Aug. 24, 1954 V. R. DESPARD 2,687,517

WIRE TERMINAL OR CONNECTOR

Filed March 30, 1951

FIG. 1.

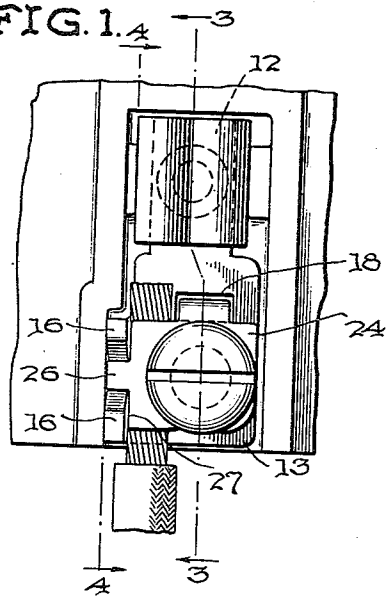


FIG. 3.

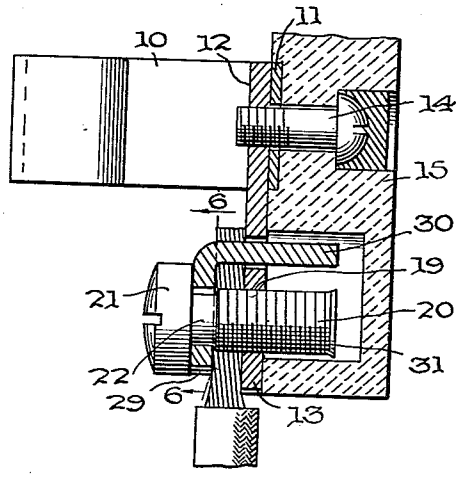


FIG. 2.

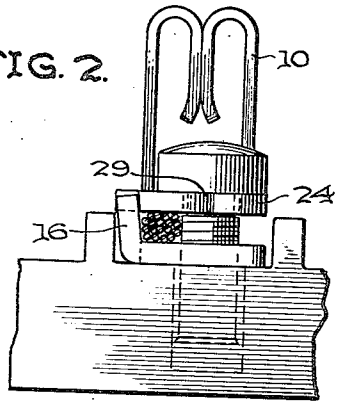
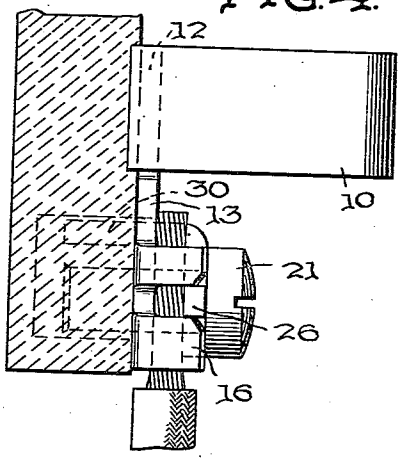


FIG. 4.



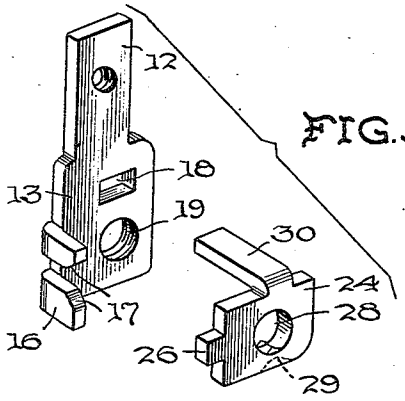


FIG. 5.

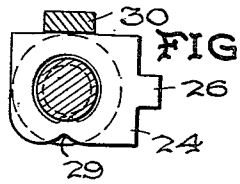


FIG. 6.

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WIRE TERMINAL OR CONNECTOR

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Application March 30, 1951, Serial No. 218,403

2 Claims. (Cl. 339—263)

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This invention relates to a combined wire clamp and terminal of general application.

The invention relates more particularly to a terminal for wiring apparatus of any kind, together with a binding clamp for attaching either a solid or a stranded conductor thereto.

It is a general object of the present invention to provide a novel and improved terminal and wire clamp.

More particularly it is an object of the invention to provide a terminal and wire clamp comprising a base plate, a captive washer mounted on a clamping screw, interlocking tongues on the two parts when in clamping relation and means to maintain the tongues in alignment at all times.

One of the important features of the invention resides in the clamping washer which is coupled to the clamp screw so as to be captive thereon and move with the screw head to provide clearance beneath the washer for the insertion of a wire.

Another important feature resides in the pair of spaced upturned tongues on one edge of the base plate for cooperation with an edge of the captive washer, which has a projection extending between the tongues to insure firm clamping of the wire between the tongues and the sides of the screw, together with guide means to insure proper interfitting of the tongue and projection.

Other and further objects and features of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawing and following specification wherein is disclosed a single exemplary embodiment of the invention, with the understanding that such changes and modifications may be made therein as fall within the scope of the appended claims without departing from the spirit of the invention.

In said drawings:

Fig. 1 is a top plan view of a mounted wire clamp and terminal constructed in accordance with the present invention and showing a stranded conductor held thereby;

Fig. 2 is an end elevation thereof;

Fig. 3 is a longitudinal central section on broken line 3—3 of Fig. 1;

Fig. 4 is a side elevation with the insulating structure sectioned on line 4—4 of Fig. 1;

Fig. 5 is an exploded perspective of the actual clamping elements; and

Fig. 6 is a transverse section through the clamping screw taken on line 6—6 of Fig. 3 and showing the manner of maintaining the clamping washer "captive" on the screw.

