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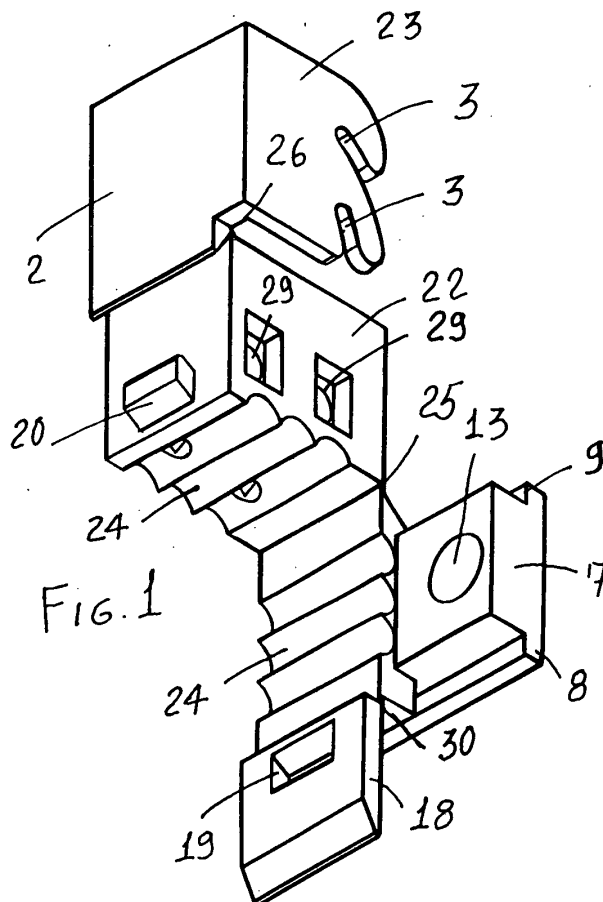
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(54) **Power supply connector adapted to also operate as a lamp-support**

(57) The present invention relates to a connector for power supplying lamps, characterized in that said connector is made of a plastic material and comprises a

socket and two side fins and, which are housed in a sliding recess and are fixed by a locking screw engaged in a hole for preventing said socket from sliding in a cross member therefor.



Description**BACKGROUND AND SUMMARY OF THE INVENTION**

[0001] The present invention relates to an improved connector, which has been specifically designed to be applied to lightening lamps.

[0002] More specifically, the connector can be coupled to one or more ribbon cables which can be used, in addition to power supplying a lighting body, also as supporting elements for said lighting body.

[0003] The connector is made of a plastic material, molded as a single-piece, and comprises a plurality of connector elements which are mutually coupled by fin and flexible portions.

[0004] The latter can be folded, with respect to one another, thereby they can be easily applied to a lamp and can be closed by a snap cover, upon having inserted a ribbon cable into a three-lobe seat therefor.

[0005] Several types of connectors, requiring that a plurality of component elements be assembled and which, moreover, can be used exclusively for fitting electric functions, are already known.

[0006] On the contrary, the connector according to the present invention can also operate as a supporting element for supporting lamps and, moreover, it allows, in addition to providing an easy electric coupling of the lamps to flat ribbon cables, to also support lamps or other lighting bodies.

[0007] The latter can be suspended by using suitable ribbon cables, and locking screws or the like.

[0008] Since the connector according to the present invention is made of a plastic material, it has a very low cost.

[0009] Moreover, it permits to power supply and support a lamp, and, in the meanwhile, allows to drain current by applying side metal clamps, which are housed and held in anchoring seats, by turning over a wall, which has a comb configuration, including a plurality of slots.

[0010] The turned over wall constitutes an anchoring elements designed for preventing the connector deriving power supply cables from being accidentally detached.

[0011] The connector comprises moreover a socket having a plurality of socket fins.

[0012] Said socket and side fins are housed in a suitable sliding seat, formed in cross members, and being connected by a locking screw, designed for preventing the connector socket or base from sliding in an extruded cross-member cooperating for forming the lamp body.

[0013] The connector according to the present invention can be constructed, as stated, at a very low cost and, moreover, it can be easily assembled and disassembled.

[0014] Moreover, it is possible to apply to the subject connector a three-lobe ribbon cable, including a central metal tie-rod, operating as a support for one or more

lighting lamps.

[0015] The lighting lamps; in particular, can be coupled to one or more ribbon cables.

