

(No Model.)

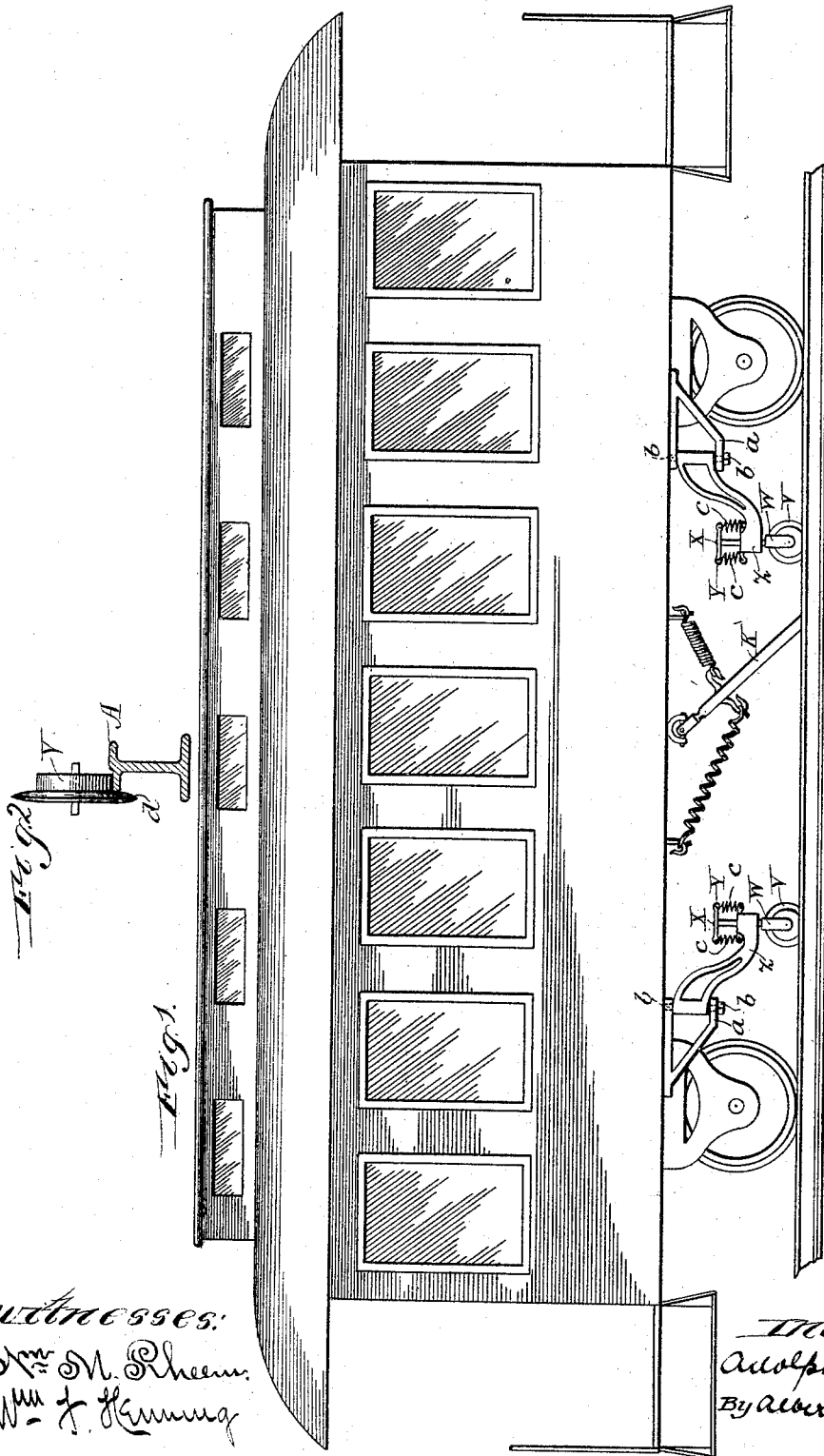
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A. HEISER.

CLOSED ELECTRIC CONDUIT FOR RAILWAYS.

No. 492,398.

Patented Feb. 28, 1893.



