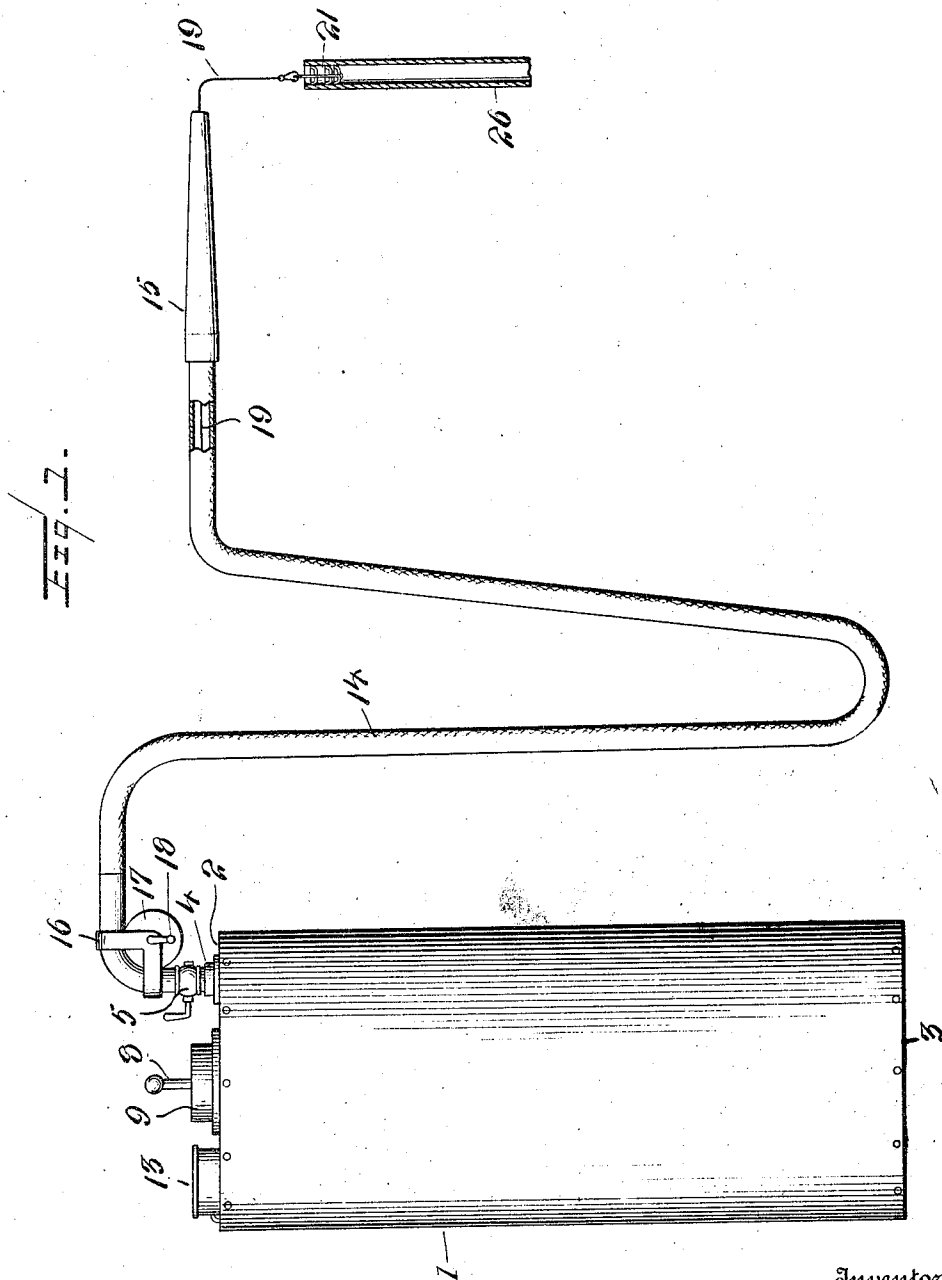


F. N. STEIGLEDER.
 LINE THREADING DEVICE.
 APPLICATION FILED MAR. 12, 1910.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.

979,899.



