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D. A. KIMBARK.
LAMP SOCKET AND PLUG.
APPLICATION FILED MAY 21, 1902.

NO MODEL.

Fig. 1.

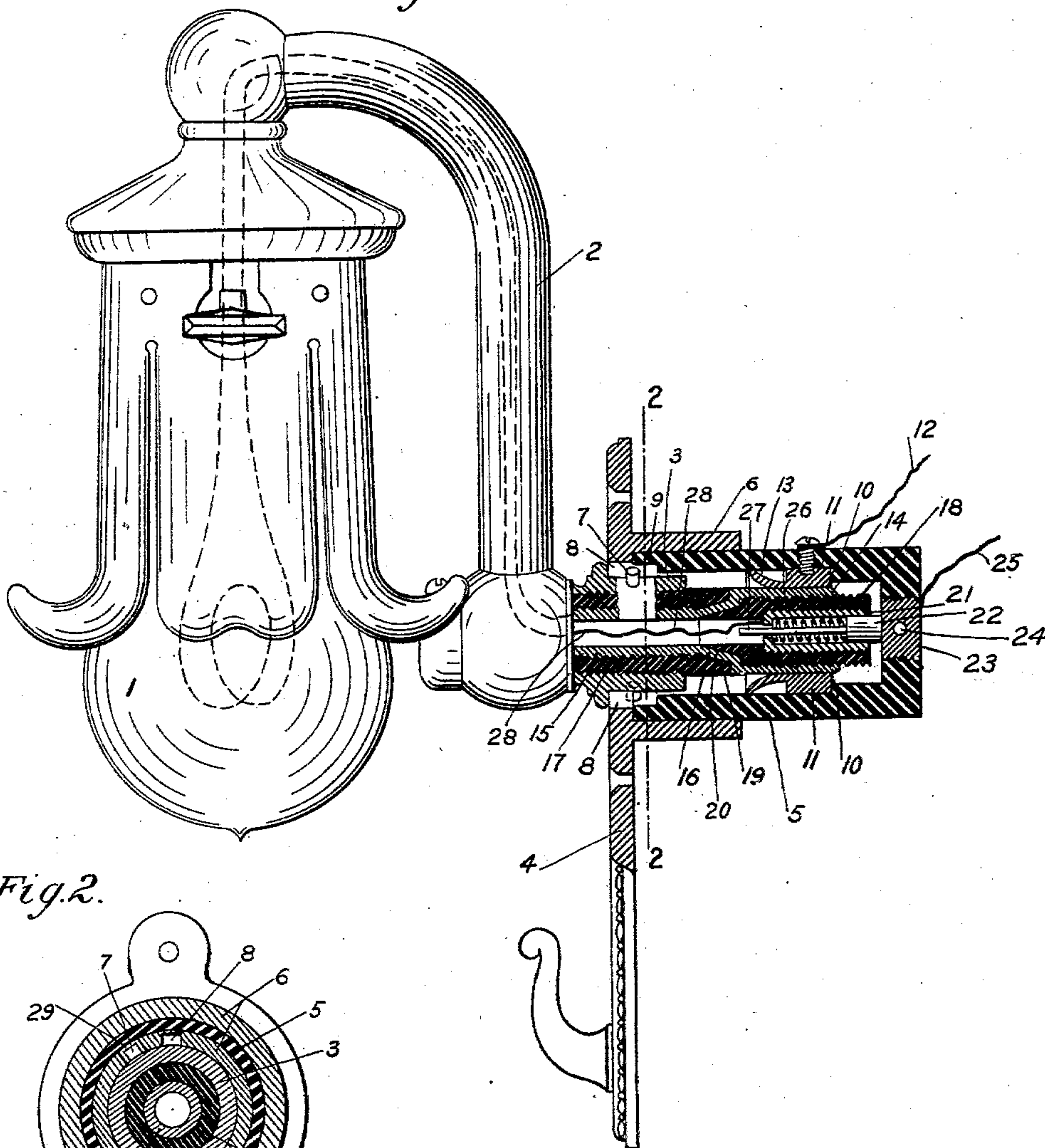
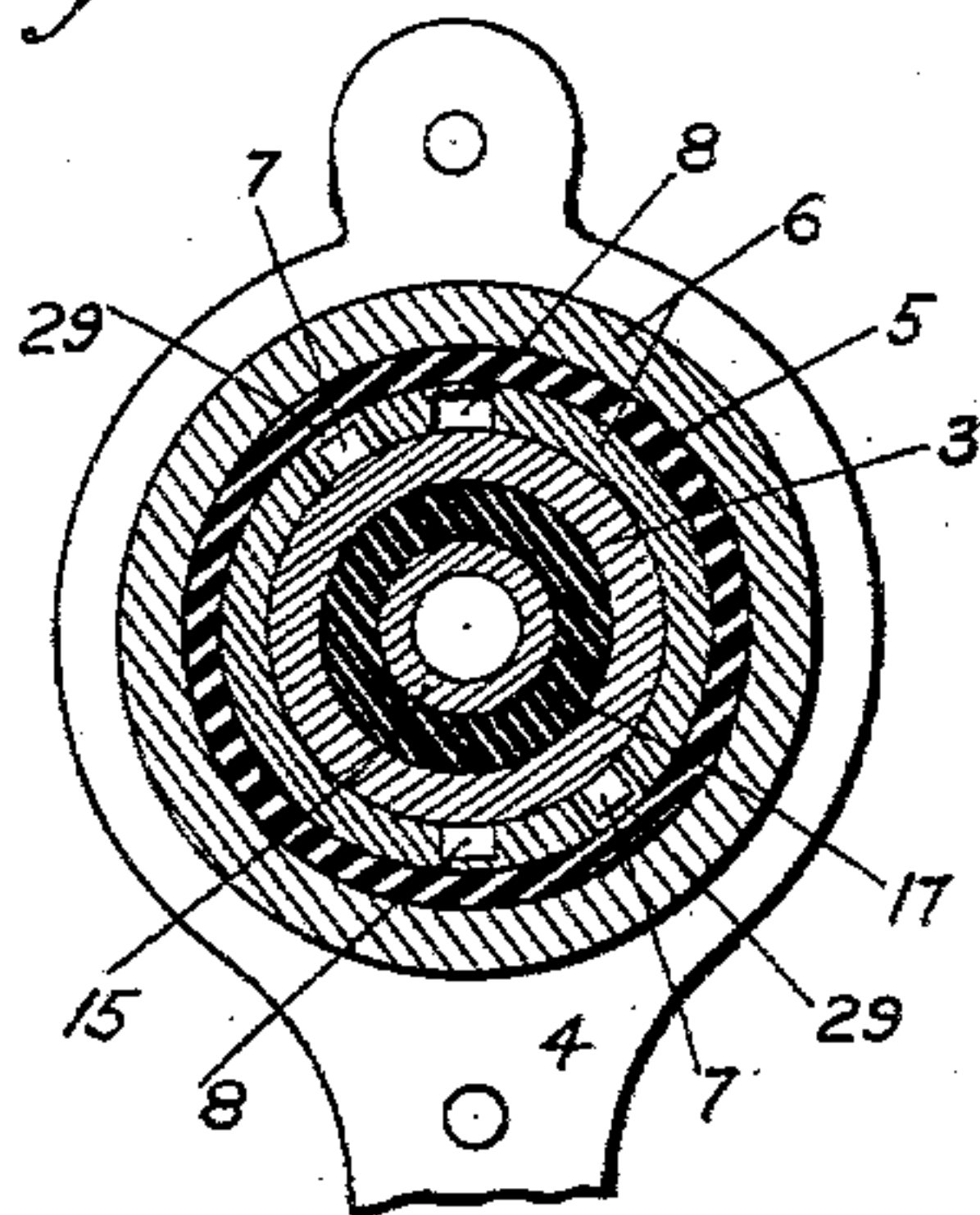


