Sept. 10, 1935. R. J. NOSCHANG 2,014,288

ELECTRICAL COUPLING, SWIVEL RING AND SLEEVE CONSTRUCTION

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Fig. 1.

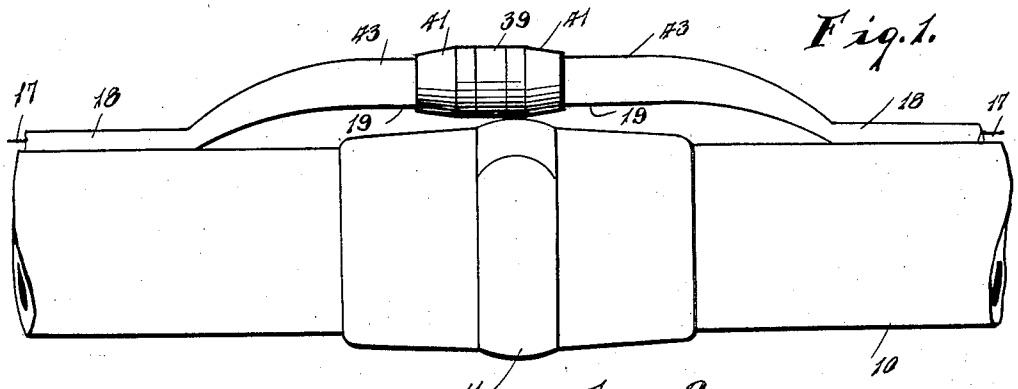


Fig. 2.

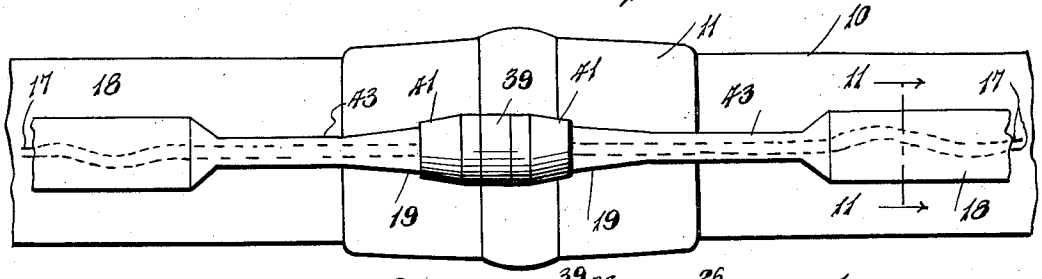


Fig. 3.

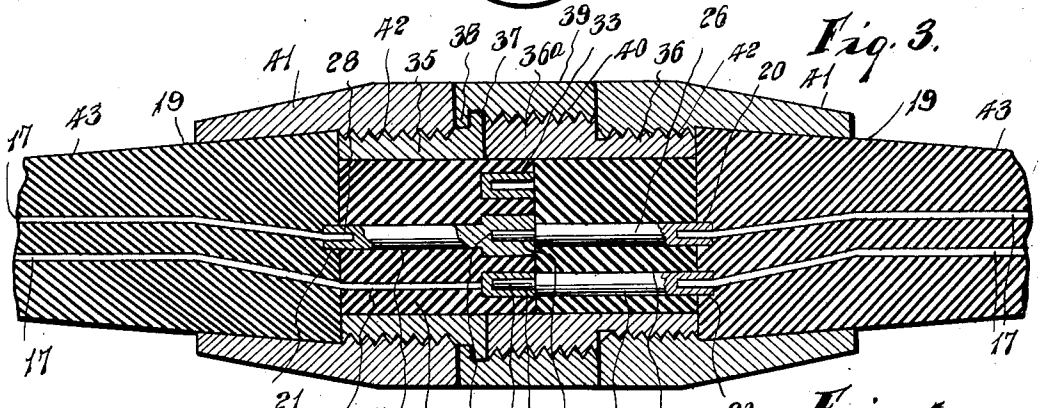


Fig. 4.

Fig. 5.

