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C. S. GORDON ET AL

2,472,527

DROP WIRE CLAMP

Filed May 22, 1947

FIG. 1

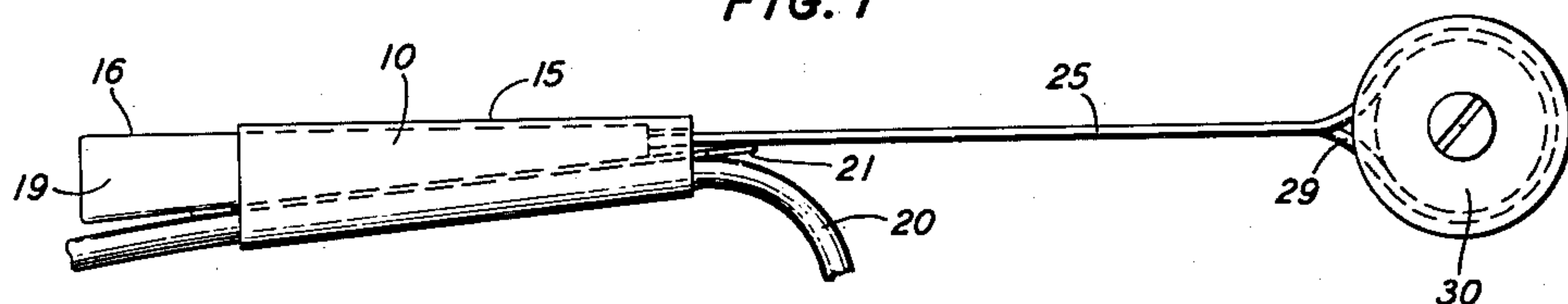


