

A. FROHNE.  
 TROLLEY CONTACTOR.  
 APPLICATION FILED MAY 31, 1921.

1,390,120.

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Fig. 1.

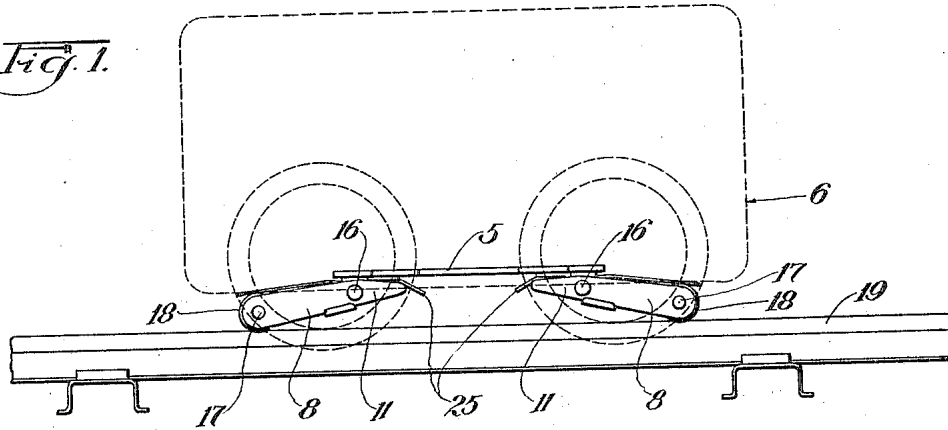


Fig. 2.

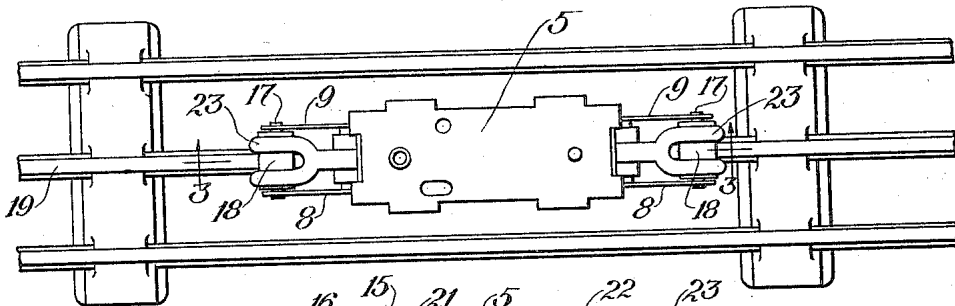


Fig. 3.

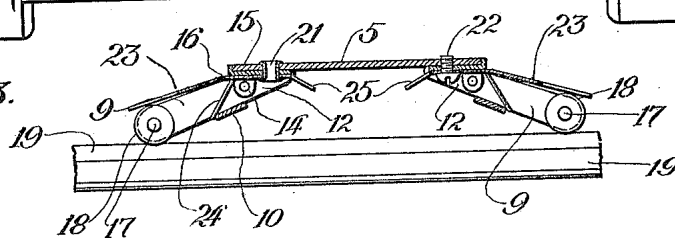
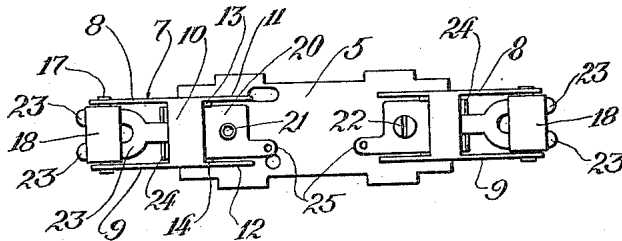


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## TROLLEY-CONTACTOR.

1,390,120.

Specification of Letters Patent.

Patented Sept. 6, 1921.

Application filed May 31, 1921. Serial No. 473,743.

*To all whom it may concern:*

Be it known that I, ALBIN FROHNE, a citizen of Germany, having declared my intention of becoming a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Trolley-Contactors, of which the following is a specification.

10 The present invention has to do with certain improvements in trolley contactors for toy electric railroads. One of the objects of the invention is to provide a contactor which can be very cheaply manufactured from a small number of parts.

15 Another object of the invention is to provide a contactor of such construction that the current will be delivered away from the contactor without having to pass through the bearings of the roller or wheel, thus reducing the electrical resistance and eliminating the burning of these bearings and their overheating.

20 Another object of the invention is to provide a contactor of such form that it will be maintained under spring pressure against the trolley or third rail, but also of such form that the amount of movement of the roller will be limited, so that when the contactor travels off of the third rail it will not swing through an excessive arc.

