

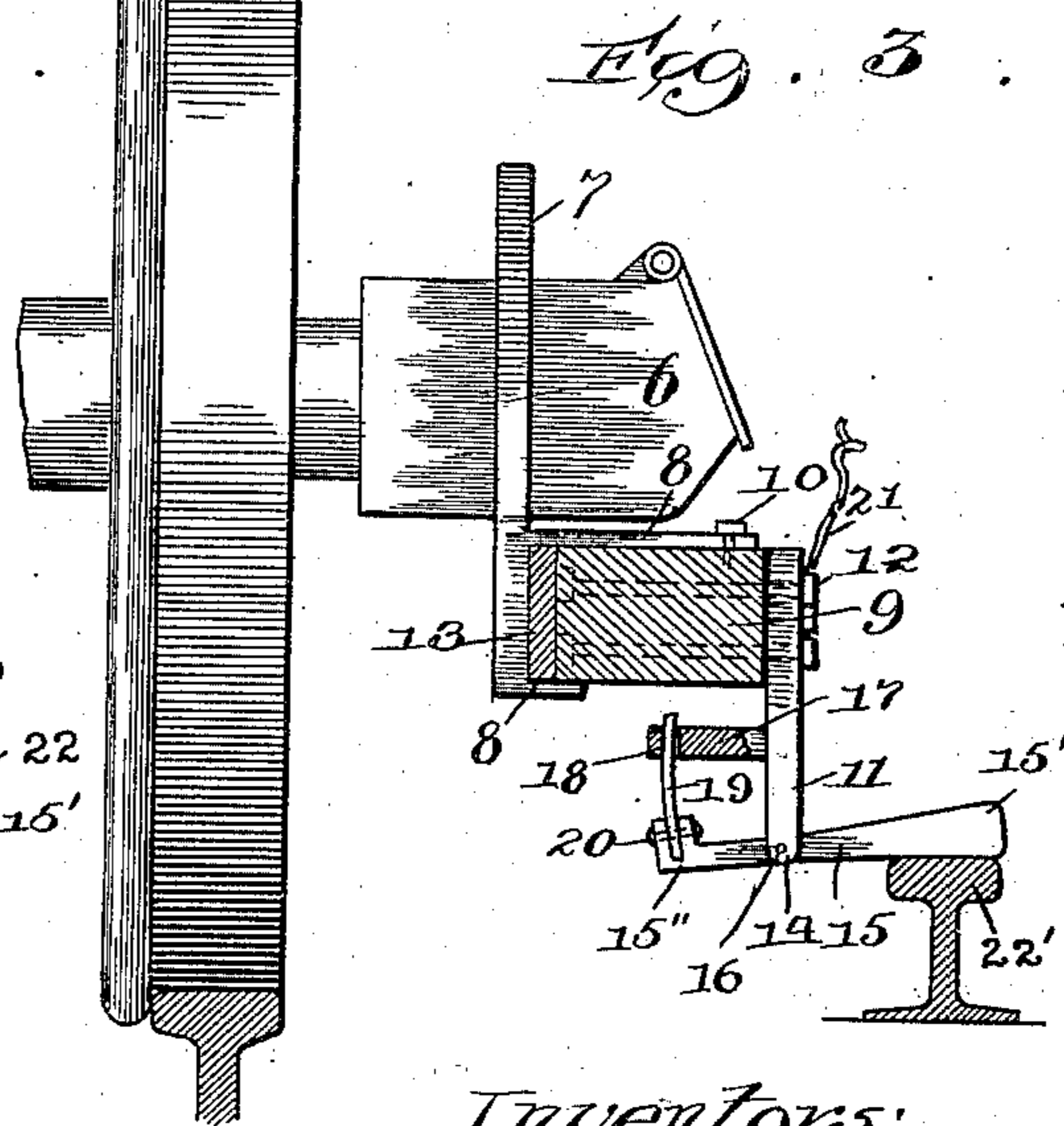
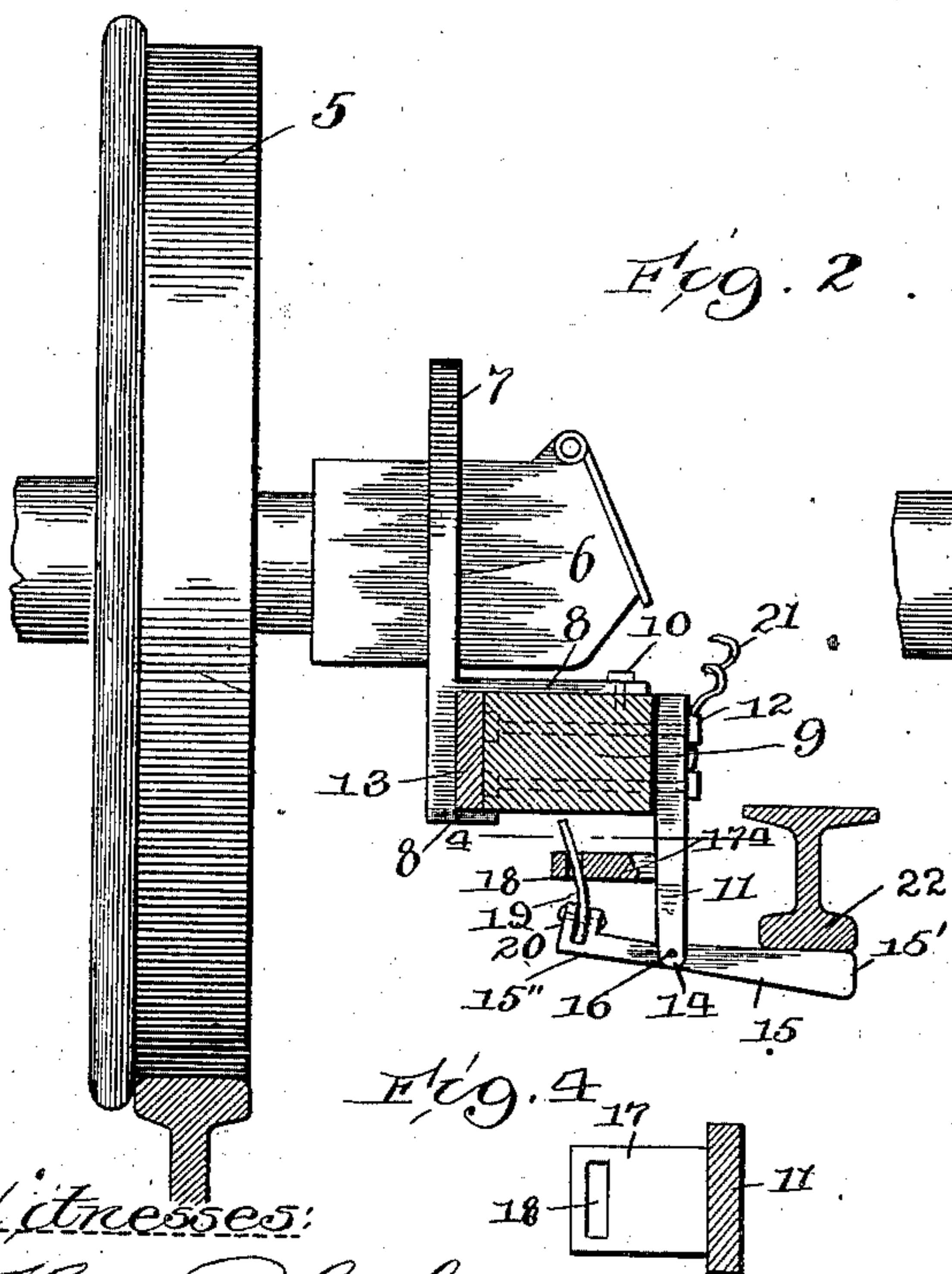
