

A. H. FARGO.
PLUG AND RECEPTACLE.
APPLICATION FILED MAR. 4, 1915.

1,311,266.

Patented July 29, 1919.
2 SHEETS—SHEET 1.

Fig. 1.

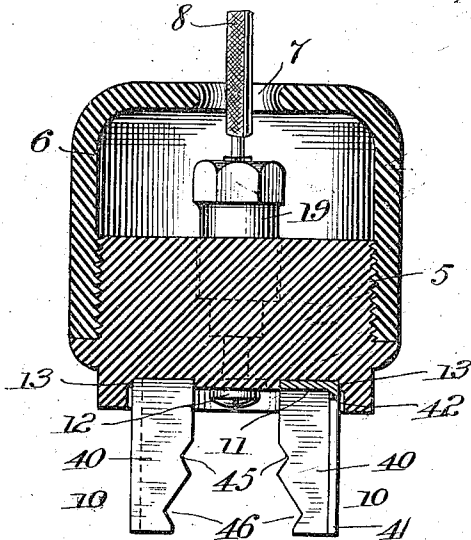


Fig. 2.

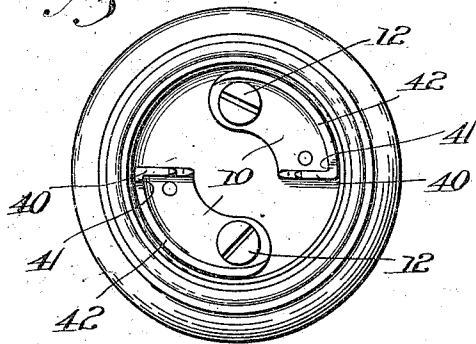


Fig. 3.

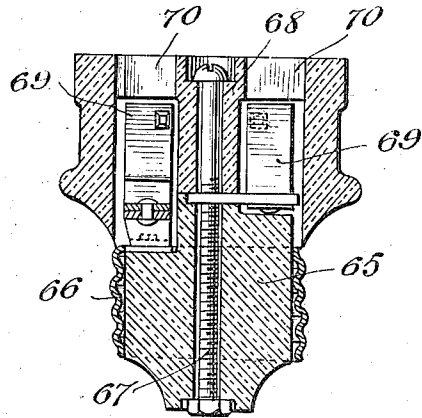


Fig. 4.

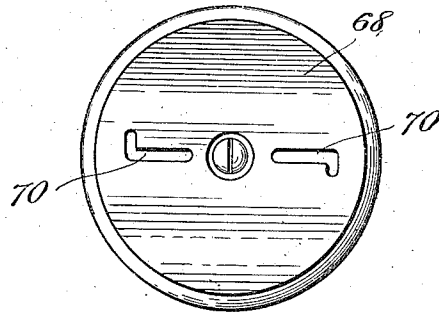


Fig. 5.

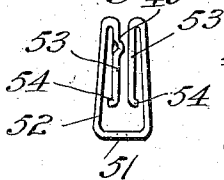


Fig. 6.

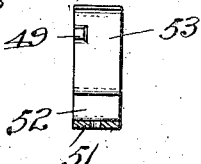


Fig. 7.

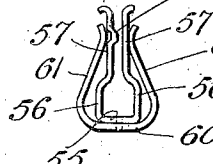
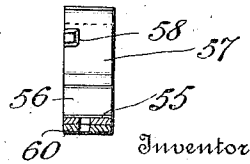


Fig. 8.



Witnesses

W. S. McLowell
N. O. Freeman

A. H. Fargo,

By J. Stuart Freeman
Attorney

A. H. FARGO.
 PLUG AND RECEPTACLE.
 APPLICATION FILED MAR. 4, 1915.

1,311,266.

Patented July 29, 1919.
 2 SHEETS—SHEET 2.

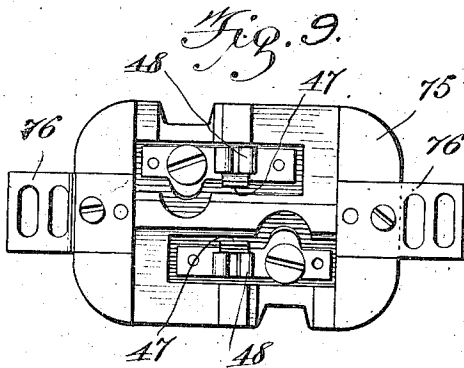
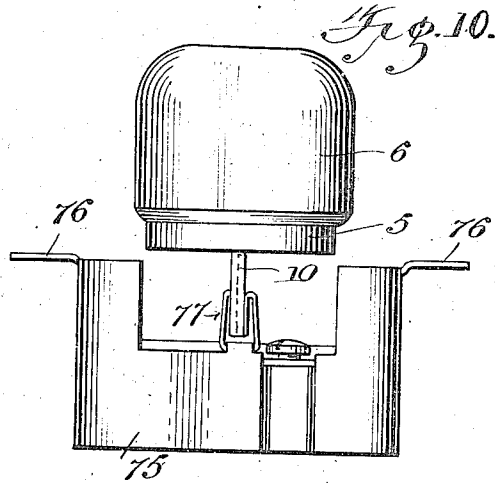
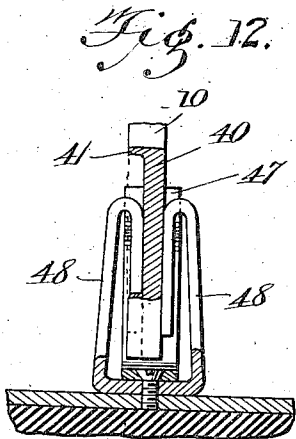


