

Feb. 26, 1963

D. J. CRIMMINS ET AL
CONNECTOR FOR CONDUCTORS

3,079,579

Filed May 20, 1960

3 Sheets-Sheet 1

FIG. 1

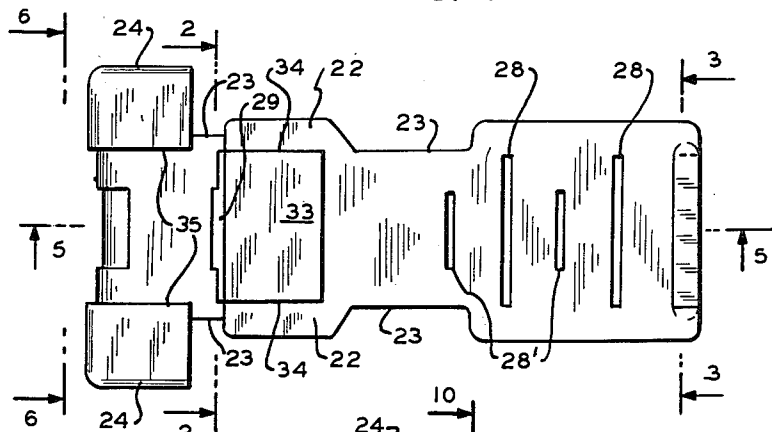


FIG. 2

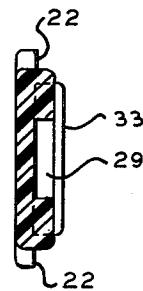


FIG. 3

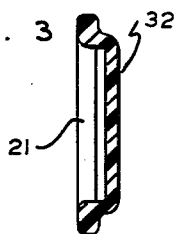


FIG. 4

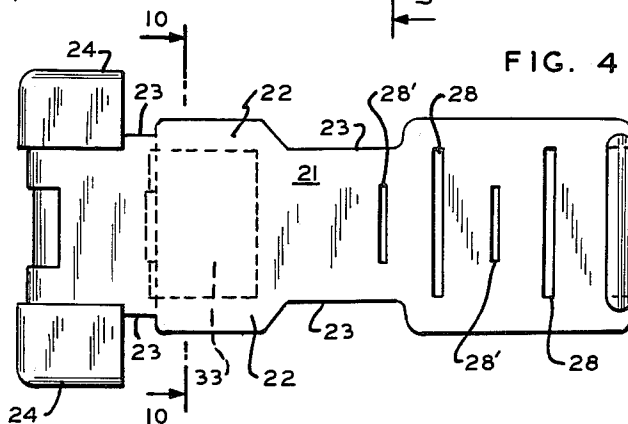


FIG. 5

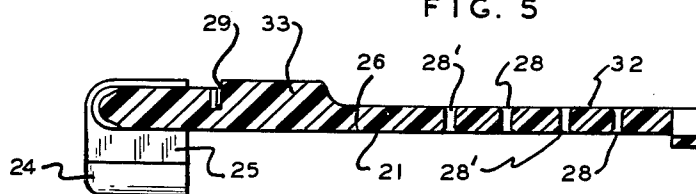
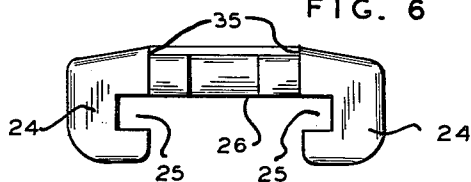