Fig. 2.



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LAMP SOCKET AND PLUG.

SPECIFICATION forming part of Letters Patent No. 753,276, dated March 1, 1904.

Application filed May 21, 1902. Serial No. 108,313. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. KIMBARK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lamp Sockets and Plugs, of which the following is a full, clear, and exact specification.

My invention relates more particularly to that class of lamp sockets and plugs used on lamps known as "berth-lights," and is shown in connection with such; but this is done for convenience of illustration and description, and it will be understood that the invention is applicable to other uses where plugs and sockets are desirable; and the invention has for its primary object to provide a compact and simple form of plug and socket of this general description.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of a berth-light, showing the plug and socket in longitudinal section; and Fig. 2 is a transverse sectional view taken on the line 2 2, Fig. 1.

1 is the electric light or lamp, which is provided, as usual, with a supporting arm or bracket 2, through which the conductor-wires pass, but which may be regarded as any other electrical appliance to be supplied with current through my improved socket and plug. To the lower end of the arm 2 is secured a hub or joint-stock 3, which passes through an opening in the usual face-plate 4, to the back of which is secured barrel 5 of the socket. This barrel is composed of rubber or fiber or any other suitable insulating material and is attached to the plate 4 by being inserted in a flange or collar 6, formed on the back of the plate. The stock 3 is provided with one or more radiating lugs 7 and the edge of the aperture in the plate 4 with a corresponding

number of notches 8, through which the lugs 7 pass when the stock 3 is inserted and when inserted beyond the inner edge of the plate 4 may be turned or rotated so as to engage with such inner face, and thereby lock the stock in place, the outer end of the barrel 5 being cut away, as shown at 9, for the movement of the pins or lugs 7.

The barrel 5 is formed with a shoulder or internal flange 10, against which abuts a contact-collar 11, which is connected through the barrel 5 with one of the conductors or line-wires 12. One end of the collar 11 is provided with a reduced extension 13, which is considerably thinner than the main portion of the collar, so that the same may be flared outwardly in the form of a funnel-shaped mouth for receiving the end of a contact-sleeve 14. This sleeve 14 is also provided with a reduced end or extension 15, which is adjoined to the larger part of the sleeve by a conical-shaped portion 16, and surrounding this reduced extension and conical-shaped portion is an insulating-sleeve 17, which is of substantially the same diameter as the maximum diameter of the contact-sleeve 14. The purpose of this particular formation is to provide for an internal insulating-sleeve 18 in the larger part of sleeve 14 without necessitating any increase in the diameter of the end 15, thereby allowing room for a second insulating-sleeve 19 to be placed around the reduced end 15 for separating the latter from the joint-stock 3. The sleeves 18 and 19 are screw-threaded, the former externally and the latter internally; and the larger part of the contact-sleeve 10 screw-threaded internally, while the smaller part 15 screw-threaded externally for receiving these threaded insulating-sleeves. One end of sleeve 18 is made conical on the exterior, as shown at 20, to fit the conical part 16 internally, and one end of insulating-sleeve 19 is made flaring, so as to fit the conical part 20, and thus constitute continuous surfaces on both the interior and exterior of the plug.

The joint-stock or hub 3 is screw-threaded on the insulating-sleeve 19 and is secured to or formed on the arm or bracket 2 of the lamp-fixture in any suitable way.

Within the insulation-sleeve 18 is screwed or otherwise secured a housing 21 for a reciprocating plunger 22, adapted to slide back and forth therein and which when pushed outward impinges against a contact 23, screwed in or otherwise secured to the barrel 5 of the socket and having an aperture 24 or other means for the attachment of one of the wires or conductors 25, the contact 23 being of course insulated from contact-collar 11 by the barrel 5. The plunger-contact 22 is thus forced outwardly by means of a coil-spring 26 or other suitable cushion located between the plunger and the inner end of the housing 21 and surrounding a guide-stem 27, formed on or secured to the plunger and passing through the end of the housing 21, which is contracted around the stem to form a shoulder for the abutment of spring 26. One of the conductors (28) is connected to housing 21, arranged within sleeves 15 18 and of course covered with suitable insulation, so as to avoid short-circuiting with sleeve 15.

