(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 457 425 A2**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **91302791.8**

(22) Date of filing: **28.03.91**

(51) Int. Cl.5: **H01R 13/26**, H01R 9/24, H01R 9/22

(30) Priority: **12.05.90 GB 9001689**

(43) Date of publication of application:
21.11.91 Bulletin 91/47

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

(71) Applicant: **COMMTEL CONSUMER ELECTRONICS PLC**
Newark Road
Peterborough, Cambridgeshire PE1 5XU(GB)

(72) Inventor: **Drewnicki, Richard**
North Luffenham Hall, North Luffenham
Near Oakham, Rutland, Leicestershire(GB)
Inventor: **Moore, Gary Leigh**
1 Peacocks Ley, Peacocks Road
Cavendish, Suffolk(GB)

(74) Representative: **Maguire, Peter Albert et al**
P.A. Maguire & Co. 12, The Broadway
St. Ives, Cambridge PE17 4BN(GB)

(54) Extension socket for telephone cable.

(57) A telephone extension socket enabling interconnection between a telephone cable having a plurality of wires and a telephone plug, comprising a base member, a body member mounted on the base member and defining at least in part a plug-receiving socket recess, a plurality of terminals for making respective electrical connection with the individual wires of the cable, and a plurality of conductive contact members clamped between the base member and the body member and one end of each of which member contacts a corresponding one of the terminals and the other end of which extends into the socket recess and serves as a spring terminal to make contact with the corresponding electrically conducting part of the plug.

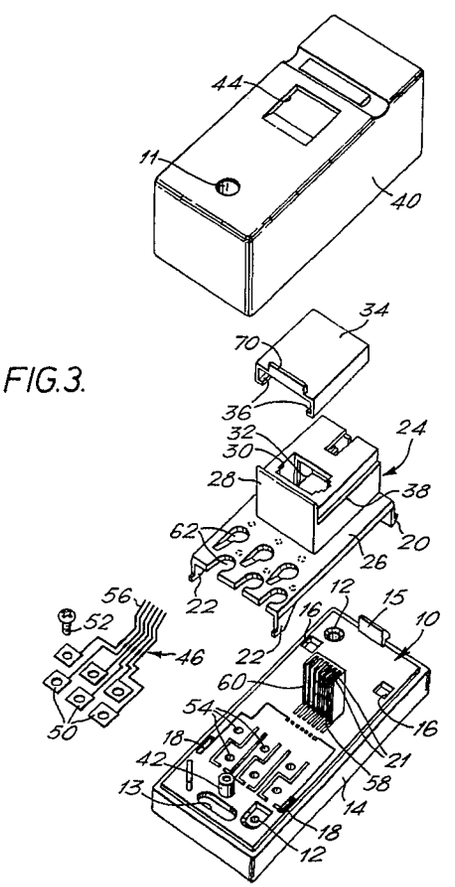


FIG.3.

EP 0 457 425 A2

Technical Field

This invention relates to an extension socket for a telephone cable.

Background Art

Conventionally a telephone extension socket intended for mounting on a surface such as a wall has consisted of a cover member having a socket aperture, the cover member carrying a spring loaded shutter for covering the socket aperture when not in use, the rear of the cover member supporting a printed circuit board having the necessary electrical circuitry and which carries both the electrical terminals by which the individual wires of the telephone cable are connected to the socket and a member defining a telephone plug socket recess and in which socket is disposed an array of electrical spring contacts.

Such an arrangement is expensive to produce. It is an object of the invention to provide an improved telephone extension socket.

Disclosure of the Invention

According to the invention there is provided a telephone extension socket enabling interconnection between a telephone cable having a plurality of wires and a telephone plug, comprising a base member, a body member mounted on the base member and defining at least in part a plug-receiving socket recess, a plurality of terminals for making respective electrical connection with the individual wires of the cable, and a plurality of conductive contact members clamped between the base member and the body member and one end of each of which members contacts a corresponding one of the terminals and the other end of which extends into the socket recess and serves as a spring terminal to make contact with a corresponding electrically conducting part of the plug. Normally, the socket recess is shielded by a moveable shutter and preferably the shutter is slideably mounted on the body member. Preferably the body member comprises an integral base plate which overlies the contact members. In a preferred arrangement, the terminals are screw terminals mounted on the base member, the said one end of each contact member being disposed under the head of a corresponding screw terminal. Preferably the socket recess is defined in part by a plurality of spring terminal locating slots formed in a pillar integral with the base member and projecting into the body member. Preferably the body member is mounted on the base member by snap-action connections. If desired a cover member is mounted on the base member to enclose the body member.

