

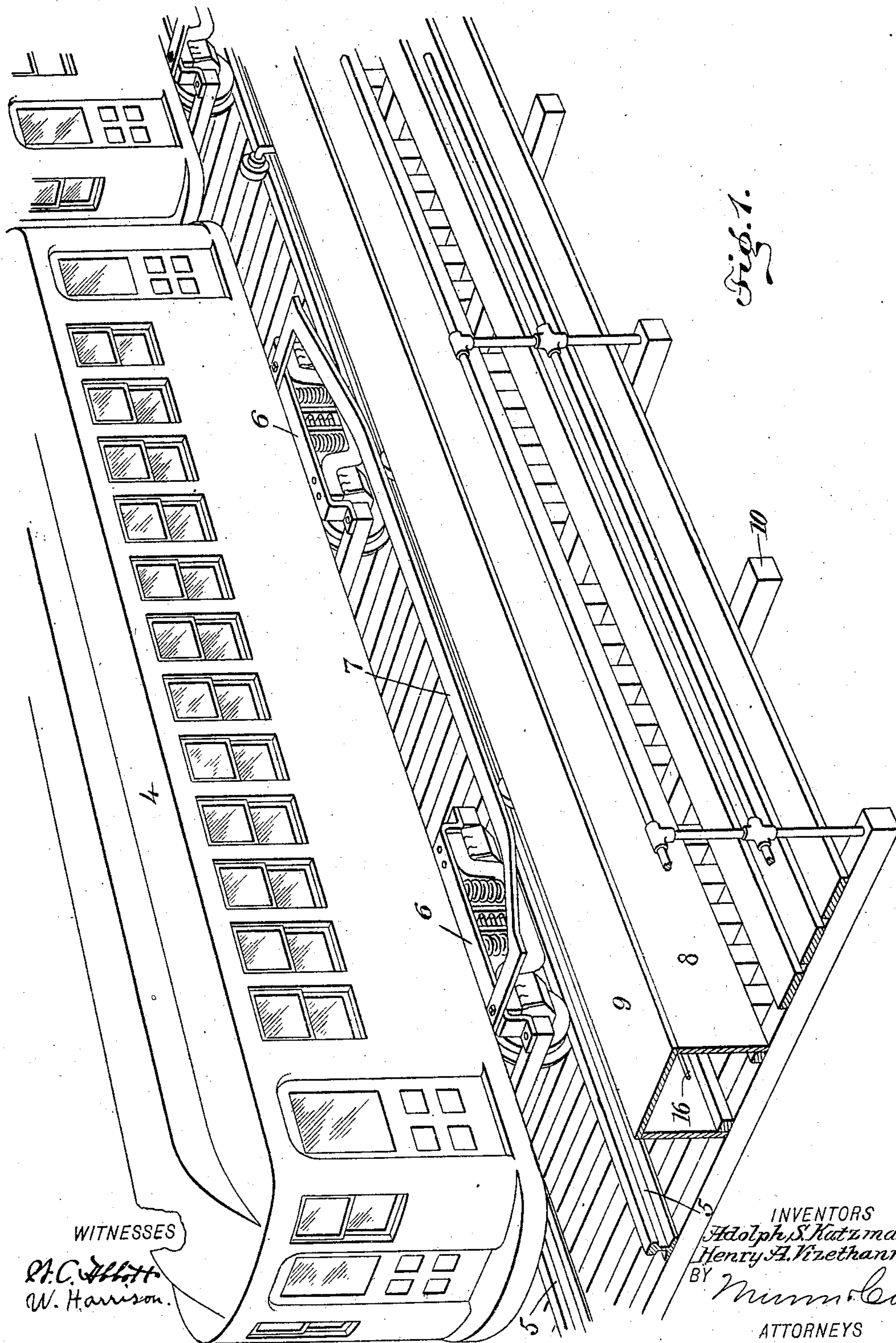
No. 847,080.

PATENTED MAR. 12, 1907.

A. S. KATZMAN & H. A. VIZETHANN.  
INTERRUPTED CONTACT FOR THIRD RAIL SYSTEMS.

APPLICATION FILED SEPT. 28, 1906.

2 SHEETS—SHEET 1.



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Fig. 2.

