

(No Model.)

2 Sheets—Sheet 1.

W. R. ELLIOTT.
ELECTRIC CONDUIT.

No. 435,487.

Patented Sept. 2, 1890.

Fig. 1.

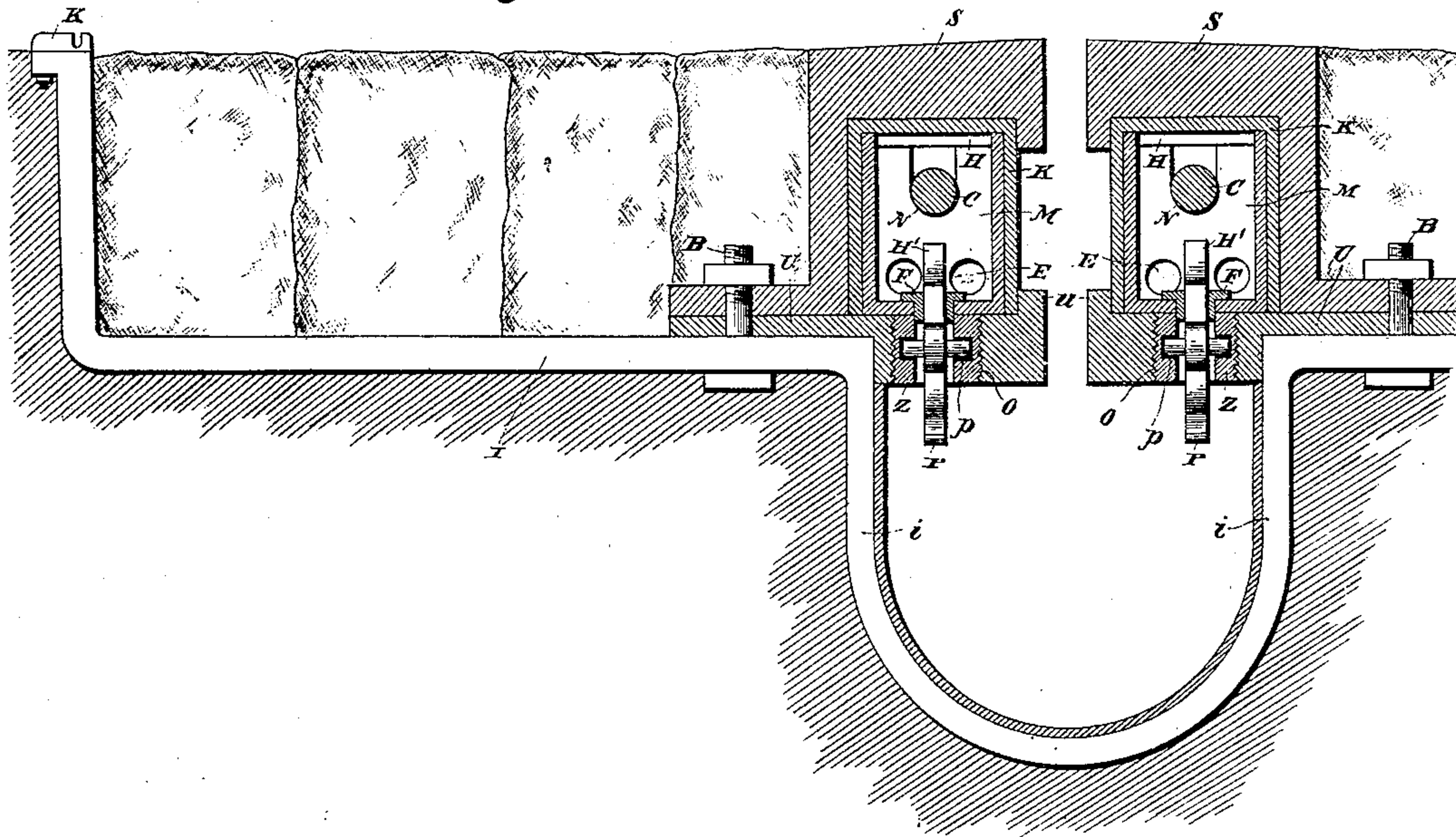
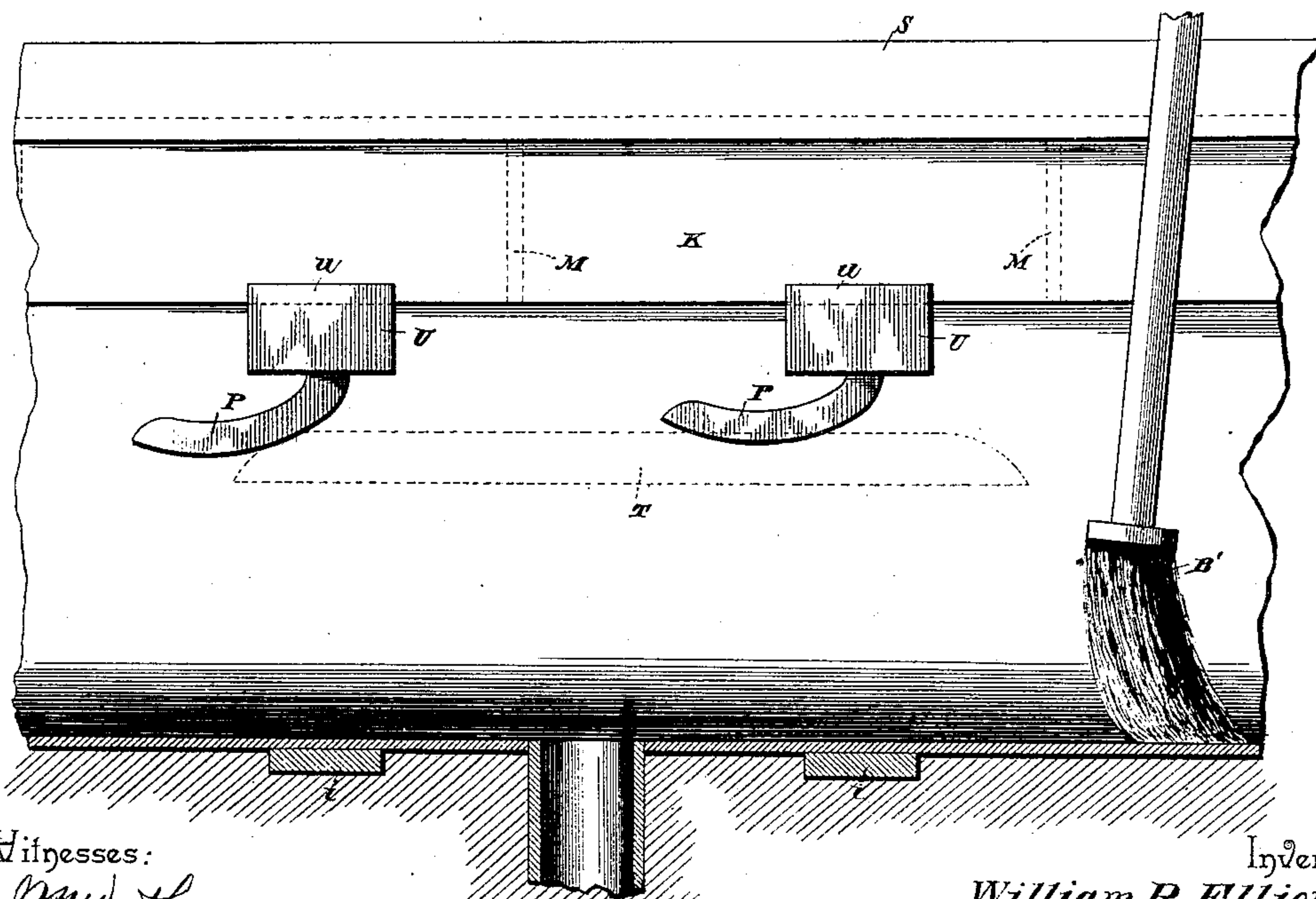


Fig. 2.



