

(No Model.)

2 Sheets—Sheet 1.

A. SEGADE & D. J. O. REGAN.  
UNDERGROUND CONDUIT.

No. 525,670.

Patented Sept. 4, 1894.

Fig. 1.

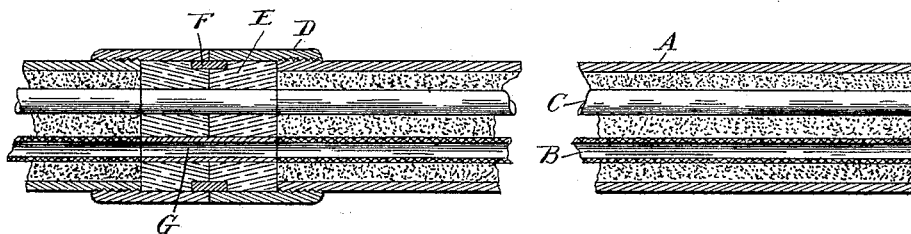


Fig. 2.

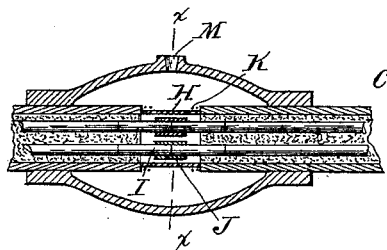


Fig. 3.

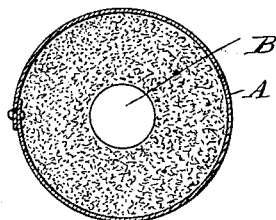
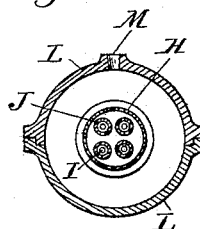


Fig. 4.



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Fig. 3.

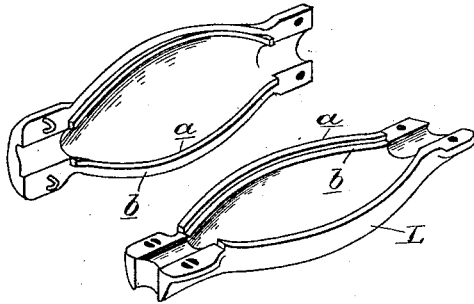


Fig. 8.

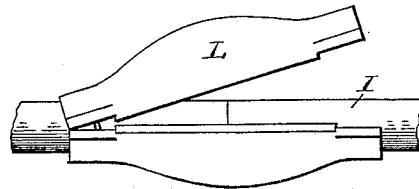


Fig. 6.

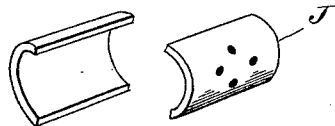
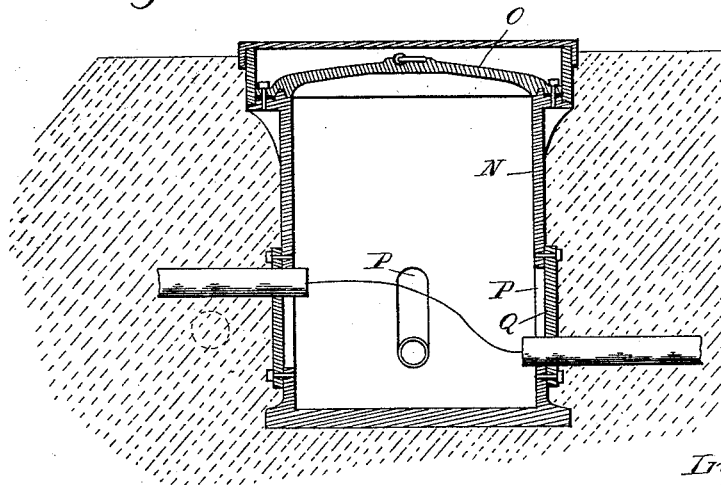


Fig. 5.



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# UNITED STATES PATENT OFFICE.

ALEXANDER SEGADÉ AND DENNIS J. O. REGAN, OF DETROIT, MICHIGAN,  
ASSIGNORS OF ONE-HALF TO PATRICK MCCOY, OF SAME PLACE.

## UNDERGROUND CONDUIT.

SPECIFICATION forming part of Letters Patent No. 525,670, dated September 4, 1894.

Application filed March 6, 1894. Serial No. 502,533. (No model.)

*To all whom it may concern:*

Be it known that we, ALEXANDER SEGADÉ, citizen of the United States, and DENNIS J. O. REGAN, a subject of the Queen of Great Britain, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Underground Conduits, of which the following is specification, reference being had therein to the accompanying drawings.

The invention relates to the construction of a conduit made in sections with ducts adapted to be registered in adjoining sections.