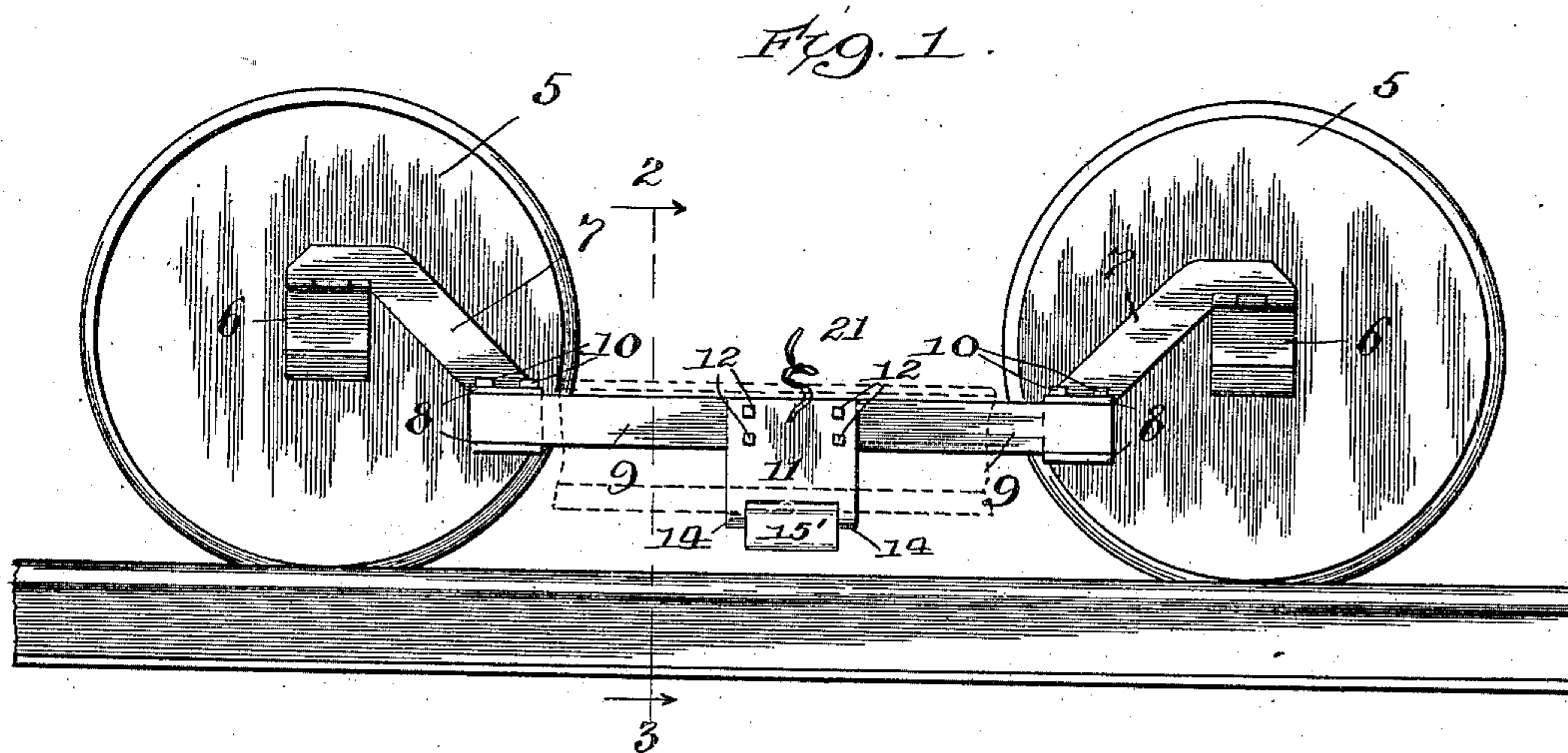
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PATENTED APR. 28, 1903.