Fig. 11.

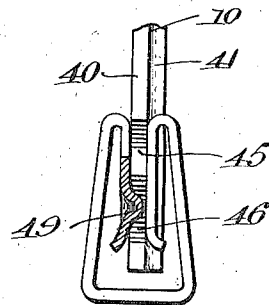
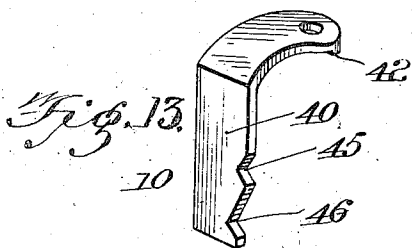
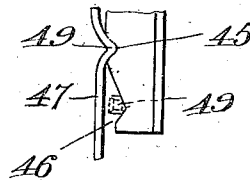


Fig. 14.



Witnesses

W. S. McLowell
R. O. Freeman

Inventor

A. H. Fargo

By *J. Stuart Freeman*

Attorney

UNITED STATES PATENT OFFICE.

ARTHUR H. FARGO, OF POUGHKEEPSIE, NEW YORK.

PLUG AND RECEPTACLE.

1,311,266.

Specification of Letters Patent.

Patented July 29, 1919.

Application filed March 4, 1915. Serial No. 12,003.

To all whom it may concern:

Be it known that I, ARTHUR H. FARGO, a citizen of the United States, and a resident of the city of Poughkeepsie, county of Dutchess, State of New York, have invented certain new and useful Improvements in Plugs and Receptacles, and of which the following is an exact disclosure.

An object of this invention is to provide a plug and receptacle which will embody details having increased efficiency over such devices now on the market.

Another object is to provide a receptacle adapted to receive and lock a plug; to provide a plug adapted to enter and lock within a receptacle; to provide a plug contact having means to reinforce the same against transverse bending; to provide an improved receptacle contact clip; and to provide other details of construction as hereinafter fully brought out.

A further object of this invention is to provide a connector which will overcome all of the defects commonly experienced in the various types now on the market, and also present new advantages hitherto not embodied in devices of this character.

A further object is to provide a connector which grips an electrical conductor of circular cross-section with substantially equal pressure around its circumference; to provide one that efficiently grips the conductor in a substantially straight form, not bent, curved, or twisted, as is usually the case; to provide a conductor which, by the tapering shape and wedged coöperation of its parts, grips the conductor with a force much greater than that usually attained, and at the same time does not weaken by flattening, cutting or shearing that portion of said conductor within or adjacent to said connector; to provide a connector which requires little or no space between it and adjacent objects in which to manipulate the conductor when attaching the latter to the former; to provide a connector capable of coöperating with a conductor as permanently as is obtained in the use of a soldered joint, yet which can be released at will and without in any way damaging either; to provide a connector, which automatically operates to increase its grip upon a conductor, with any increase in the strain of the latter longitudinally; and to provide other objects and details, hereinafter fully brought out.

In the drawings Figure 1 is a sectional

view of an electric contact plug; Fig. 2 is a bottom plan view of the same; Fig. 3 is a longitudinal, diametrical section of a combined receptacle and lamp socket plug; Fig. 4 is a top plan view of the same; Fig. 5 is a side elevation of a receptacle contact clip; Fig. 6 is a central vertical section of the same; Fig. 7 is a side elevation of a modified form of the same; Fig. 8 is a central vertical section of the clip shown in Fig. 10; Fig. 9 is a top plan view of a wall receptacle with face-plate removed; Fig. 10 is a side view of same with improved plug in position; Fig. 11 is a detail view of the improved plug and receptacle contacts in coöperation; Fig. 12 is a view of the new plug and a well known receptacle contacts in coöperation; Fig. 13 is a perspective view of the improved plug contact; and Fig. 14 is a diagrammatic view showing the positions of the retaining shoulders in two different types of receptacles.