Brief Description of Drawings

A telephone extension socket according to the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of the socket;

Figure 2 shows the socket with a cover removed;

Figure 3 shows the parts of the socket in exploded view;

Figure 4 is a sectional view on an enlarged scale, through a part of the centre of the socket, and

Figure 5 shows the metal stamping from which electrical contact members of the socket are made.

Best Mode for Carrying Out the Invention

Referring to Figures 1 to 3 of the drawings, a telephone extension socket is moulded from a plastics material and comprises a generally rectangular plastics base member 10 having diagonally opposite screw holes 12 to enable the base to be secured to a support surface such as a skirting board or wall by means of screws (not shown). The rear face of the base 10 has a surrounding flange 14 with conventional knock-out portions (not shown) to enable a telephone cable (not shown) to enter the back of the socket and then to be passed through an elongate slot 13 in the base 10 for connection to the socket as described below.

A substantially centrally disposed pillar 60 projects upwardly from the base 10 and is formed with flanges 21 defining a series of six slots 58 for the purpose appearing below.

The base 10 has two pairs of apertures 16 and 18 near respective opposite ends of the base and adapted to receive two projecting pairs of lugs 20 and 22 on a body member 24 whereby the body member is connected to the base. The body 24 consists of a plate-like base flange 26 and a box-like formation 28 which is integral with the base plate or flange 26. The pair of lugs 22 are hooked and engage positively in the apertures 18 in the base 10 after which the lugs 20, which are arranged as snap-action connections, can be engaged in the apertures 16 in the base whereby the body 24 is firmly connection to the base 10. When the body 24 is assembled on the base 10, the plate-like base flange 26 of the body 24 lies firmly against the base 10, as illustrated in Figure 2, by reason of the snap-action connection referred to above. The box-like formation 28 has a socket opening 30 leading into a plug socket recess 32. The socket opening 30 is closeable by a sliding shutter 34 having in-turned lips 36 guided in re-

spective grooves 38 on the formation 28. The base flange 26 is formed with six key-hole slots 62 for the purpose appearing hereafter.

The body 24 is enclosed by a box-like cover 40 which is retained on the base 10 by engagement with a lug 15 on the base 10 and by a screw 17 (Figure 1) passed through a screw hole 11 in the cover 40 and threaded into a boss 42 projecting from the base 10. The top surface of the cover 40 has a rectangular aperture 44 which provides access to the shutter 34 and thence to the socket recess 32 beneath the shutter 34.

The socket also includes six metal contact members 46 illustrated in Figure 3. This group of six contact members 46 are cut from a series of groups of such contact members, formed into a strip as illustrated at 48 in Figure 5 and in which the contact members are joined by strip edges 23. The group of six metal contact members 46 are separated from the strip 48 by severing along the lines marked 47 in Figure 5 and are assembled between the base 10 and the body 24 while still connected as a group. The individual contact members are then separated by removing the strip edges 23 by breaking the edges 23 from contact members at weakened portions 25 at the ends of the contact members.

Each contact member 46 has at one end an apertured terminal 50 which is held in position under the head of a corresponding screw terminal 52 screwed into a corresponding one of six holes 54 formed in the base 10. The other end of each contact member 46 terminates in a spring terminal 56 which is bent upwardly and located in a corresponding one of the six slots 58 formed in the pillar 60 projecting upwardly from the base 10. Between its two ends, each contact member 46 is clamped between the base 10 and the base flange 26 of the body 24 as a consequence of the snap-action connection between the body and the base whereby the contact members are retained in position when the screw terminals are released.

