

No. 738,919.

PATENTED SEPT. 15, 1903.

M. T. A. KUBIERSCHKY & P. HERKNER.

SUSPENSION OF TROLLEY WIRES.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

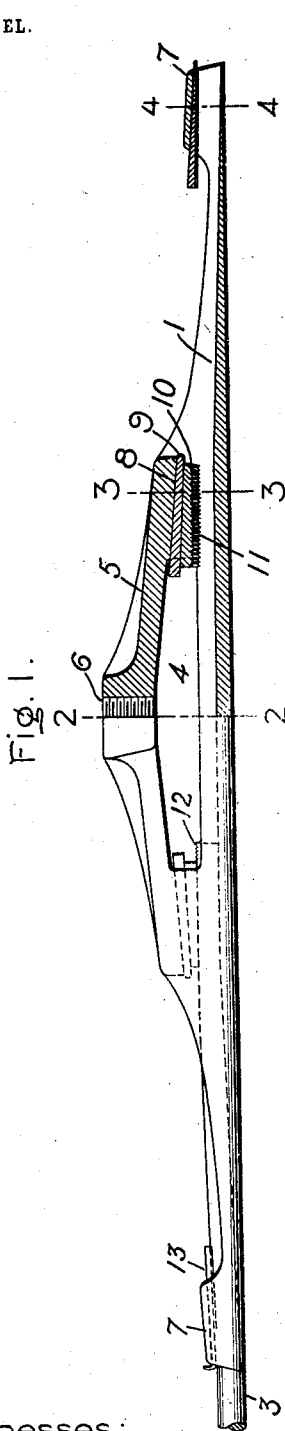


Fig. 1.

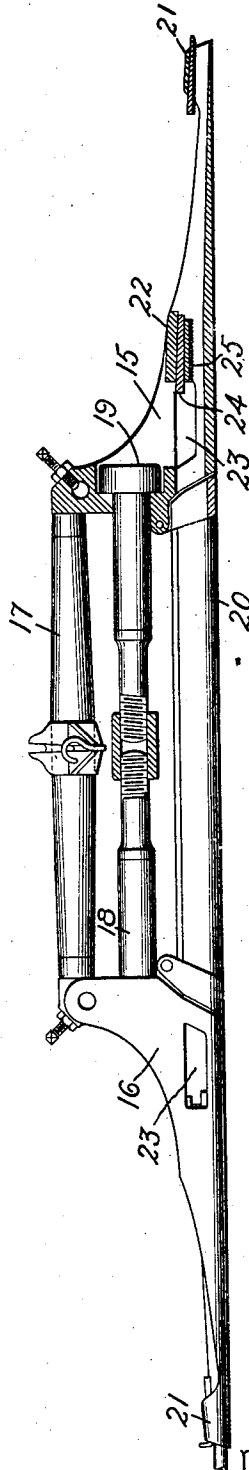


Fig. 5.

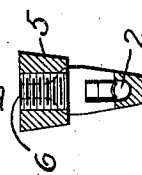
Fig. 4.



Fig. 3.



Fig. 2.



Witnesses:

*George H. Tilden.*  
*Arthur Orford*

Inventors:

Martin T. A. Kubierschky  
Paul Herkner.

by *Albert S. Davis*  
Atty.

# UNITED STATES PATENT OFFICE.

MARTIN T. A. KUBIERSCHKY AND PAUL HERKNER, OF BERLIN,  
GERMANY.

## SUSPENSION OF TROLLEY-WIRES.

SPECIFICATION forming part of Letters Patent No. 738,919, dated September 15, 1903.

Application filed June 8, 1903. Serial No. 160,611. (No model.)

*To all whom it may concern:*

Be it known that we, MARTIN T. A. KUBIERSCHKY and PAUL HERKNER, subjects of the Emperor of Germany, and residents of Berlin, Germany, have invented certain new and useful Improvements in Suspension of Trolley-Wires, of which the following is a specification.

The present invention relates to the suspension of electric trolley-wires, and has for its object to provide a flexible suspender to which the ends of the wire may be securely and adjustably connected and readily disconnected.

The invention will be readily understood upon reference to the following description and the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a part elevation and part sectional view of a connection-ear embodying one form of our invention. Figs. 2, 3, and 4 are cross-sections thereof, taken on the lines 2 2, 3 3, and 4 4 of Fig. 1; and Fig. 5 is a part elevation and part sectional view of a section-insulator embodying our invention.

