No. 693,092. Patented Feb. 11, 1902.

G. G. WEITZ.

ELECTRIC HOSE SIGNAL SYSTEM.

(Application filed July 19, 1901.)

(No Model.) 3 Sheets—Sheet 1.

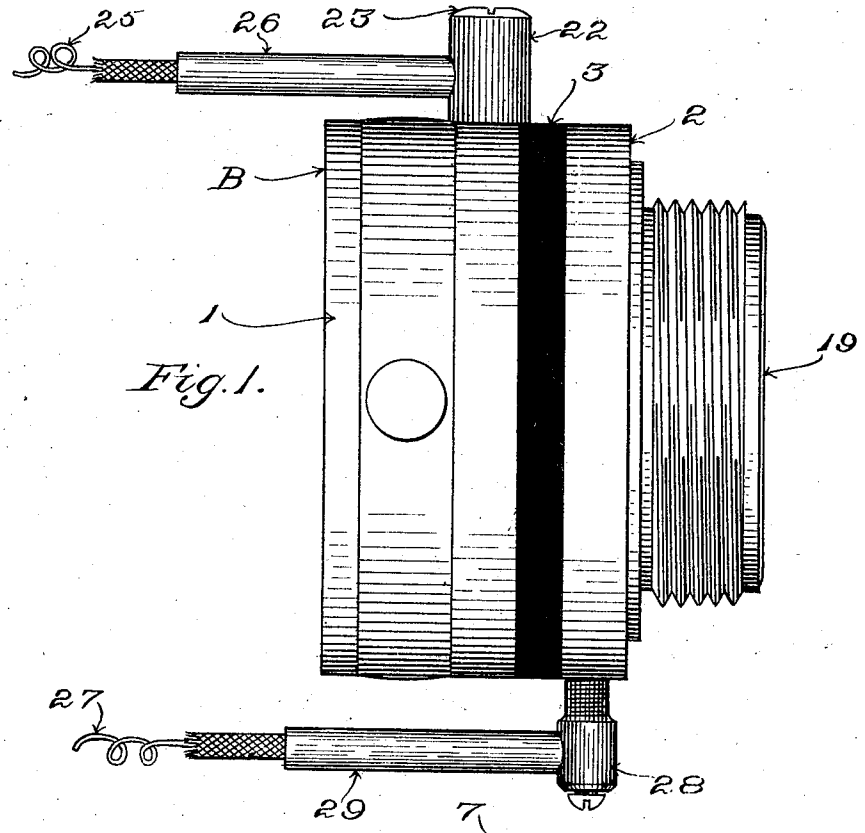



Fig. 1.