The six keyhole-like openings 62 in the flange 26 register with and provide clearance around the heads of the six screws 52, as illustrated in Figure 2. Hence, each contact member 46 provides independent electrical connection between a corresponding one of the screw terminals provided by the screws 52 and the spring contact lying in the corresponding one of the six channels or slots 58. As best seen in Figure 4, the pillar 60 projects into the box-like formation 28 and defines in part the socket recess 32 so that the spring terminals 56 are located in the required positions to make electrical contact with the corresponding electrically conducting parts of a telephone plug (not shown) which is inserted into the socket recess 32.

The shutter 34 is biased into the closed position shown in the drawings, in which it closes the socket opening 30. This spring bias is provided by a single turn torsion spring 64 located in a compartment 19 formed in the body 24 such that one limb 66 of the spring 64 engages within a slot 68 of the shutter 34 to urge the latter to the closed position. A projecting lip 70 on the shutter provides a finger pull and enables the shutter 34 to be slid against the influence of the spring loading, to an open position (shown in broken lines in Figure 4) in which the socket opening 30 is accessible for a plug to be inserted in the socket recess 32.

In use, the individual wires of a telephone cable are brought into the back of the base and are brought through the slot 13 and then connected under the heads of the terminal screws 52, these screw heads being accessible by virtue of the key-hole shaped holes 62 in the flange 26 of the body 24. The extension socket is then screwed to a support surface and is ready to receive a telephone plug which, as described, is pushed into the socket recess 32 so that the electrically conducting parts on the plug make respective contact with the spring terminals 56 lying in the locating channels 58.

Industrial Applicability

The telephone extension socket as described above is simple and thus inexpensive to make as compared with conventional telephone extension sockets.

Claims

1. A telephone extension socket enabling interconnection between a telephone cable having a plurality of wires and a telephone plug, characterised by a base member (10), a body member (24) mounted on the base member and defining at least in part a plug-receiving socket recess (32), a plurality of terminals (52) for making respective electrical connection with the individual wires of the cable, and a plurality of conductive contact members (46) clamped between the base member and the body member and one end (50) of each of which members (46) contacts a corresponding one of the terminals and the other end (56) of which extends into the socket recess and serves as a spring terminal to make contact with a corresponding electrically conducting part of the plug.

2. A telephone extension socket according to claim 1, characterised in that the socket recess (32) is shielded by a moveable shutter (34), and wherein the shutter (34) is slideably moun-

ted on the body member (24).

3. A telephone extension socket according to claim 1 or claim 2, characterised in that the body member (34) comprises an integral base plate (26) which overlies the contact members (46).

4. A telephone extension socket according to any preceding claim, characterised in that the terminals (52) are screw terminals mounted on the base member (10) and in that the said one end (50) of each contact member (46) is disposed under the head of a corresponding screw terminal (52).

5. A telephone extension socket according to any preceding claim, characterised in that the socket recess (32) is defined in part by a plurality of spring terminal locating slots (58) formed in a pillar (60) integral with the base member and projecting into the body member.

6. A telephone extension socket according to any preceding claim, characterised in that the body member (24) is mounted on the base member (10) by snap-action connections.

7. A telephone extension socket according to any preceding claim, characterised by a cover member (40) mounted on the base member (10) to enclose the body member (24).

8. A telephone extension socket according to any preceding claim, characterised in that the base member (10) is adapted by means (12) for wall mounting.