FIG. 6



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FIG. 7

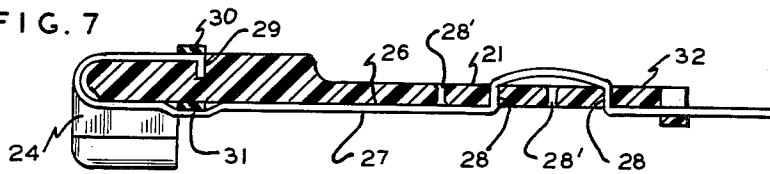


FIG. 8

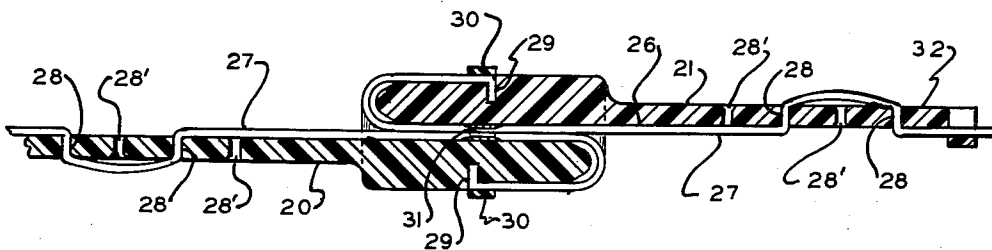


FIG. 9

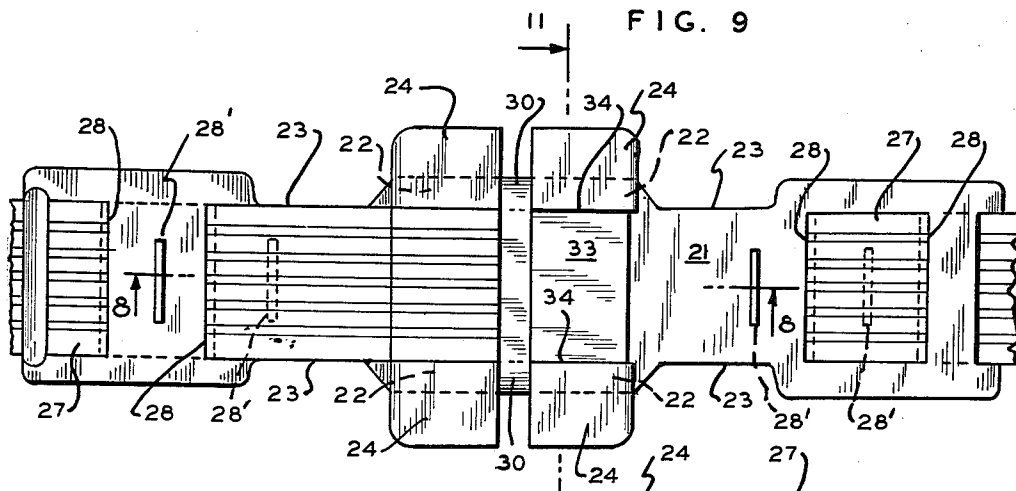


FIG. 10

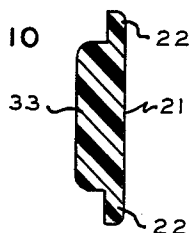
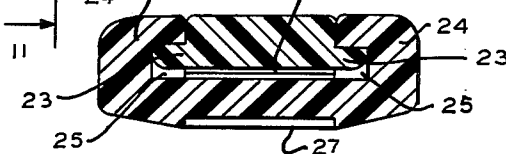


