

(No Model.)

G. L. BARNARD.
ELECTRIC SIGNALING DEVICE FOR FIREMEN.

No. 482,778.

Patented Sept. 20, 1892.

Fig. 1.

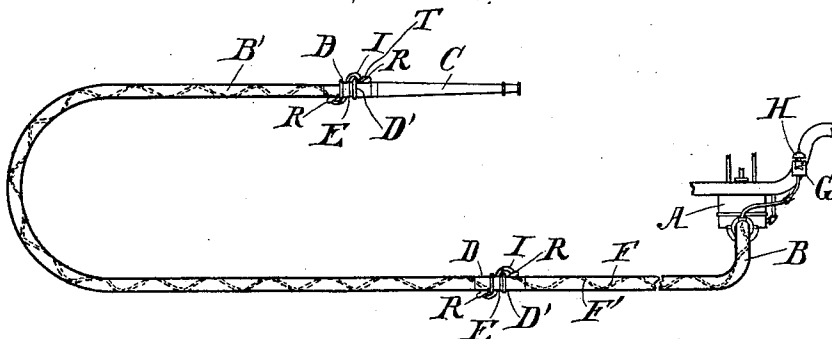


Fig. 2.

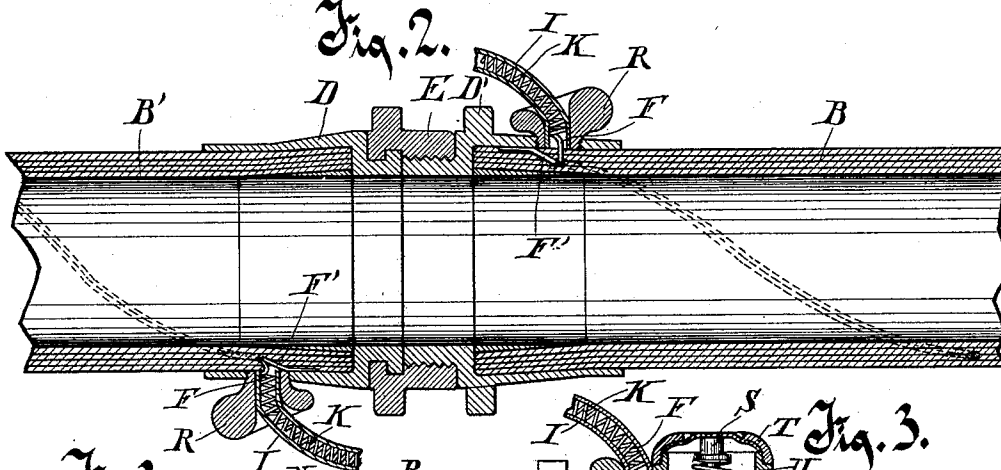


Fig. 4.

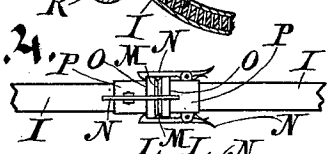


Fig. 5.

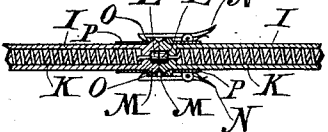
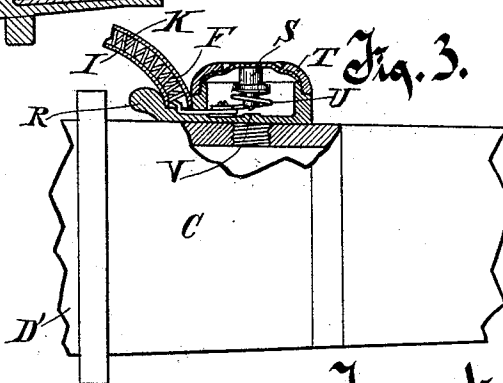


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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ELECTRIC SIGNALING DEVICE FOR FIREMEN.

SPECIFICATION forming part of Letters Patent No. 482,778, dated September 20, 1892.

Application filed July 24, 1891. Serial No. 400,525. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. BARNARD, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Electric Signaling Devices for Firemen, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 The object of my invention is to provide devices and means to enable a pipeman having charge of the nozzle of a hose such as is used at fires in connection with a fire-engine while at a distance from the engine to signal
15 to the engineer for more water or less pressure or to send help or a tool or more hose, a different nozzle, or anything wanted by the pipeman.

20 In the drawings, Figure 1 is a fragment of a steam fire-engine with a hose attached thereto in which my improved devices are embodied. Fig. 2 is a central longitudinal section of a fragment of hose including the couplings of two sections of the hose, showing
25 my improved devices therewith and the manner of constructing and arranging them. Fig. 3 is a section of the nozzle of the pipe with that particular part of my device which is adapted for completing the electric circuit.
30 Fig. 4 is a view of the coupling used for connecting one line of the wire forming the electric circuit in my improved device. Fig. 5 is a longitudinal section of the fragment of the device shown in Fig. 4.

