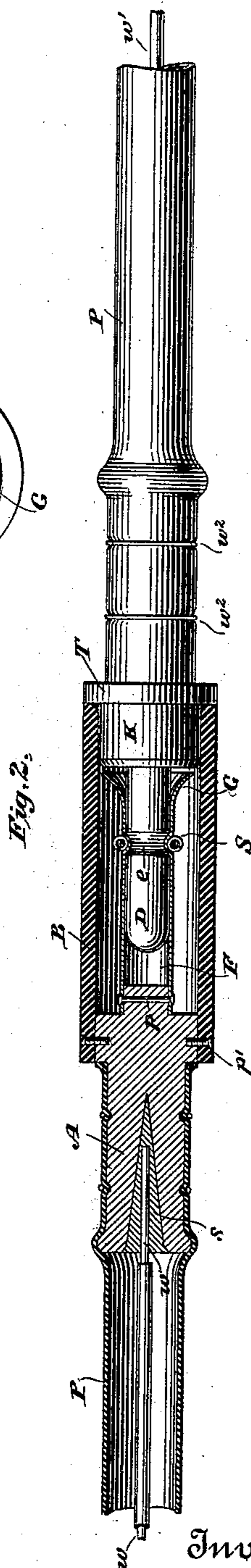
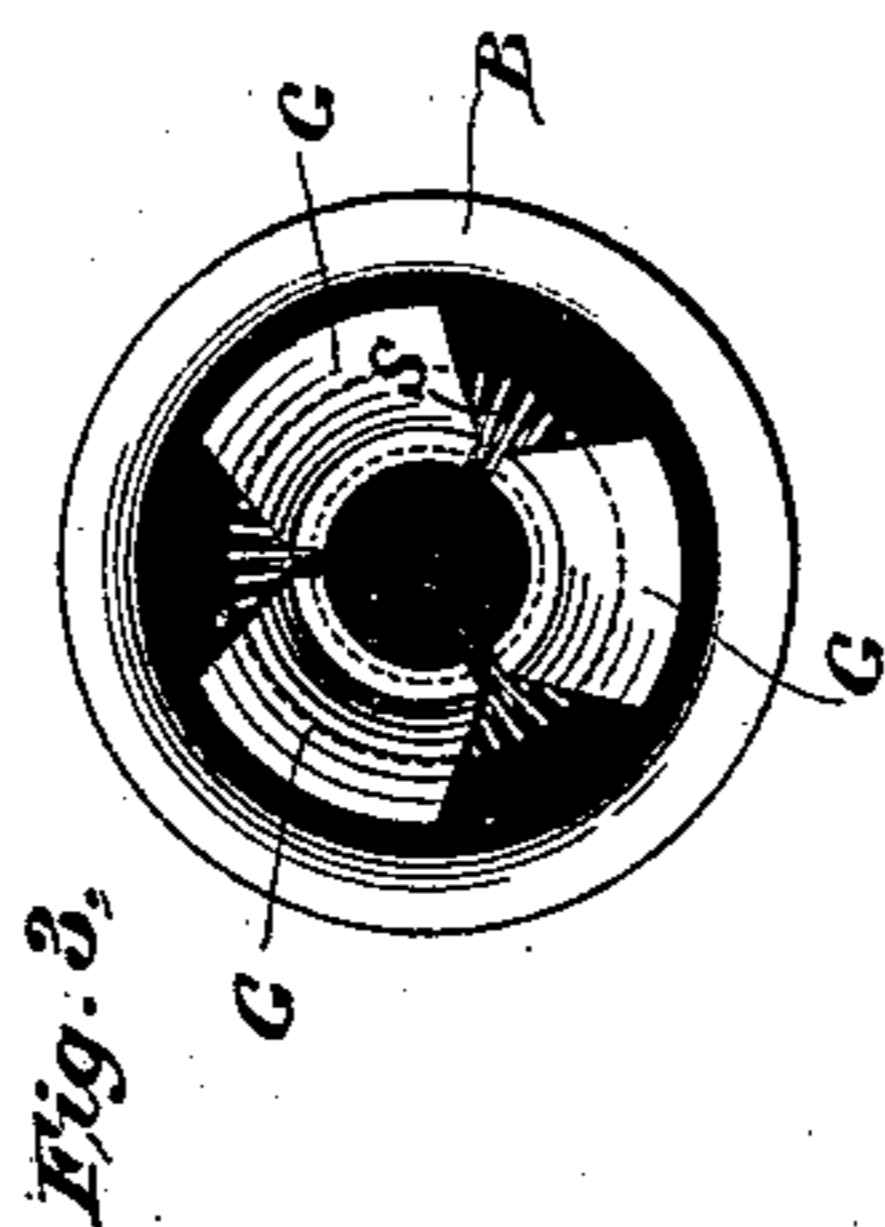
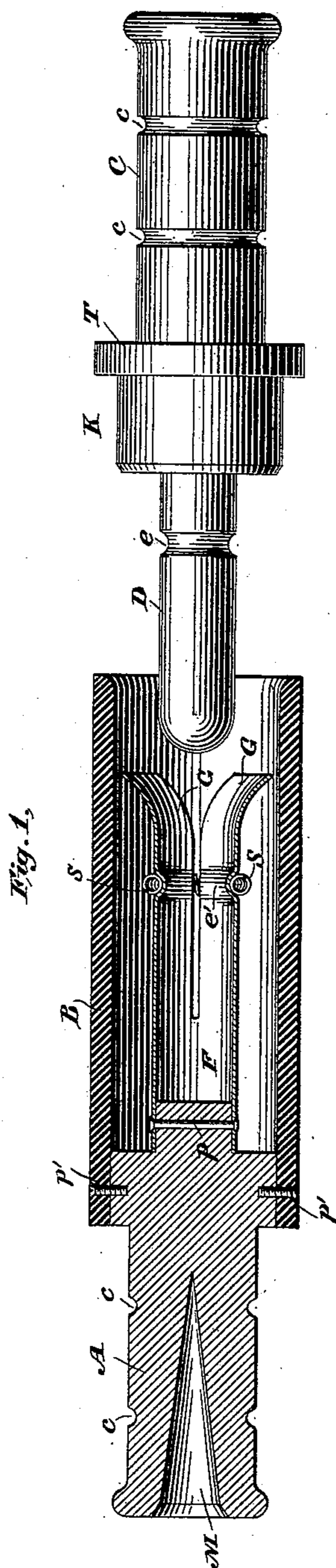