FIG. 11



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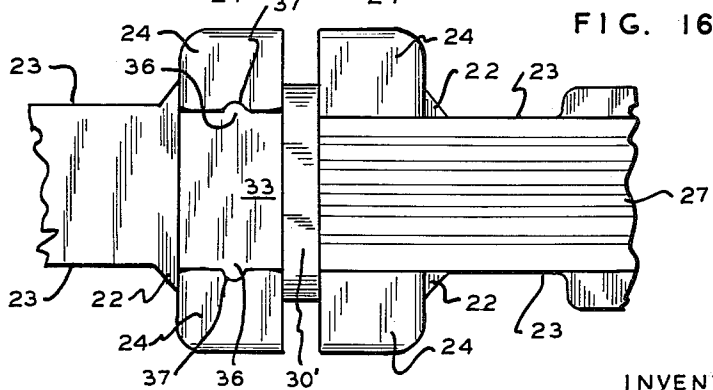
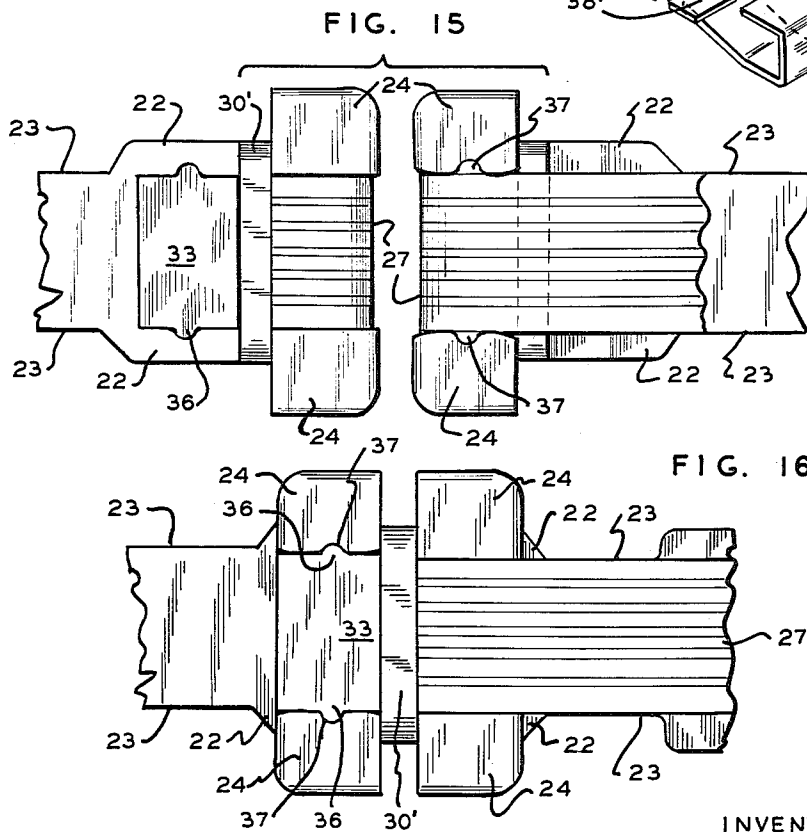
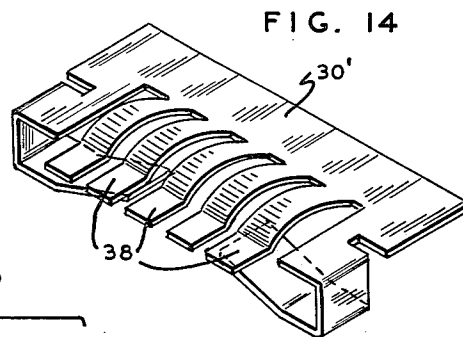
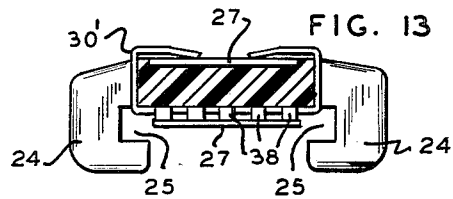
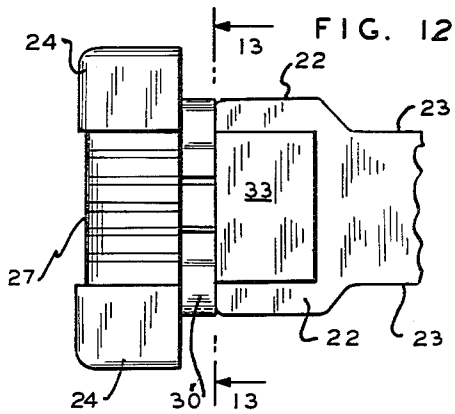
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CONNECTOR FOR CONDUCTORS

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Filed May 20, 1960, Ser. No. 30,590
4 Claims. (Cl. 339-49)

This invention relates to a connector for conductors comprising a pair of plate members having planar axial faces on which flat conductors may be disposed and slidably interengaging the plates to register them with their planar faces in parallel relation and with the flat conductors carried thereby into direct electrical contact.

A further object of the invention is to provide a connector comprising plates to which conductors may be secured in a convenient and highly effective manner, adapted to be slidably interengaged to register the conductors in direct electrical contact, without any intermediary between the conductors, avoiding power loss and assuring constant connection of the conductors.