FIG. 2

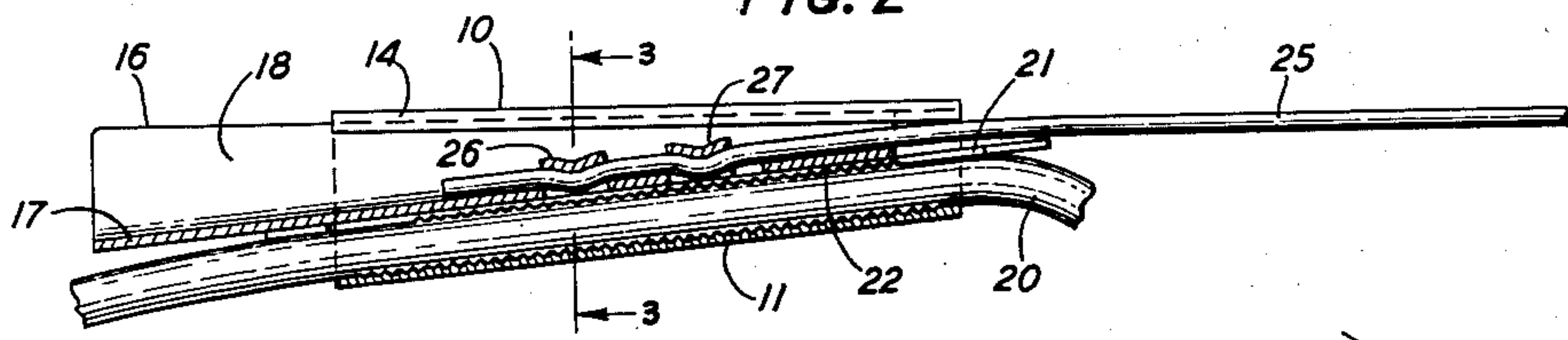


FIG. 3

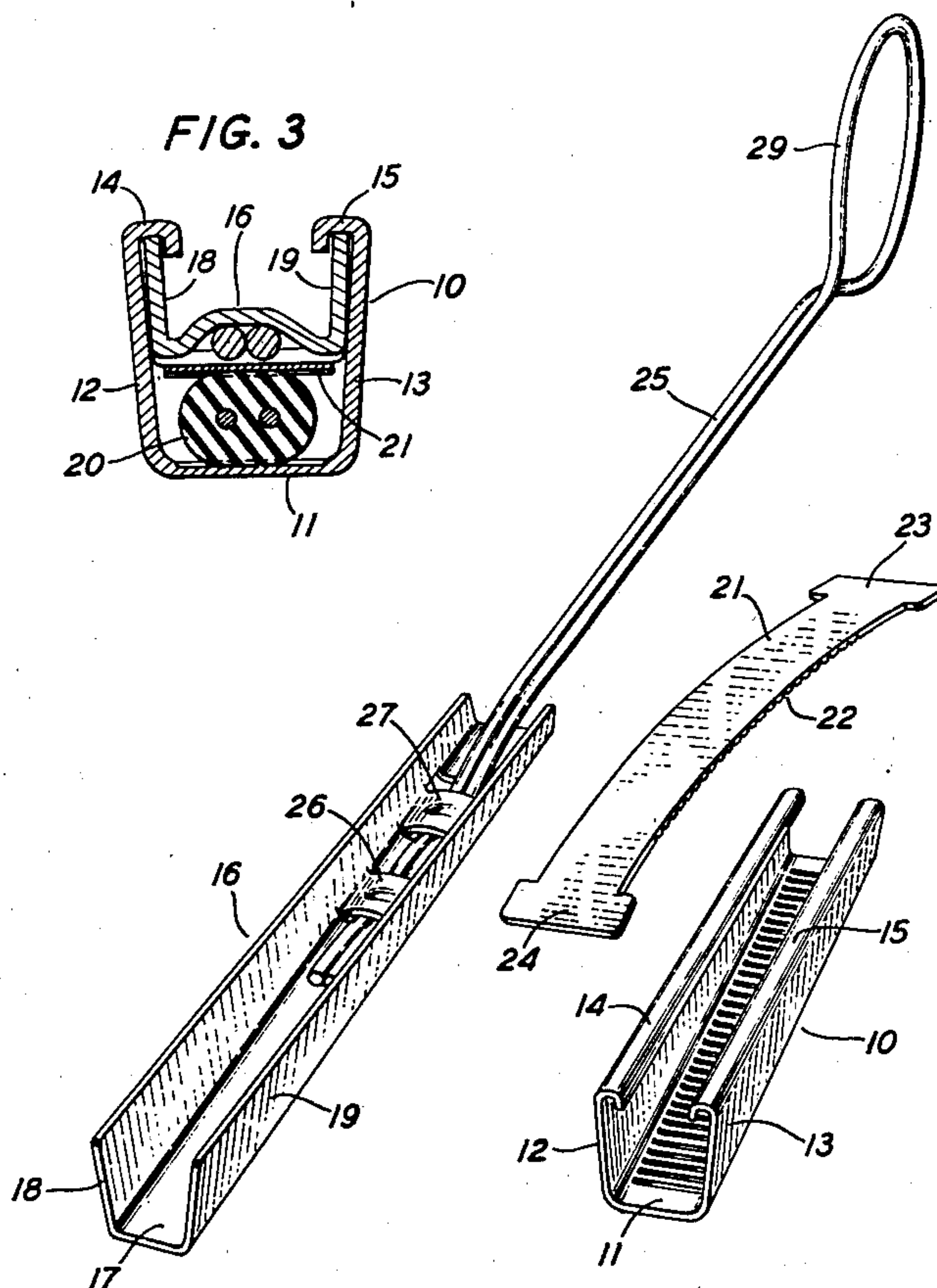
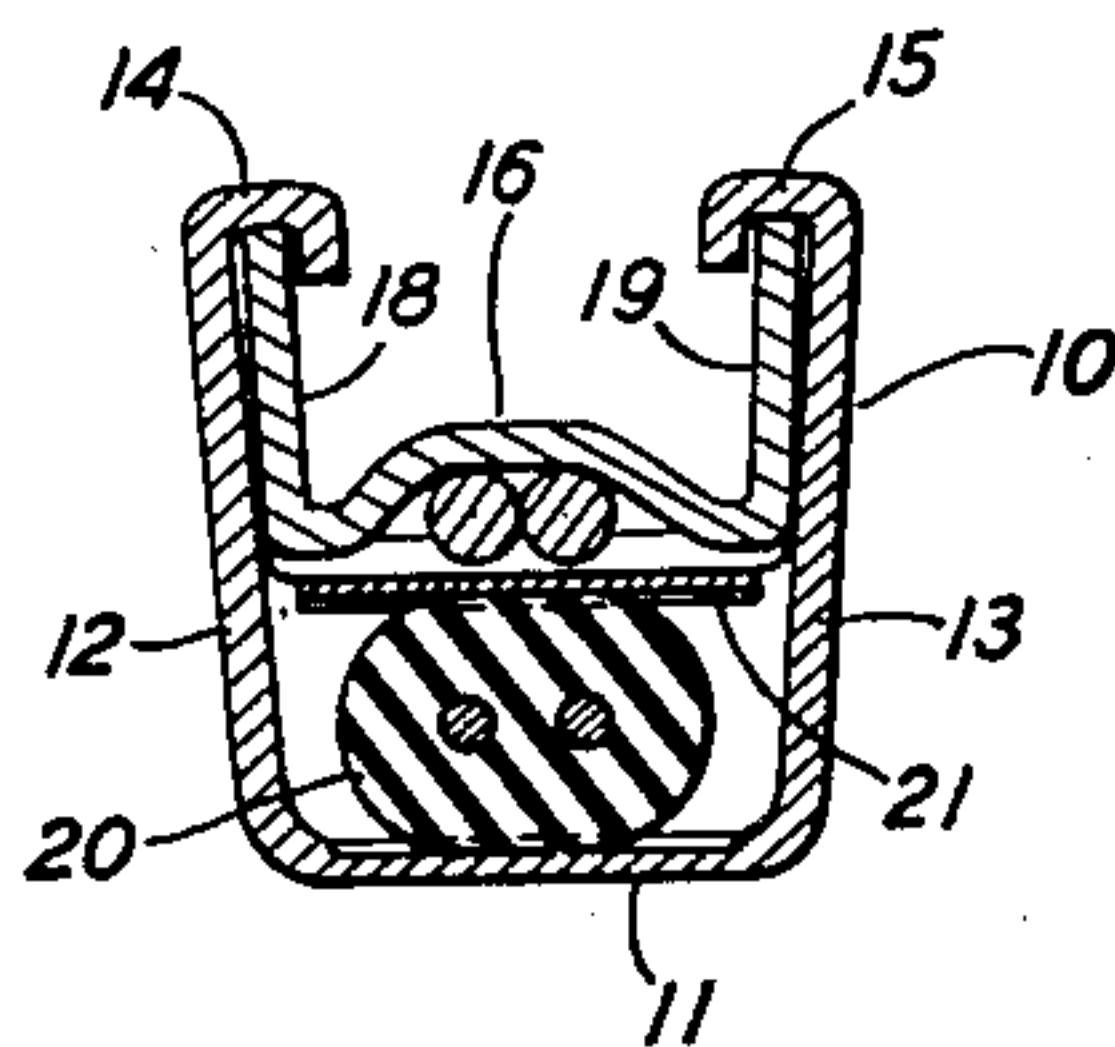