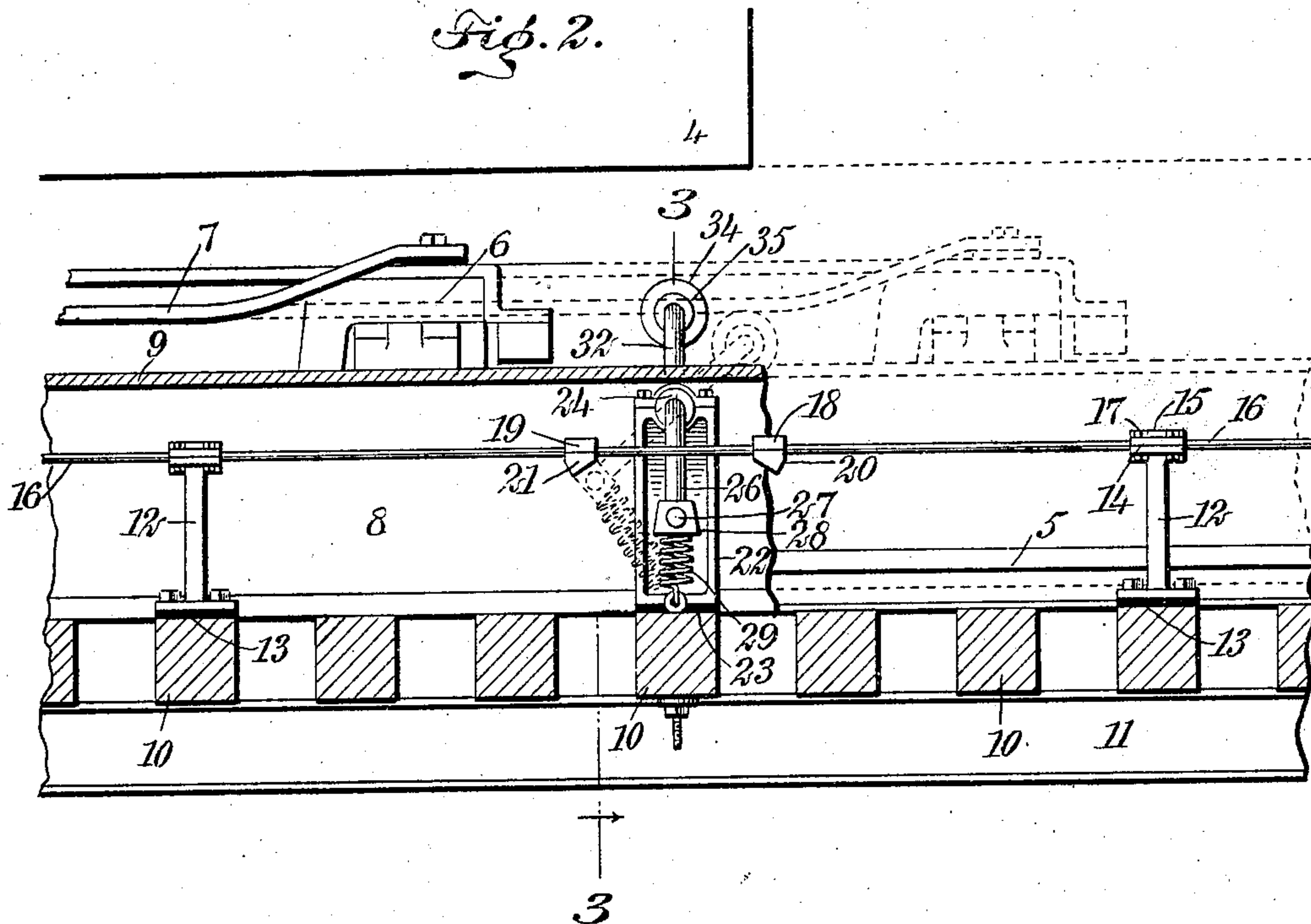
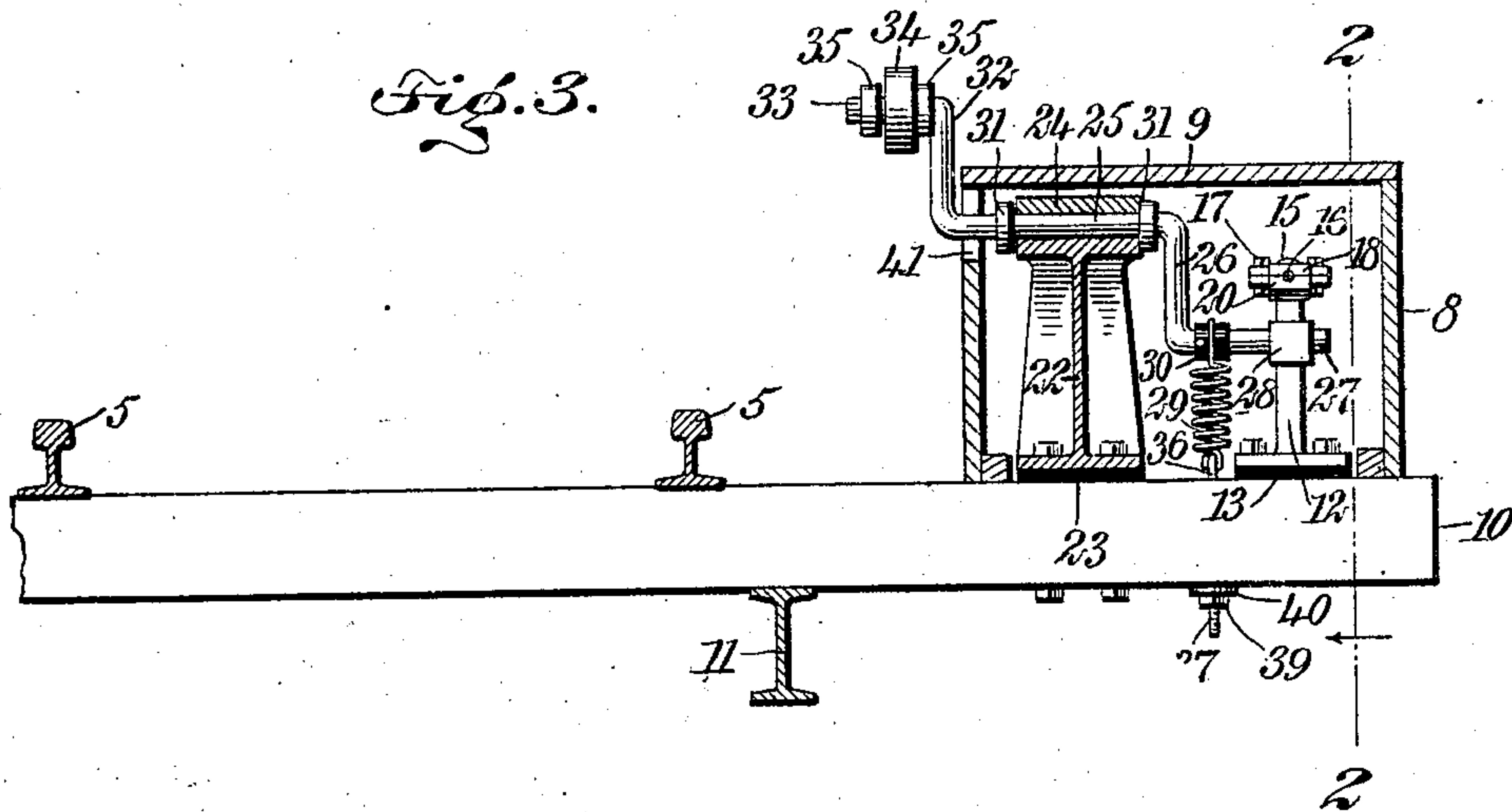


