

No. 651,326.

Patented June 5, 1900.

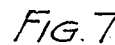
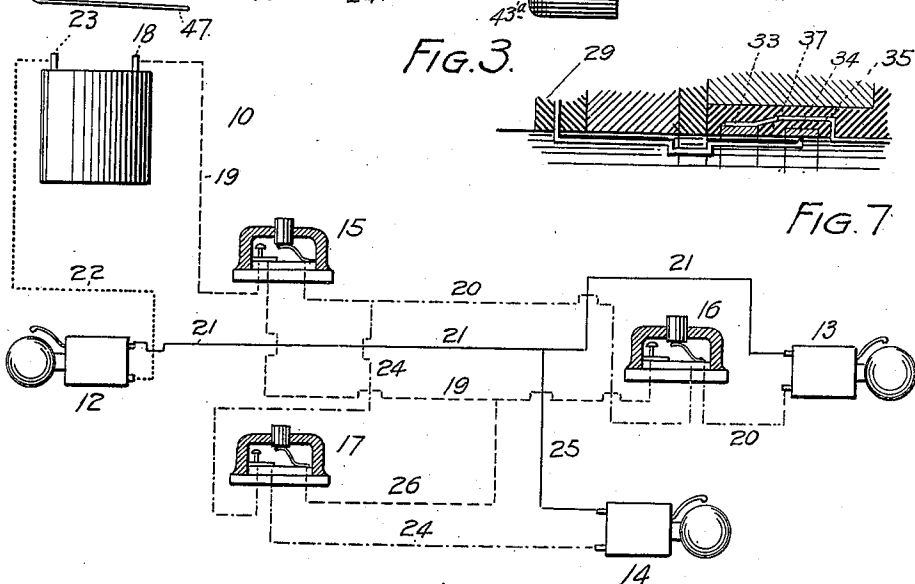
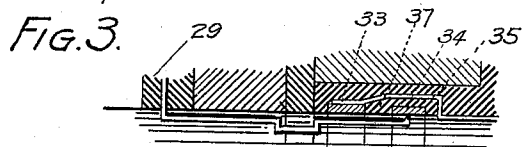
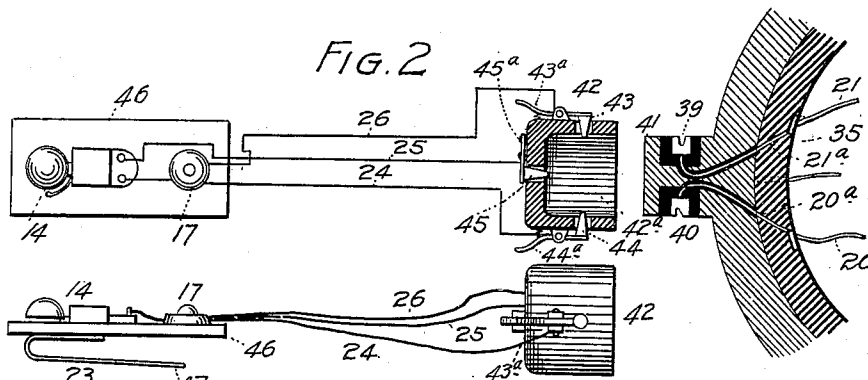
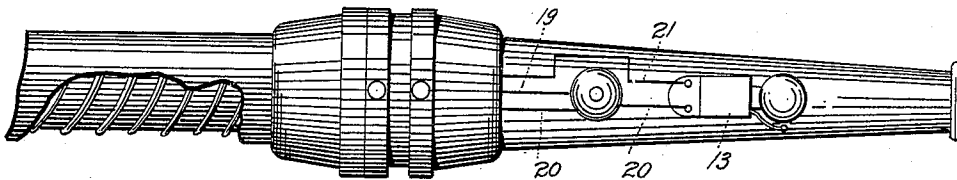
W. FOWLER.

ELECTRICAL HOSE SIGNALING APPARATUS.

(Application filed Mar. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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No. 651,326.

Patented June 5, 1900.

W. FOWLER.
ELECTRICAL HOSE SIGNALING APPARATUS.

(Application filed Mar. 18, 1900.)

(No Model.)