Referring to Figs. 1 and 2 of the drawings, a plug is shown as comprising a body portion 5, screw-threaded on its circumference to receive the insulating shell 6, centrally apertured at 7, to receive electrical conductors 8.

The body portion of the plug is further more recessed at 9 from which point extend the contact fingers 10, said fingers having a flat portion 11, embedded in the body 5 and secured in place by screws or bolts 12, which project at their opposite ends into recesses 13 also in the body portion and secure to said fingers connectors 19.

The plug contacts 10 comprise a flat shank, or contact portion 40, provided upon its outer edge with a longitudinally extending, stiffening or reinforcing rib 41, which at its upper end merges into a flange 42, projecting integrally from the radial outer edge of the plate 11 and operative to reinforce the latter, and to retain the end portion of an electric conductor beneath the head of the bolt 12 when the connector is not employed.

The inner edge portion of each of the contacts 10 is notched as shown at 45 and 46, the latter being deeper than the former. The position of the notch 45 is such that, as indicated diagrammatically in Fig. 14, the resilient locking member 47 in a well-known type of receptacle clip 48 readily coöperates with the same to yieldingly maintain the contact 10 of the present plug there-

in. Furthermore, the notch 46 is positioned so that its sides engage the boss or shoulder 49 on the inner surface of the receptacle contact clip shown in Figs. 3, 5 and 6.

5 The preferred form of clip comprises a flat base portion 51, from which extend upwardly and slightly convergingly resilient portions 52, at their upper ends turned inwardly and downwardly to form substantially parallel, flat portions 53, the surface of one of which is broken by the boss 49, while the lower extremities of said last-named portions are oppositely directed at 54. By the shape and length of the portions 54, it is obvious that upon inserting a contact into the clip, the portions 53 expand to a predetermined degree, after which the cooperation of the ends 54 with the sides 52 forces the latter to expand also and thus share a portion of the pressure exerted directly upon the portions 53 by the inserted contact.

Figs. 7 and 8 illustrate a modified form of receptacle contact comprising in general two parts. The inner member consists of a piece of flexible metal having a substantially flat portion 55 from which rise two sections 56, having substantially parallel portions 57, the surface of one of which is broken by a laterally positioned boss or shoulder 58. The other member comprises a base portion 60 and oppositely positioned resilient portions 61, operative to press against and add increased resiliency to the sides 57.

35 Fig. 3 shows a combined plug receptacle and lamp socket plug. The lower portion comprises a body 65 surrounded by a threaded shell 66 and pierced centrally by a bolt 67 also extending through the upper portion 68, which in turn embodies two contact clips 69 similar to those described and respectively connected to said bolt and to said shell. The openings 70 in the top of the upper portion 68 are L-shaped, to admit the similarly shaped plug contacts 10.

In Fig. 9 is shown the top or outer face of a wall receptacle with the usual face plate removed, and comprising the usual body 75, plate securing lugs 76, and contact clips 77. These clips embody two oppositely positioned, resilient side members 48 and the

transversely positioned spring shoulder 47. Fig. 13 shows a side view of this construction with a plug in engagement therewith.

In Fig. 11 is shown in enlarged manner 51 the cooperation of the improved plug and receptacle contacts hereinbefore described, while in Fig. 12 is shown the cooperation of the improved plug contact with the receptacle contact shown in Figs. 9 and 10. 60 From these views it is evident that there has been provided an improved type of cooperating plug and receptacle contacts; a plug contact capable of efficient cooperation with a receptacle; and a receptacle capable of efficiently receiving a plug. 65

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

1. The combination of a receptacle with a 70 pair of spaced resilient contacts, one of which is provided with an inwardly projecting shoulder, a substantially horse-shoe shaped resilient member partially encircling said contacts, its ends pressing together to contract said contacts, and a plug contact provided with a recess extending inwardly from one edge, adapted to cooperate with said contacts, and said shoulder adapted to enter said recess. 75 80

2. A plug contact, comprising a substantially flat contact portion, a substantially flat base portion perpendicular to the former, and a flange extending longitudinally of both of said portions and perpendicular 85 to the planes of said respective portions.

3. A plug contact, comprising a substantially flat contact portion, a substantially flat base portion perpendicular to the former, and an integral flange extending longitudinally of both of said portions and perpendicular to the planes of said respective portions, adjacent to one of their edges, said contact portion being provided in its opposite edge with notches adapted to receive 90 95 various receptacle contact locking devices.

In witness whereof I have hereunto set my hand this 2d day of December, A. D. 1914.

ARTHUR H. FARGO.

Witnesses:

FRANK L. GARDNER,
E. K. DUSENBURY.