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The terminal and wire clamp of the present invention may be used in connection with most any type of electrical apparatus. It is shown in the figure as forming the terminal for one spring contact 10 of an electric receptacle, which contact is adapted to receive between its spaced arms the blade of a contact plug. This contact has a flat base portion 11 adapted to be overlaid by a tang 12 extending rearwardly from the base plate 13 of the terminal and preferably formed integral therewith. Said tang may be perforated to receive the attaching screw 14 which holds the terminal and the contact to the insulating base structure, although obviously any other method of mounting and connecting the terminal to the apparatus with which it is associated may be resorted to.

As viewed in Fig. 1 the base plate 13 is substantially rectangular in plan and projecting from the left edge are a pair of integral spaced tongues 16 bent upwardly through almost a right angle to give a slight flare, as shown in Fig. 2. Preferably the spacing between the tongues is less than their own width and the corners adjacent the spacing are chamfered as at 17 to facilitate the entry of a projection on the captive washer, which will be later described. The base plate is also provided with a rectangular opening extending clear through at 18 and with a threaded opening 19 to receive a clamping screw 20 with a large fillister head 21. The threads on the shank stop short of the flat under surface of the head at a shallow circumferential groove 22.

The clamping washer 24 is mounted on the screw and is made from material slightly thinner than the longitudinal extent of the channel 22 in the screw. The washer is preferably of a width equivalent to that of the base plate and has a projection 26 thereon positioned to a loosely fit in the space between the tongues 16, while the edge 27 of the washer has just a comfortable clearance from the inner faces of these tongues. The washer is constrained to be captive on the screw and rise when the latter is unscrewed by having the hole 28 therein initially a close sliding fit over the threads of the screw. After assembly the edge of the washer which is relatively close to the hole is nicked in as at 29, bending in the material of the washer as seen in Fig. 6 to form a projection which rides on the bottom wall of the channel 22 in the screw and prevents the parts from separating.

The washer is also provided with an integral tang 30 bent directly downwardly or parallel to

the axis of the screw and spaced therefrom the same distance of the hole 18 in the base plate, in which the tang is received, as clearly seen in Figs. 1 and 2. The cooperation between the walls of the opening 18 and the edges of the tang prevent any rotation of the washer, as the screw is turned, to insure its riding up and down with its projection 26 always in proper alignment with the space between the tongues 16. The distance between these tongues and the adjacent side of the screw is slightly greater than the maximum diameter of any wire to be received and clamped so that when the washer is raised the wire may be introduced either longitudinally alongside the screw or laterally beneath the projection 26 and above the tops of the tongues and dropped into the position shown in Figs. 1 and 3 where it can be promptly clamped by merely turning down the screw with a simple screw driver. The cooperation of the tongues and the interfitting projection insures against any strands of the wire remaining outside of the clamping action and a very effective four sided engagement particularly of a bundle of stranded wires is effected, as seen in Fig. 2.

It will be seen that the terminal and wire clamp has no loose parts since the base of the screw is upset as at 31 to prevent it from being run all the way up, and the washer being captive rises as the screw is threaded upwardly so that a single one handed operation with a screw driver prepares the terminal for the reception of the wire, which can be inserted with the other hand, and the screw run down to effect the final clamping.

While a downwardly projecting tongue has been provided on the washer to eliminate relative rotation when the screw is turned, it will be appreciated that similar effect can be achieved by extending the tongues 16 upwardly so they move in cooperative engagement with the projection 26 on the washer. Such an arrangement permits longitudinal entrance of the wire only but this is no serious handicap.

The device is capable of being made in many sizes and can be used for all sorts of apparatus requiring a simple and effective terminal and wire clamp.

I claim:

1. A wire clamp and terminal comprising, in combination, a base plate having an integral mounting and connecting tang extending therefrom and in the plane thereof, said plate and tang having a flat bottom constructed for direct mounting against an insulating base, a pair of spaced tongues projecting upwardly from one edge of said plate to form a slight obtuse angle with the upper face thereof, a binding screw threaded into said plate intermediate its edges, a wire clamping washer captive on said screw directly beneath the head thereof and relatively rotatable in respect thereto, one edge of said washer closely approaching the inner faces of said tongues when the screw is run down, a projection from said washer edge adapted to be received between said tongues, said tongues being of such length as to only receive the projection after the washer approaches the base to approximately the thickness of a wire to be clamped, a tang depending from an edge of the washer substantially 90° displaced from said projection, a slot in said base closely receiving said tang and having walls continuously engaged by the tang to maintain alignment of the projection and tongues for proper interfitting and to limit canting of the washer over the eccentrically positioned wire.

2. The wire clamp and terminal as defined in claim 1 in which said screw and tang are of such length that the washer projection may be withdrawn above the upturned ends of the tongues sufficiently for side introduction of the wire for clamping, said tongues being spaced from the screw and tang a distance not substantially greater than the maximum diameter of the wire to be clamped.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,372,653	Becket	Apr. 3, 1945

FOREIGN PATENTS

Number	Country	Date
380,049	Germany	Sept. 4, 1923
475,680	Germany	Apr. 30, 1929
492,975	Great Britain	Sept. 30, 1938
726,300	Germany	Oct. 10, 1942