[0016] Each lamp, consequently, can be power supplied through a plurality of different power lines, allowing each lamp to be actuated by operating one or more lighting spots.

[0017] According to a modified embodiment thereof, the connector according to the present invention can comprise two or more connector portions coupled by an anchoring or connecting pins.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The above disclosed features, of functional and constructional nature, of the connector according to the present invention will become more apparent hereinafter from the following detailed disclosure of a preferred embodiment thereof, with reference to the accompanying drawings where:

Figure 1 is a side perspective view illustrating the connector according to the present invention in an opened position thereof;

Figure 2 is a top side perspective view illustrating that same connector shown in a partially folded position thereof;

Figure 3 is a side cross-sectional view illustrating the connector according to the present invention, in a closed condition thereof;

Figure 4 is a further side perspective view illustrating a generic lamp, made of an extruded material, to which is applied the connector or clamping element according to the present invention;

Figure 5 is a further perspective view illustrating a section member including a second fitting section member to which the connector according to the present invention can be connected;

Figure 6 is a side view illustrating that same section member and a second section member covering element, the connector according to the present invention being shown in a modified embodiment thereof including two connector portions coupled by a connecting pin and being applied to the first section member;

Figures 7, 8, 9 and 10 are respectively two perspective views and two side views showing a socket or base of a modified embodiment of the connector according to the present invention; and

Figures 11, 12 and 13 show a further modified embodiment of the connector according to the present invention, as illustrated by several perspective views.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] With reference to the number references of the

figures of the accompanying drawings, the connector 1 is characterized in that it is made as a single body of a plastic material.

[0020] The body of the connector 1 comprises a wall 23, perpendicular to a further wall 2 and including a comb element having a plurality of slots 3.

[0021] The comb element operates as an anchoring and safety element and is designed for preventing an electric line derived from the connector 1 from being accidentally detached.

[0022] The electric comprises two cables, which are coupled to two metal clamps 29, housed in the main body 22 of the connector 1 according to the invention.

[0023] The connector 1 comprises moreover seats or recesses 4 for housing and holding therein screws 15, having a conical screw tip each.

[0024] The screws 5 are used for perforating the power supply ribbon cable 6 at the conductor wires positive 6' and negative 6" thereof.

[0025] The ribbon cable 6 is held in suitable three-lobe seats or recesses 24, as partially formed in the main body 22 of the connector 1 and in the bottom socket or base 7, pivoted at a side 25 thereof to the main body of the connector 1.

[0026] The socket or base 7 comprises a cavity 13, designed for receiving a clamping screw, adapted to improve the connection of the socket or base 7 to a lamp or a supporting element of the connector.

[0027] As shown, the connector 1 further comprises a connector side 18 adapted to operate as a closure cover.

[0028] The cover 18, in its closed condition, will prevent the wall 2 from being turned over.

[0029] The connector 1 comprises moreover a socket or base 7 including a plurality of fins 8 and 9, designed for engaging in holding seats or recesses 10 formed in an anchoring cross member 32, 102 constituting an integrating part of the lamp 11.

[0030] The lamp 11 is clearly shown in figure 4 for illustrating, by way of an example, the main features of the connector according to the present invention and the application modes thereof.

[0031] More specifically, figure 4 clearly shows the connector 1 according to the invention, which is simultaneously fitted to two ribbon cables 6, power supplying said connector at each side thereof.

[0032] The cable 6 comprises, at a central portion thereof, a supporting tie rod 16, which is not power supplied, and two further cables 6' and 6".

[0033] Said cables 6' and 6" power supply, through metal clamps 29, the lamp 11 which can have any desired configuration.

[0034] In the exemplary embodiment being shown, the lamp 11 comprises a transformer 14 and two closure cover elements 12, designed for also constituting the lateral sides thereof, and enclosing the connector 1 according to the present invention.

[0035] The connector 1, in particular, is coupled to the

supporting tie-rod 16 by one or more coupling screws.

[0036] As shown, said connector 1 comprises furthermore very reduced thickness portions or flaps 25, 30 and 26, made of a plastic material, designed, respectively, for allowing a rotary movement and connection of the socket or base 7 with respect to the connector body 22, while allowing the connector body 22 to rotate with respect to the wall 2, and further allowing the wall 18 to rotate with respect to the socket 7.

[0037] Figures 6 to 13 show a modified embodiment 101 of the above disclosed connector.

