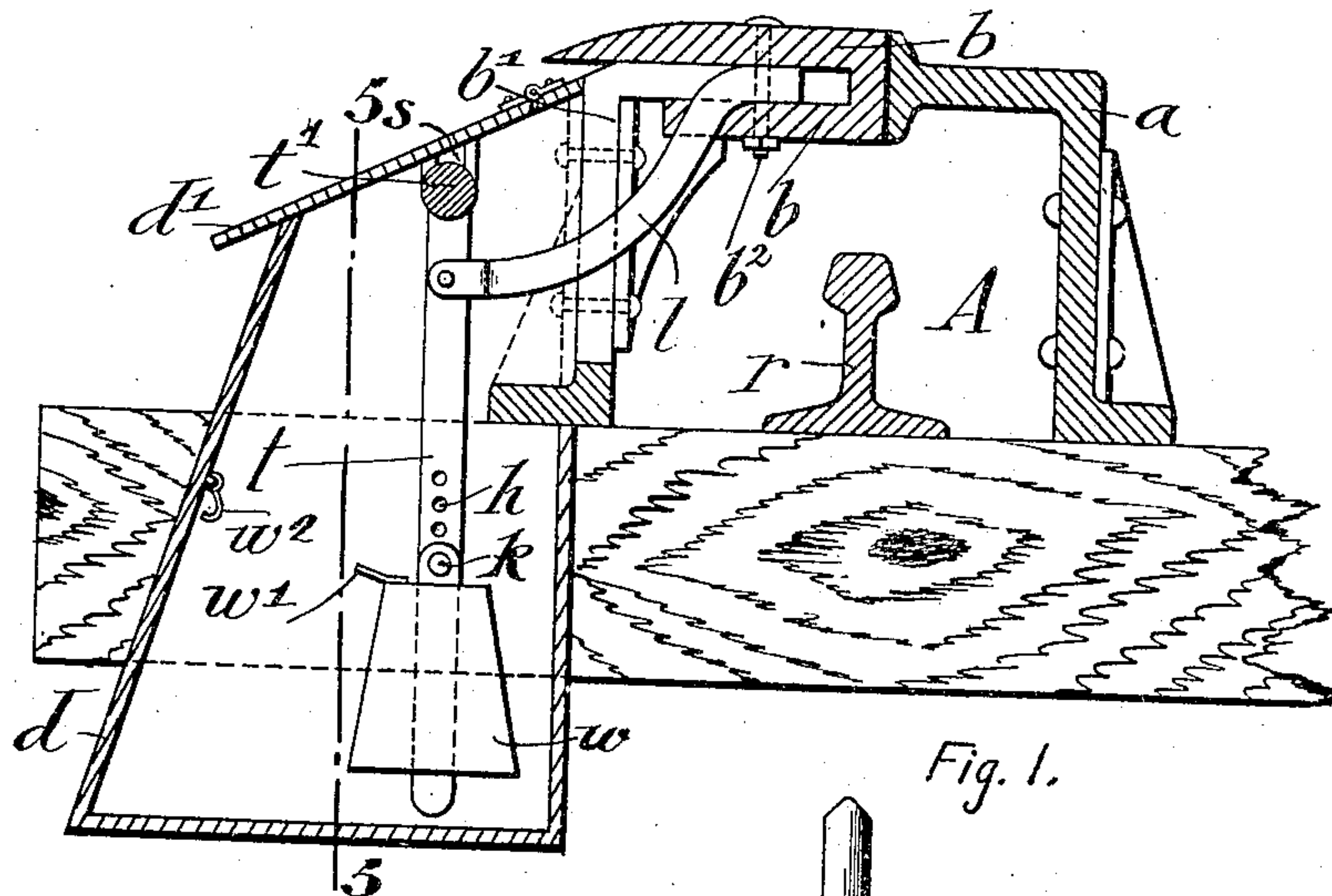


GUARD COVERING FOR THE THIRD RAILS OF ELECTRIC RAILWAYS.

APPLICATION FILED AUG. 27, 1908.

Patented Jan. 11, 1910.



