

(No Model.)

2 Sheets—Sheet 1.

H. C. BURK.
UNDERGROUND CONDUIT SYSTEM.

No. 548,514.

Patented Oct. 22, 1895.

Fig. 7

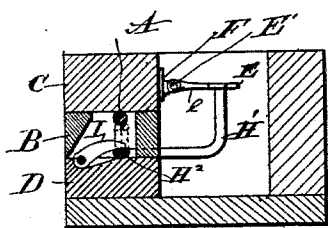


Fig. 1

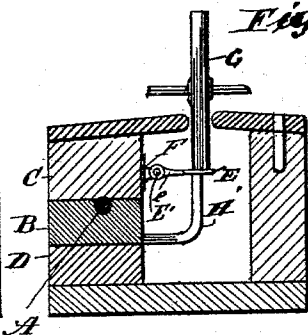


Fig. 8

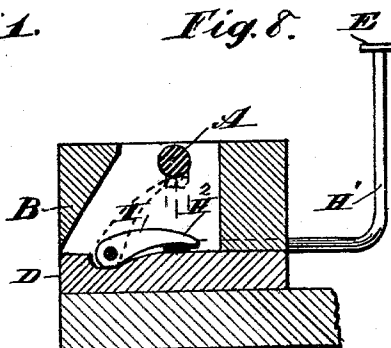


Fig. 2

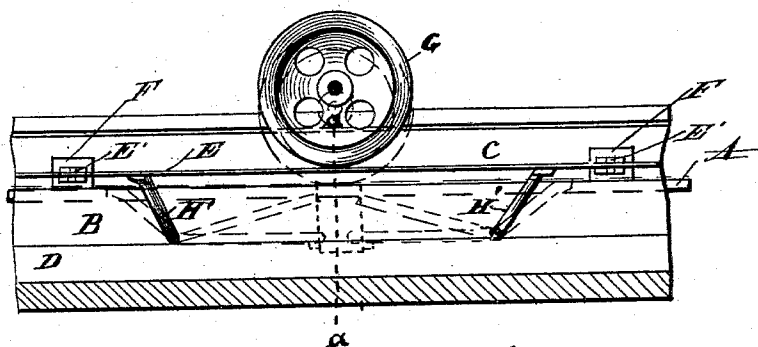


Fig. 3

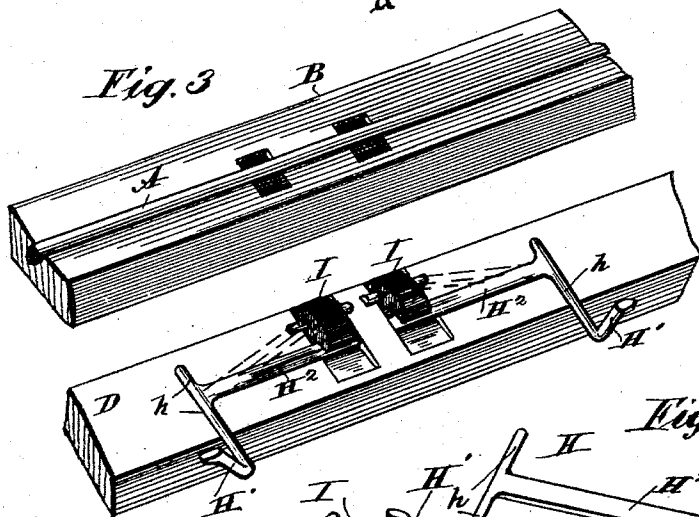


Fig. 4

Fig. 10

Fig. 9

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Fig. 5.

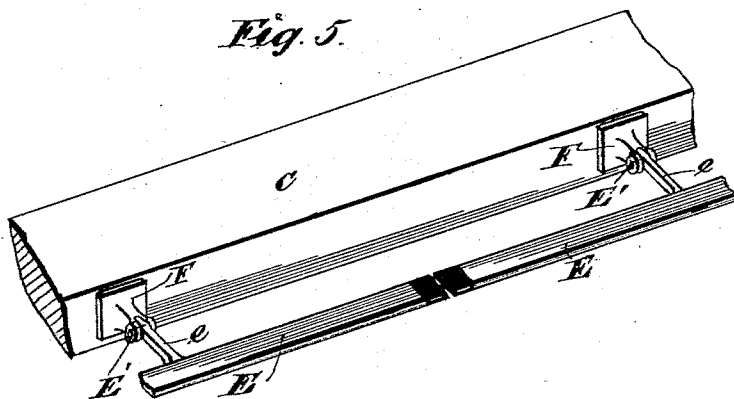
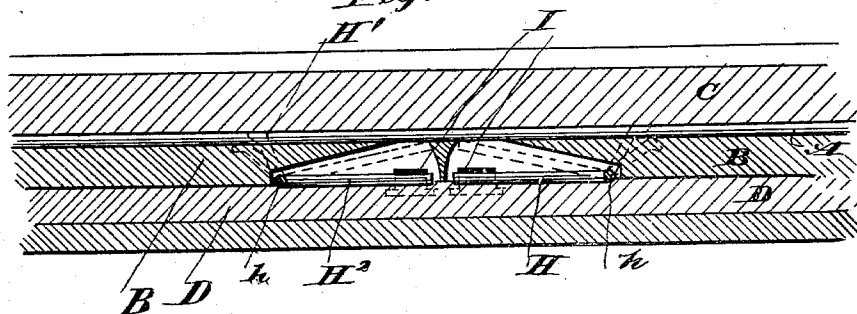


Fig. 6.