(No Model.)

W. F. Z. DESANT.
ELECTRIC CONNECTOR.

No. 465,430.

Patented Dec. 15, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM F. Z. DESANT, OF NEW YORK, N. Y.

ELECTRIC CONNECTOR.

SPECIFICATION forming part of Letters Patent No. 465,430, dated December 15, 1891.

Application filed May 20, 1890. Renewed July 1, 1891. Serial No. 398,104. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. Z. DESANT, a citizen of the United States, residing at New York, county of New York, and State of New York, have made a new and useful invention in Electrical Connectors or Couplers, of which the following is a specification.

My invention relates, particularly, to improvements in electrical connectors or couplers for use in connection with electrical railway-signals or in analogous places, and is applicable in any place where it is desired to connect or couple two parts of an electric circuit, so that the circuit shall be continuous through said coupler.

The objects of my invention are to devise a coupler which shall be simple, efficient, and secure and shall at the same time be little liable to get out of repair or subject the person or persons using it to liability of a shock or accident due to the electrical current. I accomplish these objects by means of the apparatus hereinafter described, but particularly pointed out in the claims which follow this specification.

My invention will be fully understood by referring to the accompanying drawings, in which—

Figure 1 represents a partly longitudinal sectional and partly elevational view of the entire apparatus disconnected. Fig. 2 is a similar view showing the parts connected. Fig. 3 is an end elevational view as seen looking into the interior of the left-hand portion of the apparatus, as shown in Fig. 1.

Like letters of reference represent like parts wherever used.

A is a solid cylindrical metallic block having drilled in its outer end a hole M, adapted to receive the end of an insulated wire or conductor *w* and held securely in position by solder *s*, as shown in Fig. 2.

