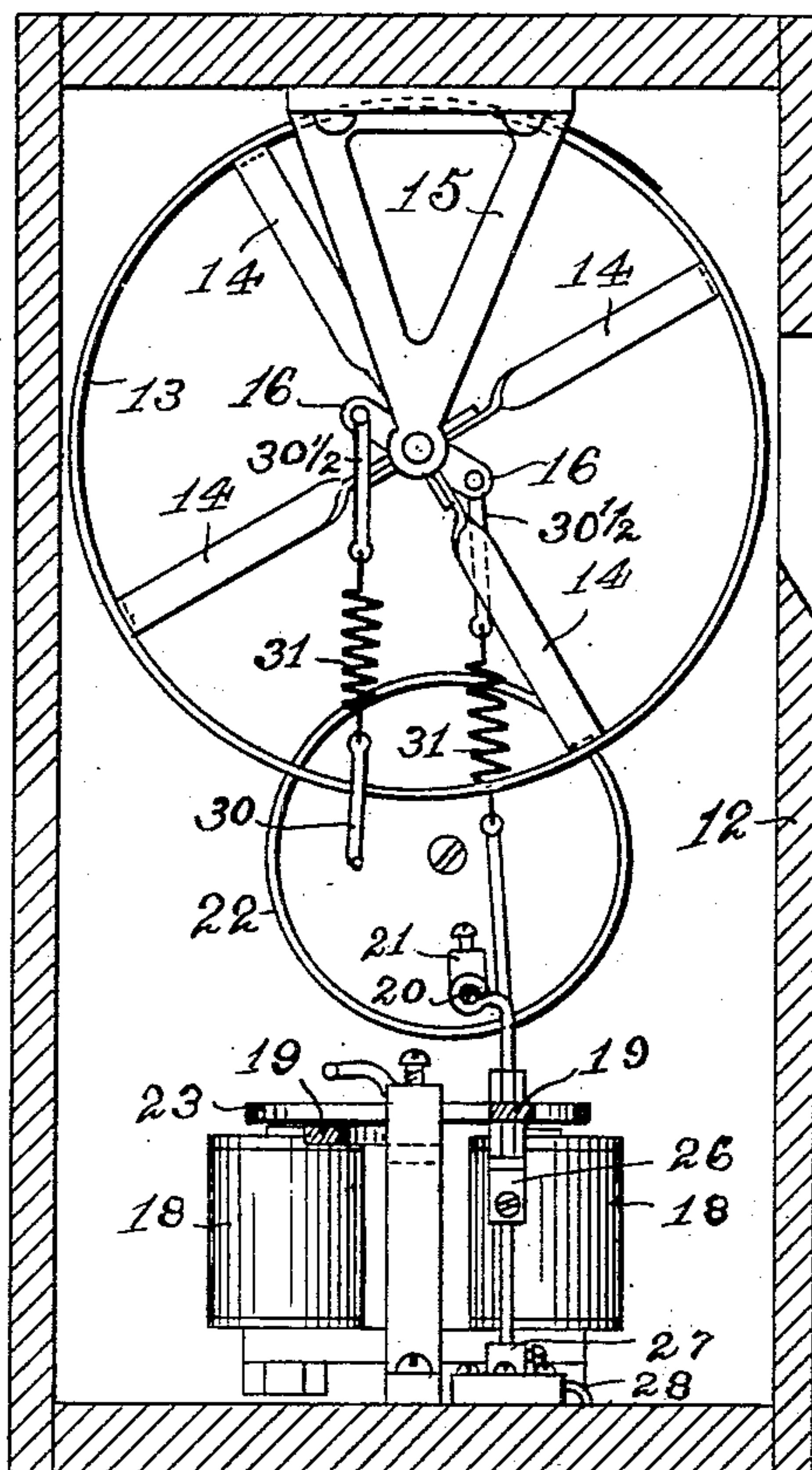
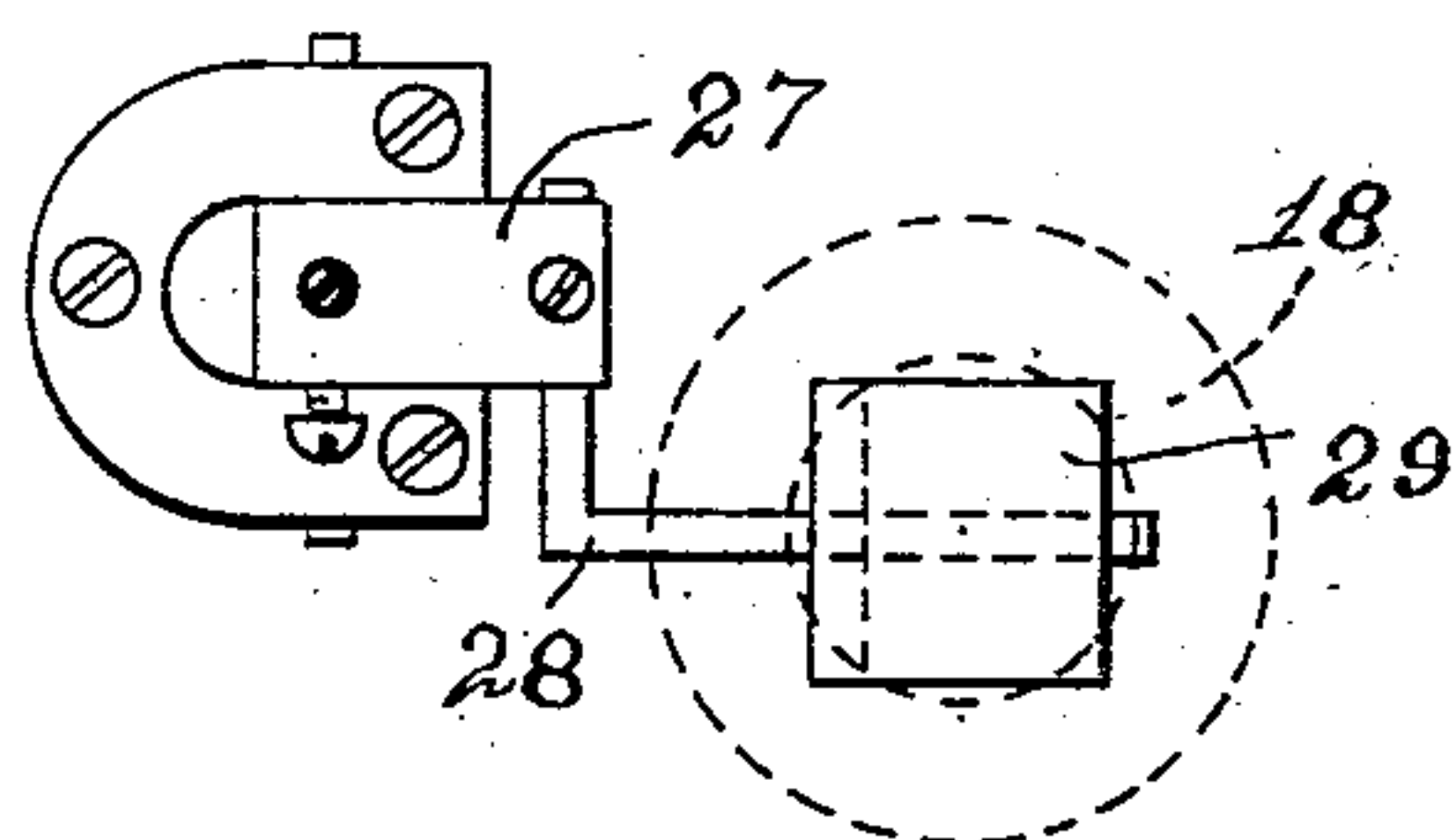
Ira J. Bradshaw,  
 By E. C. Crawford,  
 Attorney.

