Feb. 20, 1934. W. R. NEUMANN 1,948,309

ELECTRICAL CONDUCTOR CONTACT CLIP

Filed May 18, 1931

Fig. 1

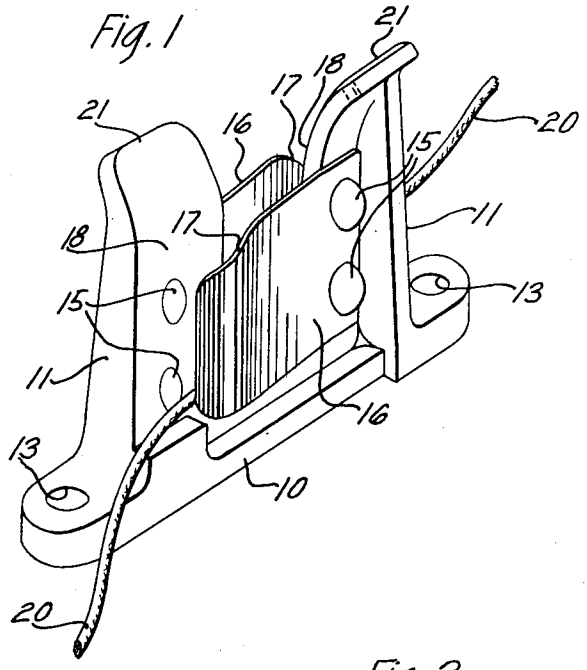
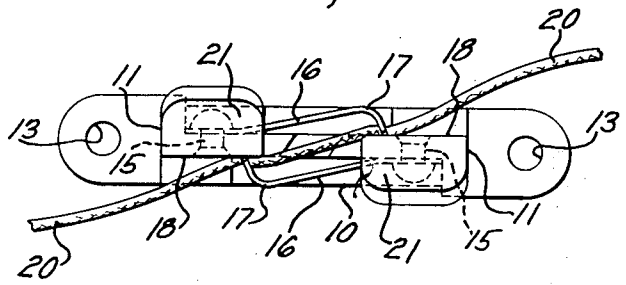


Fig. 2



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ELECTRICAL CONDUCTOR CONTACT CLIP

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5 Claims. (Cl. 173—324)

This invention relates to electrical conductor contact clips and more particularly to multiple contact clips for insulated electrical conductors.

In the testing of electrical lines or circuits through devices, for instance electrical coils, during process of inspecting and adjusting and in which a conveyor system is used it is necessary to complete a circuit through the coil terminals or leads, which are generally insulated, to a test set cord and since the time available for making the test while the coil is being conveyed is short it is desirable to make contact with the conductor without removing the insulation therefrom.

The primary object of this invention is to provide an electrical conductor contact clip which is of simplified construction, practical and efficient for making the above mentioned electrical conductor contact.

In one embodiment of this invention, a support is formed with a pair of spaced upright members which support on opposite sides thereof a pair of curved leaf springs, a curved free end of each spring being arranged to normally bear against the other member. When an insulated conductor, grasped by an operator at points outside the spaced upright members is inserted between the free ends of the springs and their associated members and drawn downwardly, the insulation is displaced and contact is made with the bare conductor at two spaced points. To complete a circuit from a test set through the insulated conductor associated with the upright members and the leaf springs, a terminal of the test set is moved into contact with the upper end of one of the upright members which are tapered and curved in opposite directions to facilitate the guiding of the insulated conductor during the insertion thereof.

Further objects of this invention will be apparent from the following description, taken in connection with the appended drawing, in which

Fig. 1 is a perspective view of one form of electrical conductor contact clip embodying the features of this invention, and

Fig. 2 is a plan view thereof.

The electrical conductor contact shown in the drawing comprises a support or base member 10 provided with a pair of spaced offset upright arms 11, openings 13 for the reception of screws or bolts being formed in opposite ends of the support member for securing it to a bench, fixture or conveyor. Fixed by means of rivets 15, or other suitable securing means, such as screws, to each of the arms 11 upon opposite sides thereof is a leaf spring 16, having its free vertical end edge curved inwardly and downwardly, as indicated at 17, and normally engaging a smooth machined face 18 of the opposite arm. The vertical edges of the free ends of the springs 16 are suitably rounded and smoothed and in some cases may be sharpened so that when an insulated conductor, indicated at 20, is inserted between the smooth faces 18 of the arms 11 and the curved free ends of the springs 16 and drawn downwardly the insulation will be sufficiently displaced to permit contact with the conductor 20, but without marring or cutting the surface thereof. The depth of the vertical free edge of the spring 16 is such that when the conductor 20 is in the position shown in the drawing adjacent the bottom of the spring the upper portion of the vertical edge is inclined toward the face 18 of the arm 11 sufficiently to retain the conductor in contacting position. At their upper ends the arms 11 are tapered and curved outwardly in opposite directions, as indicated at 21, to facilitate the guiding of the insulated conductor between the spaced arms 11 and into contacting relation with the faces 18 of the arms and the free ends of the springs 16 as is clearly shown in Fig. 2.