The invention particularly consists in the construction of the sections of an outer metallic casing, a series of ducts therein, and an insulating material around the ducts formed of compacted wood or paper pulp; further in the construction of the joint between the adjoining sections; further in the construction of the service box, and in the construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical, central, longitudinal section through an underground conduit embodying our invention. Fig. 2 is a similar section through one of the junction boxes. Fig. 3 is a detached perspective view of the sections of the junction box separated. Fig. 4 is a cross section on line *x x* Fig. 2. Fig. 5 is a vertical central, longitudinal section through one of the surface boxes. Fig. 6 is a detached perspective view of the sleeves employed in making the joint, as shown in Figs. 2 and 4. Fig. 7 is a section through a modified form of conduit. Fig. 8 is a side elevation of the junction box.

Our conduit consists of an outer casing A, preferably a metal pipe. This outer casing may be ordinary wrought iron tubing such as in the market, or it may be made by forming sheet metal into the desired shape, as shown in Fig. 7, riveting the overlapping ends of a sheet together and thus forming a tube. In this tube are formed one or more ducts B preferably lined by means of a tube C of hard rubber or similar insulating material. These tubes are supported at suitable distances apart in the casing, by means of an insulating filling between the tubes and the outer casing. For this material we preferably em-

ploy wood or paper pulp forced in under pressure in any desired manner. We find that this material makes an exceptional light and efficient conduit section when thus filled around the inner tubes. To connect these conduit sections together we preferably employ the joints shown in Fig. 1, which comprise a forwardly extending sleeve D detachably secured at each end of each section, and an apertured block E adapted to fit therein flush with the outer face of this sleeve. This block is provided with apertures in line with the apertures in the conduit sections. The joint between the meeting ends of the sleeves, is covered by means of a thin ring F secured in notches or gains at the forward edge of the blocks and within the sleeve.

G are tube sections of a length corresponding to the length of the space between the two conduit sections and fitting nicely into the apertures in the block E spanning the joint between.

In Fig. 2 we have shown a slightly modified form in which the blocks E are made in the shape of a ring, as shown in Fig. 5, and the joint is formed by means of the tubes I extending from a central point each way a slight distance into each of the conduit sections, the outer ends being secured together by means of a sleeve J. Around these sleeves and between the ends of the conduit sections, the ring H is secured by suitable binding wires K. The whole joint is then protected by means of the junction box formed of the two halves L adapted to be clamped about the sections on each side of the joints, provided with a filling aperture M through which a suitable compound may be poured. The edges of the junction box are formed with tongues *a* and grooves *b* to assist in making a waterproof joint therefor.

The service box is shown in Fig. 6 and consists of an ordinary cast metal box N having a cover O and provided on its side with apertures P.

Q are apertured plates adapted to cover the apertures P in the plates, being of sufficient size to receive the ends of the conduit sections, and these conduit section apertures are arranged near one end, so that the plates Q may be turned with the aperture at the top

or at the bottom for the purpose of enabling us to pass through the junction box section upon different planes, as shown in Fig. 6.

What we claim as our invention is—

5 1. In an underground conduit for electrical conductors, the combination of the casing, an outer sleeve projecting beyond the casing at each end, blocks adapted to fit against the end of the sections and within the sleeves,  
10 ducts in the casing and complementary ducts in the blocks, substantially as described.

2. In an underground conduit for electrical conductors, the combination of an outer metallic casing, screw-threaded at the ends, of  
15 sleeves having interior screw threads engaging the ends of the casing, blocks fitting within the sleeve against the end of the section, ducts in the sections, corresponding ducts extending across the two blocks in the meeting  
20 ends of two adjacent sections and the strip F arranged between the sleeve and blocks, substantially as described.

3. In an underground conduit for electrical conductors, the combination of an outer metallic casing, a joint to connect the adjacent  
25 casings together, ducts of insulating material within the sections and a compacted filling of pulp around said ducts, substantially as described.

4. The combination with the conduit sections of an underground electrical conduit, of  
30 a service box, N, having enlarged apertures on the sides, and the reversible plates Q having apertures to receive the ends of the conduit sections, substantially as and for the  
35 purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

ALEXANDER SEGADE.  
DENNIS J. O. REGAN.

Witnesses:

JAMES WHITEMORE,  
O. F. BARTHEL.

It is hereby certified that the name of one of the patentees in Letters Patent No. 525,670, granted September 4, 1894, for an improvement in "Underground Conduits," was erroneously written and printed "Dennis J. O. Regan," that said name should have been written and printed *Dennis J. O'Regan*; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 18th day of September, A. D. 1894.

[SEAL.]

JNO. M. REYNOLDS,  
*Assistant Secretary of the Interior.*

Countersigned:

S. T. FISHER,  
*Acting Commissioner of Patents.*