April 10, 1956 S. SMITH 2,741,749

SAFETY PLUG AND RECEPTACLE

Filed March 31, 1954

Fig. 1

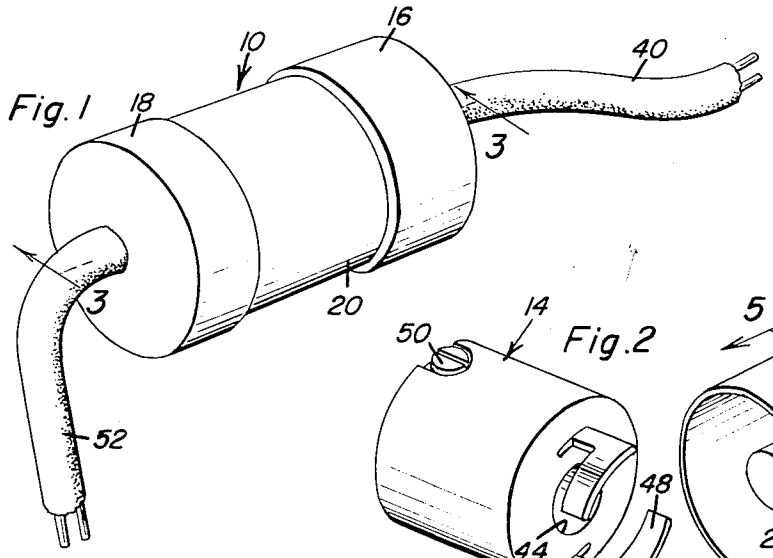


Fig. 2

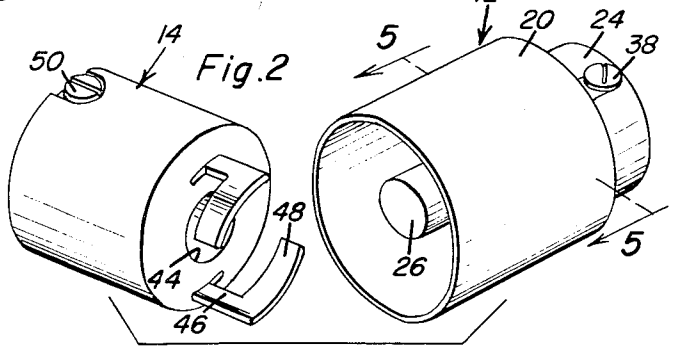


Fig. 3

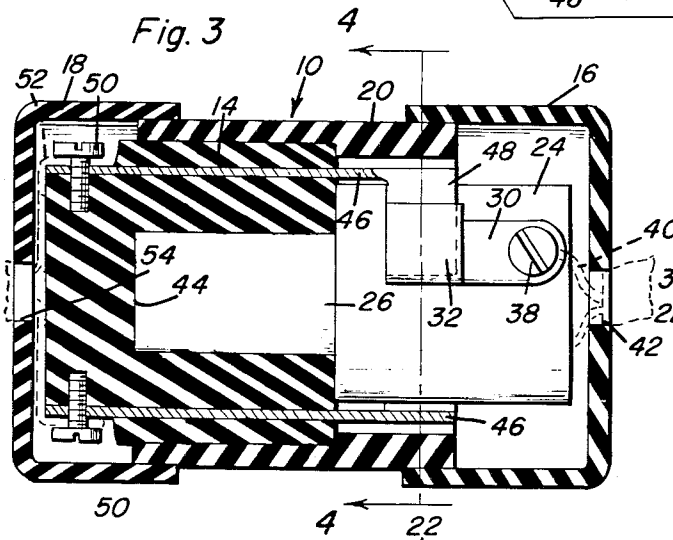
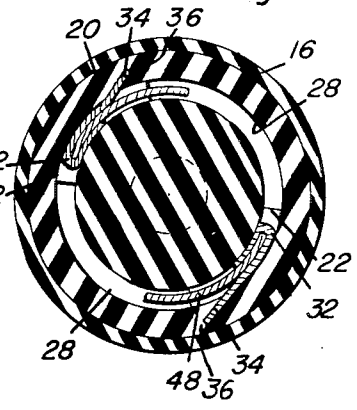


Fig. 4



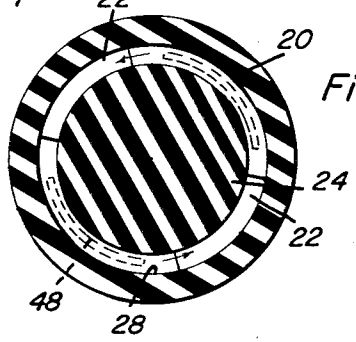


Fig. 5

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SAFETY PLUG AND RECEPTACLE

Stephen Smith, White Plains, N. Y.

Application March 31, 1954, Serial No. 420,061

1 Claim. (Cl. 339—189)

This invention relates to a safety plug and receptacle and more specifically provides for safely, quickly, and effectively connecting and locking the end of an electrical conductor.