[0038] In particular, the modified connector 101 is substantially constructionally like to the above disclosed connector, but, furthermore, it comprises two mutually fitted portions, which are coupled to one another by a pivot pin.

[0039] As shown, the bottom portion of the connector 101 comprises a bottom base or socket 7, including fins 8 and 9, designed for engaging in a section member 102 which constitutes an integrating part of a lamp.

[0040] The bottom socket or base 7 comprises three-lobe recesses 24, formed in the main body 106 of the connector 101 and in the socket 7.

[0041] With reference to figures 11, 12 and 13, the connector 101 includes furthermore a lug 107 having a recess 104 for receiving therein a coupling pin for coupling the socket 7 to the side 105 of the main body 106 of the connector 101.

[0042] This side 105 of the main body 106 is coupled to the wall 2 by a fin plastic material portion 26 operating as a flexible hinge, for allowing the wall 2 to turn about said portion 26.

[0043] Thus, it is possible to close the connector 101, while allowing the comb element formed in the wall 23, and including a plurality of slots 3, to provide a safety anchoring for derived cables coupled to the metal clamps 29.

[0044] In the closing position, a plurality of lugs, formed on the wall 108, engage in corresponding recesses formed in the wall 18 which constitutes an integrating part of the bottom socket or base 7.

[0045] The connector 101 according to the invention can be anchored to a section member 102 including a covering element 109 adapted to be snap engaged thereto.

[0046] From the above disclosure it should be apparent that the connector 1 according to the present invention can be changed and modified without departing from the scope of the invention.

[0047] As stated, the connector 1 is advantageously made of a plastic material, thereby the conductor cables, screws and metal clamps housed in the connector body are perfectly electrically insulated.

Claims

1. A connector for power supplying lamps, **character-**

- ized in that** said connector is made of a plastic material and comprises a socket (7) and two side fins (8) and (9), which are housed in a sliding recess (10) and are fixed by a locking screw engaged in a hole (13) for preventing said socket (7) from sliding in a cross member (32) therefor.
2. A connector according to the preceding claim, **characterized in that** said connector comprises a wall (23) including a plurality of slots (3) and having a comb configuration.
 3. A connector, according to the preceding claims, **characterized in that** said comb slots (3) are designed for operating as anchoring and safety elements for preventing a derived electric line from being accidentally detached from said connector.
 4. A connector, according to one or more of the preceding claims, **characterized in that** said derived line comprises electric cables coupled to two metal clamps (29).
 5. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises moreover pointed screws (5) designed for perforating a power supply ribbon cable (6), at the conductor wires thereof, respectively a positive conductor wire (6') and a negative conductor wire (6''), included in said ribbon cable (6).
 6. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises three-lobe recesses (24) formed in the connector main body and socket (7), pivoted on a side thereof to the connector main body.
 7. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises a wall (18) operating as a cover element therefor.
 8. A connector, according to one or more of the preceding claims, **characterized in that** said cover element (18) comprises a cavity (19) engaging with a projecting locking pin (20) formed on the connector main body.
 9. A connector, according to one or more of the preceding claims, **characterized in that** said cover element (18), in a closing condition thereof, prevents the wall (2), perpendicular to and rigid with the wall (23), from being turned over.
 10. A connector, according to one or more of the preceding claims, **characterized in that** said connector is simultaneously coupled to either one or two ribbon cables (6) power supplying said connector at each side of said connector.
 11. A connector, according to one or more of the preceding claims, **characterized in that** said ribbon cable (6) is provided, at a central portion thereof, with a supporting tie-rod (16) not power supplied and connected by screws, and two further cables (6') and (6'') power supplying respectively the positive and negative clamps or posts (29) of the lamp (11).
 12. A connector, according to one or more of the preceding claims, **characterized in that** said lamp (11) is associated with an electric transformer (14) and two closure cover elements (12), enclosing said connector (1) therein.
 13. A connector, specifically designed for power supplying and supporting electric lamps, according to one or more of the preceding claims, **characterized in that** said connector can be used, in addition to power supplying a lighting body, also as a supporting element for said lighting body.
 14. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises a plurality of fin portions (25), (30) and (26) allowing respectively said socket (7) to be rotatively coupled to the body (22) of the connector, while allowing said connector to turn with respect to the wall (2) thereof, while allowing the wall (18) to rotate with respect to said socket (7).
 15. A connector, according to one or more of the preceding claims, **characterized in that** said connector is made of a plastic material in a single piece.
 16. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises a lug (107) having a housing recess (104) for engaging therein a coupling pin for coupling said socket (7) to a side (105) of the main body (106) of said connector (101).
 17. A connector, according to one or more of the preceding claims, **characterized in that** the side of the main body (106) of said connector is coupled to said wall (2) by a fin portion (26) made of a plastic material operating as a flexible hinge and allowing the wall (2) to rotate about said fin portion (26).
 18. A connector, according to one or more of the preceding claims, **characterized in that** said connector comprises a plurality of lugs formed on the wall (108) thereof engaging in corresponding recesses formed on said wall (18) perpendicular to the latter.
 19. A connector, according to one or more of the pre-

