June 2, 1953 W. B. WINN 2,640,667

ELECTRICAL SERVICE CONNECTOR

Filed May 1, 1950

Fig. 1.

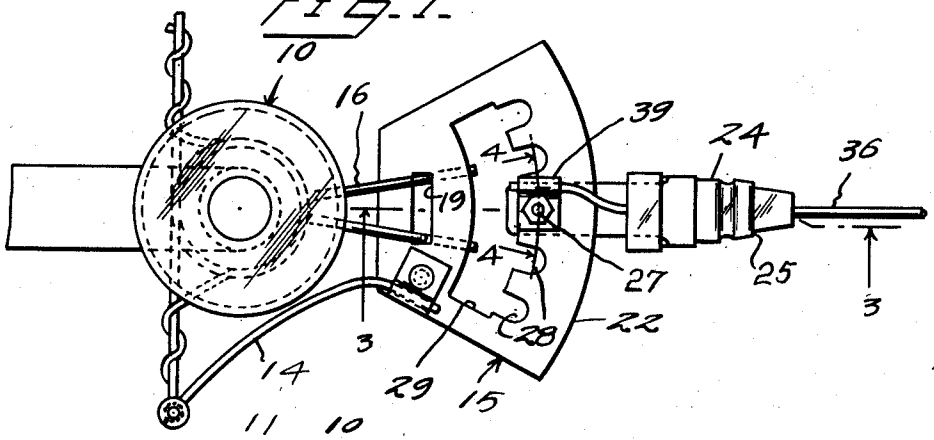


Fig. 2.

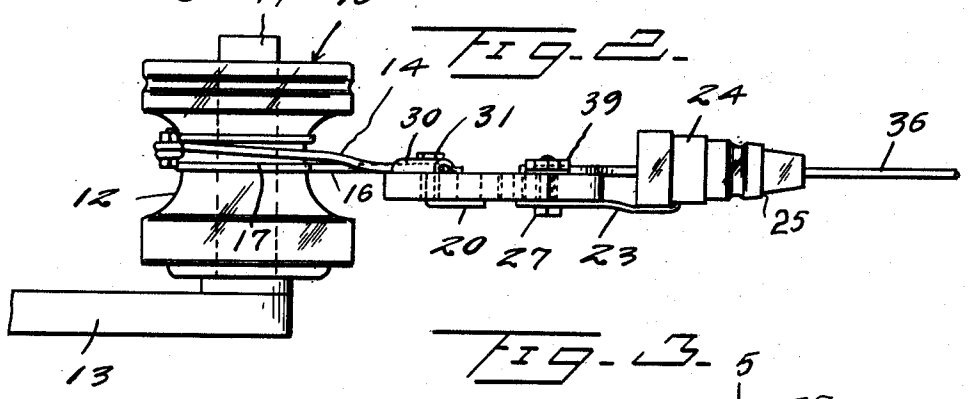


Fig. 3.

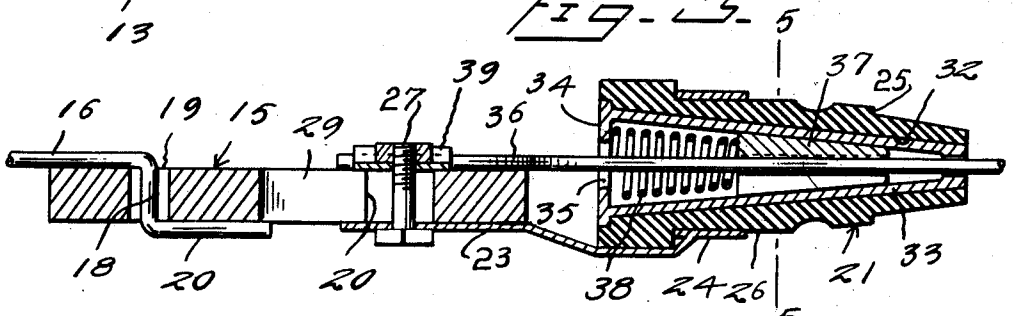


Fig. 4.

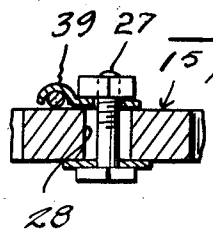
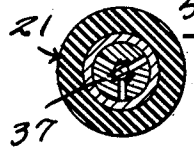


Fig. 5.



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ELECTRICAL SERVICE CONNECTOR

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1 Claim. (Cl. 248—65)

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This invention relates to electrical service connectors.

An object of this invention is to provide an electrical connector for branch wires to a main wire which is so constructed and arranged as to reduce the man hours normally required for such connections.

Another object of this invention is to provide a service connector which will provide an increased contact surface with the wire.