2 Sheets—Sheet 2.

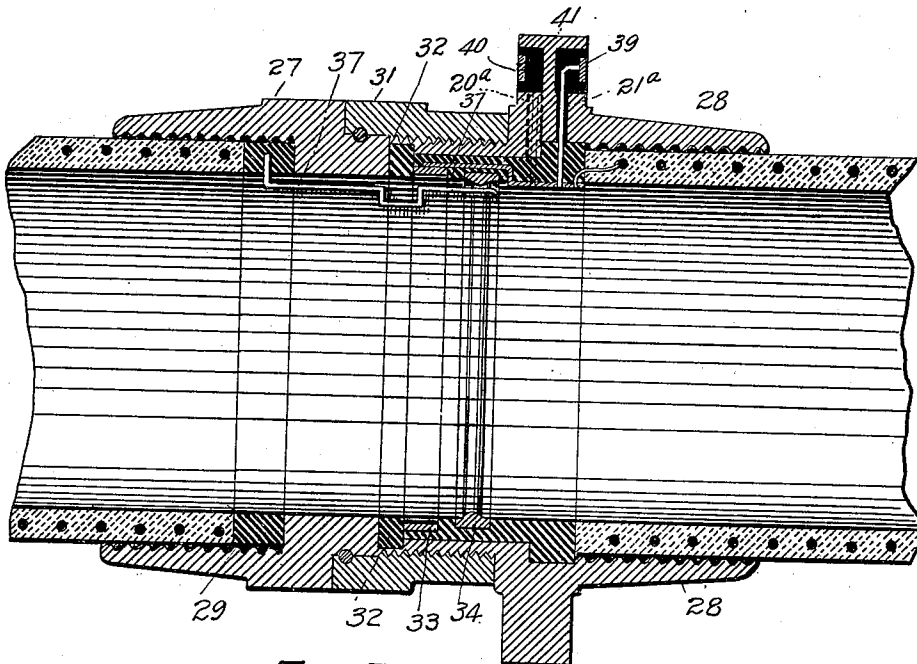


FIG. 5.

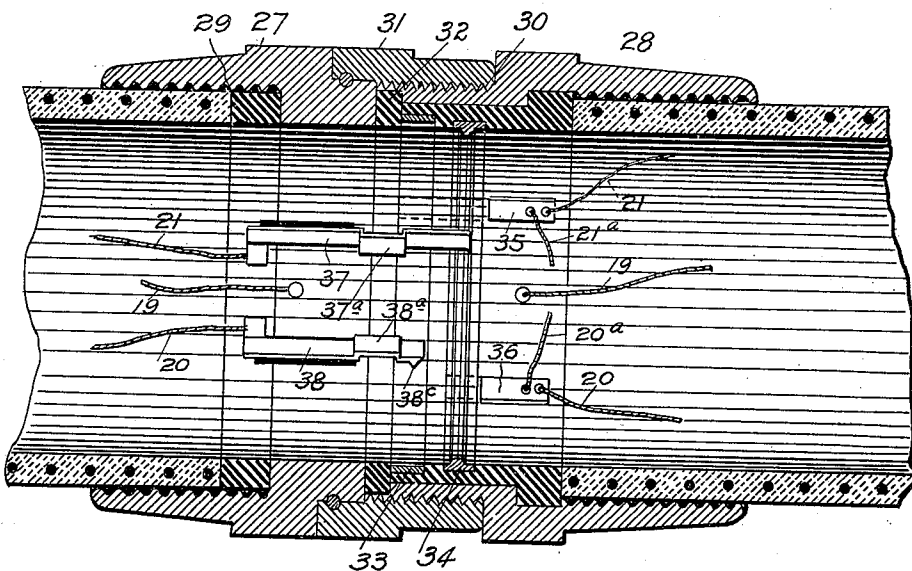


FIG. 6

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WILLIAM FOWLER, OF COLORADO SPRINGS, COLORADO.

ELECTRICAL HOSE-SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 651,326, dated June 5, 1900.

Application filed March 13, 1900. Serial No. 8,516. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FOWLER, a citizen of the United States of America, residing at Colorado Springs, in the county of El Paso, and State of Colorado, have invented certain new and useful Improvements in Electrical Hose-Signaling Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in electrical hose-signaling apparatus of the class set forth in my previous patents numbered 470,752, 486,807, 539,000, and 539,017 and dated March 15, 1892, November 22, 1892, and May 7, 1895, respectively.

My present invention relates more especially to the construction for completing the circuit through the hose-coupling, whereby the attachment may be applied to the ordinary couplings now in use and whereby the diameter of the waterway at the couplings is not materially diminished.

The invention will now be described in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 shows the nozzle extremity of the hose with my improvement applied. Fig. 2 is a sectional view illustrating the manner of placing the third bell in the circuit at any coupling. Fig. 3 is a side elevation of the bell and a contact-key. Fig. 4 is a diagrammatic view illustrating the three-bell circuit. Figs. 5 and 6 are sections taken through the coupling, illustrating the circuit-making devices, the parts being shown on a larger scale. Fig. 7 is a sectional view illustrating a slightly-modified form of construction.

