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(71) Applicant: **BURROUGHS CORPORATION (a Michigan corporation)**
Burroughs Place
Detroit, Michigan 48232(US)

(72) Inventor: **Iosso, Thomas Peter**
123 First Street
Middlesex New Jersey 08846(US)

(74) Representative: **Speiser, Dieter K. et al,**
Eisenführ & Speiser Martinistrasse 24 Albingia-Haus
D-2800 Bremen 1(DE)

(54) Cable connector and method of coupling flat multi-wire cable.

(57) A multi-conductor flat cable-connector assembly wherein the cable comprises a plurality of insulated conductors surrounded first by a conductive shield and then an insulating jacket, and the connector comprises a metal housing enclosing an array of pins or sockets and having a pair of plate portions between which the cable is clamped with the shield folded back over the insulating jacket and disposed between the pair of plates with both plates being in contact with said shield.

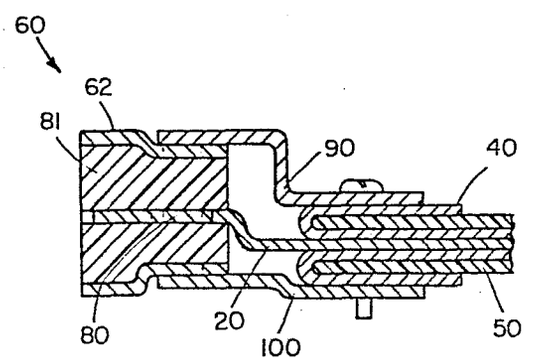

Fig. 2

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TITLE

CABLE CONNECTOR AND METHOD OF COUPLING FLAT MULTI-WIRE CABLE

BACKGROUND OF THE INVENTION

Many types of electronic equipment at the present time use flat multi-wire cable to connect from one chassis to another. Cable of this type includes a plurality of insulated wires enclosed by a shield of aluminum or copper foil to provide an electrical shielding action. The entire assembly is enclosed in an insulating jacket. It has been found that, even with a shielding sheath surrounding the wires, electrical interference still occurs. The present invention provides an electrical connector arrangement for the multi-wire cable which eliminates problems due to electrical interference and provides optimum electrostatic shielding.

DESCRIPTION OF THE DRAWINGS

Fig. 1 is a plan view of a cable and connector coupled together in accordance with the invention; and

Fig. 2 is a sectional view along the lines 2-2 in Fig. 1.

DESCRIPTION OF THE INVENTION

The apparatus and method of the invention are practiced with a flat cable 10 which includes a plurality of relatively fine insulated wires 20 surrounded by an electrical shielding sheath 40 of aluminum, copper, or the like. An insulating jacket 50 encloses the entire assembly of wires and shielding sheath. According to the invention, the cable 10 is secured to a terminating connector or plug 60 in a unique manner.

The plug 60 is made of tin-plated steel or the like and has an annular metal housing 62 which carries an assembly of pins or sockets 80 embedded in an insulating matrix 81. The housing 70 includes a rearwardly extending generally S-shaped plate 90 which is soldered to the housing 70 and is adapted to engage one surface of the end of the cable with a similar separate plate 100 which engages the opposite surface of the cable. Plate 100 is secured to the plate 90 with the cable between them.

In practicing the invention, at one end of the cable 10, the shield 40 is turned back so that the individual wires 20 are exposed and enough insulation is removed so that each can be secured to a pin or socket 80. The shield 40 which is turned back covers the insulating jacket 50, as seen in Fig. 2, and it is clamped between the plates 90 and 100 with the shield between and in electrical contact with the plates 90 and 100. The plates are secured together by bolts, screws, or the like.

The connector 60 carrying the cable 10 is coupled to a terminal chassis (not shown) or the like and is grounded for optimum operation by means of thumb screws 110 which secure the metal housing 62 to the chassis. The other end of the cable 10 can be

prepared and secured to a connector in similar fashion, if desired.

The assembly described provides optimum shielding of a multi-conductor cable from electrical and electrostatic fields. The body of the connector itself provides a shielding action for electric fields, and the connection to the chassis provides a path for electrostatic discharge.

What is claimed is:

1. Electrical connector apparatus comprising
a flat cable including a plurality of insulated conductors,
a conductive shield surrounding said conductors,
an insulating jacket surrounding said conductive shield and said wires,
a terminal connector comprising a metal housing enclosing an array of pins or sockets,
a first plate secured to said housing and extending rearwardly therefrom,
a second flat plate adapted to be coupled to said first plate,
said flat cable being coupled to said connector with its conductors each secured to a pin or socket and with its shield being folded back and extending rearwardly overlying said insulating jacket, said first and second metal plates being secured together with said cable between them and both in contact with said shield.