25 Other objects and uses of the invention will appear from a detailed description of the same, which consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawing:

30 Figure 1 shows a side elevation of a double contactor embodying the features of the present invention, and shows by dotted lines a car on which the same may be mounted. It also shows a double contactor as traveling on the third rail;

35 Fig. 2 shows a plan view corresponding to Fig. 1;

40 Fig. 3 shows a cross section taken on the line 3—3 of Fig. 2, looking in the direction of the arrows; and

45 Fig. 4 shows a bottom view corresponding to Fig. 1.

50 In the drawings I have shown the features of the invention as applied to a double contactor, that is, one having two contacting

rollers, but I wish it distinctly understood that I do not limit myself to either a single or double type of construction. 55

The contactor illustrated includes a base plate 5 of insulating material adapted to be attached to the car 6. Each contactor includes a U-shaped member 7 having a pair of side arms 8 and 9 joined together in their central portions by a cross bar 10. Each of said arms is extended beyond the cross bar as a pair of shoes 11 and 12. 60

Each of the members 7 is pivotally supported as by means of a pair of ears 13 and 14 between the arms 8 and 9, said ears depending downwardly from a plate 15 which is secured to the insulating block 5. The arms are pivoted to the ears by means of a cross pin 16 as clearly shown in Fig. 3. 65

Each of the shoes 11 and 12 has its upper surface cut at an angle as clearly shown in Figs. 1 and 3, so that the rocking movement of the member 7 is limited. 70

Between the outer ends of the arms 8 and 9 there is journaled a contacting roller 18 which is adapted to travel on the third rail or trolley 19. 75

A strip of spring like material of good electrical conductivity 20 is rigidly secured with respect to the insulating block 5. This may be done either by a rivet 21 or by a screw 22 as shown in Fig. 3. Said rivet or screw may also serve to secure the block 15 in place. Each of the strips 20 is provided with one or more fingers 23 which rest upon the roller 18 and make electrical contact therewith at all times, and also serve to exert a certain amount of spring pressure on said roller. An additional amount of spring pressure may be provided by means of a spring lug 24, which bears against the cross bar 10, tending to force the same downwardly as clearly shown in Fig. 3. 80

85 It will be observed that the arms 8 and 9, the cross bar 10, and shoes 11 and 12 may be stamped out from a single piece of sheet metal, and that the strip 20 including the fingers 23 and 24 may also be stamped out from another piece of sheet metal. This latter stamping may also serve to provide a terminal connector 25 by means of which the current may be removed from the contactor. 90

95 While I have herein shown and described only a single embodiment of the features of

my present invention, still I do not limit myself to the same except as I may do so in the claims.

I claim:

5 1. A trolley contactor for the purpose specified comprising a block of insulating material, a plate lying against said block and having a pair of outwardly extending separated lugs, a bifurcated member having  
10 a pair of longitudinally extending separated arms, a cross connecting bar, and a pair of rearwardly extending shoes adapted to engage the block of insulating material to thereby limit the swinging movement of  
15 said bifurcated member, a pivotal connection between the bifurcations and the lugs aforesaid, a roller pivotally mounted between the ends of the arms of the bifurcated member, and a strip of resilient, electrically conducting material rigidly secured  
20 to the plate aforesaid and having a finger spring pressed against the top surface of said roller and having another finger spring pressed against the cross connecting  
25 bar aforesaid and tending to swing the bifurcated member to carry its shoes against the block of insulating material, substantially as described.

30 2. A trolley contactor for the purpose specified comprising a block of insulating material, a pair of outwardly extending separated lugs in conjunction with said block, a bifurcated member having a pair  
35 of longitudinally extending separated arms, a cross connecting bar, and a pair of rearwardly extending shoes adapted to engage the block of insulating material to thereby limit the swinging movement of such bifurcated member, a pivotal connection between  
40 the bifurcations and the lugs aforesaid, a roller pivotally mounted between the ends of the arms of the bifurcated member, and a strip of resilient, electrically conducting material rigidly secured to the plate aforesaid and having a finger spring pressed  
45 against the top surface of such roller and

having another finger spring pressed against the cross connecting bar aforesaid and tending to swing the bifurcated member to carry its shoes against the block of insulating material, substantially as described. 50

3. A trolley contactor for the purpose specified comprising a suitable support, a pair of outwardly extending separated lugs in conjunction therewith, a bifurcated member having a pair of longitudinally extending separated arms, a cross connecting bar, and a longitudinally extending shoe adapted to engage said support to thereby limit the swinging movement of said bifurcated member, a pivotal connection between the bifurcations and the lugs aforesaid, a roller pivotally mounted between the ends of the arms of the bifurcated member, and a strip of resilient, electrically conducting material rigidly secured to said support and having a finger spring pressed against the top surface of said roller and having another finger spring pressed against the cross connecting bar aforesaid and tending to swing the bifurcated member to carry its shoe against said support, substantially as described. 55 60 65 70

4. A trolley contactor for the purpose specified comprising a suitable support, a pair of outwardly extending separated lugs in conjunction therewith, a bifurcated member having a pair of longitudinally extending separated arms, a cross connecting bar, and a longitudinally extending shoe adapted to engage said support to thereby limit the swinging movement of said bifurcated member, a pivotal connection between the bifurcations and the lugs aforesaid, a roller pivotally mounted between the ends of the arms of the bifurcated member, and a strip of resilient, electrically conducting material rigidly secured to said support and having a finger spring pressed against the top surface of said roller, and tending to swing the bifurcated member to carry its shoe against said support, substantially as described. 75 80 85 90

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