An object of this invention is to provide a safety plug and receptacle having interengaging prongs and contacts for interlocking the plug and receptacle upon relative rotation between such members.

A further object of this invention is to provide a safety plug and receptacle having telescopically received male and female members with rotatively engaged interlocking means between the male and female members.

Yet another object of this invention is to provide a safety plug and receptacle which is simple in operation, simple in construction, insulated, well adapted for its purposes and relatively inexpensive to manufacture.

These, together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view showing the safety plug and receptacle of the present invention;

Figure 2 is a group perspective showing the male and female members of the safety plug and receptacle of the present invention in disassembled relation;

Figure 3 is a longitudinal, vertical section taken substantially along section line 3—3 of Figure 1, showing the details of construction of the assembled safety plug and receptacle;

Figure 4 is a transverse section taken substantially along section line 4—4 of Figure 3 showing the details of construction of the interengaging contacts and extending prongs; and

Figure 5 is a detailed transverse section taken substantially along section line 5—5 of Figure 2 showing further details of construction of the female member of the safety plug and receptacle.

Referring now specifically to the drawings, it will be seen that the safety plug and receptacle of the present invention is generally designated by the numeral **10** and includes a female member **12** and a male member **14** with a cap **16** and **18** positioned over the remote ends of each of the members **12** and **14**.

The female member **12** includes a generally cylindrical tubular member **20** comprising an internally reduced end portion having a pair of internally extending arcuate shoulders **22** which are positioned oppositely on the inner periphery of the tubular member **20**. A cylindrical body or platform member **24** is positioned within the tubular member **20** in spaced eccentric relation thereto and fixed between the shoulders **22**. A centrally extending guide post **26** extends from one end of the platform **24** toward the inner end of the tubular member **20**. The peripheries of the platform **24** and the tubular

member **20** are in spaced relation and the two oppositely disposed shoulders **22** form arcuate access grooves **28** for a purpose described hereinafter. A pair of resilient contact members **30** are mounted longitudinally on the periphery of the platform **24** and terminate at their inner ends in U shaped circumferentially extending clips or contact members **32** having a flared end portion **34** anchored in grooves **36** in the inner periphery of the tubular cylinder **20**. Screw fastening means **38** are provided on the outer end of each of the contact members **30** for securing electrical conductors **40** thereto. The cap **16** positioned over the outer end of the cylindrical tube **20** is provided with a suitable aperture **42** for the passage of the electrical conductors **40** thereby completely insulating the electrical conductors **40** and the contact members **30**. Further, it will be seen that the contact members **30** and the U-shaped contacts **32** are so positioned on the platform **24** that they are disposed behind the shoulders **22** for a purpose described hereinafter.

Referring now specifically to the male member **14**, it will be seen that the male member **14** is generally a cylindrical plug having a centrally located socket **44** for telescopically receiving the guide post **26** when the body **14** of the male member is telescopically received in the tubular member **20**. Prongs **46** having hook-shaped or offset ends **48** are provided on the inner end of the male member **14** and the prongs **46** are generally arcuately curved about an axis formed by the longitudinal center of the safety plug and receptacle **10**. The prongs **46** extend completely through the body **14** and suitable screw fastening means **50** are provided for the connection of electrical conductors **52** which proceed through an aperture **54** positioned in the cap **18**.

After the conductors **52** and **40** are connected to the screw threaded means **50** and **38**, respectively, the male member **14** is inserted into the female member **12** with the guide post **26** entering the tubular socket **44**. The offset end portions **48** of the prong **46** must be aligned with the arcuate grooves **28** formed by the shoulders **22** thereby permitting entry behind the shoulders **22**. After the end portions **48** have been inserted through the grooves **28**, the male and female members are rotated in relation to each other thereby engaging the free ends **48** of the prongs **46** with the U-shaped contacts **32** thereby securely contacting the prongs **46** and the contacts **30** and locking the male member **14** in the female member **12**. Obviously, the caps **16** and **18** completely insulate the device and the internal construction may be any suitable plastic or insulating type material.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

An electric cord connector comprising separable male and female members, said female member including a tube comprising an internally reduced end portion including diametrically opposite shoulders on its inner periphery spaced inwardly from the adjacent end of the tube and defining a pair of grooves, a cylindrical body mounted longitudinally in the tube in spaced, concentric relation thereto and projecting therefrom, said body being affixed to the shoulders and including a reduced end portion constituting a guide extending longitudinally in the tube, elongated contacts mounted longitudinally on

the projecting portion of the body and extending into the reduced end portion of the tube, said contacts comprising circumferentially extending, substantially U-shaped resilient clips on the inner ends thereof located behind the shoulders and having one end anchored in the reduced end portion of the tube, said male member comprising a plug rotatably and slidably mounted in the tube in abutting engagement with the internally reduced end portion thereof and having a socket therein accommodating the guide, prongs on said plug operable in the grooves and including circumferentially extending end

portions engageable in the clips behind the shoulders for electrically and detachably securing the male and female members together, and apertured closure caps on the end portions of the tube.

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