35 A is a fragment of a fire-engine to which a section of the hose B is connected.

C is a nozzle connected to the outer end of a section B' of the hose. The sections of the hose are connected to the engine and to the
40 nozzle and are coupled together in any manner that is common for such purpose.

The method of connecting the sections of the hose together shown by me consists of a metal coupling in two parts D D', secured,
45 respectively, to the ends of the hose, one part, as D', being provided with a peripheral screw-thread and the other part D being provided with a loose screw-threaded collar E, adapted to turn on the part D' and couple the parts
50 of the hose together water-tight.

My improved devices for electric signaling from the pipeman in charge of the nozzle to

the engineer in charge of the engine consist of an insulated electric wire F, running from the engine A along the hose to the nozzle 55 when the sections of hose are connected together and the nozzle is attached thereto and a return electric wire F' therefrom to the engine. A small electric battery G, located, preferably, on the engine, is placed in the circuit, 60 and a suitable electric bell H, also secured to the engine, is in the circuit, the proper make-and-break mechanism being arranged therein for operating the bell on the completion otherwise of the electric circuit. The wires F and 65 F' are properly insulated by covering them with rubber or silk or other suitable insulating material, and for properly protecting them and extending them throughout the length of each section of the hose the wires are in- 70 serted in the hose, preferably run around the hose spirally from one end to the other of each section in the wall of the hose, being preferably inserted between the layers of the hose, where it is constructed in layers, as it 75 commonly is.

The advantage of running the wire through the walls of the hose spirally consists in the fact that in this form said wire is not likely to be broken or damaged by reason of the 80 constant bending to which the hose is subjected, especially when wound upon a reel. If the wire were embedded in a straight line, it would soon become broken or otherwise injured from the cause just stated. At the 85 ends of each section of the hose one of these wires, as F', is placed in contact and in electric connection with the part of the coupling D or D' at that end of the hose, so that when the two ends of the hose are coupled together 90 the electric circuit of that line of the wire is complete. The other line of wire, as F, is run through an aperture in the metal coupling, and the projecting portion is provided with a flexible covering for its protection and 95 further insulation, preferably in the form of a tube I, which may be of rubber or other suitable material. The wire is preferably coiled in spiral form, as at K, in this tubular covering I and terminates in a metal head or 100 disk L, located in and surrounded by a suitable insulating material, preferably a rubber end M of the tube I. When the hose is coupled together, the extremities of this wire F

are brought together, the disk L being brought into contact, as shown in Fig. 5, by the coupling together of the ends M of the inclosing flexible tubes I. These tubes I are secured to each other by latches N, pivoted in suitable manner on the tubes I, conveniently in metal sleeves about the tubes, which latches engage annular shoulders O on the sleeves P, in which they are pivoted, the latches being arranged to engage the shoulder on the extremity of the abutting tube I. The ends of the wire F may thus be coupled together, forming an electric circuit past the ends of the hose, at the same time that the hose is coupled together, completing the electric circuit of the other wire F'. An annular guard R is placed about the wire F where it passes through the aperture in the coupling D or D' to protect it from injury at that point. As the wire is fixed relative to the hose at the point when it leaves the section, it would be liable in the rough usage to which it is subjected at fires to be broken or cut off by being struck at this relatively fixed and unyielding part close to the hose, and I therefore protect this part of the wire by the annular guard R, which is carried out from the hose a sufficient distance therefor, the more distant and flexible part of the wire being capable, if struck, of readily yielding or escaping the force of the blow. The flaring and rounded outer ends of the annular guards also serve to obviate any sharp bend of the wire that would be liable to break it.

The methods of connecting the wires F and F' to the engine and to the nozzle, respectively, are substantially the same as used to connect the ends of the wires where the hose is coupled together. At the nozzle the wire F terminates in a movable push-button S, movable in a suitable case T, which button is held by a suitable spring U, normally out of contact with a metal plate V, fastened to and in electric contact with the metal nozzle, with

which the other wire F' is put in electric contact by the coupling of the metal nozzle onto the coupling on the end of the hose. By pushing this button S, putting it in contact with the plate V, the electric circuit is completed between the wire F and F' and the bell H is actuated, whereby a signal or a series of signals is given by the ringing of the bell. In this manner signals as agreed upon may be given by the pipeman to the engineer for the purposes hereinbefore mentioned or for others, as agreed upon.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of hose-sections, registering metallic couplings secured to the contiguous ends of said sections, flexible tubings projecting from the registering couplings, said tubings provided with enlarged insulating-heads, means for detachably connecting the ends of said tubings when the same are brought into juxtaposition, spirally-arranged wires embedded in each section of hose leading to the metallic couplings, spirally-wound embedded wires in each section passing through the metallic couplings into the flexible tubings, said wires being also spirally wound therein and provided with metallic disks adapted to be brought into contact when the ends of the tubings are secured together and to be surrounded by the insulating-heads of said tubings, and annular guards for the wires, extending out from the hose-couplings, said guards adapted to protect the wires at points close to the hose and provided with flaring mouths to permit free bending at points distant from the hose, substantially as set forth.

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

GEORGE L. BARNARD.

Witnesses:

C. T. BENEDICT,
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