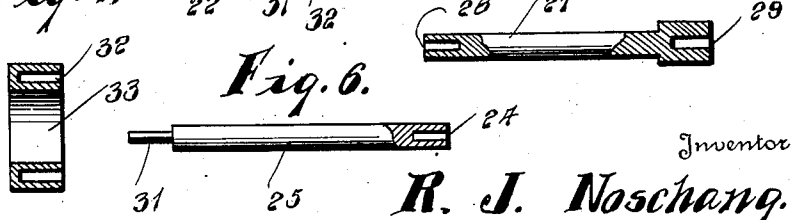


Fig. 6.

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ELECTRICAL COUPLING, SWIVEL RING AND SLEEVE CONSTRUCTION

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Fig. 7.

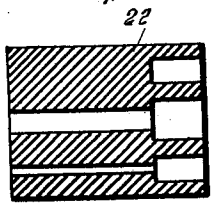


Fig. 8.

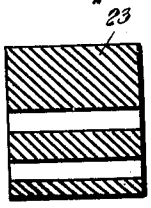


Fig. 9.

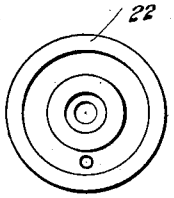
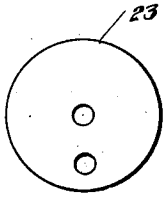


Fig. 10.



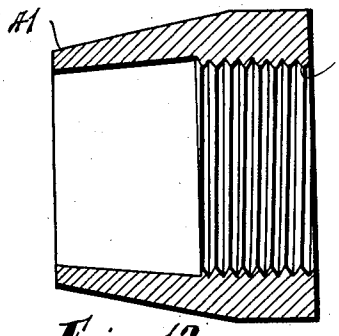


Fig. 12.

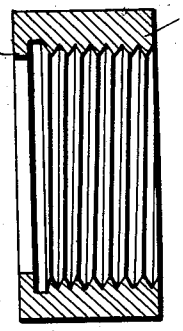


Fig. 13.

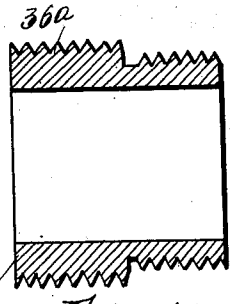


Fig. 14.

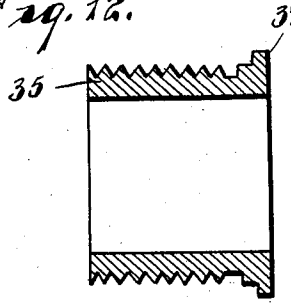


Fig. 15.

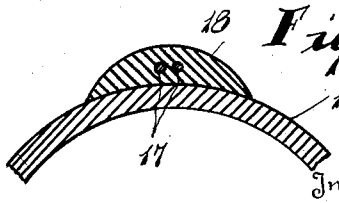


Fig. 11.

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Patented Sept. 10, 1935 2,014,288

UNITED STATES PATENT OFFICE

2,014,288

ELECTRICAL COUPLING, SWIVEL RING, AND SLEEVE CONSTRUCTION

Raymond J. Noschang, Cincinnati, Ohio

Application August 30, 1934, Serial No. 742,171

2 Claims. (Cl. 173—328)

This invention relates to an electrical coupling, swivel ring and sleeve construction particularly adapted for the union of the wires of an electric signalling circuit means carried by fire hose or the like and especially such a circuit whereby the members of a fire-fighting force may signal to the engineer, who is usually distant therefrom, from time to time, as more or less water pressure is required or it is desired to discontinue or resume the supply of water.

It is particularly aimed to provide such a construction which will enable the flexible element in which the coupling is incorporated, to be wrapped on a reel without substantially impairing the flexibility of the element. It is also aimed to provide a novel swivel connection between the electrical parts.