I. J. BRADSHAW.  
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NO MODEL.

4 SHEETS—SHEET 2.

*Fig. 3.**Fig. 4.*

Witnesses:

C. F. Wilson  
W. R. Burling

Inventor:

Ira J. Bradshaw,

By E. C. Crawford,  
Attorney

No. 746,001.

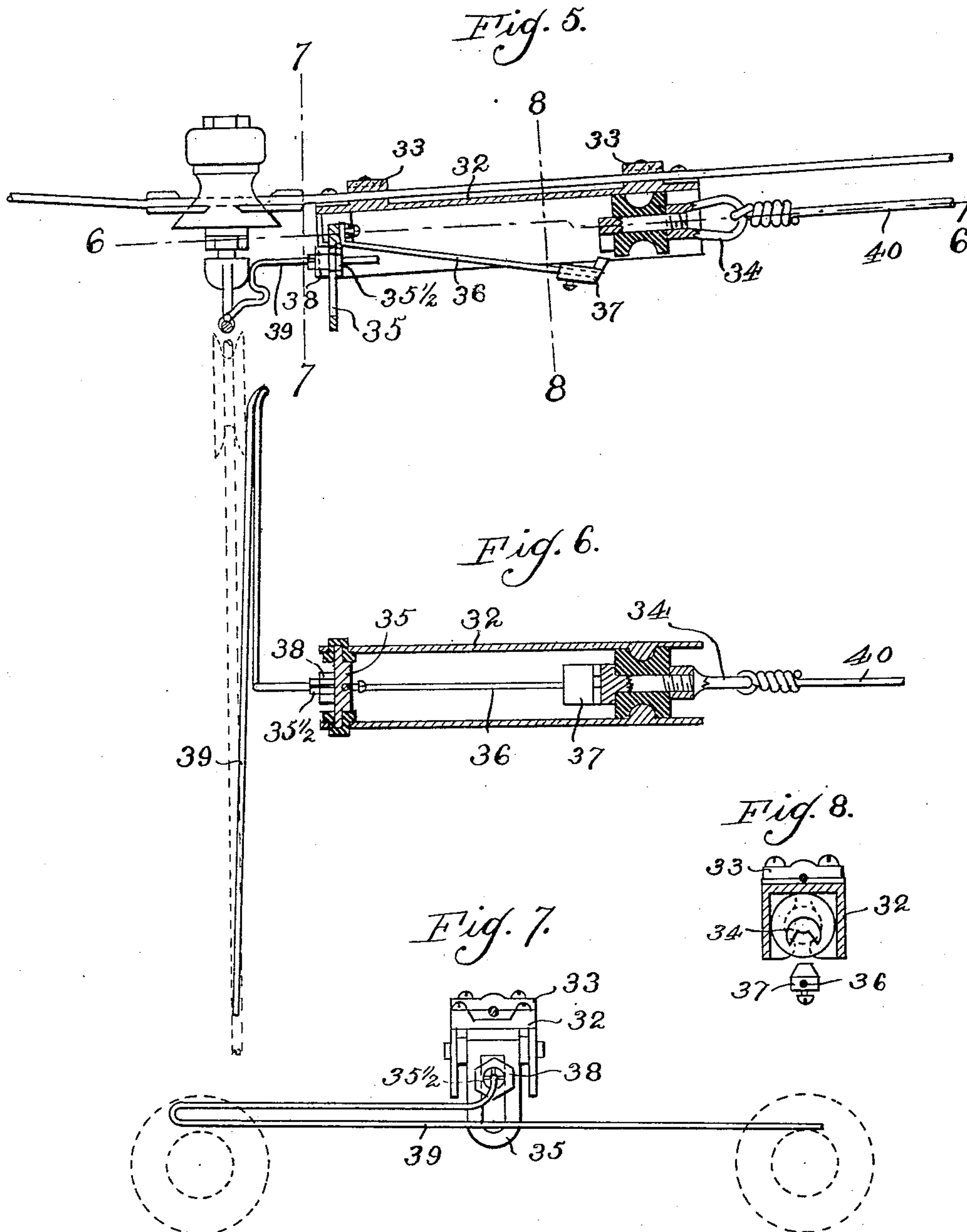
PATENTED DEC. 8, 1903.

I. J. BRADSHAW.  
ELECTRICAL ANNUNCIATOR FOR TROLLEY CARS.

APPLICATION FILED MAR. 28, 1903.

NO MODEL.