L. WHEELER & J. T. MURPHY.
RAIL CONTACT SHOE AND SUPPORT THEREFOR.

APPLICATION FILED FEB. 24, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

LEONARD WHEELER, OF WHEATON, AND JOHN T. MURPHY, OF CHICAGO,
ILLINOIS.

RAIL CONTACT-SHOE AND SUPPORT THEREFOR.

SPECIFICATION forming part of Letters Patent No. 726,600, dated April 28, 1903.

Application filed February 24, 1903. Serial No. 144,600. (No model.)

To all whom it may concern:

Be it known that we, LEONARD WHEELER, residing at Wheaton, in the county of Dupage, and JOHN T. MURPHY, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Rail Contact-Shoes and Supports Therefor; and we hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to rail contact-shoes and supports therefor adapted for use in third-rail electric-railway systems.

As is well known in the art in electric-railway systems the third rail is sometimes of an upright and sometimes of an overhanging type, and different sections of road are sometimes equipped with rails of each type, so that cars traversing the entire length of road must be equipped with both overrunning and underrunning contact-shoes.

The primary object of our invention is to provide a contact-shoe and its support so constructed and arranged that the single shoe may serve as an overrunning or an underrunning contact without change or alteration.

A further object of our invention is to generally simplify and improve the construction and arrangement of devices of the class specified.

With a view to attaining these and other objects, which will be apparent to those skilled in the art, our invention consists, broadly, in providing a double-faced contact-shoe movable upward or downward in a supporting-hanger and interposing a double-acting spring between the shoe and a relatively stationary part of the car on the support, so that under the influence of the spring the shoe will tend to return to normal or intermediate position from any point above or below such normal position from which it may be moved.

Our invention further consists in the features of construction and arrangement specified in the claims and hereinafter more fully described.

In the drawings, Figure 1 is a side elevation of a portion of the running-gear of a car,

showing the preferred application of our invention thereto, an overhanging rail being illustrated in dotted lines. Fig. 2 is a vertical section taken on line 2 3 of Fig. 1 looking in the direction of the arrow and illustrating the position of the parts when the shoe is employed as an underrunning conductor. Fig. 3 is a similar view illustrating the position of the parts when the shoe is running upon an upright rail. Fig. 4 is a section on line 4 4 of Fig. 2.

Throughout the drawings like numerals of reference refer to like parts.

