

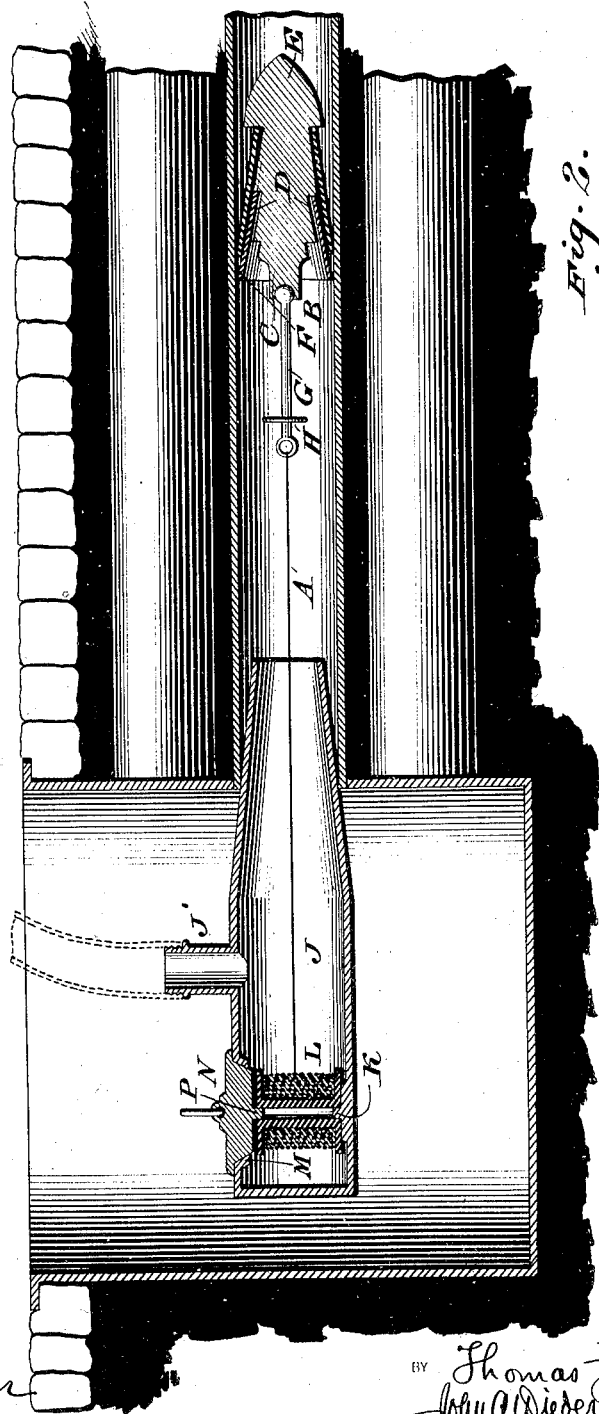
(No Model.)

T. J. COPE.  
LAYING ELECTRIC CONDUCTORS.

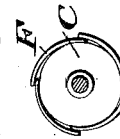
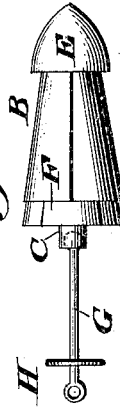
No. 423,134.

Patented Mar. 11, 1890.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS JEFFERSON COPE, OF PHILADELPHIA, PENNSYLVANIA.

## LAYING ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 423,134, dated March 11, 1890.

Application filed July 26, 1889. Serial No. 313,758. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS JEFFERSON COPE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Laying Electric Conductors in Conduits, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to a device for laying electric conductors in underground and other conduits or pipes.

The invention consists in the novel formation of a projectile to carry the pilot-wire.

The invention further consists in the construction of an air-tight plug having a reel mounted therein.

The invention further consists in the novel construction and combination of the several parts, as will be more fully hereinafter set forth.

Figure 1 represents a longitudinal vertical section of a device for laying electric conductors embodying my invention. Fig. 2 represents a side elevation of the projectile thereof. Fig. 3 represents a sectional view of the projectile.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a pipe or conduit of any desirable shape, in which a carrier or projectile B is adapted to travel, the same consisting of a block C, formed with slightly-inclined recesses D and having a cap or head E. One or more flexible or pliable flanges, wings, or leaves F are movably secured to the block C and formed in sections, with overlapping sides to form a tight joint with the conduit. Said wings or leaves diverge rearwardly, and are adapted to be expanded to contact with the conduit A when pneumatic or hydraulic pressure is applied thereagainst. A rod G is pivotally affixed to the rear of the block C and having an eye formed in its rear end to receive the wire to be laid. On said rod G a suitable guide H is mounted for preventing too much

vibration of the rear end of the said carrier or projectile.

J designates a hollow tubular plug, which is closed at one end and has a conical nozzle to be removably fitted in the conduit, said plug having a tap or branch J', for connection with a source of pressure, and is provided with a stud or teat K to form one support of a removable reel L, which carries the pilot-wire. An opening M is provided in the plug for the application and removal of the reel or for access to the same for other purposes. A removable cap or screw-plug N occupies said opening M and forms a tight joint with the walls thereof, it being noticed that said cap N carries a stud or teat P as one of the bearings of the reel.

It will be seen that the reel is within an air-tight compartment, the latter being in communication with the conduit or pipe A and allowing free passage of wire from the said reel to the carrier or projectile.

The parts having been arranged in relative position as set forth, the motive power is exerted against the carrier or projectile, and the same, carrying the wire from the reel, is forced through the conduit.

The parts may be readily removed and replaced elsewhere when desired, and, as will be seen, may be easily manipulated or adjusted.

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

1. In a device for laying conductors underground, a carrier or projectile, an air-tight plug containing a reel, and means, substantially as described, connected with said plug for moving said projectile, substantially as and for the purpose set forth.

2. An air-tight plug having a removable reel therein adapted to be used with a carrier or projectile, and means, substantially as described, connected with said plug for moving said projectile, for the purposes set forth.

3. A carrier or projectile for the purpose

set forth, consisting of a block with inclined peripheral recesses and a head, and having flexible flanges movably secured to the body, and with overlapping side edges, said parts  
5 being combined substantially as described.

4. A carrier or projectile for a pilot-wire, having a rear rod or stem provided with a device for preventing vibration, substantially as described.

5. A hollow water and air tight plug having a reel therein and provided with means, substantially as described, for moving a projectile, said parts being combined substantially as and for the purpose set forth.

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Witnesses:

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