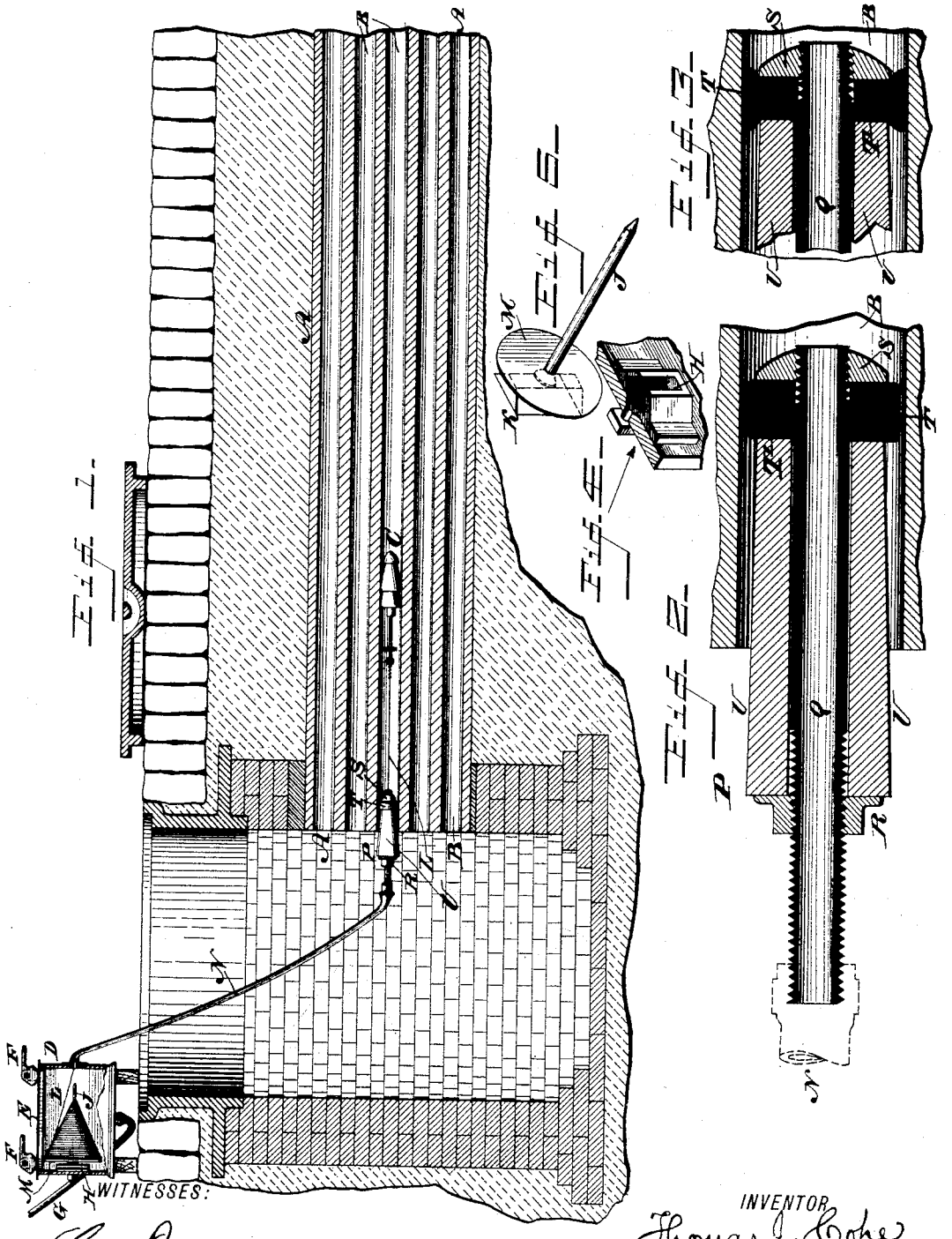
(No Model.)

T. J. COPE.

APPARATUS FOR LAYING ELECTRIC CONDUCTORS.

No. 443,823. Patented Dec. 30, 1890.



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APPARATUS FOR LAYING ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 443,823, dated December 30, 1890.