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William R. Elliott

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Fig. 3.

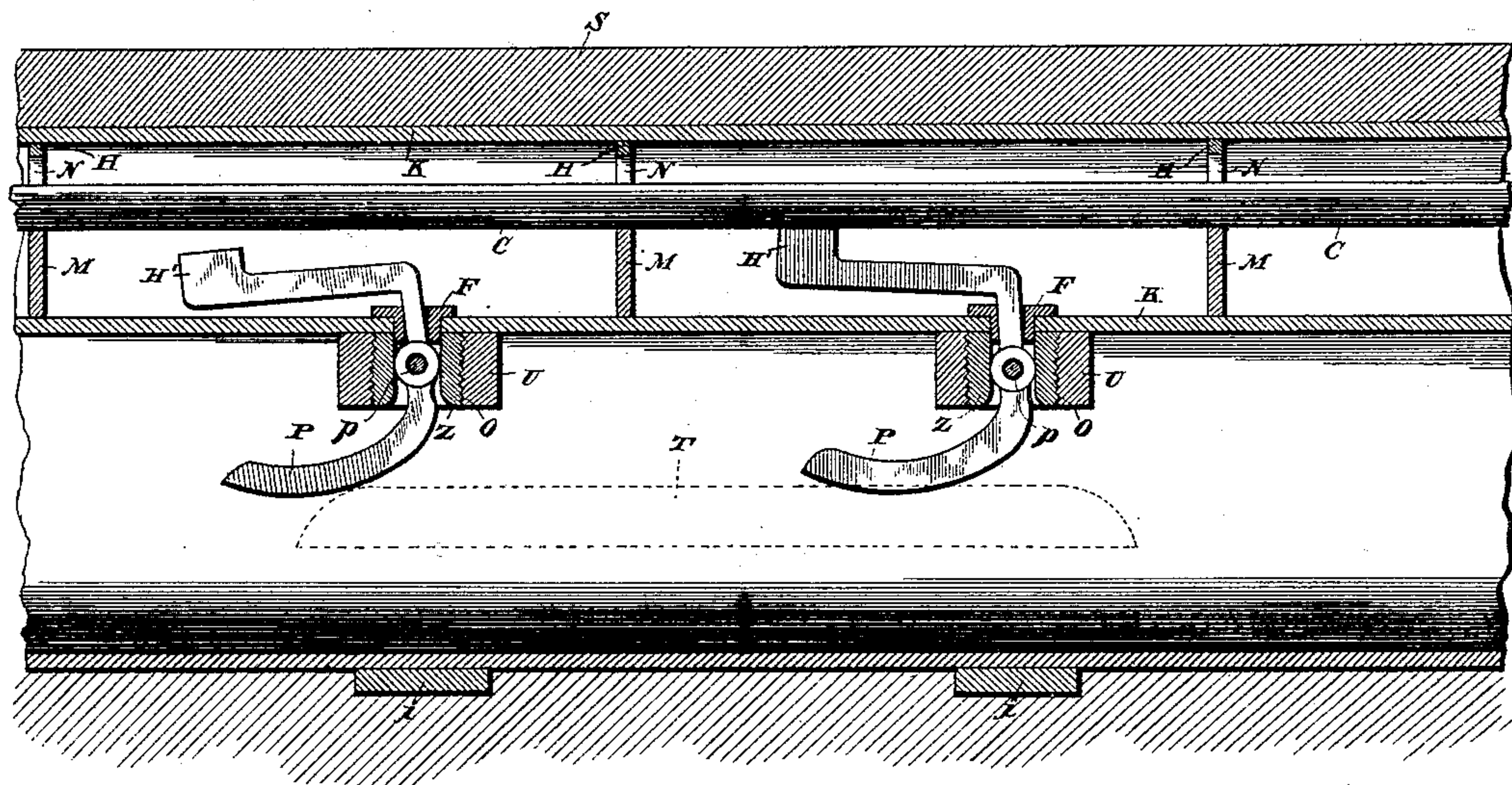