Witnesses
 E. R. Ruppert
 K. Allen

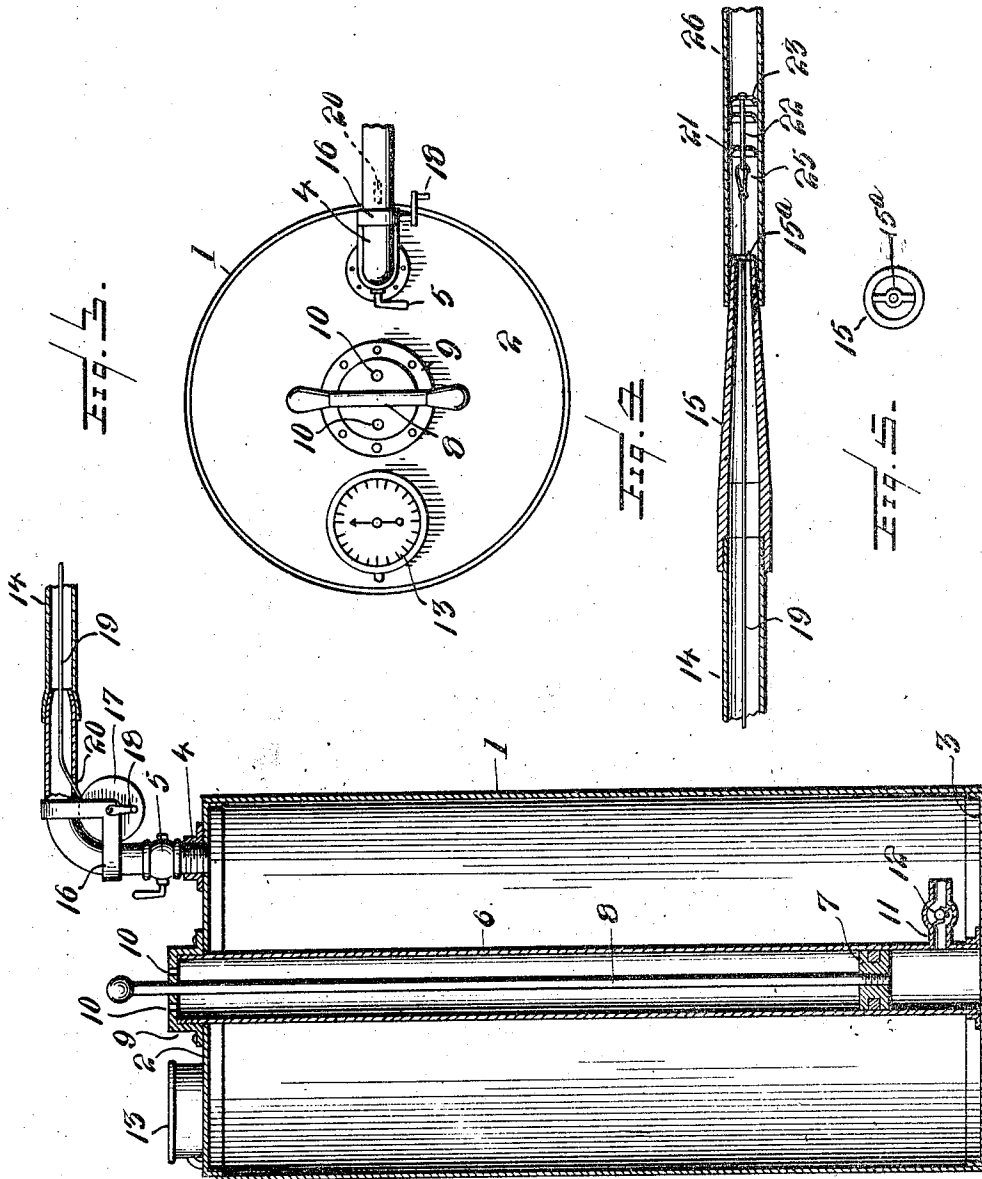
Inventor
 Frank N. Steigleder
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UNITED STATES PATENT OFFICE.

FRANK N. STEIGLEDER, OF RICHMOND, VIRGINIA.

LINE-THREADING DEVICE.

979,899.

Specification of Letters Patent.

Patented Dec. 27, 1910.

Application filed March 12, 1910. Serial No. 548,966.

To all whom it may concern:

Be it known that I, FRANK N. STEIGLEDER, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Line-Threading Devices, of which the following is a specification.

This invention relates to a device for threading a cord or line through the narrow electric wire pipes or conduits of buildings, to which cord the electric wires may be attached for drawing them through the pipes.

The object of the invention is to provide a device whereby the operation of threading the wires may be easily, quickly and conveniently accomplished and with a great saving in time and labor over the customary practice of "fishing" with metal tapes.

The invention consists of the features of construction, combination and arrangement of devices, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is an elevational view of a line threading device embodying my invention. Fig. 2 is a vertical longitudinal section through the storage tank and pump. Fig. 3 is a top plan view of the same. Fig. 4 is a sectional view, showing the nozzle and traveler applied to a conduit for use. Fig. 5 is an end view of the nozzle.

In the illustrated embodiment of my invention, I have disclosed a traveler, a flexible line connected with the traveler, and means for supplying compressed air or other fluid pressure for forcing the traveler through the pipe or conduit, and it is to be understood that within the scope of the invention the fluid pressure employed might be other than that supplied from an air compressor, such as would be produced by forming a vacuum in the pipe in advance of the traveler and utilizing the normal air pressure behind the traveler to force the same through the pipe.