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ADOLPH S. KATZMAN AND HENRY A. VIZETHANN, OF NEW YORK, N. Y.

## INTERRUPTED CONTACT FOR THIRD-RAIL SYSTEMS.

No. 847,080.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed September 28, 1906. Serial No. 336,550.

*To all whom it may concern:*

Be it known that we, ADOLPH S. KATZMAN and HENRY A. VIZETHANN, citizens of the United States, and residents of the city of New York, (borough of Manhattan,) in the county and State of New York, have invented a new and Improved Interrupted Contact for Third-Rail Systems, of which the following is a full, clear, and exact description.

Our invention relates to contact mechanism, and more particularly to contact mechanism suitable for use upon third-rail trolley systems and in all relations where it is desirable to have a conductor which is normally dead, but which is energized momentarily upon the approach of a member of rolling-stock properly equipped for utilizing the current.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view showing our invention as applied to a street-car system, the trolley being inclosed within a casing and the escape of current being ordinarily impossible except in the presence of a car adapted to use the current. Fig. 2 is an enlarged side view, partly in section, on the line 2 2 of Fig. 3, and partly in elevation, showing the tripping-arm employed for closing the circuit and the shoe carried by the rolling-stock for tripping the arm; and Fig. 3 is a cross-section upon the line 3 3 of Fig. 2 looking in the direction of the arrow and showing the tripping-arm as occupying its normal position, and consequently as normally dead.

The body of the motor-car is shown at 4 and the service-rails at 5. The car is provided with iron frames 6, and connected with these frames is a comparatively long shoe 7. A casing 8 is provided with a cover 9 and rests upon cross-ties 10, the latter being mounted upon an iron framework 11. Posts 12 are distributed equidistant along the track, each post resting upon a plate 13, of insulating material, these plates resting upon certain cross-ties 10. Each post 12 terminates at its upper end in a bearing 14 of substantially semicylindrical form and provided with a loose cap 15, also substantially of semicylindrical form, held thereupon by bolts 17.

The feed-wire is shown at 16 and is clamped intermediate of the semicylindrical parts 14 15. This feed-wire may have the form of an ordinary cylindrical rod or wire.