4 SHEETS—SHEET 3.



Witnesses:

C. F. Wilson  
M. R. Burling

Inventor:

Ira J. Bradshaw,  
By E. C. Crawford, Attorney.



No. 746,001.

PATENTED DEC. 8, 1903.

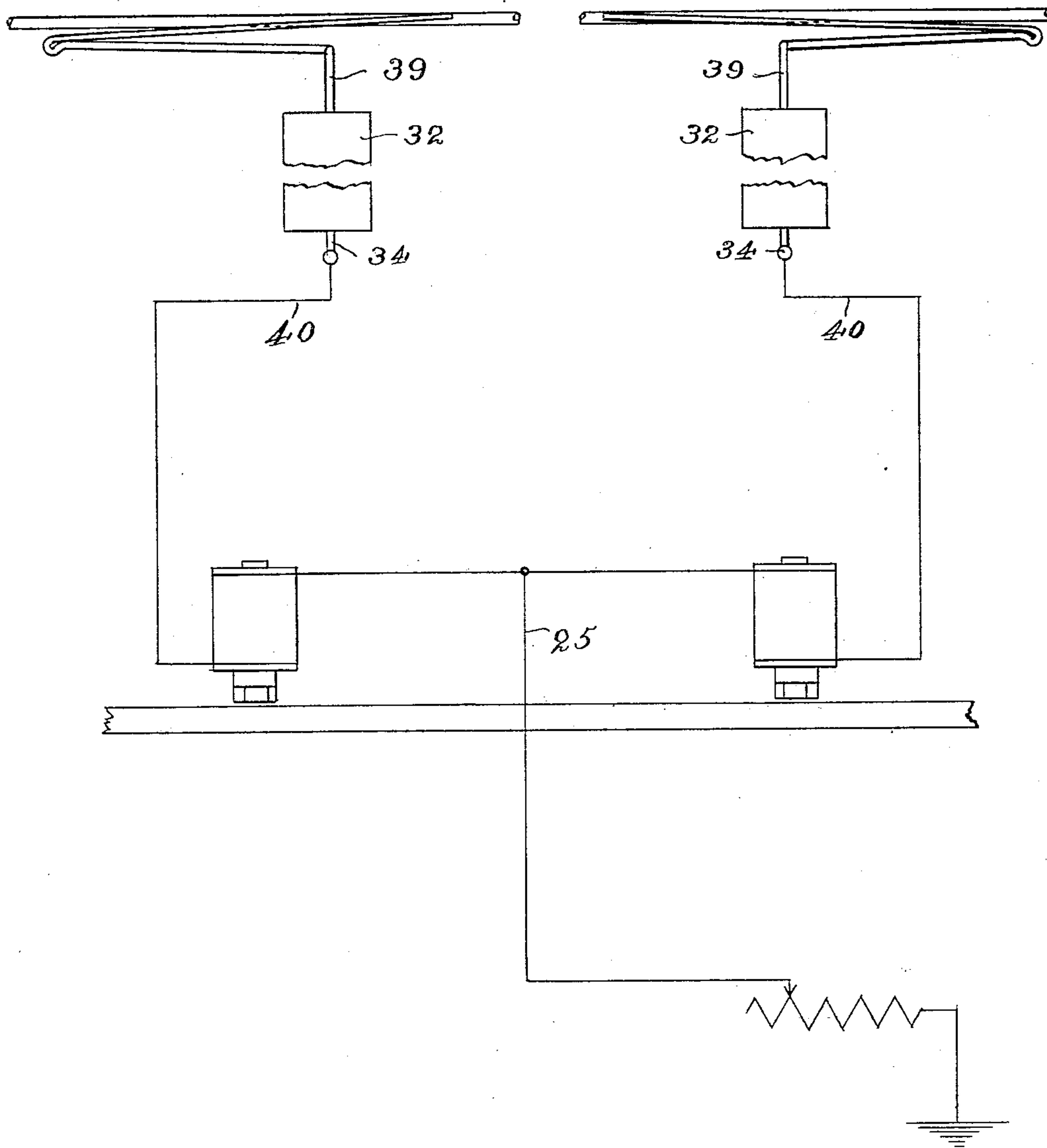
I. J. BRADSHAW.  
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APPLICATION FILED MAR. 28, 1903.