Referring to the drawings, 1 designates a source of compressed air supply comprising a storage tank closed by top and bottom heads 2 and 3 and provided with a discharge outlet 4 having a controlling valve 5. Arranged centrally and vertically within said tank is an air compressor comprising a cylinder 6 having a piston 7 operating therein; the rod 8 from which extends upwardly through a cap 9 closing the upper end of

said cylinder for operation by hand or power as preferred. The cap 9 is provided with air inlet ports 10, while the lower end of the cylinder is provided with an outlet 11 controlled by a check valve 12, by which air may be forced from the cylinder to the tank and prevented from returning to the cylinder. The cylinder is further provided with a suitable gage 13, by which pressure of the compressed air therein may be determined at any time.

A preferably flexible tube 14 is connected at one end with the outlet 4 and is provided at its free end with a tapered nozzle 15, preferably formed of wood or other slightly yielding material, which nozzle is detachably connected therewith so that nozzles of different sizes may be applied to the pipe for connecting the same with different sizes of conduits.

A bracket 16 engages the pipe 14 at a point adjacent the valve 5 and holds the same normally in a desired bend or curve, and supported by said bracket immediately below the curved portion of the pipe is a drum or reel 17 having an actuating crank 17, to which reel is attached one end of a flexible cord or line 19. This cord passes from the reel into the adjacent end of the pipe 14 through a slit or opening 20 formed in said pipe, and thence extends through the pipe and nozzle, said slit or opening being of comparatively restricted size so as to avoid the escape of any material quantity of the compressed air. The cord is preferably in the nature of a stout fishing line, and the reel may be provided with an ordinary spring drag to allow the cord to reel off freely and uniformly and without regard to the amount of cord which happens to be upon the reel at any stage in the threading operation. The discharge end of the nozzle is provided with a central guide 15^a for the line, by which the line is held in a determined position and prevented from being pinched between the nozzle and conduit, when the nozzle is inserted. Connected with the free end of the line is a traveler 21, which is herein shown as formed of a laterally flexible or resilient wire stem 22 carrying one or more disks or heads 23, composed of leather or other suitable flexible material. The disks or heads are of concavo-convex form with their peripheral edges turned back slightly, so as to contact with the walls of the pipe or conduit through which the

cord is to be threaded. The edges are radially flexible or yieldable to readily accommodate themselves to and pass portions of the conduit which vary in diameter, and this capacity of the heads to yield in a radial direction in connection with the lateral flexibility of the stem or carrier 22, provides a universally flexible or yieldable traveler which is adapted to readily and easily adjust itself to pass through the various bends, angles and curves which may be formed in conduits of this character. As shown, the stem of the traveler is detachably connected with the line by an ordinary snap hook 25, by which it may be conveniently separated therefrom at any time, so that a larger or smaller sized traveler may be substituted therefor to pass through a smaller or larger conduit.

In the operation of the device, the traveler and a portion of the line are first inserted into one end of the conduit 26, and then the nozzle 15 is fitted into the end of the conduit, after which the valve 5 is opened to allow air to feed from the tank 1 through the pipe 14 and the conduit 26 behind the traveler, by which the latter will be forced or driven through said conduit and discharged at the opposite end thereof. The electric wire to be passed through the conduit may then be attached to the cord 19 and drawn through the conduit with the cord, or, if the wire should be too large or heavy to be fed in this manner, a light wire may be attached and drawn through the pipe with the cord, and the conducting wire then fastened to the feed wire and drawn therewith through the conduit. In this manner the operation of threading electric wires through conduits of any length and diameter may be quickly and conveniently performed, and with a great saving of time and labor over the customary practice of "fishing" the conduits with metal tapes. By detachably connecting the nozzle to the air supply pipe 14 and simi-

larly connecting the traveler with the line, different sizes of nozzles and travelers may be quickly attached for use in connection with different sizes of conduits. After the electric wire is threaded, it will be understood that the traveler is detached from the line, and the latter wound back through the conduit by means of the reel 17.

Having described the invention, I claim:—

1. In a line threading device, the combination of a fluid pressure supply pipe having an opening therein and provided with a discharge nozzle, a bracket mounted upon the exterior of said pipe in proximity to said opening, a reel journaled upon said bracket, a line wound upon the reel and extending through said opening into the pipe and thence through the pipe and externally through the nozzle, and a traveler connected with the free end of said line, said traveler comprising a flexible stem carrying radially flexible disks.

2. In a line threading device, the combination of a fluid pressure supply pipe having at one end an elbow-shaped inlet portion and an opening adjacent thereto and having at its opposite end a discharge nozzle, a bracket fitted upon the elbow-shaped portion of the pipe, a reel mounted upon said bracket to lie within the bend formed by the elbow-shaped portion, a line wound upon the reel and extending therefrom through said opening into the pipe and thence exteriorly of the pipe through the nozzle, and a traveler detachably connected with the free end of the line, said traveler comprising a flexible stem carrying a series of concavo-convex radially flexible disks.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK N. STEIGLEDER.

Witnesses:

ROBINSON NELSON,
C. VALVIN ROBINSON.