*Fig. 1.*

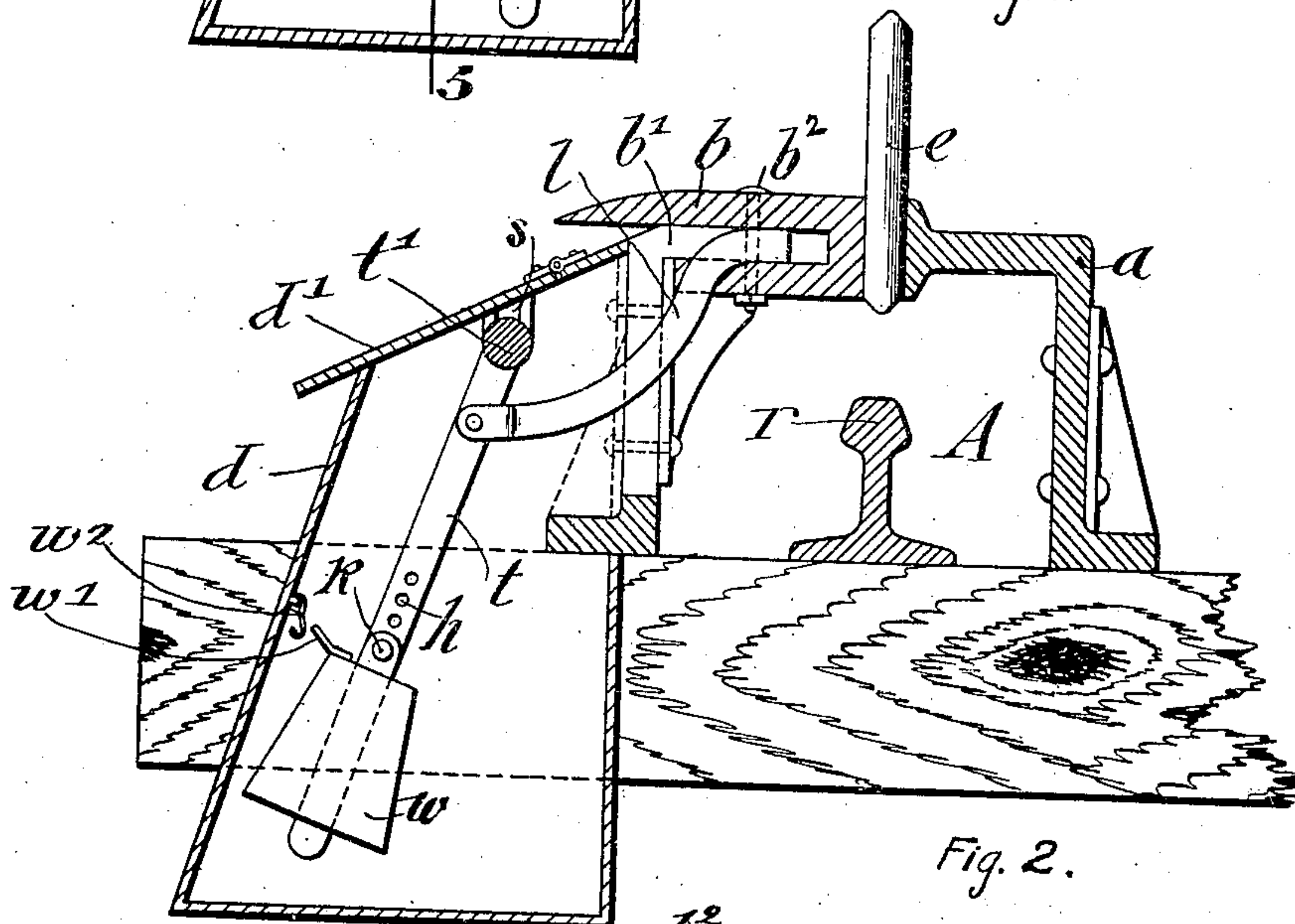


Fig. 2.