B is an electrical protecting-sleeve fitting over the end of the part A and held in position by screws *p'*. This protecting-sleeve is preferably of insulating material, such as hard rubber, and may be secured to the part A in any preferred manner.

F is a light metallic sleeve or socket, preferably of cylindrical form, secured to the inner end of the part A either by a pin *p* or in

any preferred manner. This socket is of spring metal of good conducting quality, and its slitted ends G are curved outward, so as to bear lightly against the interior of the protecting-sleeve B, as clearly shown. Near the two free ends of the parts G is a depressed groove *e'*, in which lies a metallic coil-retaining spring S.

C is a cylindrical metallic block similar in form to the part A and provided with a cylindrical plug D and shoulders K and T, the part D having a grooved depression *e*, of the same dimensions as the depression *e'* in the parts G.

c c are grooves on the parts A and D for securing rubber or analogous protecting pipes or tubes P around said parts, and also around the insulating conducting-wires *ww'*, the ends of said tubes P being depressed in the grooves *c c* by wires *w² w²*, as shown in Fig. 2.

The operation of the apparatus is at once obvious. The free end of the tube B, coming in frictional contact with the shoulders K and T and the plug D fitting snugly in the socket F, is locked in position by the parts *e e'* under the influence of the spiral spring S and spring parts G. It will thus be seen that a perfect connector is provided between the two adjacent ends of an electrical conductor and that there is little danger of its becoming accidentally disconnected, while the insulating sleeve B, which protects the parts A and F, secures the person making the connection from any accidental shocks, and the relation of the parts G and the sleeve B is such that the insertion of the plug D is insured with a minimum amount of trouble.

I am aware that plug and socket connectors have heretofore been devised, and I do not claim such a construction, broadly.

It will of course be understood that where this form of connector is used in low-tension circuits, where there is little danger from accidental electrical shocks, the sleeve B may be of metal, if preferred; but for use in systems of electric lighting and other places where there is a liability of dangerous shocks to persons manipulating the apparatus I prefer to make the sleeve B of insulating material, or, if of metal, to insulate it from the parts A and F in any preferred manner.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A connector or coupler for an electric circuit, consisting of two metallic or conducting parts secured to the ends of the circuit-wire, one of said parts having a conducting-socket and surrounding shield and the other a conducting-plug and sustaining-shoulders, which fit snugly inside the surrounding tube, the whole being arranged substantially as shown and described.

2. A connector or coupler for an electric circuit, consisting of two metallic or conducting parts, one of which is provided with an elastic tubular conducting-socket and a surrounding shield and the other with a conducting-plug and sustaining-shoulders, substantially as described.

3. A connector or coupler for an electric circuit, consisting of two metallic or conducting parts, one of which is provided with a hollow split yielding socket having a depressed bead or groove near its free end, in which rests a retaining-spring, and the other with a conducting-plug having a groove adapted to receive the first-named bead or groove, substantially as described.

4. A connector or coupler for an electric circuit, consisting of a split socket having a depressed bead near its outer end, in which rests a retaining-spring, in combination with a conducting-plug having a groove adapted to fit in the first-named bead, substantially as described.

5. A connector or coupler for an electric circuit, consisting of a split tubular socket having a depressed bead or groove near its free end and an elastic retaining device located in said groove, in combination with a conducting-plug having a groove adapted to fit in the aforesaid bead, substantially as described.

6. In a connector or coupler, the combination of the following parts: a split socket F, having a depressed bead e' and a retaining-spring s , in combination with a conducting-plug D, provided with a groove e , substantially as described.

7. In a connector or coupler, the combination of the following elements: two conducting parts A and C, the former having a split conducting-socket F, beaded near its outer end, as at e' , with a surrounding spring s and a protecting-sleeve B, and the latter a conducting-plug D, grooved, as at e , and provided with shoulders K and T, substantially as described.

8. An electrical circuit consisting of insulated wires ww' , secured in electrical contact with the ends of the conducting parts A and C, in combination with surrounding or protecting tubes P and a coupling device having a surrounding or protecting tube B, which protects the coupler when the parts are united, substantially as described.

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Witnesses:

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