FIG. 4

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2,472,527

DROP WIRE CLAMP

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2 Claims. (Cl. 24—136)

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This invention relates to securing devices and more particularly to an improvement in devices intended for use in securing electrical conductors to supports, as shown in Patents 1,653,840 to Byl, December 27, 1927 and 2,068,368 to Bouvier et al., January 19, 1937.

The primary object of this invention is to provide an inexpensive wire securing device or clamp, of the friction type, which will securely grip the insulated jacket of the conductor positioned therein in such a manner that no slippage will occur and the insulating jacket of the conductor will not be damaged since the friction means which clamps the conductor tightly in the device is not directly in contact with the insulated jacket of the conductor.

In accordance with the preferred embodiment of the invention, the proposed device contemplates a clamping device comprising an elongated sheet metal channel member having tapered side walls, the longitudinal edges thereof intumed to provide guides for a second elongated sheet metal member of wedge-shaped configuration, the side walls of which have substantially the same taper as the channel member and serves to securely clamp between the base portion of the channel member and the bottom surface of the wedge member, and electrical conductor. Interposed between the bottom surface of the wedge member and the upper portion of the electrical conductor is a thin bowed metallic shim which serves to prevent the wedge member from slidably engaging the surface of the conductor as the wedge member exerts a downward pressure on the conductor to frictionally engage it and force it into contact with the bottom of the channel member.

In order to improve the holding power of the shim, the concave or underside is slightly roughened.

A wire loop for securing the clamp to a suitable support is attached to the bottom of the wedge member by means of staking.