The more specific objects and advantages will in part be pointed out and otherwise become apparent from a consideration of the description following, taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:—

Figure 1 is a view in elevation showing the joint or junction between sections of fire hose equipped with my invention;

Figure 2 is a plan view of the parts of Figure 1;

Figure 3 is a substantially central longitudinal sectional view through the joint for the electrical parts;

Figure 4 is a diametric section through the annular contact member;

Figures 5 and 6 are details, partly in section of the conductor pins;

Figures 7 and 8 are longitudinal sectional views through the insulating plug;

Figure 9 is an end view of the plug of Figure 7;

Figure 10 is an end view of the plug of Figure 8;

Figure 11 is a detail sectional view taken on the line 11—11 of Figure 2;

Figure 12 is a longitudinal sectional view through one of the clamping collars;

Figure 13 is a longitudinal sectional view through the swivel member; and

Figures 14 and 15 are longitudinal sectional views through the sleeve employed.

Referring specifically to the drawings, 10 designates sections of conventional fire hose detachably connected together as at 11.

In accordance with my invention, two conductors 17 are embedded in casings 18 of rubber, which are united, preferably by vulcanization, to the rubber of the hose sections 10. It will be noted, particularly from Figure 2, that the conductors 17 are sinuous or corrugated. Such a construction, I find, enables the conductors to yield to a greater extent, where necessary, than heretofore. The vulcanization may occur substantially throughout the length of the body 18, or it may be at spots and the body 18 relatively large at such spots.

The adjacent ends of the rubber casings 18 have rubber sheathing sections 43 vulcanized thereto which are enlarged or tapered at 19. The wires or conductors 17 of one section, are connected in sockets 24 of contact pins 25 and 26, carried by an insulation block 23 and extending partly into sockets 20 of the adjacent tapered portion 19.

A contact pin 27 is disposed centrally of an insulation block 22 extending into a socket 21 of adjacent portion 19 and has a socket 28 receiving one of the wires 17 of the other hose section. The other end of pin 27 has a socket 29 receiving slidably and detachably, a reduced extension 30 of the pin 26. A reduced extension 31 on the pin 25, engages an annular groove 32 of an annular contact 33 carried by the block 22, and to which the terminal 34 of the remaining conductor 17 is connected.

Surrounding the blocks 22 and 23 are sleeves 35 and 36, respectively. Said sleeves 35 and 36 are slidable and detachable. One of the sleeves has an outwardly extending flange 37 which is overlapped at one side by a hook flange 38 of a swivel coupling band or ring 39 which has screw-threads at 40 engaging corresponding screw-threads on an enlarged portion 36a of the sleeve 36 so that the sleeves may be drawn into tight engagement. Disposed about each sleeve 35 and 36 is a clamping collar 41, screw-threaded to the sleeves as at 42. Such collars 41 are preferably tapered as shown to correspond to portions 19 and they clamp the aforesaid sheathing sections 43 against the ends of the sleeves 35 and 36 to thus protect the parts within them.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. A coupling for the conductor wires of a fire hose signalling system, the same comprising blocks of insulation in end to end relation containing contacts adapted for engagement when the coupling is assembled, one of said contacts being annular, a sleeve surrounding each of the blocks, sheathing about the conductor wires, said

sheathing having enlarged ends abutting with said blocks and sleeves, and clamping collars having portions undercut and surrounding the said enlarged ends to draw the enlarged ends toward each other, said clamping collars being screw-threaded to the sleeves, and a coupling between said clamping collars screw-threaded to one of the sleeves and having swivel engagement with the other sleeve.

2. A coupling of the class described comprising blocks of insulation in end to end relation, a contact socket and an annular contact on one of the blocks, a pair of contact pins on the other block detachably engaging the first mentioned socket and annular contact, conductors secured to the outer ends of said pins, to the socket and to said annular contact, sheathing about said conductors having enlarged ends, sleeves about the blocks, clamping collars screw-threaded to each sleeve and having portions undercut to engage and draw said enlarged ends toward each other, and a band between the collars having hook engagement with one of the sleeves and being screw-threaded to the other sleeve.

RAYMOND J. NOSCHANG.