ceding claims, **characterized in that** said connector comprises two portions coupled to one another by a pivot pin.

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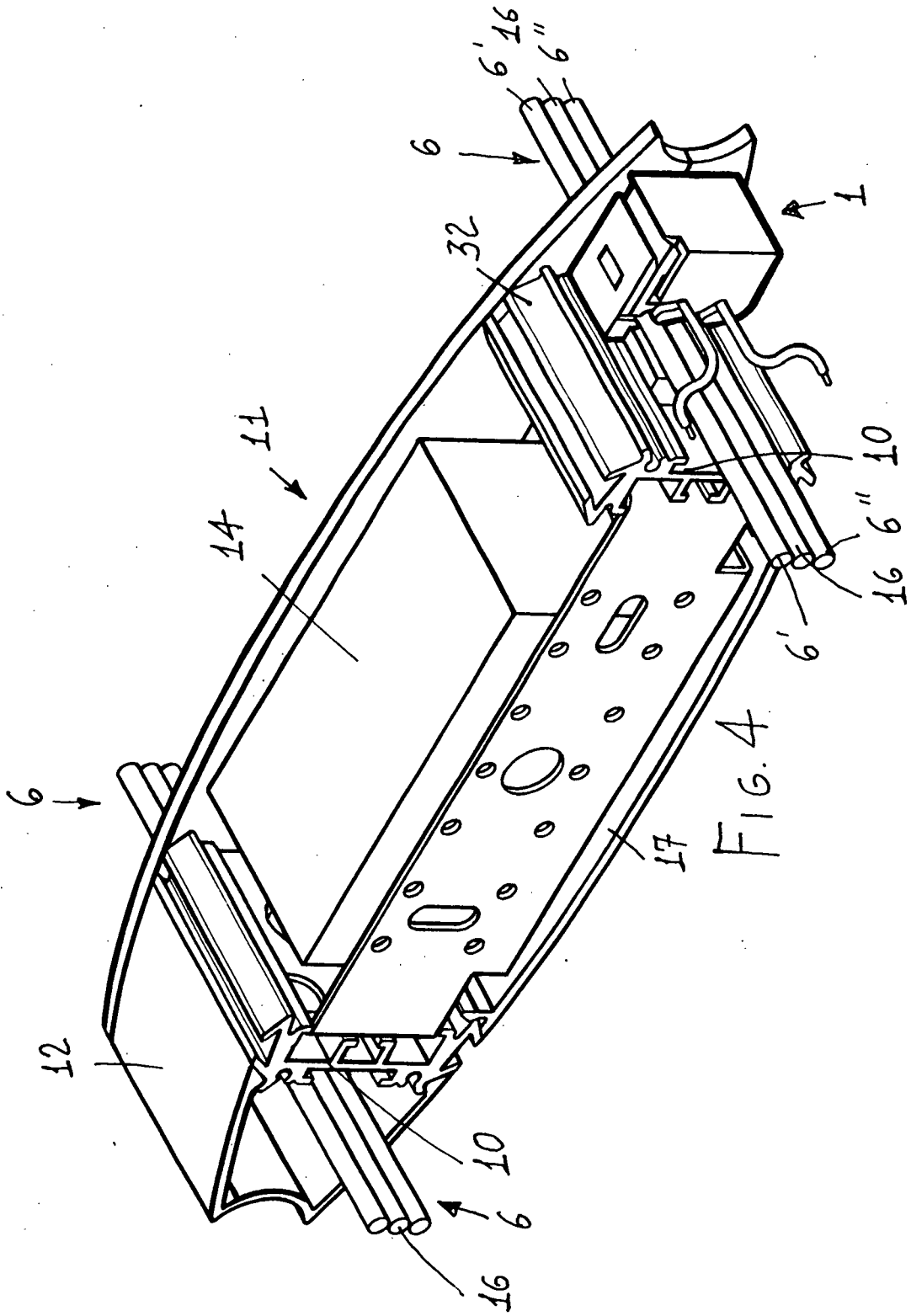
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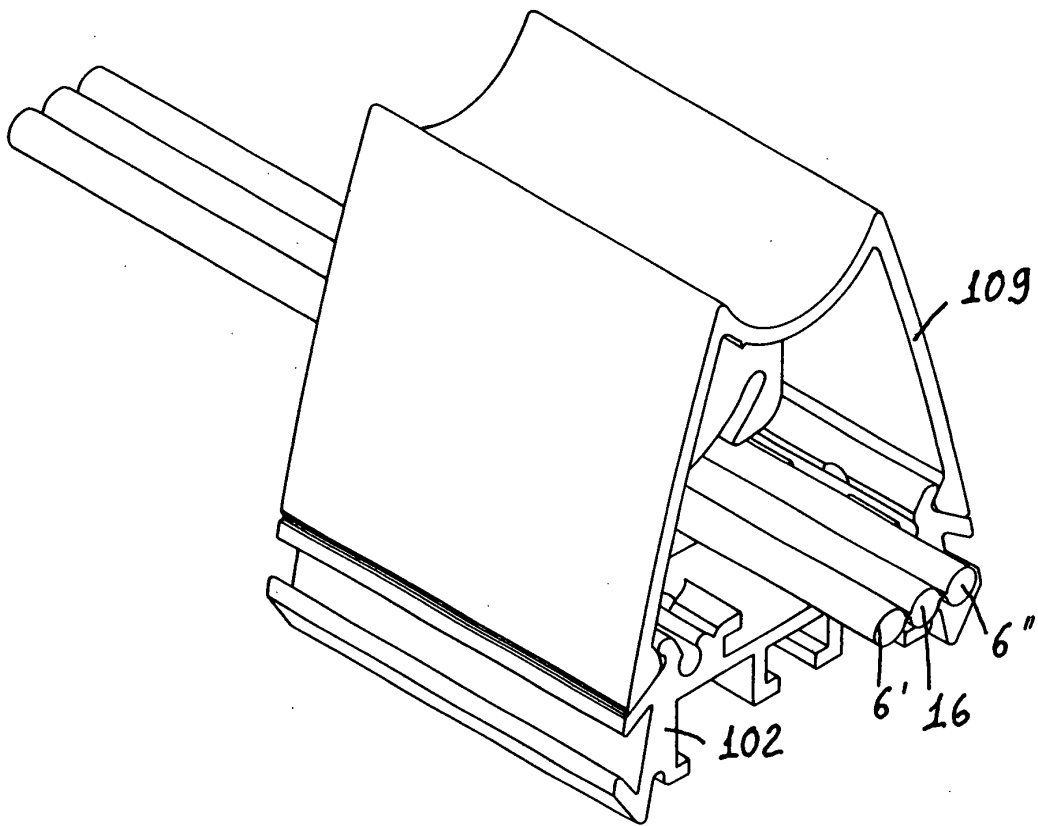