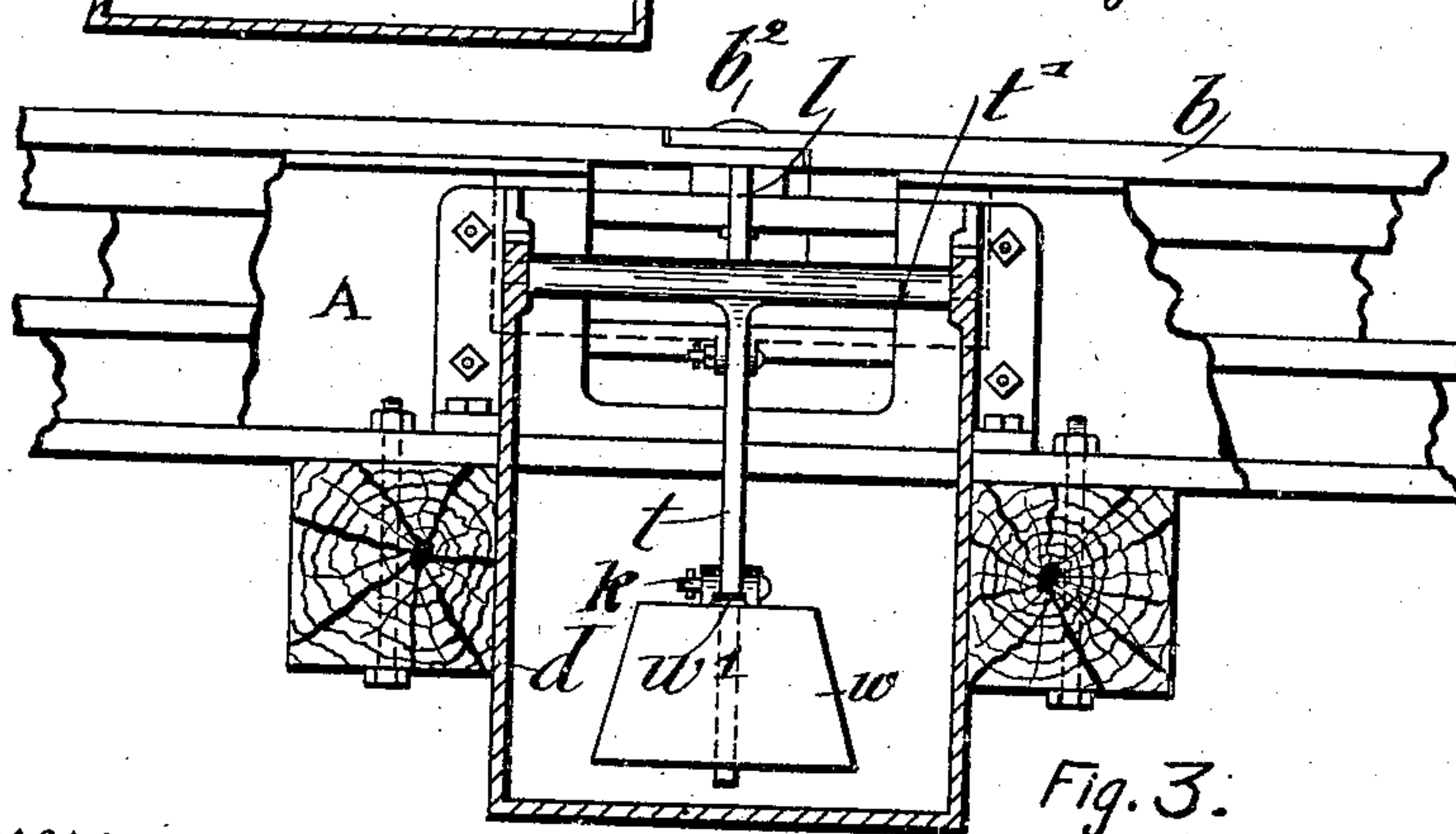


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN KRESS, OF NEW ROCHELLE, NEW YORK.

GUARD-COVERING FOR THE THIRD RAILS OF ELECTRIC RAILWAYS.

946,373.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed August 27, 1908. Serial No. 450,534.

*To all whom it may concern:*

Be it known that I, JOHN KRESS, a citizen of the United States of America, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Guard-Coverings for the Third Rail of Electric Railways, of which the following is a specification.

10 This invention relates to guard-coverings for the third rail of electric railways, by which the rail is protected against snow and rain and accidents are prevented, and more particularly to guard-coverings embodying  
15 a fixed guard-plate, and a movable guard-plate normally held against the fixed guard-plate and covering the rail, though movable away from the fixed guard-plate by the contact-shoe.

20 The object of the invention is to provide an improved construction for mounting and guiding the movable guard-plate, and also to improve the mechanism by which said guard-plate is normally closed over the rail.

25 A further object of the invention is to provide simple means by which said guard-plate can be held away from the fixed guard-plate if desired, so that the covering will be held open and the shoe can contact with the  
30 rail without shifting the movable plate.

With these ends in view the invention consists in the novel features and combinations of parts which will now be pointed out.

35 In the accompanying drawing, Figure 1 is a transverse section through a guard-covering for third rails constructed in accordance with the invention, the same being closed, Fig. 2 is a similar view showing how the guard-covering is opened by the disk or  
40 other opening device carried by the car, and Fig. 3 is a section on line 5, 5, of Fig. 1.

Similar letters of reference indicate corresponding parts in the different figures.

45 Referring to the drawings, A represents a conduit, which is preferably arranged alongside of the track, or which may form part of the conduit as arranged below the track-rails. The conduit is formed of a stationary angular guard-plate  $a$  having an enlarged upper end vertically above the center  
50 of the third rail  $r$ , and of a laterally movable guard-plate  $b$  which abuts normally against the enlarged end of the stationary guard-plate  $a$  and which is made U-shaped in cross-section and guided on the upper horizontal  
55 portion of a guide-plate  $b^1$ , both the angular

