

Oct. 10, 1950

L. FRANK

2,525,123

ELECTRIC WIRE CONNECTING CLAMP

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Fig. 1.

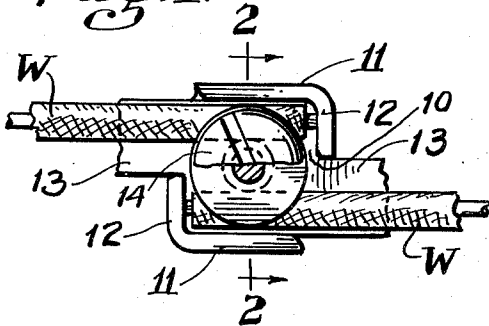


Fig. 2.

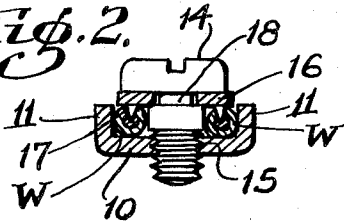


Fig. 4.

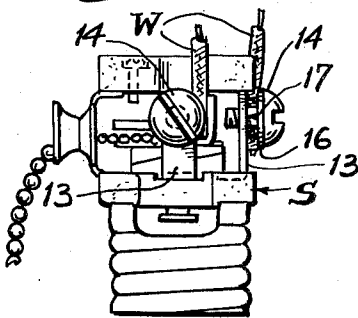


Fig. 5.

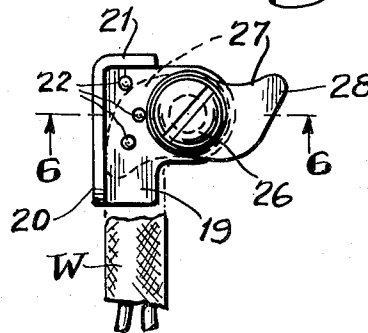


Fig. 6.

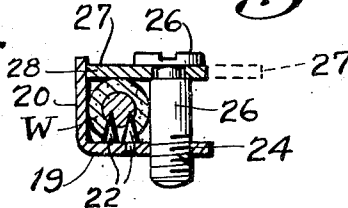


Fig. 7.

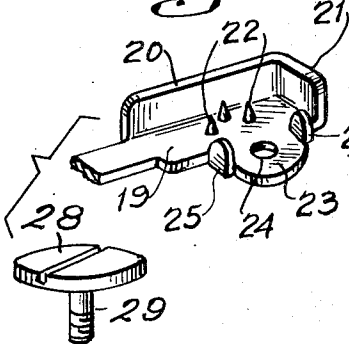


Fig. 8.

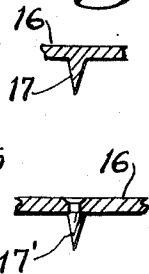


Fig. 9.

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ELECTRIC WIRE CONNECTING CLAMP

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4 Claims. (Cl. 173-340)

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My invention relates to an electric connector and has for its principal object, to provide simple, practical, inexpensive and highly effective means for connecting insulated electric wires to various electric fittings, such as plugs, sockets, contact plates and the like.

Further objects of my invention are to provide an electric wire connection of the character referred to, which may be easily and quickly applied to and removed from the connected parts, which will resist to a substantial degree all strains which tend to pull the connected members apart, and which eliminates the time and labor involved in stripping the insulation from the ends of the wire clamped to the connector.

A further object of my invention is to generally improve upon and simplify the construction of the Wire or Rod Clamp and Connector covered by U. S. Letters Patent #2,238,386, issued to me April 15, 1941.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully described and claimed and illustrated in the accompanying drawing, in which:

Fig. 1 is a plan view of one form of my improved connector.

Fig. 2 is a cross section taken on the line 2-2 of Fig. 1.

Fig. 3 is a perspective view of the connector parts in separated positions.

Fig. 4 is an elevational view of a portion of a conventional electric lamp socket and showing same equipped with my improved connector.

Fig. 5 is a plan view of a modified form of the connector.

Fig. 6 is a cross section taken on the line 6-6 of Fig. 5.

Fig. 7 is a perspective view of a modified form of the base member of the connector.

Fig. 8 is a detail section of the base member of the connector and showing same formed with integral prongs.

Fig. 9 is a detail section showing the base member provided with separately formed prongs.

Referring by numerals to the accompanying drawing, which illustrates practical embodiments of my invention, 10 designates a metal plate provided on opposite sides with upstanding walls 11, and on portions of the ends of said plates, are upstanding walls 12, the outer ends of which united with the adjacent ends of the side walls 11.