FIG. 5

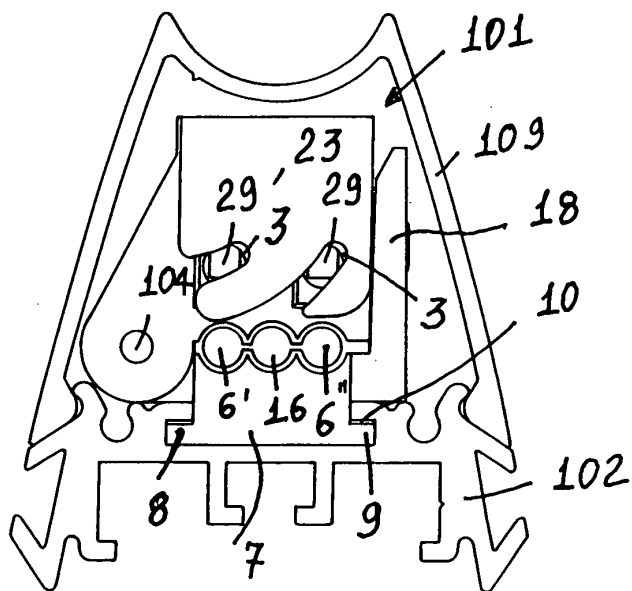
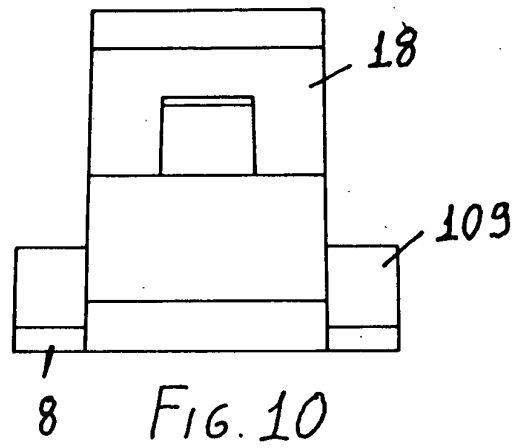
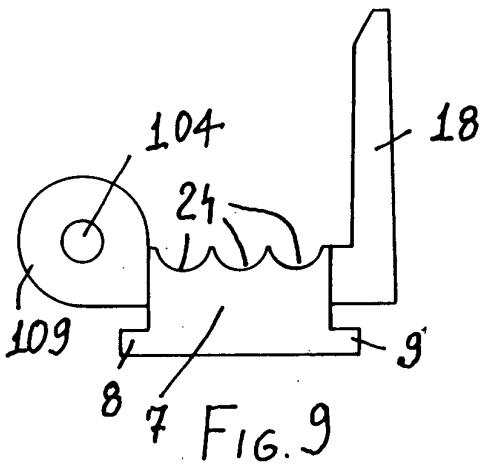
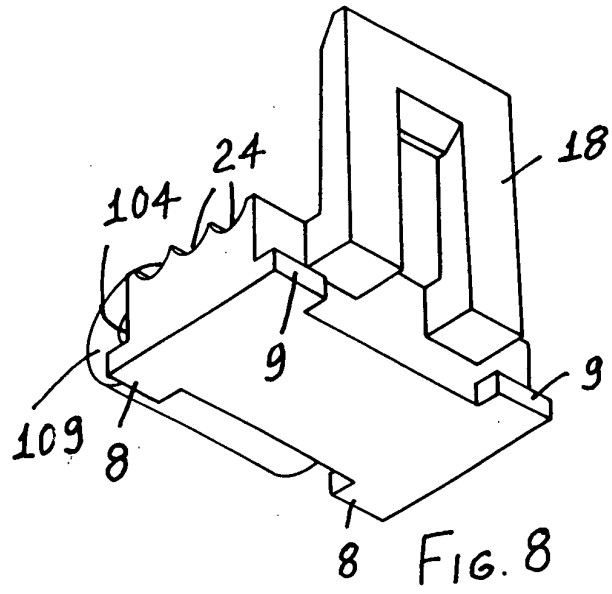
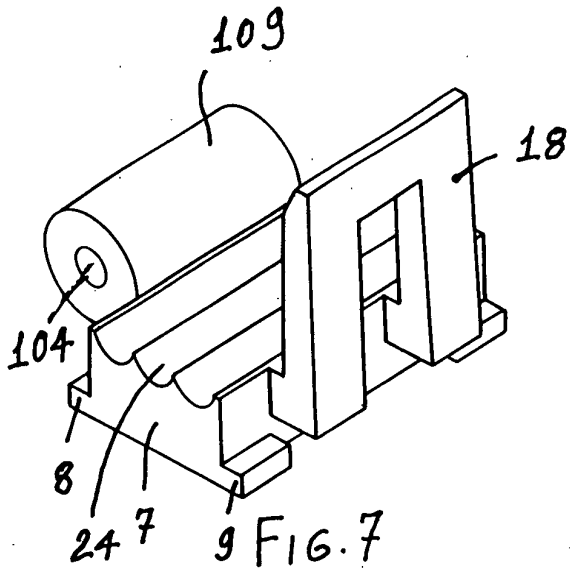