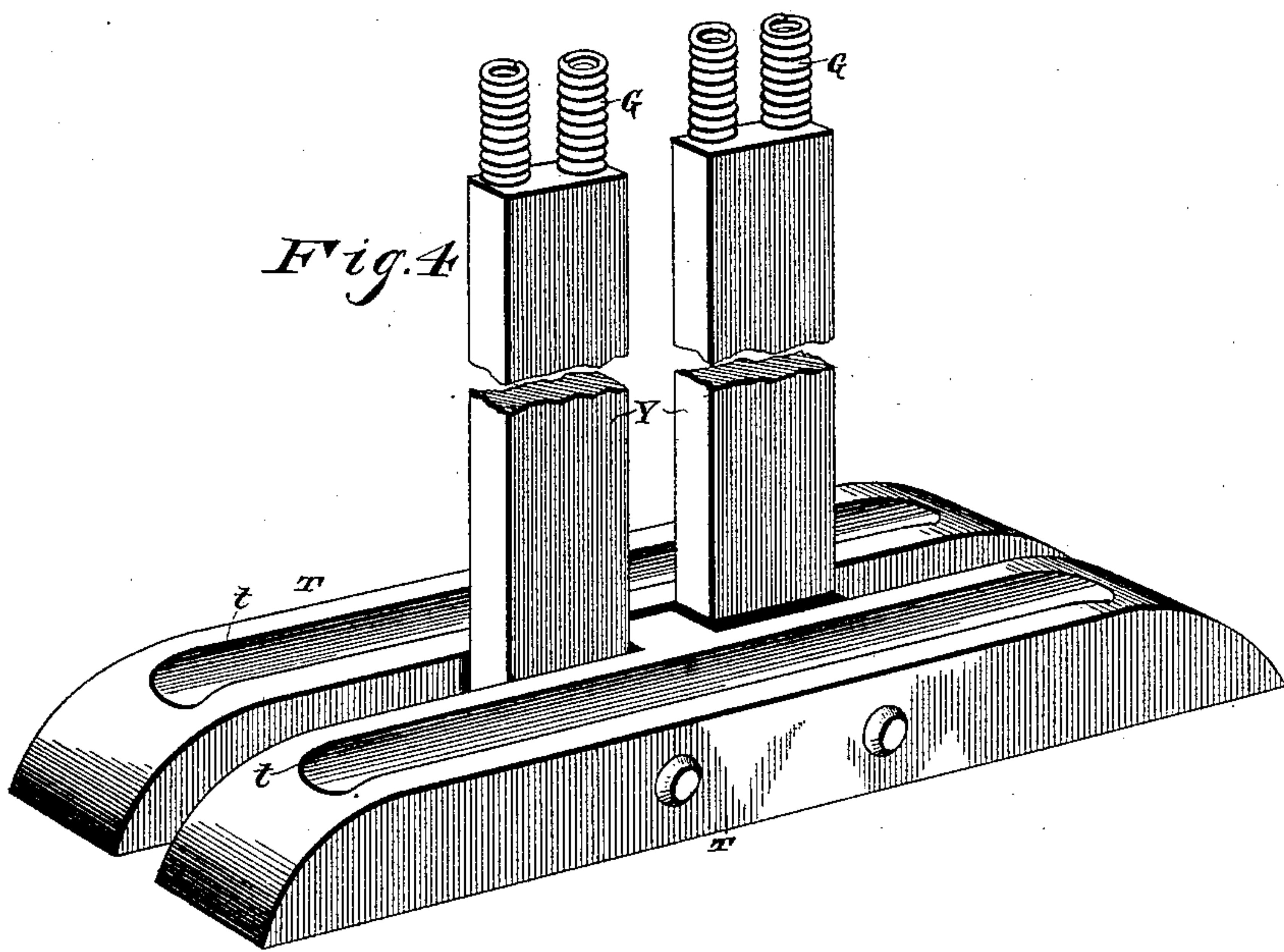


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM R. ELLIOTT, OF KANSAS CITY, MISSOURI.