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UNITED STATES PATENT OFFICE.

HIRAM C. BURK, OF CLEVELAND, OHIO.

UNDERGROUND CONDUIT SYSTEM.

SPECIFICATION forming part of Letters Patent No. 548,514, dated October 22, 1895.

Application filed February 28, 1893. Serial No. 464,124. (No model.)

To all whom it may concern:

Be it known that I, HIRAM C. BURK, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Underground Conduit Systems, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in underground conduit systems for electric railways; and its objects are to provide means for electrically connecting the trolley depending from the car with the line-wire at the time of passing, while otherwise withdrawing the line-wire from possible contact with moisture or exposure to outside influences.

My invention consists in the insulated line-wire and depending trolley-wheel, with the intervening contact and protecting mechanism, as hereinafter described, shown in the accompanying drawings, and more specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a transverse sectional view of conduit and line-wire. Fig. 2 is a longitudinal section through the slot. Fig. 3 is a perspective view of insulating-plate and line-wire. Fig. 4 is a similar view of lower insulating-plate and intermediate contact mechanism. Fig. 5 is a perspective view of contact-strip for trolley and connections. Fig. 6 is a longitudinal section of insulating-plate and contact mechanism. Fig. 7 is a section on line *a a*, Fig. 2. Fig. 8 is an enlarged portion of Fig. 7. Figs. 9 and 10 are details.

In the figures, A is the live wire inclosed between insulating-plates B and C, of material impervious to moisture, D being a similar plate, forming with the plates B and C one wall of the conduit or a portion thereof.

E is a strip or combination of strips hinged at E', by means of arms *e*, to supports F upon the side wall and is located longitudinally under the slot-opening, where it can readily be depressed by the trolley-wheel G in its passage. This strip is normally supported upon the upwardly-turned arms H' of bell-crank levers H, provided with the horizontal pivots *h* and longer arms H².

The levers H are pivoted transversely of

the side blocks D in such a manner that the depression of the outer arms by the strip E and passing trolley-wheel will raise the inner and longer arms until their extremities come into contact with the live wire directly over them, and the bell crank levers being metallic, an electric connection is made at once between the line-circuit and trolley-wheel.

To prevent jumping or arcing connection of the current between the live wire and the levers intervening between the wire and strip E, insulating drop-blocks I are pivoted at one side of the lever-arms H², so that they may cover the levers when down; but when the levers are raised to make connection with the live wire the pivoted blocks slide off from the upper or contact surface of the levers, so that the metallic surface of wire and lever is presented for contact, as shown distinctly in dotted lines in Fig. 8.

The advantages of this device are obvious in the extreme protection afforded the line or live wire from all contact or influences of moisture and in its entire disconnection from any portion of the intervening mechanism until the trolley-wheel is introduced at the proper level to connect the parts.

I do not claim the exact shape or arrangement of the parts shown in the drawings, nor limit myself to the size or exact location of the insulating-blocks in the wall of the conduit.

I believe myself to be the first to employ an interposed automatically-operated insulation block or plate in an underground conduit system between the line-wire and trolley-operated contact mechanism.

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

1. In an underground trolley system the combination of a line wire inclosed in insulating material in the conduit wall, a strip or series of strips hinged to said wall but insulated therefrom and located under the conduit slot, bell crank levers, pivoted in said insulating material and provided with long arms located under the line wire and short arms adapted to support said strip or strips with insulating blocks I between said line wire and longer arms, substantially as described.

2. In an underground conduit system the combination of a line wire A, inclosed between insulating blocks, B, C, insulating block D, strip or strips E, pivoted to the side of the conduit upon arms e and insulated therefrom, 5 levers H provided with arms H' and H² and pivoted at h between said insulating blocks, and a wheel adapted to pass through the conduit slot, and depress the said strip E, substantially as described. 10

3. In an underground conduit the combination of a line wire, a contact strip engaged by the trolley passing in the conduit, contact mechanism, between said strip and wire, with 15 a block of insulating material normally inter-

posed between said wire and contact mechanism, but withdrawn by the action of the trolley, substantially as described.

4. In an underground conduit the combination of an insulated deep seated line wire, a 20 block of insulating material mounted adjacent to said line wire with means for automatically inserting said block between the wire and contact mechanism located beneath the line wire, actuated by the trolley in passing, substantially as set forth. 25

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