Application filed May 22, 1890. Serial No. 352,765. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. 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 Apparatus for Laying Electric Conductors in Conduits, &c., which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in apparatus for laying electric conductors or wires in conduits, &c.; and it consists, first, of an air-tight chamber, substantially as hereinafter described, intermediate of the air-pressure device and a plug in the end of the conduit; second, of a detachable pin or stud within said air-chamber for carrying the conductor; third, of adjustable and flexible connections between the source of air-pressure and the air-chamber and the latter and the plug in conduit, and, fourth, of the combination of parts hereinafter set forth.

Figure 1 represents a vertical sectional view of a conduit and an air-chamber with apparatus embodying my invention. Fig. 2 represents a central longitudinal section of the plug in end of conduit before expansion of collar. Fig. 3 represents a sectional view of conduit and plug, showing the collar of plug when expanded. Fig. 4 represents a perspective view of a portion of the wall of the air-chamber, to which the detachable pin is secured. Fig. 5 represents a perspective view of the detachable pin for holding the wire.

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

Referring to the drawings, A designates a conduit, having a series of passages B, in which the projectile C is adapted to travel. The said projectile C may be of the form shown herein and patented by me in Letters Patent No. 423,134, of date March 11, 1890, or of different form; but such construction forms no part, *per se*, of this application.

D designates an air-chamber, having a removable lid E, which is tightly secured in place by means of the cam-levers F, which are pivotally secured to the body of the chamber and bear upon the said lid, so as to hold the same in closed position. A flexible hose or pipe G connects the interior of the chamber with a pneumatic pump or other source of air-pressure.

Within the chamber D, and detachably secured to a flanged attachment H of its inner walls, is a pin or stud J, having a head K fitting in the said attachment H, so as to be held stationary while the wire L thereon is being unwound therefrom. A collar M is connected with said stud and forms a support for the wire at its largest coils. A flexible hose or pipe N, through which the wire passes, connects the air-chamber D with the conduit-plug P, which latter is formed of a pipe Q threaded on its outer surface at each end for the nuts R and S, and has on its unthreaded portion a rubber collar T and a movable piece U, as shown.

The manner of operating the device is as follows: The wire to be passed through the conduit is first wound upon the pin in the air-chamber and one end thereof passed through the flexible pipe N and plug P and connected with the projectile C, which latter is inserted in the conduit. The lid of the chamber is then secured thereon, and the plug P is placed in the end of the conduit and firmly held in the position shown in Fig. 2, while the nut R is rotated on the screw-thread, so as to force the piece U against the rubber collar T, when, owing to the nut S remaining at rest, the said collar is caused to bulge outward, as shown in Fig. 3, whereby a close and air-tight connection is effected between the plug and the walls at that end of the conduit, so that the air forced through the pipe G, the chamber D, the pipe N, and plug P will not escape at the said end of the conduit, but will bear against the rear of the projectile C and force the latter, with the wire L, through the said conduit to the other end of the said passage B.

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

1. The combination of an air-chamber, a conduit-plug having a tubular stem or pipe extending therethrough and a flexible pipe connecting said air-chamber and stem or pipe, substantially as described.

2. The combination of an air-chamber having a stud thereon, a pneumatic pump, and a conduit-plug having a tubular stem or pipe

extending therethrough and connected with said air-chamber, substantially as described.

3. An air-chamber with a detachable stud therein, having a fixed collar, a pneumatic pump, a flexible hose, and a plug having a pipe extending therethrough, said parts being combined substantially as described.

4. In an apparatus for the purpose set forth, an air-chamber having a detachable pin or stud with a fixed collar, substantially as described.

5. In an apparatus for the purpose set forth, a conduit-plug consisting of a pipe with screw-threaded ends, an elastic collar, and a movable piece on said pipe, and nuts on the said screw-threaded ends, said parts being combined substantially as described.

6. In an apparatus for the purpose named, an air-chamber having a removable lid and clamping-levers for said lid attached to the body of the chamber, substantially as described.

7. The combination of a pneumatic pump, an air-chamber having a flexible connection with said pump, a conduit-plug having a flexible connection with said chamber, a pin or stud on said chamber and adapted to hold the wound electric conductor, and a projectile connected to said wire, substantially as and for the purpose set forth.

THOMAS J. COPE.

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