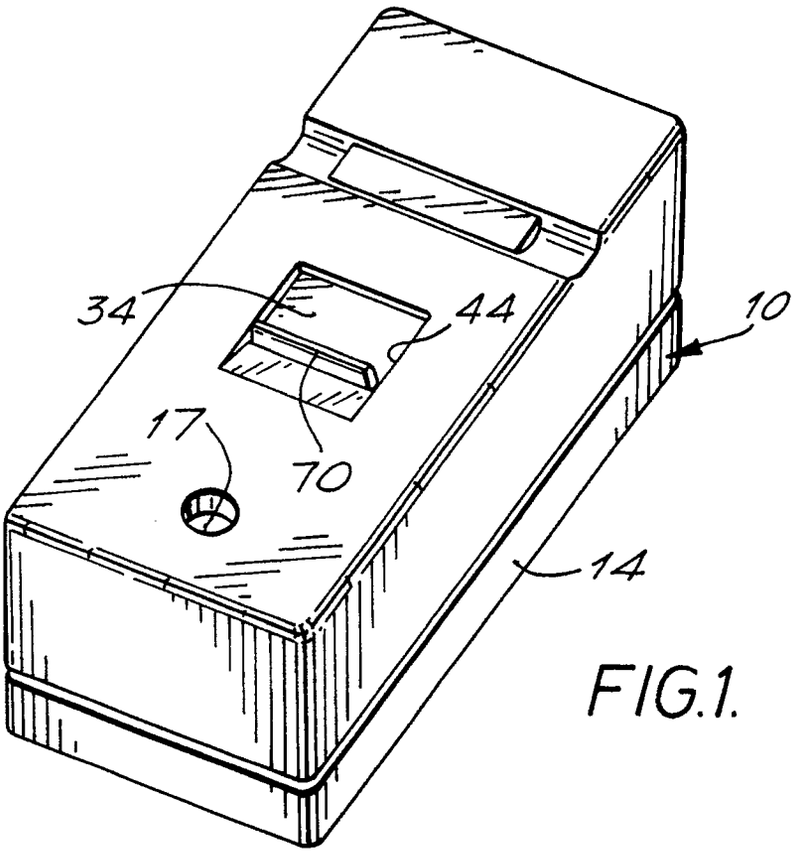


FIG.1.