Extending from the ends of plate 10 to the sides of walls 12 are narrow metal strips 13 which may

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be of any length and shape so as to combine with the electric fixture or appliance with which the connector is associated.

The threaded end of a screw 14 engages a threaded aperture 15 in the center of plate 10, and mounted to rotate freely on the shank of said screw beneath its head is a washer-like member 16, from which depends a plurality of prongs 17.

These prongs may be formed integral with and pressed from member 16 as seen in Fig. 8, or they may be separately formed and riveted or welded to said member, as shown in Fig. 9.

Formed in the shank of the screw just below the head is an annular groove 18 which receives the edge of member 16 surrounding the aperture therein and to mount said member on the screw shank, the metal around the edge of the aperture in member, is struck or flanged outwardly, when said member is stamped out and after the shank of the screw is inserted through the enlarged opening, the outwardly flanged edge is by pressure, forced into groove 18.

In Fig. 4 is here shown a conventional pull chain switch and lamp socket S, equipped with a pair of my improved connectors, with the strips 13 suitably connected to the contacts or current carrying members within said socket. When this form of connector is used, the end portions of insulation sheathed wires W, are laid on plate 10, against walls 11 with the bare ends of the conductors bearing against walls 12.

Thus the wires are definitely positioned on the plate and screw 14 is now screwed downwardly into said plate, thereby moving member 16 into clamping engagement with said wire and forcing prongs 17 through the sheath of insulation so as to make direct electrical contact with the current carrying wires or cable.

By loosening screw 14, member 16 may be drawn upward so as to withdraw prongs 17 from the conductors, thereby breaking the current flow from one conductor to the other.

In the modified structure illustrated in Figs. 5, 6 and 7, a metal plate 19 is provided on one edge with an upstanding wall 20 and on one end with an upstanding flange 21.

Projecting upwardly from the center of plate 19, is a plurality of prongs 22, disposed in staggered arrangement and projecting from the edge of said plate on the opposite side from wall 20 is an ear 23, provided with a threaded aperture 24 and on its edge with a pair of upstanding lugs 25.

The threaded end of a screw 26 is seated in

aperture 24 and mounted to rotate on the upper portion of the shank of said screw, is a short finger 27 having a shoulder 28 on its outer end and when this finger is swung into position above plate 18, its end portion overlies prongs 22 and shoulder bears against the near face of wall 20 (see Fig. 5).

When this form of connector is used, the sheathed conductor is positioned against wall 20 on top of prongs 22 with the exposed end of the wire or cable bearing against wall 21.

After finger 27 has been swung around into position above the end portion of the conductor, screw 26 is driven downward so as to cause said finger to force the conductor downward onto prongs 22, which after piercing the sheath engage and make direct electrical contact with the current-carrying wire or cable (see Fig. 6).

Lugs 25 act as stops to prevent finger 27 from being moved downward to such a degree as to make contact with and dull the prongs 22, particularly while the conductor is not in service and there is no conductor positioned on the prongs.

The side and end walls on plates 10 and 19 provide a substantial degree of protection for the ends of the conductors when same are clamped on the plates, and at the same time, they accurately determine the positions of said conductors and hold same firmly in such positions, during manipulation of the clamping screws.

In some instances, the clamping plate 27 shown in Figs. 5 and 6 may be dispensed with and the end of the wire W clamped against prongs 22, by the disc head 28 of a screw, the threaded shank 29 of which enters threaded aperture 24 (see Fig. 7).

Thus it will be seen that I have provided an electric wire connector which is simple in structure, inexpensive of manufacture and very effective in performing the functions for which it is intended.

Minor changes in the size, form and construction of the various parts of my improved electric wire connector may be made and substituted for those herein shown and described without de-

parting from the spirit of the invention, the scope of which is set forth in the appended claim.

I claim as my invention:

1. In a wire connector, a conductor plate having reversely arranged spaced upstanding L-shaped flanges on the sides and ends of opposite sides of its upper face, a screw seated in said plate, between said flanges, a washer loosely mounted on the shank of said screw beneath its head and held against detachment from said screw shank and prongs depending from said washer.

2. A wire connector as set forth in claim 1, with integral plate mounting members projecting from said plate between said upstanding flanges.

3. In a wire connector, a plate, reversely arranged upstanding L-shaped flanges on opposite sides of the upper face of said plate for preventing the end portions of wires placed thereon from spreading apart and from moving lengthwise toward each other a portion of each L-shaped flange extending the entire length of the side of said plate, with the other portion of each flange extending part way along the end of said plate and wire clamping screw seated in said plate between said flanges.

4. A wire connection as set forth in claim 3, with prongs carried by said wire clamping means.

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