The invention further provides novel interengaging means to latch the plates when registered against further accidental sliding movement.

The drawings, illustrating procedures and devices useful in carrying out the invention, and the description below, are exemplary only of the invention, which shall be deemed to cover all other devices and procedures coming within the scope and purview of the appended claims.

In the drawings, wherein similar reference characters indicate like parts:

FIG. 1 is a plan view of the obverse face 32 of one of the plate members embodying the invention,

FIG. 2 is a transverse sectional view thereof, taken at line 2-2 of FIG. 1,

FIG. 3 is a transverse sectional view thereof, taken at line 3-3 of FIG. 1,

FIG. 4 is a plan view of the plate member, at the planar axial face thereof,

FIG. 5 is a longitudinal sectional view taken at line 5-5 of FIG. 1,

FIG. 6 is an end elevational view taken at line 6-6 of FIG. 1,

FIG. 7 is a longitudinal sectional view similar to FIG. 5 but showing a tape conductor secured to the plate member,

FIG. 8 is a longitudinal sectional view of plate members embodying the invention, shown slidably interengaged and registered with their planar surfaces in tight abutment,

FIG. 9 is a top plan view thereof,

FIG. 10 is a transverse sectional view taken at line 10-10 of FIG. 4,

FIG. 11 is a transverse sectional view taken at line 11-11 of FIG. 9,

FIG. 12 is a fragmentary plan view at face 32 of a plate member of the invention, showing a holding band securing the tape conductor 27 thereto,

FIG. 13 is a transverse sectional view taken at line 13-13 of FIG. 12,

FIG. 14 is an enlarged perspective view of a holding band which may be used in carrying out the invention,

FIG. 15 is a fragmentary plan view of the obverse faces of plate members embodying the invention provided with latching means adapted to hold them in registry, and

FIG. 16 is a similar view thereof, showing one plate reversed to dispose its planar face toward that of the other, and the plates moved together and latched.

As shown in the drawings, the connector of the invention comprises a pair of plates 20, 21 (FIG. 8) which may be made of any suitable material, and are generally

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correspondingly formed so that a description of one will apply to both. The plates are provided with marginal flanges 22 (FIGS. 4 and 15) extending laterally beyond and parallel to the adjacent side edges 23 of the plates and means 24 on the outer end of the plates, which may be in the form of C-shaped ears (FIG. 6) are provided having slots 25 therein opening toward the plates to be slidably interengaged by the marginal flanges 22 when the plates are moved together (FIGS. 9 and 11).

The plate 21 has a planar axial surface 26 (FIG. 5) to which conductors, for example, a flexible tape conductor 27, may be secured, and a plurality of slots 28 through which the conductor may be threaded (FIG. 7) to position the same on the plate overlying the planar axial surface 26 thereof. The slots (compare slots 28, 28', FIG. 4) may be of varying widths to accommodate conductors of different widths. The free end of the conductor may be wrapped around the end of the plate 21 (FIGS. 7 and 8) and inserted in a slot or recess 29 at said end of the plate and held therein by a preferably flexible band 30 which may be positioned over the conductor at the face 32 of the plate obverse to the planar face 26 thereof; at the latter face the band 30 may be disposed under the tape (FIG. 8). Thus, when the plates 20, 21 are assembled (FIG. 8) bared or exposed portions 31 (FIGS. 7 and 8) of the conductors, thus urged together under tension on assembly of the plates, will be in direct electrical contact. The flanged portions 22 of each plate are received in the slots 25 (FIGS. 9 and 11) of the other plate; slots 25 are proportioned to be of greater height than the flanges 22 to provide substantial clearance on interengagement, preventing wedging, and each plate may be provided adjacent the face 32 thereof obverse to the planar axial surface 26 thereof with an extension 33 (FIGS. 1 and 9) whose marginal edges 34 are aligned with the adjacent marginal edges 23 of the plate. The extension 33 is preferably proportioned, between the marginal edges 34 thereof to approximately equal the distance between the free edges of the ears 24. The flanges 22 of each plate are received in the slots 25 of the ears 24 of the other plate, the marginal edges 34 of the extension 33 of each plate engaging the free edges of said ears 24 of the other to thus further register the parts (FIG. 11) and preclude accidental displacement. If it is desired to provide a positive lock against accidental separation of the interengaged plates protuberances 36 may be formed on the extensions 33 (FIG. 15) laterally beyond the edges 34 thereof to be received in complementary transverse recesses 37 on the free edges of the ears 24 of the other plate (FIG. 15). The holding band 30 may be a single flexible elastic member (FIG. 7) or may (FIG. 14) have a plurality of spring fingers 38 formed thereon disposed beneath and bearing against the conductor 27 at the planar face 32 of the plate (FIG. 13). The plates 21 are preferably made of suitable flexible material and the parts so proportioned that the free edges of the ears 24 will snugly or tightly engage marginal edges 34 of extension 33 on interengagement of the plates. Any stress or strain originating there (or occurring purposely by so proportioning the parts) will result in the ears bowing outwardly; this bowing action will be transmitted to the end portions of plates 21 intermediate ears 24, pressing the contacting portions 31 more tightly into engagement with each other.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A connector for abutting connection of the bared portions of a pair of flexible tape conductors comprising a pair of plates having planar axial faces, means for securing said flexible tape conductors to the plates in overlying relation to and along the planar axial faces of the plates,