NO MODEL.

4 SHEETS—SHEET 4.

*Fig. 9.*



*Witnesses:*

*C. F. Wilson*  
*W. R. Burling*

*Inventor:*

*Ira J. Bradshaw,*

*By E. C. Crawford,*  
*Attorney.*

# 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. 746,001, dated December 8, 1903.

Application filed March 28, 1903. Serial No. 149,935. (No model.)

*To all whom it may concern:*

Be it known that I, IRA J. BRADSHAW, a citizen of the United States, residing at No. 139 Genesee street, Waukegan, Lake county, Illinois, have invented a new and useful Electrical Annunciator for Trolley-Cars, of which the following is a specification.

My invention relates to annunciators for trolley-cars designed to be located in waiting-rooms for passengers of same or in drug-stores or other places where passengers wait for cars; and the objects of my invention are to provide mechanism whereby when a trolley-car is coming and is some rods distant from the waiting-room an electric circuit may be established which will ring a bell in the waiting-room and will exhibit on a revolving cylinder the point of compass from which the trolley-car is coming. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my electrical annunciator, part of the front of the case containing the same being broken away to show the interior mechanism. Fig. 2 is a horizontal section of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a vertical section of the same, taken on the line 3 3 of Fig. 1. Fig. 4 is a detailed horizontal section of the same, taken on the line 4 4 of Fig. 1. Fig. 5 is a vertical longitudinal section of the trolley-wire contact device, showing the bracket attached to the span-wire and embracing the parts requisite to establish a circuit from the trolley-wire to the mechanism in the waiting-room. Fig. 6 is a horizontal section of Fig. 5 on the line 6 6 of said figure. Figs. 7 and 8 are vertical sections of Fig. 5 on the lines, respectively, 7 7 and 8 8 of said figure. Fig. 9 is a diagrammatic view of the electrical circuits.

Like numerals refer to like parts throughout the several views.

Referring to the drawings, 12 is the case, designed to contain and to which are secured the various parts of my mechanism, which are located in the waiting-room. This will be inclosed, except a slot across its front side through which to show the names of the four principal points of compass on the cylinder.

13 is a light hollow cylinder, preferably

made of aluminium and intended to exhibit on its side the words "North" and "South" or "East" and "West," as may be desired. This cylinder has the spokes 14 secured therein, which spokes are pivoted in the brackets 15. These brackets are secured to the upper part of the case. From the hub of each set of spokes a crank 16 extends parallel with the plane of the spokes, the cranks extending in opposite directions and being rigidly attached to the respective hubs.

The metallic frames 17 are secured on the bottom of the case 12. The electromagnet 18 is secured to this frame. The lever 19 is pivoted at its outer end to the frame between its parallel upright posts. The spring-rod 20 is rigidly secured on the outer end of this lever, and is bent twice a little distance from the point of connection with the lever, so as to have a direction sloping slightly upward. It extends nearly to the opposite side of the case and has the hammer 21 secured on its end. Just opposite and within range of the hammer is the bell 22, secured to the side of the case.

23 is the armature of the electromagnet and is rigidly secured to the lever 19.

The detent 24 is secured on the spring-rod 20 and extends downward from the lever 19, being held therein by a thumb-screw. This detent is designed to engage with the like detent 26. The latter detent is secured to the lever 27. These detents when engaging with each other act through the mechanism connected with them, and thus hold the cylinder 13 stationary. This lever is pivoted on the bottom of the case just below the inner end of the lever 19. The lever has the rod 28 secured to its outside and near its end, which rod is bent downward and then bent again, so as to extend under one of the coils of the electromagnet. The soft iron 29 is secured on the end of this last bent section.

The vertical rod 30 is secured in the free end of the lever 19 and extends upward until it engages with the spiral spring 31. A rod 30½, secured in the crank 16, extends downward till it engages with the upper end of this spring.

The above-described mechanism is made in duplicate in the case 12.