2. The apparatus defined in Claim 1 and including means grounding said housing to a chassis.

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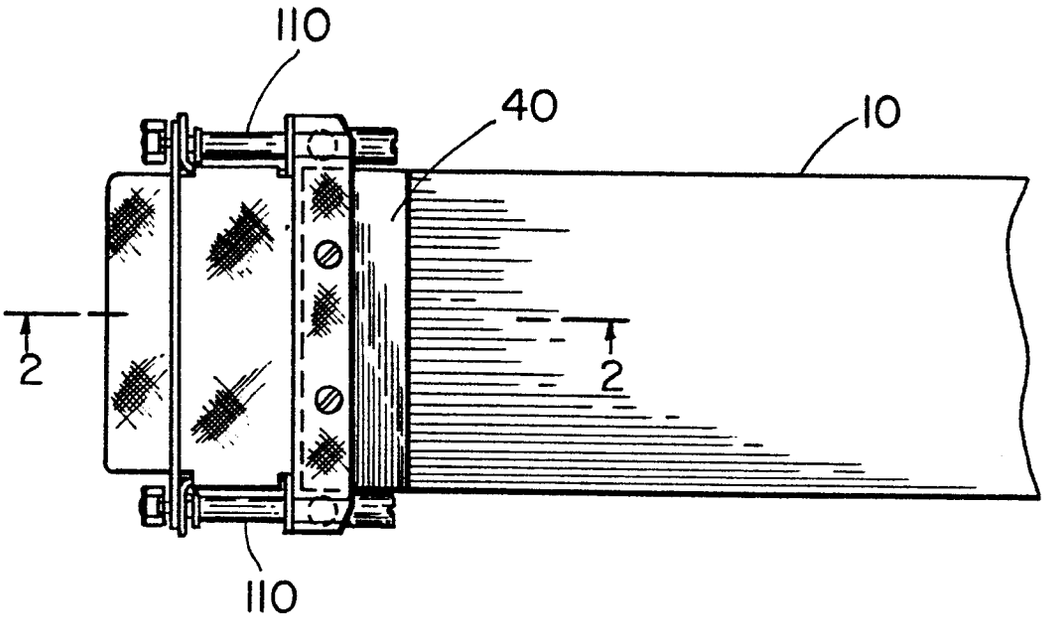

Fig. 1

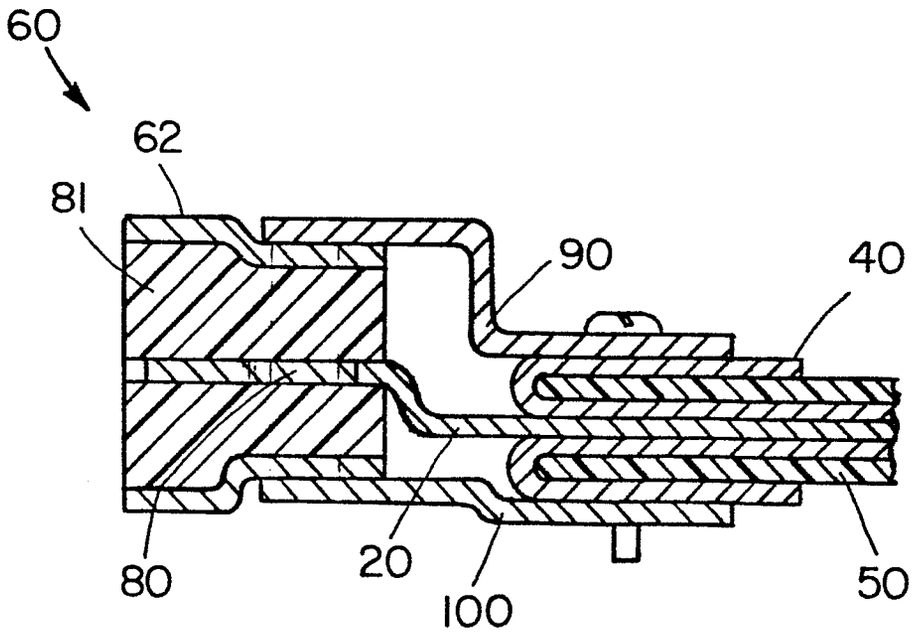

Fig. 2