witnesses:  
 Wm. M. Pheasant  
 Wm. J. Hemming

*Inventor,*  
*Adolph Heiser*  
*By Albert N. Meads*  
*his atty.*

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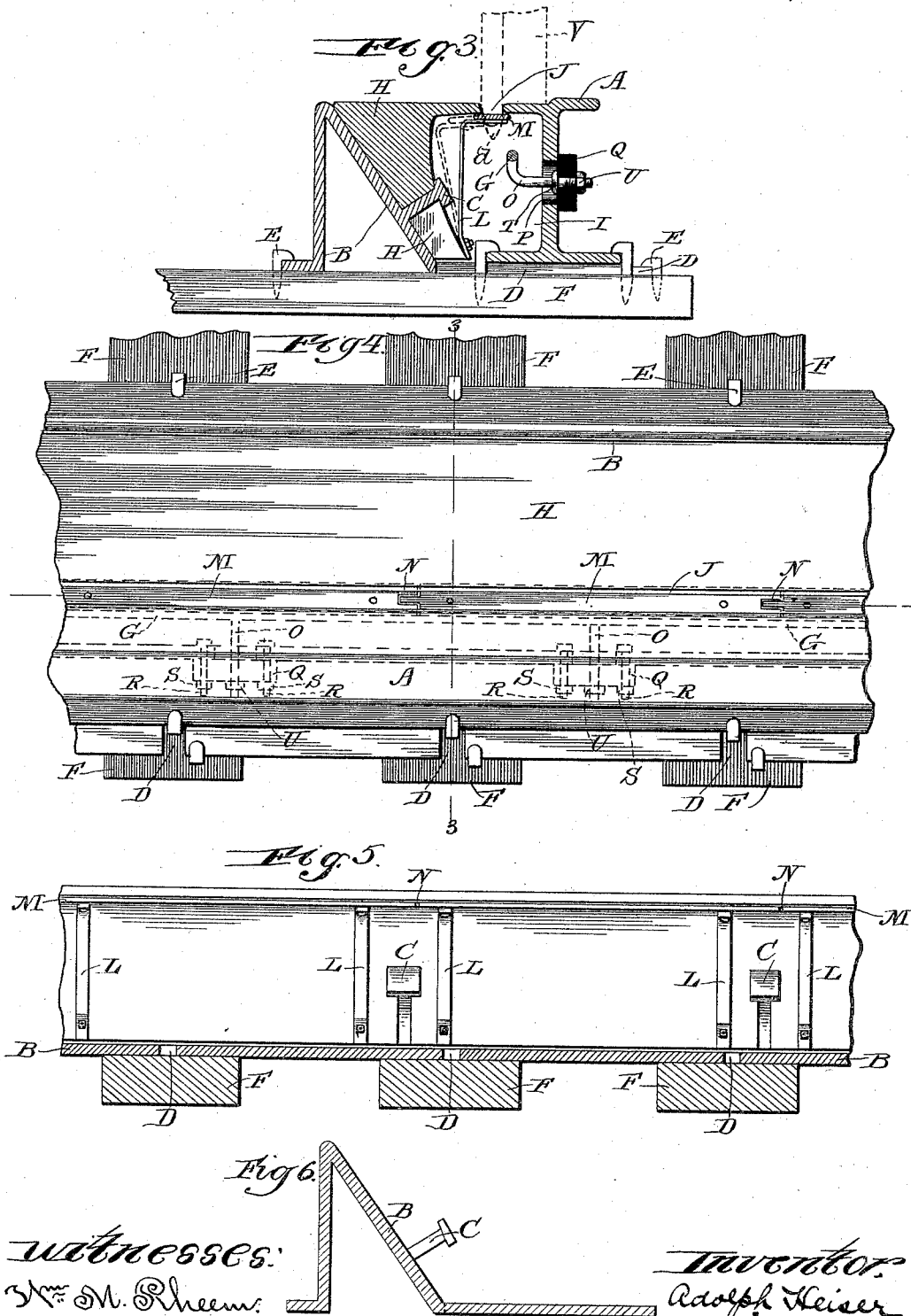
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# UNITED STATES PATENT OFFICE.

ADOLPH HEISER, OF CHICAGO, ILLINOIS.

## CLOSED ELECTRIC CONDUIT FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 492,398, dated February 28, 1893.

Application filed May 31, 1892. Serial No. 434,949. (No model.)

### *To all whom it may concern:*

Be it known that I, ADOLPH HEISER, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electric Railways; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the novel construction of a conduit for containing a wire or rod upon which an electrical trolley wheel may run, and also to the novel construction of the supports of such wire or rod by means of which such wire or rod is held in position in said conduit, and also to the novel construction of an opener attached to a car or coach for the purpose of opening the said conduit to allow the said electrical trolley-wheel and its supporting arm or shaft to pass along and through the said conduit.

The objects of my invention are, first, to provide an adjustable casting that may be applied to street railroad rails as the same are commonly laid, so as to form a conduit for the holding of electric trolley wires; second, to provide a method of attaching the electric trolley wire or cable directly to the side of the railroad rail forming one side of such conduit, for the purpose of holding such trolley wire or cable in position, without allowing the electric current to escape into such rail; third, to provide a cover or closing plate for the conduit so made, which cover or closing plate is designed to keep the conduit free from dirt and refuse matter; and fourth, to provide an opener to be attached to street cars operated upon a track with such conduit attachment, for the purpose of pressing back such conduit cover or closing plate—sufficiently to allow the electric trolley arm or shaft to pass freely along through the top of such conduit. I obtain these objects by the mechanism illustrated in the accompanying drawings, in which

Figure 1 is a view of a car or coach showing the method of attaching said conduit openers to the same and showing the position of said openers before and behind the trolley arm or shaft. Fig. 2 is a sectional view of a

railroad rail showing the opener in position upon the same. Fig. 3 is a cross section of the conduit showing the attached electric trolley wire. Fig. 4 is a plan view of the same. Fig. 5 is a sectional view of the inner half of the conduit showing the method of supporting the said cover or closing plate. Fig. 6 is a sectional view of the casting forming the inner side and bottom of such conduit.