The connection-ear shown in Figs. 1 to 4 comprises a continuous trough 1, having a circular groove 2 therein adapted to receive the ends of the trolley-wire 3 and integrally connected on each side of a central open space 4 to a bridge portion 5, provided with a threaded hole 6 for engagement with the usual insulated suspension-bolt. The metal of the trough portion 1 is gradually reduced from its connection with bridge portion 5 toward its respective ends in order to render the ear more flexible, and at the ends the sides of the trough are extended upward and united to form closed rings 7. The lower surface 8 of the bridge portion slopes outwardly toward the bottom of the trough to form key-seats.

The means for securing the ends of the wire in fixed relation with the ear comprises pairs of keys 9 and 10, one of which, key 10, is provided with teeth or corrugations 11, adapted to engage corresponding teeth or corrugations 12 in the side of the wire, and both keys are arranged with their thinner ends directed outward beneath the sloping under surface of the bridge portion 5. According to this

arrangement the end of the wire 3 may be placed in its desired position with relation to the ear and key 9 driven outward, forcing the toothed key 10 into permanent engagement with the wire and without disturbing the relative position of the wire to the ear. Should the wire tend to draw outward in service, either one or both of the keys 9 and 10 will be drawn with it and correspondingly increase the frictional resistance.

The ring portions 7 at the ends of the ear are provided with means for binding the trolley-wire in contact with the bottom of the trough, and, as shown in the drawings, this means consists of a single key 13, driven in between the inner surface of the ring and the wire and bent up at its end to prevent its working loose.

In the section-insulator shown in Fig. 5 the metallic end portions 15 and 16 are mechanically connected by an insulating-strut 17, provided at its center with means for attachment to the guy-wire, the insulated turnbuckle-bolts 18 19, and the runner 20. The metallic end portions 15 and 16 have open grooves for the reception of the ends of the trolley-wire, with their outer ends provided with closed ring portions 21, their inner ends bridged by bars 22, having outwardly-inclined lower surfaces, and apertures 23, formed in their sides between the bars 22 and the inner ends for the insertion of a tool for forcing outwardly one of the keys 24 and 25, arranged similar to keys 9 and 10. The cross-sectional area of the metallic end pieces 15 and 16 is reduced toward their outer ends to render them flexible, so that the trolley-wire carried thereby will not be abruptly flexed at the ends of the clamping-suspenders.

When it is desired to take up the slack in the wire, stretching-clamps are applied in the usual manner and the pairs of attaching-keys 9 10 or 24 25 removed and replaced, with the toothed key advanced one or more notches on the wire and the plain upper key replaced and driven home, and in case it is desired to slacken the wire the toothed key will be accordingly stepped back one or more notches on the wire.

We do not desire to restrict ourselves to the particular form or construction of parts

shown and described, since it is apparent that they may be changed and modified without departing from our invention.

What we claim as new, and desire to secure  
5 by Letters Patent of the United States, is—

1. The combination of a trolley-wire sus-  
pender having a key-seat and a groove for the  
reception of an end of the wire, and a pair of  
keys located between the wire and said key-  
10 seat and adapted when displaced by the ten-  
sion of the wire to exert increased clamping  
effect thereon.

2. The combination of a trolley-wire sus-  
pender having a key-seat and a groove for one  
15 end of the wire, and a pair of keys located be-  
tween the wire and said seat, one of said keys  
being provided on one side with teeth or cor-  
rugations to engage said wire and the other  
key having plain surfaces and adapted to be  
20 driven between said seat and the first key.

3. The combination of a trolley-wire sus-  
pender having a key-seat and a groove for an  
end of the wire, and a pair of similarly-di-  
rected keys located between the wire and said  
25 seat and adapted when either or both is dis-

placed by the tension of the wire to exert in-  
creased clamping effect thereon.

4. The combination of a trolley-wire sus-  
pender having an end gradually reduced in  
cross-section and provided with a groove for  
30 an end of the wire, a key-seat, a pair of simi-  
larly-directed keys located between the wire  
and said seat, and means for holding the outer  
end of said suspender in contact with the wire.

5. The combination of a trolley-wire ear  
35 having a grooved trough for the reception of  
the ends of the wire, a bridge portion provided  
on its under surface with key-seats, and in-  
tegrally connected at its ends with said trough  
with an intervening opening, and pairs of out- 40  
wardly-directed keys located between the  
ends of the wire and said seats.

In witness whereof we have hereunto set  
our hands this 27th day of May, 1903.

MARTIN T. A. KUBIERSCHKY.  
PAUL HERKNER.

Witnesses:

WOLDEMAR HAUPT,  
HENRY HASPER.