

T. L. DENNIS.
ELECTRIC SWIVEL COUPLING LOCK.
APPLICATION FILED AUG. 18, 1920.

1,404,098.

Patented Jan. 17, 1922.

Fig. 1.

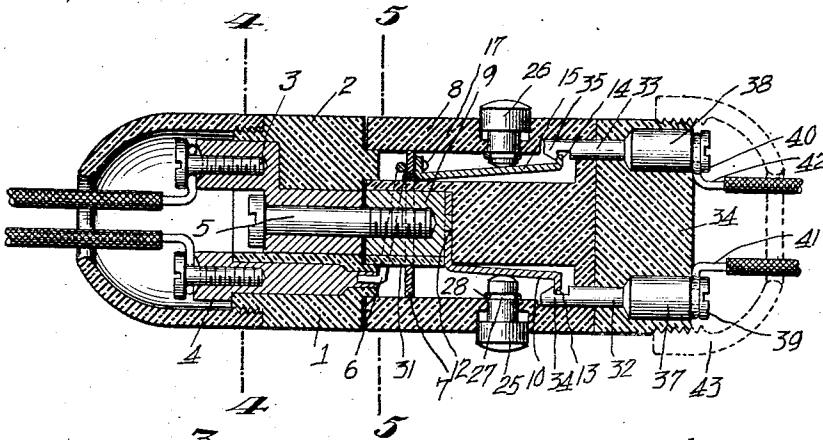


Fig. 2.

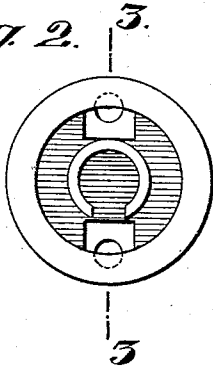


Fig. 3.

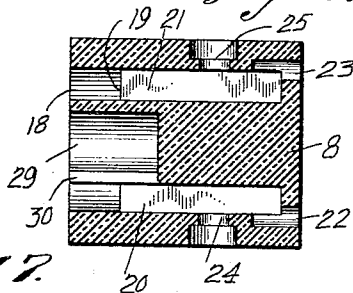


Fig. 7.

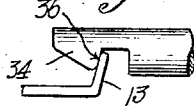


Fig. 4.

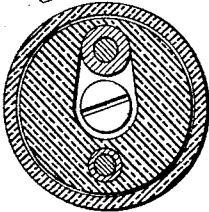


Fig. 5.

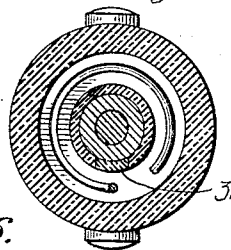
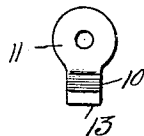


Fig. 6.



WITNESSES
H. C. Hebig
A. L. Kitchen

INVENTOR
THOMAS L. DENNIS
BY *Munn & Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

THOMAS L. DENNIS, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE F. PARKER, OF
NEW YORK, N. Y.

ELECTRIC SWIVEL-COUPPLING LOCK.

1,404,098.

Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed August 18, 1920. Serial No. 404,455.

To all whom it may concern:

Be it known that I, THOMAS L. DENNIS, a citizen of the United States, and a resident of the city of New York, Prince Bay, borough of Richmond, in the county of Richmond and State of New York, have invented a new and Improved Electric Swivel-Coupling Lock, of which the following is a full, clear, and exact description.

10 This invention relates to a combined swivel coupling and lock and has for an object to provide an improved construction wherein the plugs or connecting pins of the lead-in wires are locked against accidental removal.

15 Another object of the invention is to provide a locking device for plugs which will prevent the plugs from being removed by a direct pull thereon.

20 A still further object of the invention is to provide an improved construction of plug designed to co-operate with my improved swivel disclosed in my co-pending application, Serial No. 384,696, filed May 27, 1920.

25 An additional object more specifically is to provide an arrangement of plug and socket wherein the plugs or terminals may be easily inserted by being pushed into the socket but which are locked against an outer pull without a previous releasing having been affected.

In the accompanying drawing—

35 Figure 1 is a longitudinal vertical section through a swivel and a locking plug combined, disclosing one embodiment of the invention.

Figure 2 is an end view of one section of the swivel coupling shown in Figure 1.

Figure 3 is a sectional view through Figure 2 on line 3—3.

40 Figure 4 is a transverse sectional view through Figure 1 on line 4—4.

Figure 5 is a transverse sectional view through Figure 1 on line 5—5.

45 Figure 6 is an end view of a hook member embodying certain features of the invention.

Figure 7 is an enlarged detail fragmentary side view showing the interlocking ends of one of the plug associated parts shown in Figure 1.

50 Referring to the accompanying drawing by numerals 1 indicates the swivel coupling which is constructed according to the principal disclosed in my co-pending application above referred to.