Similar reference characters indicating corresponding parts in the views, let the numeral 10 designate a battery or other suitable source of electricity located on the engine at the fire-hydrant or other suitable point, 12 an electrical bell at the same end of the line, 13 another bell at the opposite or

nozzle end of the hose-line, and 14 the third bell, intermediately located with reference to the respective bells, which are so connected in the battery-circuit that the pressing of any one of the push-buttons rings all the bells simultaneously.

The manner of connecting the bells in the circuit is as follows, (see Fig. 4:) From one pole 18 of the battery leads a wire 19 to the button 15 and thence to the button 16, where it terminates. From button 15 leads another wire 20 to the button 16 and thence to the bell 13, where it may be said to terminate. From the bell 13 leads another wire 21 to the bell 12, while from said last-named bell still another wire 22 leads to the other pole 23 of the battery. From the wire 20 leads a branch wire 24 to the button 17 and thence to the bell 14, from which leads another wire 25 to the wire 21. From the wire 19 leads a wire 26 to the button 17, where it terminates. From this arrangement of the bells in the circuit it will be observed that by pressing any one of the buttons 15, 16, or 17 all the bells 12, 13, and 14 are sounded in unison. If button 15 is pushed, the current may be said to pass from pole 18 of the battery, through wires 19 and 20, to the bell 13, and thence through the wire 21 to the bell 12 and through the wire 22 to the other pole of the battery, and from the wire 20, through wire 24, to the bell 14, and thence through the wire 25 to wire 21. If button 16 is pressed, the current passes from pole 18 of the battery, via wires 19 and 20, to bell 13, thence through wire 21 to bell 12 and through wire 22 to pole 23 of the battery, while from wire 19 the current passes to button 16, back through wire 20 to its junction with wire 24, and thence through said last-named wire to bell 14, via wire 25 to wire 21, bell 12, and wire 22, to pole 23. When button 17 is pressed, the current passes from pole 18, via wires 19 26 24, to bell 14, and thence via wires 25 and 21 to bell 12, and thence from wire 22 to pole 23; also, from wire 19, through wire 26, to button 17 and back through wire 24 to wire 20, thence through button 16 to bell 13, and thence to wire 21, completing the circuit through bell 12 and wire 22.

The wires 19, 20, and 21 are attached to the line of hose in any suitable manner, being

preferably concealed within the layers of the hose material and wound spirally therearound, as shown in Fig. 1. To the adjacent extremities of any two hose-sections are secured the metallic coupling-sections 27 and 28, adapted to be screwed together. Within these metallic coupling-sections 27 and 28 are secured the insulating-rings 29 and 30, respectively.

The coupling part 27 is provided with the ordinary swivel-ring 31. The coupling part 28 carries the ordinary rubber gasket 32. To the insulating-ring 30 of the part 28 are attached two metal rings 33 and 34, respectively. These rings are insulated from the coupling part 28 and from each other. Two metal contacts 35 and 36 are also attached to the insulating-ring 30. These contacts are insulated from each other and connected with the metal rings 33 and 34, respectively. From the contacts 35 and 36 lead circuit-wires 20 and 21, respectively, while the wire 19 is connected with the metal part 28 of the coupling. These wires 19, 20, and 21 extend the entire length of the hose-section with which the coupling part 28 is connected.

To the insulating-ring 29 of the opposite coupling part 27 are attached two metal springs 37 and 38, which are insulated from the coupling part 27 and from each other. When the parts 27 and 28 are connected to form the coupling, the springs 37 and 38 engage the rings 34 and 33, respectively, and make the wires on opposite sides of the coupling virtually continuous electrically. Hence the wires connected with the contacts 37 and 38 are given the same reference characters—namely, 21 and 20—as those connected with the contacts 35 and 36. The third wire, connected with the coupling part 27, is also designated by the reference character 19, as the current passes from one of these wires 19 to the other when the coupling parts are connected, thus making them also electrically continuous. The springs 37 and 38 are provided with bends 37^a and 38^a to permit the interior swelling of the rubber gasket circumferentially when the parts are connected without interfering with the contact-springs. In the construction shown in Figs. 5 and 6 the inner surface of the metal ring 33 is depressed or located sufficiently beyond the inner surface of the insulating-ring 30 to prevent the spring 37 from engaging this spring during the operation of coupling, the spring 38 being provided with a lug 38^c of sufficient length to engage the ring 33 when the parts are assembled. From the contacts 35 and 36 also lead wires 21^a and 20^a, respectively, to contacts 39 and 40, mounted on the horn 41 of the metal coupling part 28. These contacts 39 and 40 are insulated from the horn 41 and from each other. The horn is formed integral with the metal coupling part.