Similar letters refer to similar parts throughout the several views.

A is a street railroad rail of the ordinary type and pattern.

B is a casting of steel or other metal provided with the lugs C, which may be made a part of said casting or riveted to the same, which casting B has on its lower or horizontal plate the slots or slits D which allow the said casting B to slide under the rail A until it reaches a proper position where it is held in position by the spikes E driven into the tie F. The casting B of substantially the same shape as shown in the drawings is made of convenient lengths, preferably about twenty feet long (except on curves, where it must be made of lengths to suit the radius of the curve), and together with the rail A forms the conduit for the electric trolley wire G.

Resting upon the slanting side of the casting B is the solid casting H which partly fills said conduit and is held in place by the lugs C which pass through slits or slots in the casting H, said slits or slots allowing said casting H to pass by said lugs C and slide down upon the slanting side of said casting B until the horizontal bottom of said casting H rests upon said horizontal part of said casting B. This casting H may be permanently fixed in position by any proper supports and fastenings, but is preferably left removable and held in place by gravity, in order that it may be easily removed for the purpose of cleaning the conduit. The casting H and the inner half of the top or "T" of the rail A form the roof of the conduit I, and completely close said conduit I with the exception of the slit or slot J, which is the space between the projecting ledge of the casting H and the inner T of the rail A. This space or slot is thus left open for the passage of the trolley arm or shaft K (see Fig. 1) along through the conduit when the car is in motion.

Attached to the inner side of the casting H are the springs L which support the plate M, which plate M in a normal condition and with no pressure applied to said springs L, lies beneath the slot opening J, across said opening J and beneath the ledge of the casting H and the projecting top of the rail A, thus closing the conduit I. When pressure is applied to that side of the plate M toward the rail A the said plate M and the springs L are pressed back toward the side of the casting H, as shown by the dotted lines in Fig. 3, thus leaving open the slot J. The plate M is made in convenient lengths, upon a straight track preferably in lengths of ten feet, and the various segments or sections of said plate M are joined together by mortises and tenons N.

Attached to the trolley wire G are the metal arms or braces O which pass through openings P in the side of the rail A, but do not touch the rail A, the said openings P being of much larger diameter than the braces O. Secured to the outer side of the rail A are blocks of wood, or other non electrical conducting substance, Q, which blocks Q are secured to the rail A by the bolts R and the nuts S. The brace or arm O is provided with a shoulder T and passes through the block Q and is held in place by a nut U screwed upon a thread upon its outer end, the shoulder T resting against the inner side of the block Q.

To open the slot J, to allow the free passage through it of the trolley shaft K, I provide each car or coach with two wheels V placed before and behind the said trolley shaft. The wheels V revolve about axles set in the forks W which are securely fastened to the rods X or may be made with the rods X from the same piece of metal. The rods X are provided with cross arms Y and pass freely through the arms or brackets Z, which brackets Z are secured to the car body by the brackets a, being hinged in said brackets a by the vertical hinge bolt b, which hinge bolt b passes freely through said bracket Z, allowing the said bracket Z to move freely with lateral motion. To the cross arms Y and to the brackets Z, springs c are fastened, holding said cross arms Y, the rods X and the wheels V firmly upon the track, but still al-

lowing sufficient play for any unevenness upon the track. The wheels V run upon the inner surface of the rail A, as shown in Fig. 2, and are provided with flanges d, which flanges d run in the slot opening J as shown by the dotted lines in Fig. 3. The flanges d of the wheels V are beveled and run nearly to a point, as shown in Figs. 2 and 3. The object of this beveling is to provide an inclined plane or wedge, which, advancing as the wheel moves along the rail, will press back the slot cover or closer M and allow the shaft K to pass through the opening J. The wheels V are placed both before and behind the said shaft K, so that there will be no friction of the plate M upon said shaft K.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an electric railway conduit, the combination of the rail A, forming one side and part of the roof of such conduit, with the adjustable casting B and the casting H forming the other side and the remainder of the roof or top of such conduit, substantially as described.

2. In an electric railway conduit the combination of the rail A, forming one side of such conduit, the adjustable casting B, the casting H, the slot closer M and the springs L, substantially as described.

3. In an electric railway, the combination of the wheel V, the forks W, the rods X, the cross-arm Y, the arms or brackets Z, and the springs c from said cross-arm Y to said bracket Z, substantially as described.

4. In an electric railway conduit, the combination of the track rail A forming one side and part of the top or roof of such conduit, and provided with the openings P, the non-conducting blocks Q secured to the rail over said openings, the conductor-supports O secured in the blocks Q and extending through the openings P, and the conductor G carried by the supports O, substantially as described.

ADOLPH HEISER.

Witnesses:

ALBERT H. MEADS,  
JOHN LEO FAY.