ELECTRIC CONDUIT.

SPECIFICATION forming part of Letters Patent No. 435,487, dated September 2, 1890.

Application filed March 20, 1890. Serial No. 344,599. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. ELLIOTT, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Electric Conduit, of which the following is a specification.

This invention relates to electric conduits, more especially of that class having a slot through which projects a device similar to a trolley carried by a moving car, and by means of which one or more currents are carried upward to the car.

The object of the invention is to construct the conduit in such a manner that the conductor will be perfectly insulated and access thereto will be impossible, whereby all danger of accident will be avoided, as well as to effect the perfect draining and cleaning of the conduit. This object I accomplish by my improved conduit, which consists, essentially, of the conductor suitably insulated and supported beneath a slotted iron between the rails, pivoted contactors normally out of contact therewith, and a trolley carried by the car and adapted to throw said contactors against said conductor as the car progresses, together with adjunctive and specific details of construction assisting in the accomplishment of the above objects and certain auxiliaries tending to enhance the value of the completed structure, all as will be hereinafter more fully described and as are illustrated in the accompanying drawings, in which—

Figure 1 is transverse section of this conduit. Fig. 2 is a longitudinal section through the slot. Fig. 3 is a longitudinal section through the conductor. Fig. 4 is a perspective view of the trolley.

Referring to the said drawings, the letter I represents one of the ties for the road-bed, which is bent downwardly at its center, as at *i*, to form a drain or channel.

The letter K designates the rails forming the track upon which the cars run, as will be understood, and these rails are secured to the extremities of the ties in the usual or in any preferred manner.

S is a slotted iron covering the drain and is of the shape in cross-section shown in Fig. 1, this iron being secured to the ties where it crosses them and extending the entire length of the railroad.

Between the slotted iron and ties are clamped the supports U, preferably by the same bolts B by which the iron is attached, and the inner ends of these supports have shoulders *u*, also as shown in Fig. 1 of the drawings.

The letter C designates the conductor, which is not insulated, but which rests in recesses or notches N, cut in insulating-supports M. The latter are located at points between the ties within a compound tube K, consisting of two U-shaped members fitting into each other, as shown. The lower member rests upon the support U, between its shoulder *u* and the upright bar of the slotted iron S, and the upper member fits over this lower member closely, thereby forming a water-proof coating the entire length of the conductor. The insulated support M is of a size to fit exactly within this compound tube, and the upper end of the slot N therein is covered by a plate II when in position. The tube K is preferably coated or lined with asbestos or some other good water-proof material, and the conductor is thereby effectually protected from the elements, as will be understood.

The supports U are each provided with a threaded opening O, within which is screwed a block Z, wherein, upon insulated bearings *p*, is pivoted a contactor P. The upper arm of this contactor passes through a hole in the bottom of the lower member of the compound tube K, and is provided at its tip with a weighted head II', which stands normally below and out of contact with the conductor C. The lower arm of the contactor is curved slightly and depends below the lower face of the support U.