Engaging the upper side of the feed-wire 16 are blocks 18 19, which are respectively mated by wedges 20 21, these parts being of metal and secured rigidly upon the rail. A pedestal 22 rests upon a plate 23, of insulating material, the latter being supported upon one of the cross-ties 10. The upper portion of this pedestal 22 is formed into a bearing 24 of substantially cylindrical form. Fitting into this bearing is a rocking arm 25, provided with a downwardly-projecting portion 26 and an outwardly-projecting portion 27 integral therewith. A contact member 28 of substantially keystone shape is fitted upon the outwardly-projecting portion 27 and is rigid in relation thereto. A spiral spring 29 is connected with a sleeve 30, of insulating material, encircling this outwardly-projecting portion 27, the spring being secured also to one of the cross-ties 10, as will be understood from Figs. 2 and 3. Set-collars 31 are mounted upon the rocking arm 25 for the purpose of preventing its displacement in relation to the pedestal 22. The arm 25 is further provided with an upwardly-projecting portion 32 and with an inwardly-projecting portion 33. Revolvably mounted upon the latter is a contact-wheel 34, made preferably of metal and secured loosely thereupon by means of set-collars 35. When pressure is applied in a proper direction against the contact-roller 34, the contact-arm above described is caused to rock, thus stretching the spring 29 and carrying the contact member 28 into engagement with one or the other of the wedges 20 or 21. The lower end of the spring 29 is connected with a hook 36, the latter having a threaded shank 37, which is engaged by a set-nut 39 and is encircled by a washer 40. By turning the set-nut 39 the tension of the spring 29 may be regulated at will. Apertures 41 are provided for the accommodation of the rocking arm, as will be understood from Fig. 3. The spring 29 being very powerful and its tension being maintained comparatively high, the rocking arm is normally maintained in the position indicated in Figs. 2 and 3. Considerable force is necessary to turn this rocking arm to any great extent from its normal position. Hence the rocking arm is not easily brought into such a position as enables it to become energized from the rail. Suppose now that the car 4 or similar piece of rolling-stock arrives at the point indicated by dotted lines in Fig. 2 and passes, we will say, toward the right, ac-



according to this view. The shoe 7 engages the upper surface of the contact-wheel 34 and by forcing it downwardly to the right, as indicated by dotted lines in Fig. 2, the contact-arm is caused to turn a slight distance in a clockwise direction. If the piece of rolling-stock were to move in the opposite direction, the rocking arm would turn in the opposite direction. The contact member 28 being thus lifted by the rocking of the arm and brought into engagement with the wedge 21 or the wedge 20, as the case may be, the circuit is completed as follows: feed-wire 16, wedge 21, various portions 27, 26, 25, 32, and 33, constituting the rocking arm, contact-roller 34, shoe 17 to motor of car, thence through ground (or return-rail) to powerhouse and back to the feed-wire 16. If at any time one of the contact-arms becomes too easy to turn, the spring 29 is tightened by means of the set-nut 39.

It will be noted that the third rail and substantially all of the contact mechanism are constantly under shelter. The apertures 41 allow the rocking arms to perform their movements, but are so located as not to interfere with the shelter otherwise afforded by the casings 8 and their coverings 9.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of a rocking arm, a contact member of substantially keystone form mounted thereupon, a feed-wire disposed adjacent to said rocking arm, contact-blocks mounted upon said feed-wire and provided with wedge-shaped portions mating said member of substantially keystone form, and means for maintaining such rocking arm in a predetermined normal position.

2. The combination of a feed-wire, supports therefor, contact-blocks mounted upon said feed-wire and provided with inclined contact-faces, a contact-arm disposed adjacent to said feed-wire, a contact member

mounted upon said contact-arm and provided with inclined contact-faces mating said inclined contact-faces of said block, a spring connected with said contact-arm for holding the same in a predetermined normal position, and a roller mounted upon said contact-arm and adapted to be engaged by a trolley-shoe.

3. The combination of a plurality of insulated supports, a feed-wire extending from one of said supports to another, contact-blocks mounted upon said feed-wire and provided with obliquely-inclined contact-faces, a rocking arm disposed adjacent to said contact-blocks and provided with a member for engaging one or the other of said blocks according to the direction in which said rocking arm may be moved, and means for normally holding said rocking arm in a predetermined position.

4. The combination of a casing, a pedestal mounted thereon and provided with a bearing, a rocking arm journaled within said bearing, a plurality of insulated posts mounted within said casing, a continuous feed-wire supported upon said posts, contact-blocks connected electrically with said feed-wire and disposed upon opposite sides of said rocking arm, a contact member mounted upon said rocking arm and adapted to engage with the other of said contact-blocks when said rocking arm is moved, a spring connected with said rocking arm and normally holding the same out of electrical communication with said contact-blocks, said rocking arm being provided with a portion to be engaged by a traveling shoe.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ADOLPH S. KATZMAN.  
HENRY A. VIZETHANN.

Witnesses:

WALTON HARRISON,  
EVERARD B. MARSHALL.