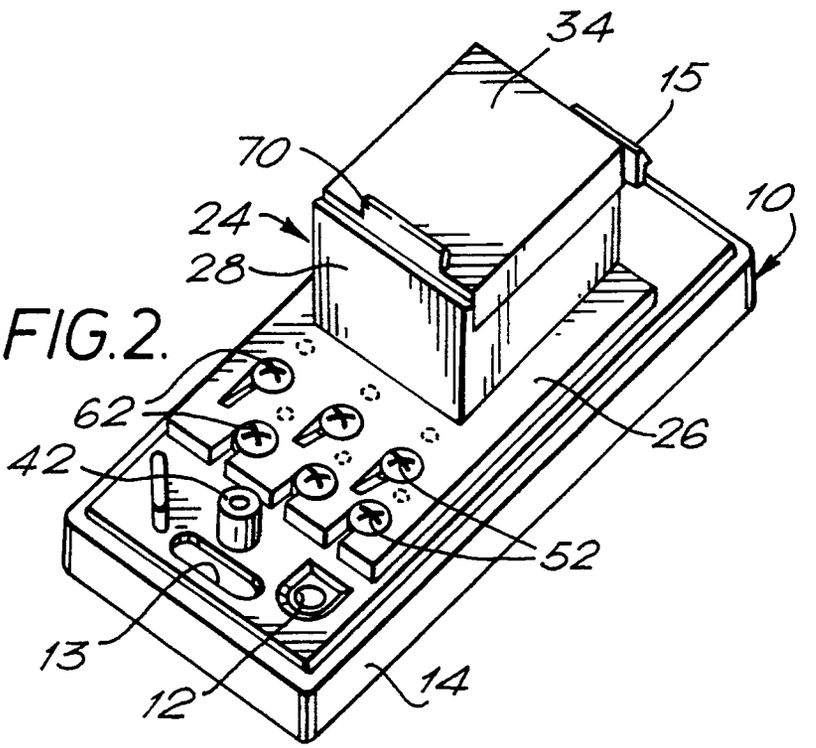
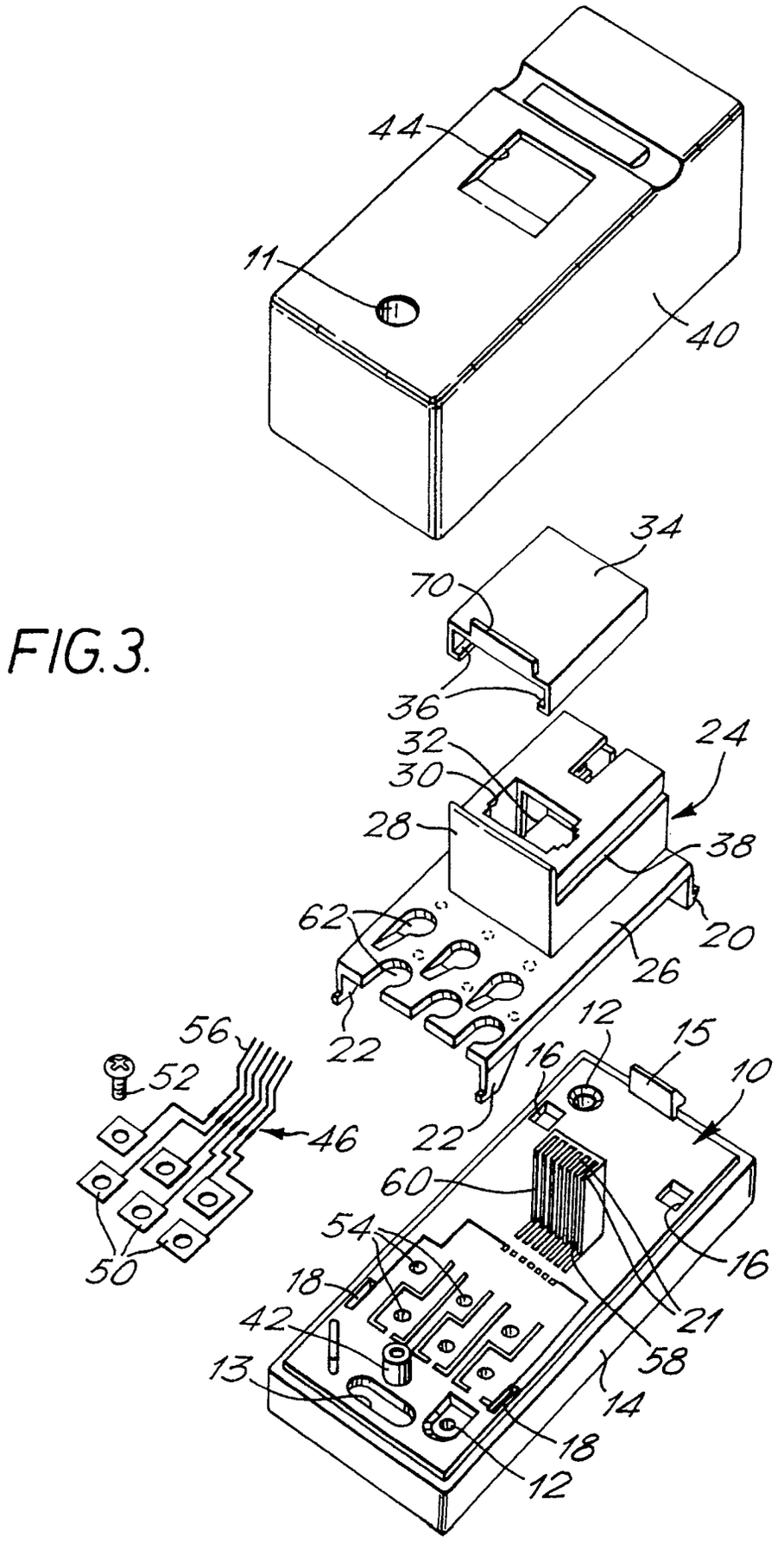


FIG.2.

FIG.3.


44
11
40
34
70
36
32
30
24
28
38
62
20
26
22
56
52
12
15
16
10
46
22
60
54
16
18
21
42
58
13
14
18
12