Fig. 4 illustrates the form of trolley I use in connection with this improved conduit. T is a metallic head having a groove *t* in its upper face and rounded off at its ends, as shown. There are two of these heads connected to but electrically insulated from each other, and each is supported by a metallic bar Y, which is electrically connected with the motor on the car, but which is mechanically supported by springs G, as shown. The conduit having been laid in a manner which will be understood from the above description and an electric current passed from a dynamo or other source of electrical energy along one conductor C and back on the other,

the car is now placed upon the track, with the bars Y passing through the slot in the iron S. As the car progresses along the track, the lower curved ends of the contactors P ride up over the rounded ends of the heads T of the trolley and pass along the grooves *t*. This motion of the contactors throws their upper ends, which are within the tubes K, upwardly against the conductors C—one against one conductor and the other against the other. The current is therefore passed from one conductor, through its contactor, the head R, and the bar Y, to the motor on the car, and down the other bar Y, through the head T at that side, up the other contactor, and into the other conductor, whence it returns to the dynamo, all as will be clear to an electrician. The head T must of course be of such length that one contactor will be thrown into contact with its conductor before the next in rear thereof drops out of contact therewith, and a constant electric communication is therefore maintained between the motor on the car and the dynamo at the engine-house of the road.

Although I have not illustrated it, one of the conductors and its surrounding tube and supports and one of the heads T and its bar Y may be omitted and the current returned through the rails K in a manner also well known among electric engineers, and the principle of the present invention need not be departed from in the least.

When it is desired to have access to the conductor C or to the interior of the tube K, the slotted iron S is removed, the upper member of the tube lifted off, and the plates H removed from the upper ends of the slots N, after which the conductor will be exposed to view and access can be had thereto for any purpose whatever. The insulating-supports M are preferably provided with holes E, whereby the tube K is made open from end to end and a current of air can be passed therethrough for the purpose of cleaning out the dust or otherwise. With this construction a rubber packing or gasket F surrounds the contactor P above its pivot *p* and seals the hole through the bottom of the lower member of the tube, and no leakage of air will therefore occur at that point.

The letter B' designates a brush carried by certain of the cars on the road, or by each car, if desired, and as the car moves along the track this brush passes through the drain and cleans the same, the dirt and water therein being swept thereby to suitable sinks in the drain, as will be understood.

I claim as the salient points of this invention—

1. In an electric conduit, a two-part waterproof tube, the upper part of which is removable, insulating-plates therein provided with open-top notches, within which the conductor rests, and plates secured across the upper ends of said notches, substantially as described.

2. The combination, in an electric conduit, with the tube containing the conductor, of a support below the same and a contactor pivoted in and passing through said support and tube, its head standing normally out of contact with said conductor, substantially as described.

3. The combination, in an electric conduit, with the tube and the plates therein supporting the conductor, of supports for said tube beneath the same at points between said plates and contactors pivoted in and passing through said supports and tube, their heads standing normally out of contact with said conductor, substantially as described.

4. The combination, in an electric conduit, with the tube and the perforated plates therein supporting the conductor, of supports for said tube beneath the same at points between said plates, contactors pivoted in and passing through said supports and tube, and rubber packing surrounding said contactors where they pass through the tube, as and for the purpose set forth.

5. In an electric conduit, the combination, with the conductor C, the supports U, and insulating devices, substantially as described, between them, of the blocks Z, screwed into said supports, and the contactors P, journaled upon insulated bearings within said blocks, all constructed and operating as set forth.

6. In an electric conduit, the combination, with the conductor and the contactors pivoted below the same with their heads normally out of contact therewith, of the trolley carried by the car, the same comprising a head T, having rounded ends with grooves *t* in their upper faces adapted to pass beneath the lower ends of the contactors and turn the same on their pivots, and the spring-actuated bars Y, supporting said heads, as and for the purpose set forth.

7. In an electric conduit for railways, the combination, with the ties depressed at their centers to form a drain and the conductors supported from the top of said drain, of the trolley carried by the car and making contact with said conductors and a brush carried by the car, the whole operating substantially as described.

8. In an electric conduit for railways, the combination of the ties depressed at their centers, the slotted irons and conduit-supports secured to said ties, the conduit proper carried by said supports, and contactors, substantially as described, pivoted in said supports and adapted to be operated by the trolley on the car, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM R. ELLIOTT.

Witnesses:

R. W. DAYTON,
R. J. MARSHALL.