The invention will be readily understood from the following detailed description when read in connection with the accompanying drawing of which:

Fig. 1 is a side view of the clamp of this invention with a conductor in place;

Fig. 2 is an enlarged fragmentary view partly in section of the clamp shown in Fig. 1;

Fig. 3 is an enlarged vertical sectional view taken on line 3—3 of Fig. 2; and

Fig. 4 is an exploded view in perspective illustrating the component parts of the clamp of this invention.

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Referring now to the drawing, the numeral 10 indicates an elongated body member which is channel-shaped in cross-section and comprises a base portion 11 and two slightly diverging side walls 12 and 13 which are tapered toward one end to form a trough-like structure. The edges of the side walls 12 and 13 are turned inwardly and downwardly to form U-shaped guideways 14 and 15 for the reception of the side walls of a wedge member 16.

The wedge member 16 comprises a base portion 17 and two slightly diverging side walls 18 and 19 which are also tapered and cooperate with the body 10 and like the member 10, the wedge is also channel-shaped in cross-section.

As shown, the tapered side walls 18 and 19 of the wedge member 16, at their widest ends, are of such a height that sufficient clearance is provided between the lower surface of the base 17 and the upper surface 11 of the member 10 on which an insulated conductor 20 is positioned, to permit the member 10 and the wedge member 16 to be assembled in operating relation and thereafter to exert a clamping action on the wire 20 when the wedge member 16 is drawn into the body member 10, as shown in Figs. 1, 2 and 3.

In order to prevent the wedge member 16 from frictionally engaging the insulated jacket of the wire 20 located on the base portion 11 of the body member 10, a bowed metallic shim 21 having a roughened surface 22 on its concave side is interposed therebetween. The shim 21 is provided with portions 23 and 24 on its ends to prevent longitudinal displacement thereof.

A loop of wire 25 is attached to the upper surface of the wedge member 16 by having its parallel end portions inserted through the struck-up embossings 26 and 27 and staked, thereby providing a means for securing the device to a suitable support.

In the use of the device of this invention, after the conductor 20 is clamped between the shim 21 and the body 10, the conductor is supported by placing the loop 25 around a suitable knob 30.

From the foregoing it will be readily observed that with the clamp of this invention, the holding power of the clamp is not dependent upon the character of the insulated jacket on the conductor, since the wedge 16 which exerts the friction to force the conductor 20 against the body member 10 is not in contact with the jacket directly, but exerts its force on the shim 21 which is interposed between the conductor 20 and the wedge 16. Hence, the wedge 16 does not slidably engage the jacket of the conductor 20 and bite

into it in order to hold the wire, but securely holds the conductor in place by exerting a force on a secondary means which in turn contacts the conductor jacket. Thus we have the wedge member 10 applying the force, sliding along to exert this force and a shim member interposed therebetween to apply the force to the conductor 20 which has been built up by the wedge member 16.

While we have shown and described the preferred embodiment of our invention, it is to be understood that various changes and modifications may be made therein without departing from the spirit of the invention and we are only limited by the scope of the appended claims.

What is claimed is:

1. A clamp for supporting insulated electrical conductors comprising an elongated transversely U-shaped tapered body member having inturned flanges along the marginal edges of the sides thereof to form guides, an elongated transversely U-shaped tapered wedge member slidably positioned within said body member and having its marginal edges located in said guides, a wire loop secured to said member for supporting said clamp, a bowed flat metallic spring member, having its concave surface roughened, interposed between said wedge member and said body member, said bowed member having its convex surface in contact with said wedge member and adapted to be flattened out against the tension thereof when a conductor is clamped between said spring member and said body member.

2. A clamp for supporting insulated electrical

conductors comprising an elongated transversely U-shaped tapered body member having inturned flanges along the marginal edges of the sides thereof to form guides, an elongated transversely U-shaped tapered wedge member slidably positioned within said body and having its marginal edges located in said guides, a wire loop secured to said member for supporting said clamp, a bowed flat metallic spring member, having its concave surface roughened, interposed between said wedge member and said body member, said bowed member having its convex surface in contact with said wedge member and adapted to be flattened out against the tension thereof when a conductor is clamped between said spring member and said body member, and means on the end of said spring member, integral therewith, for preventing the displacement thereof.

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