(No Model.)

# W. LENDEROTH.

## UNDERGROUND TUBE FOR TELEGRAPH WIRES.

No. 284,643. Patented Sept. 11, 1883.

Fig: 1

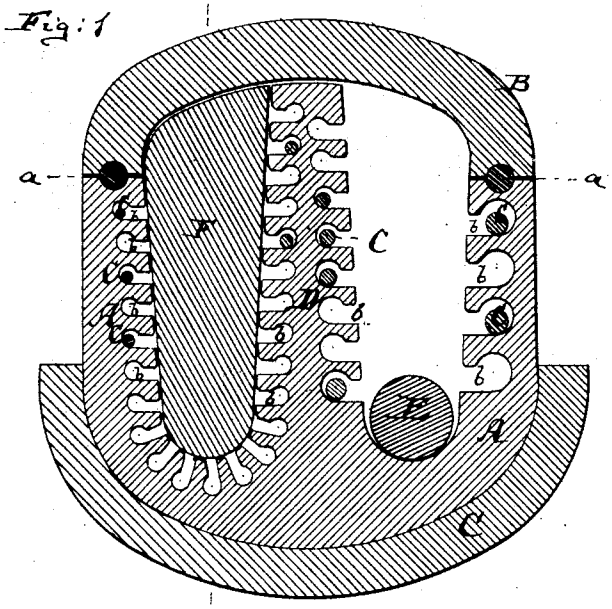
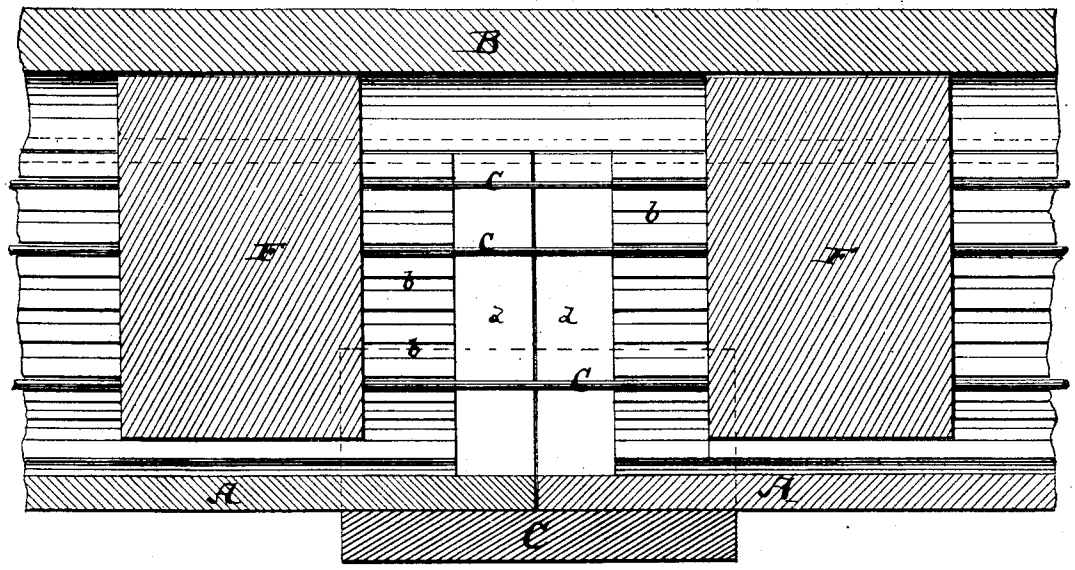



Fig: 2




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# UNITED STATES PATENT OFFICE.

WILHELM LENDEROTH, OF NEW YORK, N. Y.

## UNDERGROUND TUBE FOR TELEGRAPH-WIRES.

SPECIFICATION forming part of Letters Patent No. 284,643, dated September 11, 1883.

Application filed February 7, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILHELM LENDEROTH, of New York, in the county and State of New York, have invented an Improved Underground Tube for Telegraph-Wires, of which the following is a specification.

Figure 1 is a cross-section of my improved underground tube for telegraph-wires, and Fig. 2 a longitudinal section of the same.