55 Briefly this coupling consists of a casing

2 carrying the posts 3 and 4, the post 3 having an aperture for receiving the connecting bolt 5 and the post 4 has an extension into which the spring contact 6 fits, said contact continually frictionally engaging the contact ring 7 carried by casing 8.

60 In the application above referred to, the block 9 of metal into which screw 5 is threaded and the ring 7 are connected to two binding posts similar to 3 and 4 but in the present construction the connections have been changed to agree with the inventive idea disclosed in the drawing.

65 As shown in Figures 1 and 6, a spring or resilient hook 10 is provided in the casing 8 and is formed with an enlarged apertured end 11 through which the extension 12 on block 9 projects whereby the binding post 3 is electrically connected with hook 10, which hook is formed with an interlocking projection 13 similar to the interlocking projection 14 of the hook 15. The hook 15 is formed with a bent end 16 through which the rivet or other connection member 17 extends, said rivet or other connecting means extending through or interlocking with the ring 7 so that the hook 15 is in continuous electrical communication with post 4.

70 The casing 8 is provided with an annular bore 18 so that the ring 7 may be moved therein flat-wise until it presses against the bottom 19 of the recess 18. The pair of side passage-ways 20 and 21 are provided for the respective hooks 10 and 15, said side passage-ways merging into auxiliary or plug passage-ways 22 and 23. Transverse openings 24 and 25 are provided which merge into the passage-ways 20 and 21, said transverse passage-ways accommodating the buttons 25 and 26, each of which is provided with a groove 27 into which a dividing ring 28 is fitted. The ring 28 is preferably of resilient or spring metal and is snapped into place so as to resist accidental removal of the buttons but permit the buttons to be passed inwardly for shifting the position of the hooks 10 and 15 as shown in Figures 2 and 3. The casing 8 is, in addition to recess 18, provided with a central recess 29 in which the block 9 is secured, said recess 29 having an opening 30 which is filled by a plate 31 of rubber, bakelite or other insulating material. The slot or opening 30 is necessary in order to properly place hook 10 in the position shown in Figure 1.

As shown in Figure 1 a pair of plugs 32 and 33 are carried by plug head 34 and are insertible through the plug openings 22 and 23 so that the hook ends 34 and 35 thereto will interlock with projections 13 and 14.

The detail arrangements of these interlocking parts is shown in Figure 7 from which will be seen that the projections 13 and 14 are at a greater angle than a right angle and the contact surface 36 of the respective hook members 34 and 35 is also at a greater angle so that the spring action of the respective members 10 and 15 causes the interlocking projections 13 and 14 to press against the respective surfaces 36 and hold the plugs 32 and 33 tightly in place and against the removal by an outward pull unless the buttons 25 and 26 have been depressed. The respective plugs 32 and 33 are provided with enlargements 37 and 38 which are preferably formed with threaded bores for receiving the screws 39 and 40 which connect the lead-in wires 41 and 42 to the enlargements 37 and 38. If desired, the plug head 34 may be provided with a removable cap 43 so as to give a finished appearance to the construction.

What I claim is:—

1. A plug and socket member comprising a plug head, a pair of plugs carried by the head and having notched stems, a socket casing provided with longitudinal passages having reduced outer ends through which the plug stems extend into said passages, spring hooked contact members in the passages of the socket casing and engaging the notches of the plug stems, whereby the plugs will be held tightly in place and prevented from accidental disengagement from the contact members, and buttons mounted in the socket casing and engaging the hooked contact members to disengage them from the plug stems.

2. A coupling and lock, comprising two members rotatably connected, one of the members being provided with longitudinal

passages, contacts carried by the members, a plug head, plugs carried by the head and having stems extending into the passages, spring contact members in the said passages having interlocking engagement with the plug stems, one of the spring contact members being secured to one of the first named contacts and buttons mounted in the said member and engaging the spring contact members.

3. A coupling and lock comprising two members rotatably connected, one of the members having longitudinal passages terminating in reduced outer portions, contacts between the members, one of the contacts being in the form of a ring and arranged in the member with the passages, hooked spring contact members in the said passages, one of the contacts being secured to the ring contact, plugs having reduced and notched stems, said stems extending through the reduced portions of the passages and engaging the hooked contacts, and buttons in the said member and engaging the hooked contact members.

4. A coupling and hook, comprising two members rotatably connected, one of the members being provided with a central recess, an annular recess and longitudinal passages leading from the annular recess, a metal block secured in the central recess, a screw carried by the other member and engaging said block to hold the members together, a ring shaped contact in the annular recess, a spring contact carried by the other member and engaging the ring contact, hooked contact members in the said passages, one contact member being secured to the ring contact, and the other to the metal block, a plug head, plugs carried by the head and having notched stems extending into the said passages and engaging the hooked contact members, and buttons engaging the hooked contact members.

THOMAS L. DENNIS.