As shown in Fig. 2, the lugs or pins 7 engage in countersinks or recesses 29 in the back of face-plate 4 after they are inserted and the bracket has been turned up to its proper position, and the backward push produced by the spring-actuated plunger holds the pins or lugs 7 in the recesses 29, and when the plug is used on a lamp of the character described the pins are thus enabled to hold the lamp in an upright position, and they also prevent it from rattling.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a device for the purpose described the combination with a socket comprising two insulated contacts, of a plug comprising a spring-actuated plunger adapted to connect with one of said contacts and a contact adapted to slide over and connect with the other of said contacts and conductors electrically communicating with said contacts and plug respectively, said insulated contacts being arranged successively in the line of movement of the plug whereby the said contact of the plug will slide over one of them while approaching the other and the two may be far removed from each other, substantially as set forth.

2. In a device for the purpose described the combination with a socket comprising two insulated contacts, of a plug comprising a contact adapted to engage with one of said contacts, a plunger-housing, a plunger in said housing, a contact-sleeve surrounding said housing and insulated therefrom and adapted to engage with the other one of said contacts in the socket, and conductors electrically communicating with said plunger-sleeve and contacts respectively, said insulated contacts being arranged in succession in the direction of bodily movement of the plug whereby the plug will slide against one while approaching the

other and the two may be far removed from each other, substantially as set forth.

3. In a device for the purpose described the combination with a socket comprising two insulated contacts, of a plug comprising a plunger-housing, a plunger in said housing adapted to connect with one of said contacts, a contact-sleeve surrounding said housing and insulated therefrom and adapted to engage the other one of said contacts, said sleeve having a reduced end, a joint-stock surrounding said reduced end and insulated therefrom, means in connection with said joint-stock and socket for locking the joint-stock in the socket and conductors electrically communicating with said plunger, sleeve and contacts respectively, substantially as set forth.

4. In a device for the purpose described the combination with a socket comprising two insulated contacts, of a plug comprising a plunger-housing, a plunger in said housing adapted to engage one of said contacts, a contact-sleeve surrounding said housing and insulated from said plunger and adapted to engage the other one of said contacts, said sleeve having a reduced end, an insulating-sleeve surrounding said reduced end, a joint-stock surrounding said insulating-sleeve, and means in connection with said joint-stock and socket for locking the joint-stock in the socket, and conductors electrically communicating with said plunger, sleeve and contacts respectively, substantially as set forth.

5. In a device for the purpose described the combination with a socket comprising two insulated contacts, of a plug comprising a plunger-housing, a plunger in said housing adapted to engage one of said contacts, a contact-sleeve surrounding said housing and insulated from said plunger and adapted to engage the other one of said contacts, said contact-sleeve having a reduced end, an insulating-sleeve secured on said reduced end and being of substantially the same diameter as said contact-sleeve, a joint-stock secured on said insulating-sleeve and means in connection with said joint-stock and socket for locking the joint-stock in the socket and conductors electrically communicating with said plunger, contact-sleeve and contacts respectively, substantially as set forth.

6. In a device for the purpose described the combination with a socket comprising two insulated contacts and a face-plate secured to said socket and having a passage for a plug provided in its edge with one or more notches, of a plug comprising two contacts adapted to engage with the aforesaid contacts respectively and one or more pins radiating from said plug and adapted to pass through said notches and engage behind said face-plate for locking the plug in the socket, substantially as set forth.

7. In a device for the purpose described the combination with a socket comprising two in-

5 insulated contacts, of a plug comprising a plunger-housing, a spring-actuated plunger in said housing, an insulating-sleeve surrounding said housing and having a tapered end, a contact-sleeve surrounding said insulating-sleeve and adapted to contact with one of the aforesaid contacts and having a reduced end and a tapered portion joining said reduced end to the main portion thereof, an insulating-sleeve surrounding said reduced end, a joint-stock surrounding said second insulating-sleeve, and means in connection with said joint-stock for securing the plug in said socket, and conductors electrically communicating with said
10 plunger and contacts respectively, substantially as set forth.

8. In a device for the purpose described the combination with a socket comprising a barrel having an internal flange or shoulder, an internal contact-collar seated in said barrel against said shoulder and having a flaring mouth, and a contact secured in said barrel and insulated from said collar, of a plug comprising a spring-actuated plunger adapted to fit against the last said contact and a contact-sleeve surrounding said plunger and insulated therefrom and adapted to fit into said contact-collar, substantially as set forth.

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Witnesses:

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