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said tape conductors being bent over the ends of said plates and extending a short distance rearwardly along the top of said plates, C-shaped clips on said plates at one end thereof, formed at said planar faces of said plates, flanges extending marginally from said planar faces of said plates intermediate the clips and the opposite ends of said plates, said flanges terminating at the side edges of the plates in substantially spaced relation to the last mentioned ends of the plates, and means disposed on said planar faces of the plates and beneath said tape conductors yieldably urging the bared portions of the tape conductors outwardly of the said planar faces of the plates, said last named means also extending over the portion of said tape conductors disposed on the top of said plates to secure the same thereto; said connector being so proportioned that when the plates are disposed with their planar faces directed toward each other and the C-shaped clips of each plate moved to receive the marginal flanges of the other plate therein and the plates are then moved apart, said C-shaped clips will receive the marginal flanges and urge the planar faces of the plates toward each other, pressing the bared portions of the flexible tape conductors into abutting connection.

2. In a connector as set forth in claim 1, an extension formed on each plate at said planar face thereof in registry with the marginal flanges of such plate and having marginal edges parallel to the marginal flanges and spaced apart a distance substantially equal to the distance between the free ends of the C-shaped clips, whereby, when the C-shaped clips are moved to receive the marginal flanges of the plates, the free edges of said clips will engage marginal edges of said extensions for registry of the plates in so moving them together.

3. A connector for abutting connection of the bared portions of a pair of flexible tape conductors comprising a pair of plates having continuous and uninterrupted planar axial faces, means for securing said flexible tape conductors to said plates in overlying relation to and along the planar axial faces of the plates; C-shaped clips on said plates at the outer ends thereof and depending from said planar faces of said plates, flanges extending marginally from said planar faces of said plates interme-

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diating the clips and the inner ends of the plates, said flanges terminating at a point spaced outwardly of said inner ends, the flanges of one plate being adapted to be slidably received in the clips of the other plate, an extension disposed upwardly of the surface of each of said plates opposite said planar faces, said extensions having marginal edges parallel to and spaced inwardly of the outer edges of said flanges, the marginal edges of said extensions being spaced apart a distance substantially equal to the distance between the ends of the C-shaped clips, said connector being so proportioned that when the plates are disposed with their planar faces directed towards each other and the clips of one plate adjacent the inner end of the other plate and the plates are pulled apart the C-shaped clips of each plate will move towards each other and will receive the marginal flanges of the other plate therein and have their free ends guided upon the marginal edges of said extension in closely fitted relationship urging the planar faces of the plates toward each other, pressing the bared portions of the flexible tape conductors into electrical interengagement.

4. A conductor as set forth in claim 3, including resilient means on each of said plates adapted to urge the flexible tape conductors outwardly of the planar faces of the plates.

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