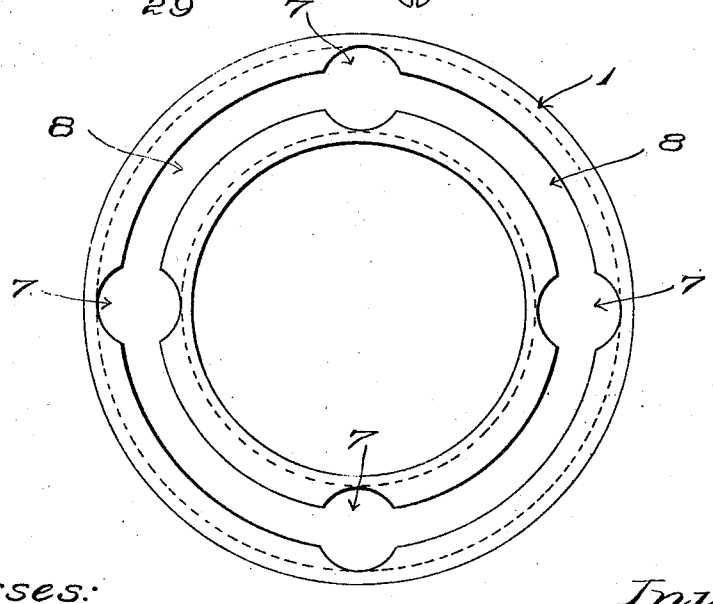



Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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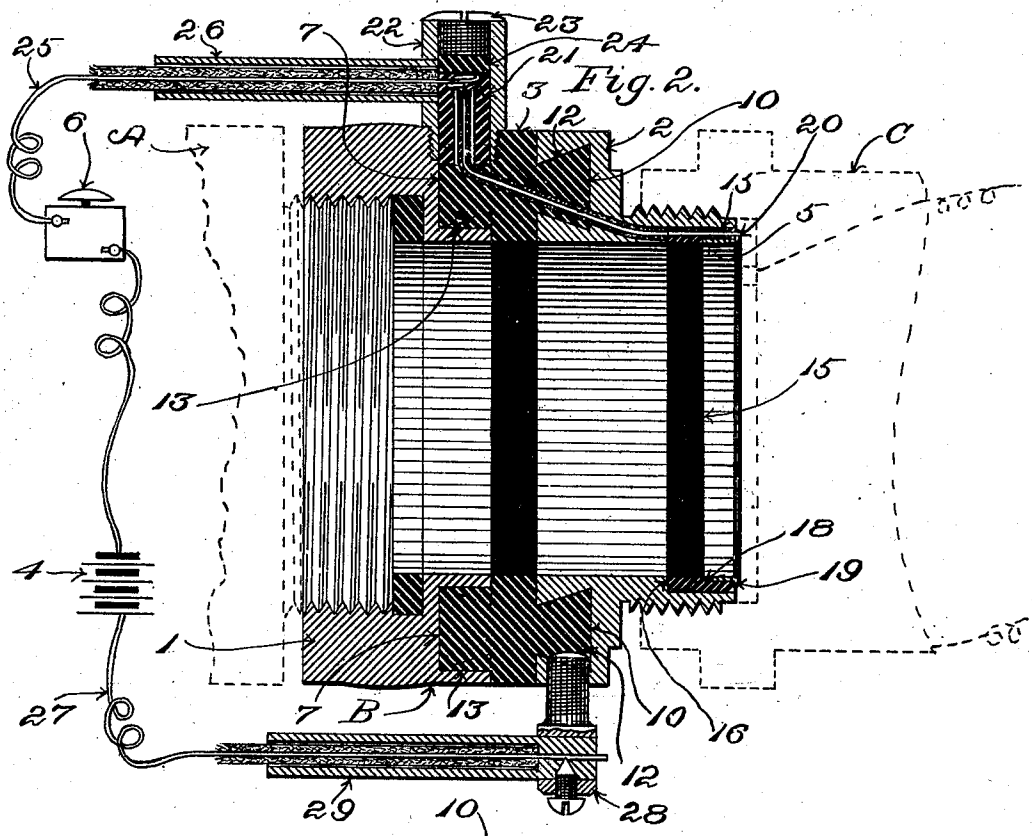



Fig. 2.

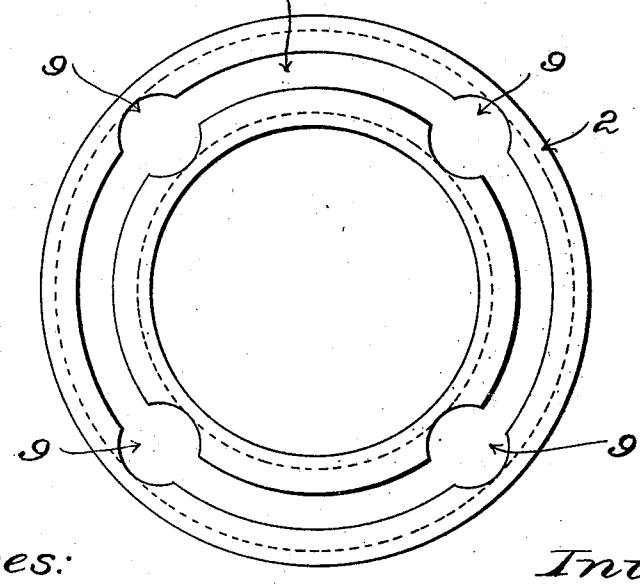



Fig. 4.

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(No Model.) 3 Sheets—Sheet 3.