In the use of the multiple contact clip herein described the insulated conductor 20, which may be a terminal of an electrical coil or other device to be tested, is grasped by an operator at spaced points outside the spaced upright arms 11, inserted between the smooth faces 18 of the latter and the curved free ends of the associated springs 16 while held taut and drawn downwardly into the position shown in the drawing. The tension in the curved leaf springs 16 will press the free ends thereof toward the faces 18 of the arms 11 with sufficient force during the inserting of the insulated conductor 20 and displace the insulation from the conductor and thus cause contact of the spring ends therewith and thereafter firmly hold the conductor in position during the testing or other operation being performed. Due to the inclination of the springs 16 hereinbefore described the conductor 20 will be firmly held during any manipulation of the coil or other device incident to the testing of or other operation thereon. In order to complete an electrical circuit from a test set to the insulated conductor, which is in electrical contact with each of the arms 11, the terminal of the test set is brought into contact with one or the other of the arms 11 preferably at their upper curved ends 21.

The design and action of the multiple contact

clip described herein is such that a uniform contact pressure is effected throughout the entire length of the conductor inserting stroke and the conductor may be readily removed from the clip by drawing upwardly thereon at points outside the arms 11 in a manner similar to that when inserting the conductor.

It will be evident that with a multiple contact clip of the type described electrical contact may be readily made with an insulated conductor at two spaced points without the removal of the insulation therefrom. This feature is of particular advantage when the clip is used in connection with a conveyor system for handling the coils or other devices during testing or other operations wherein it is desirable that no interruption of the movement of the conveyor should occur during the contacting of the conductor with the clip or the removal therefrom.

Although there is herein shown and described a specific embodiment of this invention, it should be understood that modifications may be made without departing from the spirit and the scope of the appended claims.

What is claimed is:

1. In an electrical conductor contact clip, a support having spaced arms thereon, and a resilient member secured to one arm having a free end edge thereof normally bearing against the other arm and adapted to receive therebetween an insulated electrical conductor and cooperating to displace the insulation thereof when the conductor is drawn therebetween for electrically connecting the conductor to the clip.

2. In an electrical conductor contact clip, a support having spaced offset upright arms thereon, and a resilient member secured to one arm having a free vertical end edge thereof normally bearing against the other arm and adapted to receive therebetween an insulated electrical conductor and cooperating to displace the insulation thereof when the conductor is drawn therebetween for electrically connecting the conductor to the clip.

3. In an electrical conductor contact clip, a support having spaced offset upright arms thereon, and a leaf spring secured at one end to one arm and an opposite free vertical edge of the opposite end turned inwardly and normally bearing against the other arm and adapted to receive therebetween an insulated electrical conductor and cooperating to displace the insulation thereof when the conductor is drawn therebetween for electrically connecting the conductor to the clip.

4. In an electrical conductor contact clip, a support having a pair of spaced arms thereon, and a pair of leaf springs secured to opposite sides of the arms, a free end of each spring having its edge normally bearing against the other arm on the side thereof opposite the side which supports the other spring, the arms and the springs being adapted to receive therebetween an insulated electrical conductor and cooperating to displace the insulation thereof at two spaced points when the conductor is drawn therebetween for electrically connecting the conductor to the clip at two spaced points.

5. In an electrical conductor contact clip, a support having a pair of spaced offset upright arms thereon, and a pair of horizontally extending leaf springs secured to opposite sides of the arms, a free vertical end edge of each spring turned inwardly and rounded off at its upper free corner edge and normally bearing against the other arm on the side thereof opposite the side which supports the other spring, the arms and the springs being adapted to receive therebetween an insulated electrical conductor and cooperating to displace the insulation thereof at two spaced points when the conductor is drawn therebetween for electrically connecting the conductor to the clip at two spaced points.

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