FIG. 6



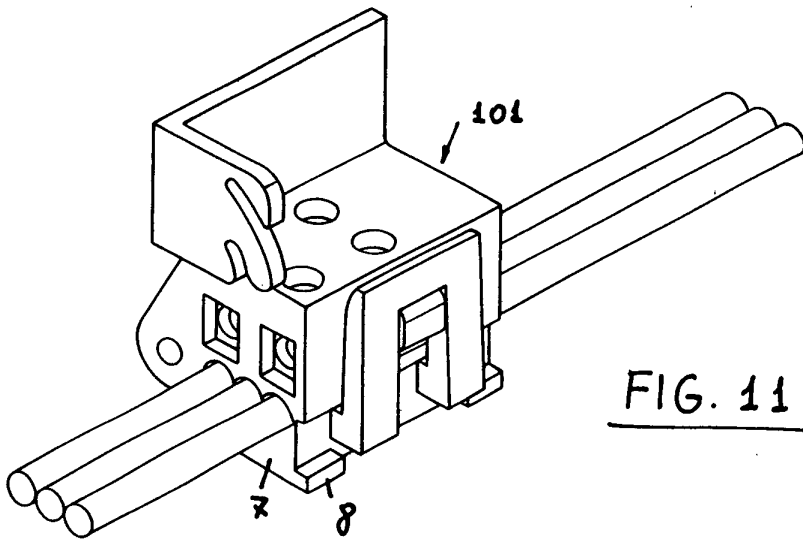


FIG. 11

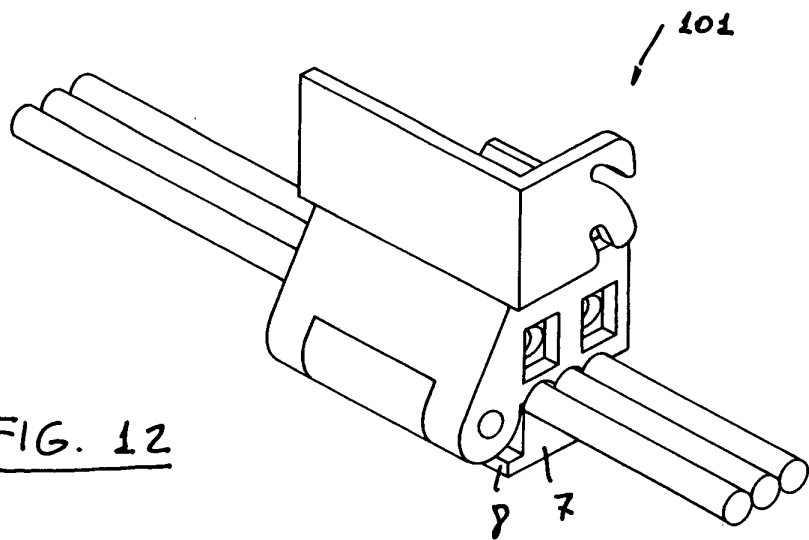


FIG. 12

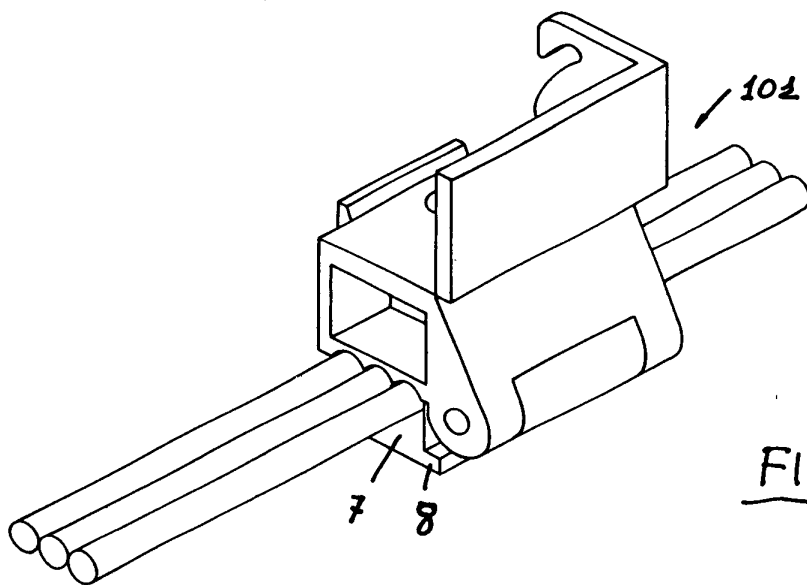


FIG. 13