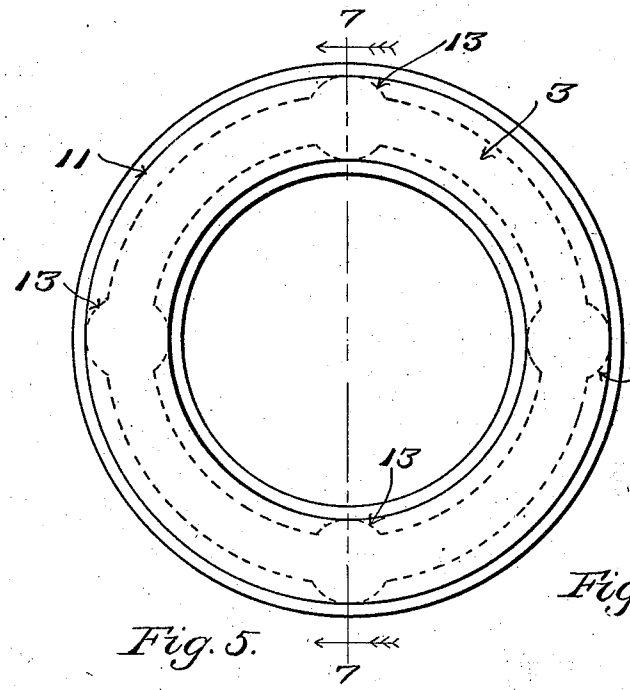



Fig. 5.

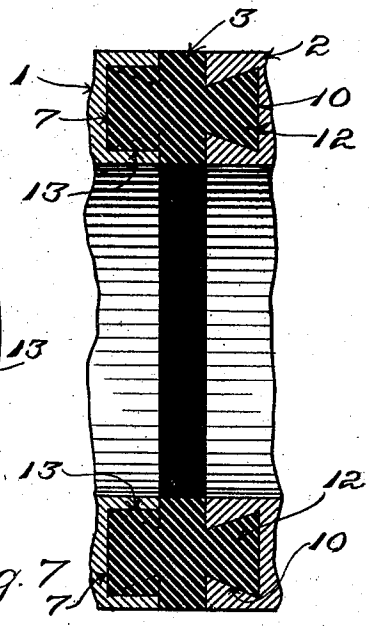



Fig. 7.

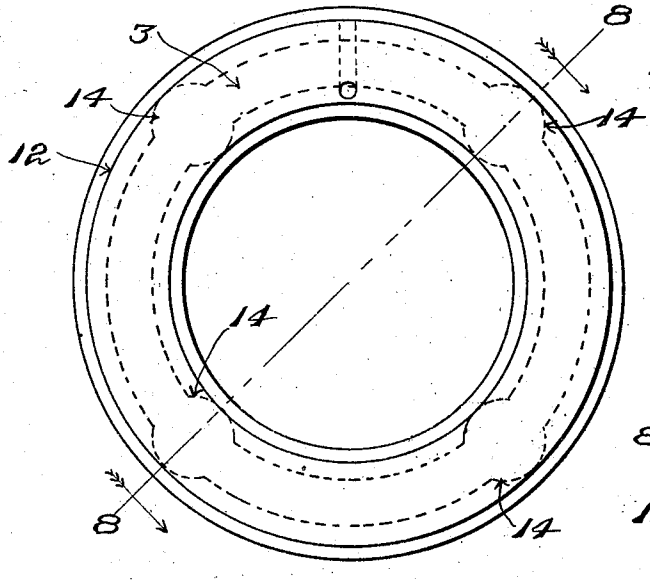



Fig. 6.

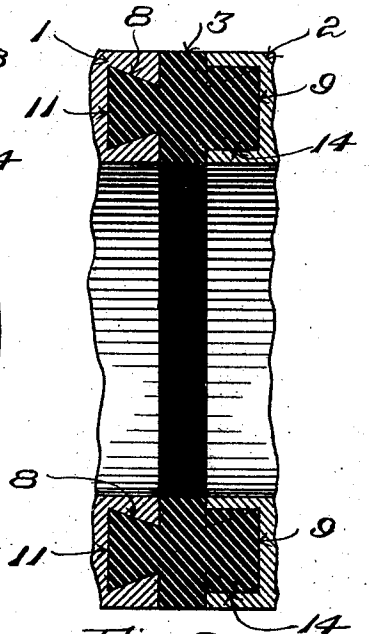



Fig. 8.

Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

GEORGE G. WEITZ, OF MEDFORD, MASSACHUSETTS, ASSIGNOR TO HIMSELF, FRANKLIN K. YOUNG, AND MICHAEL P. CURRAN, TRUSTEES, OF BOSTON, MASSACHUSETTS.