Referring now to the drawings, 5 5 indicate the wheels of a car, and 6 6 the journal-boxes therefor.

7 7 indicate hangers, illustrated as extending downward in convergence from the upper portion of the journal-boxes and at the lower ends provided with suitable lateral flanges 8, extending outward therefrom to afford support for a longitudinal beam 9, preferably of wood or other insulating material, suitably secured thereto by bolts 10.

11 indicates a hanger, preferably in the form of a wide plate, secured to the beam 9 by bolts 12, the inner extremities of which are preferably insulated, as by means of a strip of wood 13 set into the body of the beam and forming substantially a part thereof. The lower end of the hanger 11 is bifurcated, and in the ears 14, formed at the lateral extremities thereof, the contact-shoe 15 is pivoted upon a pin 16. The shoe 15 preferably extends on both sides of the pivot-point, at its outer end 15' having its vertical edges diverging outwardly and at its inner end being provided with an upturned lug 15'' for a purpose to be described.

17 indicates an inwardly-extending lug or projection, preferably formed integral with the plate 11. The projection 17 is provided with an elongated aperture 18, disposed to be in vertical alinement with the upturned end 15'' of the shoe 15 when such shoe is in normal or horizontal position.

19 indicates a double-acting spring, such as a leaf-spring, secured to the upturned end 15'' of the shoe, as by pins 20, and extending upward through the aperture 18 in the projection 17 of the hanger 11. Said spring is

somewhat longer than the distance between the projection 17 and the shoe 15 when the latter is in normal or horizontal position.

21 indicates an electrical conductor connected with the plate 11 in any suitable manner. It will be understood that this conductor leads to the motor mechanism of the vehicle.

22 indicates an overhanging rail adapted to conduct electricity, and 22' an upright rail adapted for like purpose. It will be understood that these rails are such as those commonly employed in third-rail electric-railway systems.

The use and operation of our invention is as follows: As heretofore explained, it often happens that it is desired that a car proceed from a track-section equipped with an overhanging conductor-rail to one equipped with an upright conducting-rail, the conducting-rails being at different levels with regard to the wheel-track, and it will be seen that by the use of our invention the shoe is enabled to accommodate itself to such varying conditions. When the shoe 15 is depressed, as illustrated in Fig. 2, to run in contact with an overhanging rail, the spring 19 is bowed outwardly toward the rail, as therein indicated, and the end of such spring slips upward through the aperture 18 for an accommodating distance. If, on the other hand, the shoe be running on an upright rail, as indicated in Fig. 3, said shoe will be lifted and the spring somewhat withdrawn through the aperture 18 and bowed inwardly. From either of such positions the spring constantly tends to restore the shoe to a horizontal or normal position, thereby exerting pressure upon the shoe, which keeps it in good electrical contact with its conducting-rail.

It will be further noted that the spring and its support afford a good conducting-path from the shoe to the supporting plate or hanger, through which the major portion of the current transmitted from the rail will pass, thereby preventing too much current from passing through the pivot 16, with danger of burning the latter out.

The arrangement of the shoe and its support at a distance from the metallic running-gear and framework of the car and its effective insulation from such parts reduces to a minimum the liability of an arc forming from any of the conducting parts to such metallic members.

It will be apparent to those skilled in the art that the design of the parts employed might be widely varied and many equivalent constructions employed without departing from the spirit and scope of our invention, and therefore while we have for purposes of full disclosure selected for description and illustration in some detail one operative embodiment of our invention we do not wish to be understood as limiting ourselves to the exact construction disclosed.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In combination, a car, a shoe-support attached thereto, a shoe adapted for upward and downward movement movably mounted in said support, and yielding means for normally holding said shoe in a definite position, and tending to return the shoe thereto when moved in either direction from such position.

2. In combination, a car, a shoe-support attached thereto, a shoe adapted for vertical movement in either direction mounted in said support, and a double-acting spring interposed between said shoe and a relatively stationary part of the car tending to hold the shoe in a definite position and to return it thereto when moved from such position.

3. In combination, a shoe-support adapted for attachment to a car, a shoe pivoted in said support and extending outward therefrom, and a double-acting spring interposed between the shoe and its support.

4. In combination, a car, a shoe-support insulatedly attached thereto, a shoe adapted for upward and downward movement movably mounted in said support, a double-acting metallic spring interposed between said shoe and support in constant electrical contact with both of said members, and tending to normally hold the shoe in definite position, and an electrical conductor adapted for connection to motor devices on the car secured to said support, in electrical connection therewith.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

LEONARD WHEELER.
JOHN T. MURPHY.

In presence of—
MARY F. ALLEN,
GEO. T. MAY, Jr.