A party wishing to signal either end of the line from an intermediate coupling-point carries a key 42, provided with metal contacts

43, 44, and 45. The contacts 43 and 44 are connected with spring-held levers 43^a and 44^a, respectively. The contact 45 is secured to a yielding metal part 45^a, attached to the key. The levers 43 and 44 are fulcrumed on the body of the key, which is composed of insulating material, whereby the contacts are insulated from each other. This key is provided with a socket 42^a, in which the horn 41 is adapted to fit, whereby the contacts 43, 44, and 45 are made to engage the parts 39, 40, and 41, respectively. The lever-contacts 43 and 44 perform the function of locking-dogs when the key is applied to the horn 41, whereby the key is held securely in place. To release the key, levers 43^a and 44^a are pressed inwardly toward the body of the key. From the contacts 43, 44, and 45 lead the wires 26, 24, and 25, respectively. The wire 26 leads to a push-button 17, the wire 24 to the same push-button and thence to the bell, and the wire 25 directly to the bell. (See Fig. 2.) Hence when the key 42 is applied to the horn 41 and the push-button 17 pressed the bell 14 will be placed in the circuit. The bells 12 and 13 will also be simultaneously rung by virtue of the circuit connections shown in Fig. 4 and heretofore explained. The bell 14 and the push-button 17 are mounted on a suitable base 46, provided with a hook 47, whereby the button and bell may be conveniently carried by the fireman by attaching it to the belt. In the construction shown in Fig. 7 the inner surface of the contact-ring 33 is flush with the corresponding surface of the insulating-ring.

The insulating-rings 29 and 30, the metal contacts 35 and 36, and the springs 37 and 38 are preferably secured in place by vulcanization.

Having thus described my invention, what I claim is—

1. In a hose-signaling apparatus, the combination with two coupling members, of two contact-rings carried by one member and located in different cross-sectional planes, the said rings being insulated from each other and exposed on the inner surface of the coupling, and two springs of unequal length mounted on the other coupling member and adapted to respectively engage the contact-rings of the first-named member when the members are connected, the two springs being insulated from each other.

2. In a hose-signaling apparatus, the combination with the two coupling members, of insulating-rings respectively located in the said members, two separated contact-rings mounted on the insulating-ring of one member and exposed on the inner surface of the coupling, and two contact-springs of unequal length attached to the insulating-ring of the other coupling member and adapted to engage the contact-rings of the first-named member, and circuit-wires mounted on the hose and connected with the springs and contact-rings.

3. The combination with the hose-coupling members, one of which is provided with a rubber gasket, of two contact-springs mounted on the gasket member of the coupling and having bends located adjacent the gasket to permit expansion of the latter, and two contact-rings mounted on the other coupling member and adapted to respectively engage the contact-springs of the opposite member.

4. The combination with the coupling members, of two metal rings located in one coupling member in different cross-sectional planes, said rings being insulated from the coupling member and from each other, two metal contacts also located in the same coupling member and connected respectively with the said rings, circuit-wires connected with said contacts, and two contact-springs of unequal length located in the opposite coupling member, said springs being insulated from the coupling part and from each other and adapted to respectively engage the metal rings of the first-named member.

5. The combination with the coupling members, of two metal rings located in one coupling member in different cross-sectional planes, said rings being insulated from the coupling member and from each other, two metal contacts also located in the same coupling member and connected respectively with the said rings, circuit-wires connected with said contacts, two contact-springs of unequal length located in the opposite coupling member, said springs being insulated from the coupling part and from each other and adapted

ed to respectively engage the metal rings of the first-named member, and circuit-wires respectively connected with the coupling members.

6. The combination with the coupling members and three circuit-wires mounted on the hose, of means mounted on said coupling members for making two of said wires electrically continuous at the coupling when its members are assembled, the other wire of each hose-section being directly connected with the metal part of the coupling member, two metal contacts mounted on the horn of one of the coupling members, said contacts being insulated from the coupling member and from each other, wires respectively leading from the coupling circuit-closing means of the two wires, to the said contacts on the horn, said wires being insulated from the metal parts of the coupling, a key adapted to engage the horn of the coupling member, and provided with contacts adapted to respectively engage the contacts of the horn, spring-held levers connected with the key-contacts, whereby they perform the function of locking-dogs retaining the key in place, the key being also provided with a third contact which engages the metal part of the horn.

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

WILLIAM FOWLER.

Witnesses:

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GRACE MYTINGER.