plate  $a$  and the angular guide-plate  $b^1$  being attached to the cross-ties of the track. The guard-plate  $b$  is made to abut against the stationary guard-plate  $a$  by the action of counterweights  $w$  which are applied to levers  $t$  that are pivoted by a cross-rod  $t^1$  in slots  $s$  in the side-walls of metallic boxes  $d$  having hinged lids  $d^1$ , said levers being connected by pivot-links  $l$  with bolts  $b^2$  passing through the guard-plate  $b$  and movable in recesses at the underside of the guard-plate, as shown in Figs. 1 and 2. The slots  $s$  cut in the side-walls of each box are open at their upper ends so that the crosshead  $t^1$ , which rests in said slots, may be readily set in position so as to form a pivotal support for the lever  $t$ . Access to the freely suspended lever  $t$  is afforded by the hinged cover or lid of the box. The counterweights  $w$  are capable of adjustment on the levers  $t$  by means of holes  $h$  in the same and spring-keys  $k$  passed through ears at the upper end of the counterweights and the holes. At the point where the pivot-link of the counterweight is connected with the guard-plate, each guard-plate is substantially U-shaped in cross-section and formed of three portions: a portion or web extending below the guide-plate  $b^1$ , an intermediate portion extending upwardly from said lower portion adjacent to the edge of the guide-plate, and an upper portion or top-plate which overlaps the guide-plate  $b^1$  and by means of which, in connection with the lower portion or web of the guard-plate, the latter is guided on the plate  $b^1$ . The bolt  $b^2$  connects the upper and lower webs of the guard-plate  $b$ . When it is desired to adjust the counterweight, the same can be done very readily after the hinged lid or cover has been raised.

The stationary guard-plate  $a$  and the movable guard-plate  $b$  are made of certain lengths along the straight portion of the track and provided at one or more intermediate points with the counterweighted levers described, said weighted levers serving to normally hold the guard-plate in abutting or closed position against the stationary guard-plate. The means by which the movable guard-plate is separated from the stationary guard-plate, so as to give the required space between them for the free passage of the supporting shank of the contact-shoe, are constituted by disks  $e$  which are supported on the outside of the truck, preferably at opposite ends of the contact-



shoe. The disks turn readily on their axles with a certain amount of lateral play so as to prevent any binding on the guide-plate in passing around curves. The contact-shoe follows closely after the opening-disk and forms contact with the third rail  $r$  in the usual manner. As the guard-plates are only guided at their points of connection with the levers of the counterbalancing weight, the overlapping guard-plate is capable of free motion over the guide-plate, without binding thereon, so as to prevent the free motion of the disks and contact-shoe in the longitudinal slot formed between the stationary and laterally movable guard-plate. As springs are altogether dispensed with, and counterweights used in place of the same, the guard-covering is not liable to deterioration, but has a permanent character and will function for a considerable length of time provided that care is taken to keep the surface of the guide-plate in good and clean condition. The guide-weight is provided at its upper end with a perforated eye  $w^1$  which is engaged by a hook  $w^2$  at the inner side-wall of the inclosing boxes  $d$ , so that it is possible during the summer season to hang up the counterweight by the hook, which is accomplished by opening the lid of the boxes and connecting the hook to the eye, whereby a slot between the stationary guard-plate and the laterally moving guard-plate is formed permanently and the lateral motion of the guard-plate interrupted, permitting thereby the free passage of the disk and shoe in the longitudinal slot between the guard-plates.

On straight lines of track the counterweights of the guard-plates are connected at considerable distances so that a smaller number of counterweighted levers and protecting boxes is required. At curved portions of the track shorter lengths of curved guard-plates are required, in which case a greater number of counterweighted levers and boxes is required, one at each pivot connection between the sections of the laterally movable guard-plate.

My improved covering for third rails may be made and installed at a comparatively small cost, either when building the electric railway or after the same has been built. It is specially adapted for use with elevated railways because it forms a protection against accidents as well as against the interruption of traffic during the winter months.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a guard-covering for third rails, the combination, with a shiftable guard-plate, of a box having slots cut in the upper portions of its side-walls, a counterweighted lever in said box having a cross-rod resting in said slots, and means connecting said lever with said guard-plate.

2. In a guard-covering for third rails, the combination, with a shiftable guard-plate, of a box having slots in the side-walls thereof open at their upper ends, a cross-rod resting in said slots, a counterweighted lever connected with the cross-rod and pivotally suspended in the box by means of the latter, and means connecting said lever with said guard-plate.

3. A guard-covering for third rails, consisting of a conduit formed of a stationary guard-plate and a laterally movable guard-plate, a stationary guide-plate on which the movable guard-plate is guided, counterbalanced levers connected with said movable guard-plate and holding the same normally in closed position against the stationary guard-plate, inclosing boxes for said counterweighted levers, and means in said boxes for suspending said counterweighted levers and thereby holding the laterally movable guard-plate out of contact with the stationary guard-plate.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

JOHN KRESS.

Witnesses:

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