April 16, 1957 J. G. HUMMEL 2,789,276

TERMINAL CLAMP

Filed April 15, 1954

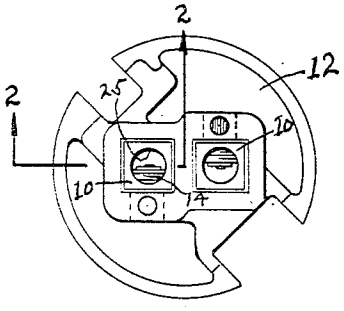

Fig. 1

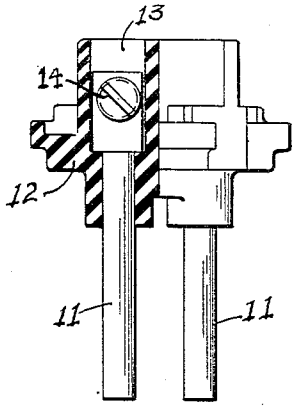

Fig. 2

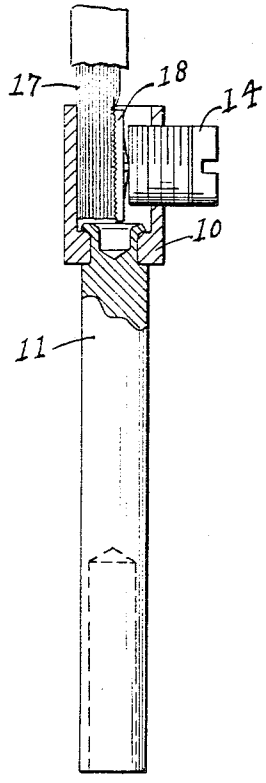

Fig. 3

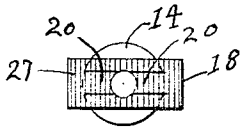

Fig. 5

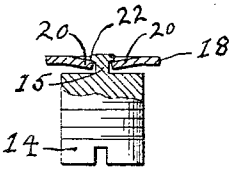

Fig. 4

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TERMINAL CLAMP

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2 Claims. (Cl. 339—272)

This invention relates to terminal clamps employed to detachably connect electrical conductors to the terminals of electrical apparatus.

In general, this type of connector consists of a tubular or boxlike body portion for the reception of the end of the conductor which is clamped therein by a plate actuated by a screw threading into the body. In prior devices of this kind, the clamping plate is apertured to rotatably receive the inner end of the screw, the plate being swiveled on the screw by the inner end of the screw being headed or swedged over the plate. In some structures, the plate is interfitted with the body of the terminal so as to have sliding movement relative thereto in a direction axially of the screw. These arrangements are to prevent accidental displacement of the plate from the body of the terminal. Such constructions are expensive to manufacture.

This invention has as an object a terminal clamp of the type referred to embodying a structural arrangement whereby the conductor clamping plate is affixed swivel fashion to the actuating screw without riveting or interconnecting the clamp plate to the body of the terminal.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings—

Figure 1 is a plan view of the contact unit of a plug or receptacle provided with terminal clamps embodying my invention.

Figure 2 is a side elevational view of the structure shown in Figure 1, the left portion of the figure being shown in section taken on line 2—2, Figure 1.

Figure 3 is a side elevational view of one of the terminals shown in Figures 1 and 2, the upper portion being shown in section.

Figure 4 is a side elevational view of the actuating screw, the inner portion thereof and the clamp plate being shown in section.

Figure 5 is a plan view of the clamp plate and actuating screw.

The terminal clamp consists of a tubular body **10** attached to a circuit forming element of an electrical apparatus. As here shown, the body **10** is attached to the end portion of a contact **11** of the type commonly employed in plug and receptacle units. These contacts are mounted in a body or contact carrying member **12** formed of insulating material.

The tubular portion **11**, shown herein, is rectangular in cross section and is mounted in a rectangular recess **13** formed in the supporting member **12**. The tubular body is formed with a threaded aperture in one of its side walls

to receive an actuating screw **14**, the inner end of which is formed with a stem **15**. The end of the conductor **17** is positioned in the tubular body **10** and is fixedly clamped therein by a plate **18**. The central portion of this plate is apertured and depressed on opposite sides of the aperture to form a pair of confronting tongues **20**. The tongues **20** extend lengthwise of the plate and are inclined from the plane of the plate **18** toward the screw **14**, and with the confronting end edges of the tongues initially spaced apart a sufficient distance to receive the enlarged head portion **22** of the stem **15**.

The plate **18** is positioned within the tubular member **10** and the screw **14** threaded inwardly, the head portion **22** of the stem **15** passing between the confronting edges of the tongues **20**, and as the plate is moved against the opposite side wall of the tubular member, the tongues **20** are moved inwardly toward the plane of the plate **18**, thus reducing the space between the confronting edges of the tongues, whereby the head portion **22** overlies the inner surface of the tongues and accordingly, the plate is swiveled to the screw without any riveting or swedging operation performed on the stem **15**.

Preferably, the tubular member **10** is formed with a cylindrical bore **25** and the plate **18** has a widthwise dimension somewhat less than the diameter of the bore of the body, and the plate **18** preferably has a lengthwise dimension substantially greater than the diameter of the body bore **25**, whereby the plate is maintained in axial relation to the bore of the body **10**. With this arrangement, it is not necessary to provide any interfitting sliding structure between the plate **18** and the body member **10** and, as previously pointed out, the riveting operation for affixing the plate to the screw is avoided. Preferably, the inner surface of the plate is serrated as at **27** to provide a firm grip on the conductor **17**.

What I claim is:

1. A terminal clamp comprising a tubular body having a threaded aperture in the side wall thereof, a screw threaded through said aperture and being formed at its inner end with an axially extending stem of reduced diameter and having an enlarged head portion at the end thereof, a conductor clamp plate positioned in said tubular member, said plate being formed with a pair of aligned deformable tongues with their confronting ends spaced apart a distance slightly greater than the diameter of said stem and being initially inclined from the plane of the plate towards said screw, with the confronting ends of said tongues spaced apart to admit passage of said head portion of the stem for engagement of said tongues by said screw whereby, upon tightening said screw, said tongues are moved into the plane of said plate to retain the same on said stem for swivel action relative thereto.

2. A terminal clamp as defined in claim 1, wherein the widthwise dimension of said clamp plate is substantially less than the diameter of the body bore, and the lengthwise dimension of said plate is substantially greater than the diameter of the body bore.

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