## ELECTRIC HOSE-SIGNAL SYSTEM.

SPECIFICATION forming part of Letters Patent No. 693,092, dated February 11, 1902.

Application filed July 19, 1901. Serial No. 68,935. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE G. WEITZ, a citizen of the United States, and a resident of Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electric Hose-Signal Systems, of which the following is a specification.

This invention relates to an electric hose-signaling system; and has for its object to include in the circuit the part of the engine-coupling with which the terminals are connected without including the engine in said circuit.

The invention will now be fully described by reference to the accompanying drawings, and the novel features thereof will be particularly pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a plan of a coupling embodying this invention. Fig. 2 is a longitudinal central section of Fig. 1 and illustrating also in diagram a loop of the circuit including the battery and signal and a portion of the engine and of the hose-coupling. Fig. 3 is an inside end view of the shell which connects with the engine. Fig. 4 is an inside end view of the shell which connects with the hose-coupling. Fig. 5 is an end view of the insulating-joint looking from the left of Fig. 2. Fig. 6 is an end view of the insulating-joint looking from the right of Fig. 2. Fig. 7 is a cross-section on line 7 7 of Fig. 5. Fig. 8 is a cross-section on line 8 8 of Fig. 6.

Referring now to the drawings, especially to Fig. 2, A represents a fire-engine, B the coupling connected with the engine, and C the coupling on the hose which connects it with the coupling B. The engine A and the hose-coupling C are shown only in diagram, as the particular construction of those members forms no part of the present invention. The coupling B comprises, essentially, two tubular shells 1 2, united by an insulating-ring 3, as will be more particularly explained hereinafter. The shells 1 and 2 are preferably made of brass; but any suitable material may be employed, it being essential that the shell 2 be a conductor of electricity, while shell 1 is not essentially a conductor. Preferably the shell 1 is formed with an internal thread by which the coupling is secured to the engine A, and the shell 2 is formed with an external thread to receive the swivel on the end of the hose-coupling C. Included in the electric circuit is a line running from shell 2 to the battery 4 and a line from said battery around through the insulating-joint 3 and shell 2 to an insulated contact-ring 5 in the end of shell 2. Included in the line is also a bell or other electric signal 6.

When the hose is connected with the coupling B, the contact-ring 5 and shell 2, respectively, make contact with lines leading through the hose to the nozzle, where a circuit-closer of any suitable kind is located, by means of which the hoseman may give the signal. There are well-known methods by which electric connection is made along the hose to the circuit-closer, and as these connections form no part of the present invention illustration is deemed unnecessary.

The coupling B will now be particularly described. The form of construction by which the shells are united to the insulating ring-joint is adapted to resist great longitudinal strain and also great torsional strain, which tends to twist the coupling when the hose-coupling is screwed on. The shell 1, which engages with the engine, is formed with a number of endwise recesses 7 in the inner end and with a dovetail groove 8, connecting these recesses. Shell 2, which engages with the hose, is also formed with endwise recesses 9 and a dovetail groove 10, but the recesses in the two shells are arranged so that they do not come opposite each other. The joint 3, which connects the two shells, consists of a ring of vulcanized rubber or other insulating material having dovetail wings 11 12, which enter the dovetail grooves 8 10 in the shells, and having bosses 13 14, which enter the recesses 7 8 in the shells. The dovetail form of the wings and grooves resists the tendency of endwise strain to pull the shells apart, and the bosses 13 14, filling the recesses 7 8, resist the tendency to rotary action of either shell upon the insulating-joint. The outer end of shell 2 is formed with an enlarged interior diameter to receive an insulating-ring 15, which abuts up against the shoulder 16 inside the shell and extends out to the end of the shell. The outer portion of insulating-ring 15 is formed with an enlarged