The object of this invention is to produce a subterranean receptacle for telegraph wires, cables, and the like, in which the several wires or cables are completely separated and insulated from one another and separately sustained in position, and in which, moreover, access can readily be had to any particular one or more wires to be reached.

The invention consists, first, in making the walls of the sectional tube (that is to say, of the tube which is longitudinally divided, so as to furnish a cover) with longitudinal channels or grooves, in which the wires can be placed, said grooves extending slightly upward, so as to provide for the slack of the wire while the same is being inserted, and for subsequent stretching.

The invention also consists in supplying the tube thus constructed with an inner projection or projections having similar grooves or cavities for receiving similar wires; also, in combining this grooved structure with wedge-like retaining-blocks, by which the wires are locked into their respective cavities.

In the accompanying drawings, the letter A represents the lower portion, and B the upper portion, of the tube or subterranean wire-carrier. These two portions A and B are longitudinally separated, as indicated in Fig. 1, and the joints between them are made tight by a suitable packing, *a*, so as to exclude water and noxious gases from the interior of the pipe, and yet the cover B can be readily taken off, when desired, to give access to the interior of the lower part, A. In laying this tube the covers and lower parts should, by preference, break joints, and where the joints are in the lower part they may be closed by a supporting saddle-piece, C, which is clearly shown in Fig. 2, or in any other suitable manner. The interior of the lower portion, A, of the tube has formed in its walls series of cavities or grooves *b*, that extend longitudinally therein, as shown; but at the ends of each section A the grooves are omitted, or, rather, the spaces between the grooves, so as to leave blank spaces *d*, (see Fig. 2,) for greater facility in taking hold of the wires whenever the junction of two sections, A A, is laid bare. Into the grooves *b b* are placed the telegraph-wires C, and in them said wires are properly supported, separated, and insulated from one another. Of course the pipe A is made of proper insulating material—such as clay—and for greater certainty the inner faces of the grooved portions *b* should be glazed or porcelain-lined. Where a larger number of wires are to be accommodated, the section A supports one or more longitudinal ribs, D, each having grooves *b* on its opposite sides, as shown in Fig. 1, so as thus to produce a larger number of receptacles for the wires C. Some of these receptacles may be made larger, others smaller, according to the size of wires to be placed into these tubes. The space left between the side walls of the tube, and any one of the projections D, may also be used as a receptacle for large cables, as indicated at E in Fig. 1. After all the wires have been placed in their respective grooves they can be locked in place by wedge-like blocks F, that are inserted in the tube at suitable distances apart, and that reach from one series of channels or grooves, *b*, to the opposite row of such channels or grooves, as is clearly indicated in the drawings.

It can be seen that with this structure telegraph-wires, telephone-wires, and the like can be quickly laid. One person can readily lay forty or fifty wires in a tube and properly space them, and when they are spaced the wedges or blocks F are inserted to lock them in position.

The cavities *b* extend slightly upward, as shown, so that when the wires are stretched they will be in the upper parts of said cavities, and not rest in the lower. This will protect them against any possible moisture that may settle in the cavities, and adds to the convenience of inserting the wires in the tube.

Whenever repairs are needed they can easily be effected by opening that portion of the tube where the operation is to take place, taking out the proper wedge or block F, and picking from

its groove the particular wire desired without at all interfering with the others.

The invention described shows that with its assistance it will be possible to lay telephone-wires, electric-light wires, telegraph-wires, &c., separately in the earth, all insulated one from the other, and yet all contained in the same tubing.

I claim—

1. The tube A B for telegraph-wires and the like, said tube having grooves *b* along its walls, on the inner side, which grooves constitute receptacles for the wires, substantially as specified.

2. The tube A B, made with channels *b* in its walls, said channels extending outward into the side walls, and thence upward, substantially as shown and described.

3. The tube A B, having channels *b*, and projecting post or rib D, having like channels, substantially as specified.

4. The tube A B, having channels *b*, in combination with the wedge or locking-block F, substantially as described.

5. The tube A B, having grooves *b* and blank spaces *d* near the ends, substantially as and for the purpose specified.

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Witnesses:
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