32 is a bracket designed to be suspended on a span-wire of an electric trolley street-railroad. It is suspended by the grooved clamps 33, screwed to the bracket over the span-wire. Secured in one end of the bracket is the metal link 34, which is insulated in the bracket. The link 35 is pivoted in the opposite end of the bracket. The lever 36 is secured to the pivot of link 35 in such manner that it can be swung within the bracket. On its opposite end there is secured the nut 37, which is designed to come in contact with the end of the link 34 when the lever 36 is raised and brought within the bracket. In the link 35 the bolt 35½ and the nut 38 are secured, the latter having a hole made through its center. Through this hole a bent section of the double spring 39 passes. The bracket is placed on the span-wire, so that this spring is located along the side of the trolley-wire hanger.

An electric wire 40 is secured to the end of the link 34 and is connected in any suitable manner with a wire of the electromagnet in the case 12.

The case 12 will be placed in any suitable manner in a room where passengers wait for trolley-cars, and the bracket will be located some rods distant from such room.

When a trolley passing along its wire comes opposite the bracket, it will actuate the double spring 39, which in turn actuating the lever 36 will lift its nut 37 till the latter comes in contact with the inner end of the link 34, and thus a current of electricity is established through the wire 40 and the electromagnet in the case 12. The effect of this current will be to lift the soft iron 29 under one of the electromagnets, and thus disengage the detents 24 and 26, so releasing the spring-rod 20. The force of the current will draw down the armature of the adjacent electromagnet, and this action will depress the lever 19 and will thus cause the corresponding rod 20, rigidly secured thereon, operating its hammer, to ring the bell opposite the last-mentioned electromagnet. At the same time by means of the lever 19, the adjacent rods 30 30½, and spiral spring 31, actuating the crank 16, the cylinder will be turned part way around. The current passes on through the ground-wire 25, which may be connected with a rail of the road by means of any well-known device for such connection.

The words "North" and "South" or "East" and "West" are placed on the cylinder, so that, for example, the word "North" will appear when the trolley-car is coming from the north, "South" when the car is coming from the south, &c. After one of these words is brought into view it will remain in view until the next car comes and the cylinder is again revolved, so as to bring another word into view.

The double spring 39 should be placed in position so as to be above the trolley-wire.

The single end of this spring is bent, so that in case of a car coming from the opposite direction on a single-track road the trolley will pass under the spring, and thus passing on will leave the spring without actuating it, and so no current will be produced. Of course the bracket device is to be duplicated, being secured on a span-wire at the proper distance in each direction from the waiting-room.

Of course only two opposite points of the compass, as either "North and South" or "East and West," will be placed on a cylinder. Which pair of such points will appear upon the cylinder will depend upon whether the street-car line extends north and south or east and west. I have selected north and south to be shown on the cylinder, but might as properly have selected east and west.

The necessarily high voltage of the wire may be reduced by use of any well-known device of coils designed to adjust resistance of a current of electricity.

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

1. In an electric annunciator for trolley-cars, the combination of the cylinder 13, electromagnet 18, the pair of levers 19, one of said levers being provided with an armature for said magnet, means for locking the other of said levers so as to hold said cylinder 13 stationary, and both of said levers being operatively connected with said cylinder, the lever 27 also carrying an armature for said magnet, said lever 27 being connected with said locking means so as to release said cylinder when the magnet is energized.

2. In an electric annunciator for trolley-cars, the combination of the cylinder 13, the electromagnet 18, means whereby the magnet is energized by the passing of the trolley-wheel, the armature-lever 19, connections between said lever and said cylinder whereby said cylinder is partly rotated when the magnet is energized, the spring hammer-rod 20 secured on said lever, and the bell 22 adapted to be struck by the hammer-rod, substantially as set forth.

3. In an electric annunciator for trolley-cars, the combination of the cylinder 13, the electromagnet 18, means whereby said magnet is energized by the passing of the trolley-wheel, the armature-lever 19, crank 16 operatively connected with said cylinder, the rod 30½ connected with said crank, the rod 30 connected with said armature-lever, and the spring 31 connecting said rods 30 and 30½, substantially as set forth.

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

IRA J. BRADSHAW.

Witnesses:

E. J. HEYDECKER,  
JAMES SHORT.