interior diameter to receive a contact-ring 5, which extends part way inward of the length of insulating-ring 15 and abuts against shoulder 18, so that when the parts are assembled the inside surface of the coupling will be smooth, with flush joints. The contact-ring is formed with a flange 19, which laps onto the end of insulating-ring 15, but without extending entirely over it, as the ring 5 must not contact with shell 2. Connected with the flange 19 of the contact-ring 5 is a wire 20, which leads backward through a passage in the insulating-ring 15, shell 2, and insulating-joint 3 into an insulated cup 21, preferably of rubber, held in place by a metal cup 22, screwed into the side of the coupling. The wire should be covered or otherwise insulated in its passage. The line leads out of the cup 21 to the signal 6, whose wire leads to the battery 4. The wire 25, which leads out of the cup 21 to the signal, may be continuous with the wire 20; but preferably they are two different wires, each formed into a coil at the connecting ends, the coils resting in a recess in the top of the cup 21 and being held in contact with each other by pressure of a rubber washer 24, which is applied by means of screw-cap 23. The wire 25 as it leaves the cup 21 is preferably supported in a metal tube 26 until it is carried past the coupling. Wire 27, which leads from the ground-pole of the battery, is connected with the ground-post 28, screwed into the side of shell 2, making electrical contact therewith. This wire is preferably supported at the side of the coupling in a tube 29.

What I claim is—

1. In an electric hose-signal system, a coupling for connecting the hose to the engine comprising two tubular shells and a joint of insulating material which unites said shells and insulates them from each other, one of the said shells being adapted for connection with an engine and the other shell being adapted for connection with the hose, substantially as described.

2. In an electric hose-signal system, a coupling for connecting the hose to the engine comprising two tubular shells and a joint of insulating material which unites said shells and insulates them from each other, one of the said shells being adapted for connection with an engine, the other shell being adapted for connection with the hose, a flanged insulating-ring in the end of said second shell and a contact-ring which extends part way of the length of said insulating-ring and lying flush with the interior of the coupling and having a flange on the outer end which partially laps over the end of said insulating-ring, substantially as described.

3. In an electric hose-signal system, a coupling for connecting the hose to the engine comprising two tubular shells and an insulating-joint which unites the two shells and insulates them from each other, one of said two shells being adapted for connection with an engine, and the other being adapted for connection with the hose, a contact-ring in the mouth of said second shell and an insulating-ring between said contact-ring and said shell, a wire leading from said contact-ring by an insulated passage through said second shell and through said insulating-joint to an electric signal, and another wire electrically connected with said second shell and leading therefrom through a battery to said signal, substantially as described.

4. In an electric hose-signal system, a coupling for connecting the hose to the engine comprising two tubular shells, an insulating-joint which unites the two shells, each of said shells having formed in their inner ends a dovetail groove and recesses in said grooves, said insulating-joint being in form of a ring with dovetail wings on both sides which fit in said grooves and having also bosses which fit in said recesses, substantially as described.

5. In an electric hose-signal system, a coupling for connecting the hose to the engine, comprising two tubular shells, an insulating-joint which unites the two shells, each of said shells having formed in their inner ends a dovetail groove and recesses in said grooves, said insulating-joint being in form of a ring with dovetail wings which fit in said grooves and having also bosses which fit in said recesses, an insulating-ring set into the hose-connecting end of said coupling and a contact-ring set into said insulating-ring and insulated thereby from the shell of said coupling, an insulated passage leading from said contact-ring through the shell on the hose-connecting end of said coupling and through the said insulating-joint, an electric battery, an electric line leading from said hose-connecting end of said coupling to said battery and an electric line leading from said contact-ring through said insulated passage to said battery, and an electric signal in said line, substantially as described.

6. In an electric hose-signal system, a coupling for connecting the hose to the engine comprising two tubular shells and an insulating-joint which unites the two shells, each of said shells having formed in their inner ends a dovetail groove and recesses in said grooves, said insulating-joint being in form of a ring with dovetail wings which fit in said grooves and having also bosses which fit in said recesses, a contact-ring set into the hose-connecting end of said coupling and insulated from said second shell, an insulated tubular passage leading from said contact-ring through said shell and through said insulating-joint, a tubular cup set into the side of said coupling and having therein an insulating-tube connecting with said passage where it leads from the insulating-joint, an electric wire leading from said contact-ring through said psssage and into said insulating-tube, another electric wire leading out of said cup and in contact with said first wire, and an insulated pressure device by which said wires

are held in contact with each other, substantially as described.

7. In an electric hose-signaling system, a coupling for connecting the hose to the engine, terminals connected with said coupling and wires leading therefrom to the battery and signal, and tubes connected with said coupling through which the said wires pass to protect and support them, substantially as described.

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

GEORGE G. WEITZ.

Witnesses:

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