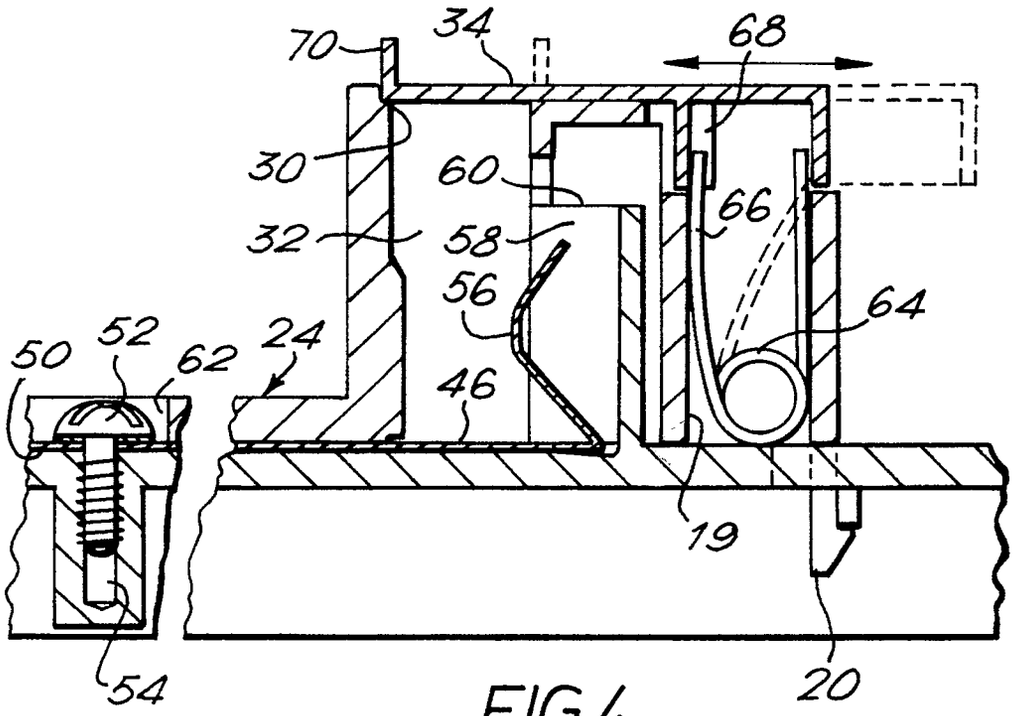

70
34
68
30
60
66
32
58
56
64
50
52
62
24
46
19
54
20

FIG.4.

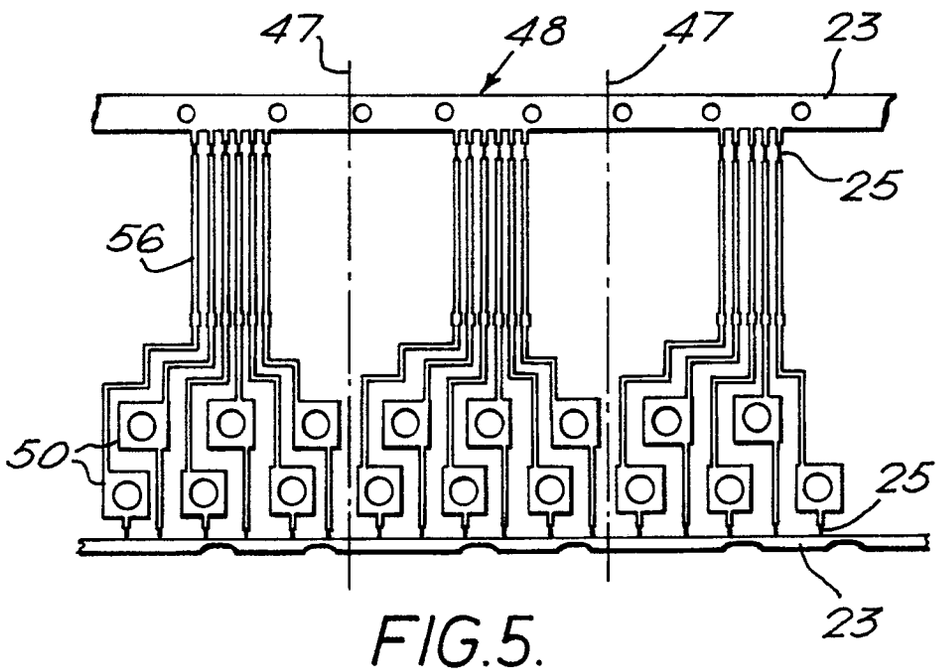

47
48
47
23
25
56
50
25
23

FIG.5.