A further object of this invention is to provide a service connector embodying a series of clamping jaws which are so arranged that the wire may be pushed through the jaws in one direction so as to tighten the stretch or span of wire, but reverse pull on the wire will cause the clamping jaws to tightly grip the wire.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claim.

In the drawings:

Figure 1 is a plan view of a multiple service connector constructed according to an embodiment of this invention.

Figure 2 is a detailed side elevation of the connector.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

Referring to the drawing, the numeral 10 designates generally an insulator which is mounted on a post or pin 11 carried by a supporting arm 13. The insulator 10 is formed with annular groove 12 about which a service wire or conductor 14 is adapted to be wound for at least one turn.

A plate generally designated as 15 extends horizontally from the insulator 10 being supported from the insulator 10 by means of a pair of resilient and relatively rigid bars 16 which are connected to a split ring 17 engaging in the groove 12 and about the insulator 10. Each arm 16 as shown in Figure 3 is provided with a substantially right angular bend 18 which extends loosely through an opening or slot 19 formed in the plate 15.

Each bar 16 also includes an outwardly extending arm 20 which extends substantially right angularly from the bend or extension 18 and engages beneath the plate 15. The two arms 16

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are inherently biased away from each other so as to be disposed in divergent relation with the arms at the opposite ends of the slot or opening 19. An insulated wire holder generally designated as 21 is supported outwardly from the arcuate outer edge 22 of plate 15 by means of a flat supporting bar 23 which is formed at its outer end with a ring 24 which is disposed about the holder or insulating member 21.

In the present instance the holder or insulator 21 is formed with one or more steps or shoulders 25, and the band 24 engages about a cylindrical portion 26 of the insulator or holder 21. The bar 23 is secured to the plate 15 by means of a bolt 27 which engages through a selected one of a series of radially disposed notches 28 which are formed in the outer portion of an arcuate opening or slot 29 formed through the plate 15. There may be as many of these notches 28 as may be desired, and there may be a holder or insulator 21 associated with each notch 28.

The terminal end of the wire 14 is secured to the upper side of the plate 15 by means of a clamping clip 30 which is held in clamping position by means of a bolt 31. The holder 21 is formed with a substantially conical bore 32 having the small end thereof outermost, and a substantially conical lining 33 engages within the conical bore 32. The inner large or base end of the lining 33 has secured thereto a base member 34 formed with a relatively large central opening 35 through which a wire 36 is adapted to loosely engage. The wire 36 is extended axially through the holder 21, and the wire 36 is tightly gripped against outward movement by means of a plurality of wedges or wire gripping members 37 which are disposed within the lining 33. A spring 38 is disposed within the holder 21, bearing at its inner or large end against the base 34 and bearing at its outer or small end against the large ends of the wedges or wire gripping members 37. By providing the wire clamping or gripping members 37, which are spring pressed outwardly to clamping or gripping position, the wire 36 is tightly clamped against outward movement with respect to holder 21. The wire 36 is extended completely through the holder 21 and is clamped to the plate 15 by means of a clamping clip 39 which is secured to the plate 15 by means of bolt 27 engaging through a selected one of the notches 28.

With a connector as hereinbefore described the wire or conductor 14 may be the main line wire, and wire 36 may be an extension service line. The plate 15 will provide a means whereby a number of service lines 36 may be easily and

quickly connected with the main line **14** without soldering, twisting or otherwise securing the service lines **26** to the main line **14**. Any outward pull on the wire **26** will be prevented by means of the clamping and wedging members **37**. In this manner the clip **39** will not be under any undue strain from the weight or other pull of the service wire **36**. In mounting the wire **36** in the holder **21** the wire is passed through the holder **21** from the small outer end thereof. When the wire **36** engages the outer ends of the wedges and clamping members **37**, these members will be pushed inwardly to a released position against the action of the spring **38**.

The wire **36** can be freely passed to the left through the holder **21** but outward movement to the right as viewed in Figures 1, 2, and 3 will be prevented by the wedging or gripping members **37** tightly gripping the surface of the wire **36**. If desired, the inner faces of the wedging members **37** may be ribbed or serrated so as to bite into the peripheral surface of the service wire **36**.

What is claimed is:

A wire connector comprising a segmental terminal plate formed with an elongated opening, means engaging in said opening for supporting said plate in substantially horizontal position, said plate also having a second elongated arcuate opening formed with spaced radial notches extending from the outer edge of said second opening, a wire holder comprising a body formed with a tapered bore whereby a wire may be extended therethrough, a bar fixed to said holder and secured to one side of said plate, clamp means engaging through a selected notch securing said bar and end of the wire to said plate, and tapered gripping members in said body spring-biased toward the narrow end thereof and clampingly engaging a wire extended through said bore outwardly of the secured end thereof for holding the wire against outward movement and relieving the secured end of the wire against pulling strain from the wire.

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