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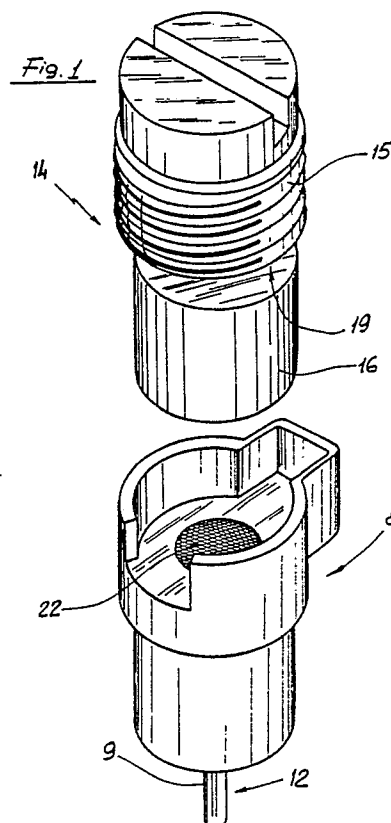
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54 Connector for coaxial cables.

57 A connector for coaxial cables is described having low parasitic inductance and capacitance which permits the typical impedance value of the coaxial cable to which it is connected to be maintained unaltered, and also creates good screening thanks to a special stop dowel which is electrically earthed to the equipment in which the connection between the printed circuit of the user equipment and the lead of the coaxial cable is obtained by means of a pin held in position between insulated elements and thus having no contact with the external metal parts of the connector.



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CONNECTOR FOR COAXIAL CABLES

This invention relates to a connector which can be used on any type of electronic and/or electrical equipment which requires connection to a coaxial cable in order to function, with particular reference to the construction of distribution systems of radio and television signals.

Its special characteristic is that it permits secure circuit connection without changing the typical impedance value of the coaxial cable.

It is known that various types of metal terminals are used to connect coaxial cables to electronic outlet boards, particularly in the connections of radio and television sockets. The disadvantage of these metal terminals is that they alter the typical impedance value of the coaxial cables because of the effect of the parasitic inductance present in the socket itself.

In the case of high frequencies, the final result is that the signal received is altered or at least subharmonic disturbance is introduced.

This invention eliminates all this since the cable and the electronic circuit are only connected electrically, all parasitic inductances being isolated and cut out, at the same time obtaining a good level of screening thanks to the special stop dowel which is electrically earthed to the mass of the equipment.

In effect, the invention comprises a connector which houses an insulated contact pin onto which is screwed a stop dowel with an insulated washer which screws down the head of the live lead of the coaxial cable.

This connector is also extremely practical since the cable does not have to be inserted into a gauged aperture but into the special housing in the flat, lightly knurled head of the contact pin and it is then screwed down by means of the insulated stop dowel.

The above-mentioned characteristics permit a connection to be obtained and this permits the whole equipment to function over a range of frequencies up to 2 GHz, maintaining relatively limited dimensions so as to permit easy use of the devices (TV sockets, various distributors) in the special flush-mounted wall boxes.

These and the other characteristics will be explained more clearly in the course of the following detailed description provided purely as an indicative and non-limiting example of the scope of this invention, and supported by the various illustrations in the drawings attached herewith, in which:

Figure 1 shows a very enlarged front view of the pin-holder collet and the stop dowel disassociated from the insulating element which exerts the connecting pressure on the conductor;

Figure 2 shows an exploded cross section of the various components of the connector in question;

Figure 3 shows a general view of the connector, demonstrating how the coaxial conductor is screwed down by the insulated stop dowel;

Figure 4 shows a full view of a radio and TV socket provided with the connector in question;

Figure 5 shows a full view of a radio and TV socket provided with the connector in question, showing the connected coaxial cables; and

Figure 6 shows a cross section of the metal box structure which contains the connectors according to this invention.

Referring now to the attached drawings, the connector 1 in question comprises a metal box structure 2, forming part of the body 3 of the socket 4, in which two cylindrical threaded seats 5 have been hollowed out, provided with apertures 6 at the front and having a profile 7 at the back which permits the insertion of the insulated element 8, into which the connecting pin 9 is inserted.

The aforesaid element 8 is inserted up to the underlying counterboring 11, and only the terminal 12 of the pin 9 pierces through the lower part of the counterboring 11 and is then soldered to the circuit plate 13 of the socket 4.

A stop dowel 14 consisting of an external threaded hollow body 15 into which a flexible metal element 17 and the insulated presser 16 are inserted, is screwed into the aforesaid cylindrical threaded seats 5.

The said stop dowel 14 has an internal circumferential rib 18 in order to reduce the attrition between the internal seat 19 and the presser 16 which is subject to axial play during screwing down.

At this point the socket 4 is already set up for the coaxial connection. After the cable 20 has been appropriately stripped, the live lead 21 is inserted into the connector terminals in correspondance to the flat knurled head 22 of the connecting pin 9 and the dowel 14 is screwed down completely thus ensuring the electrical connection with the circuit board 13 which is underneath. The head 22 of the pin 9 is knurled to improve the hold of the internal conductor.

Subsequently the braiding 23 of the two coaxial cables is earthed by a traditional fixing plate 24 provided with a threaded locking element 25 located in a central position.

It must be noted that the external body of the connector can be of a different external shape and the internal sizes can be different in order to adopt

to the various types of sockets and the various types of utilisations foreseen.

This detailed description demonstrates that this connector is practical to use and produces a considerable reduction in disturbance induced by parasitic inductance, as has already been said.

Finally, it must be emphasised that the present embodiment does not limit the scope of this invention but, on the contrary, numerous modifications, additions, variations or replacements of elements can be made to this invention without affecting its principle or its objects as defined in the claims attached hereto.

Claims

1. Connector for coaxial cable, characterised by the fact that it basically consists of an insulated element into which a flat headed pin is inserted in order to ensure an electrical connection between the printed circuit and the lead end of the coaxial cable, locked into this position by a special dowel.

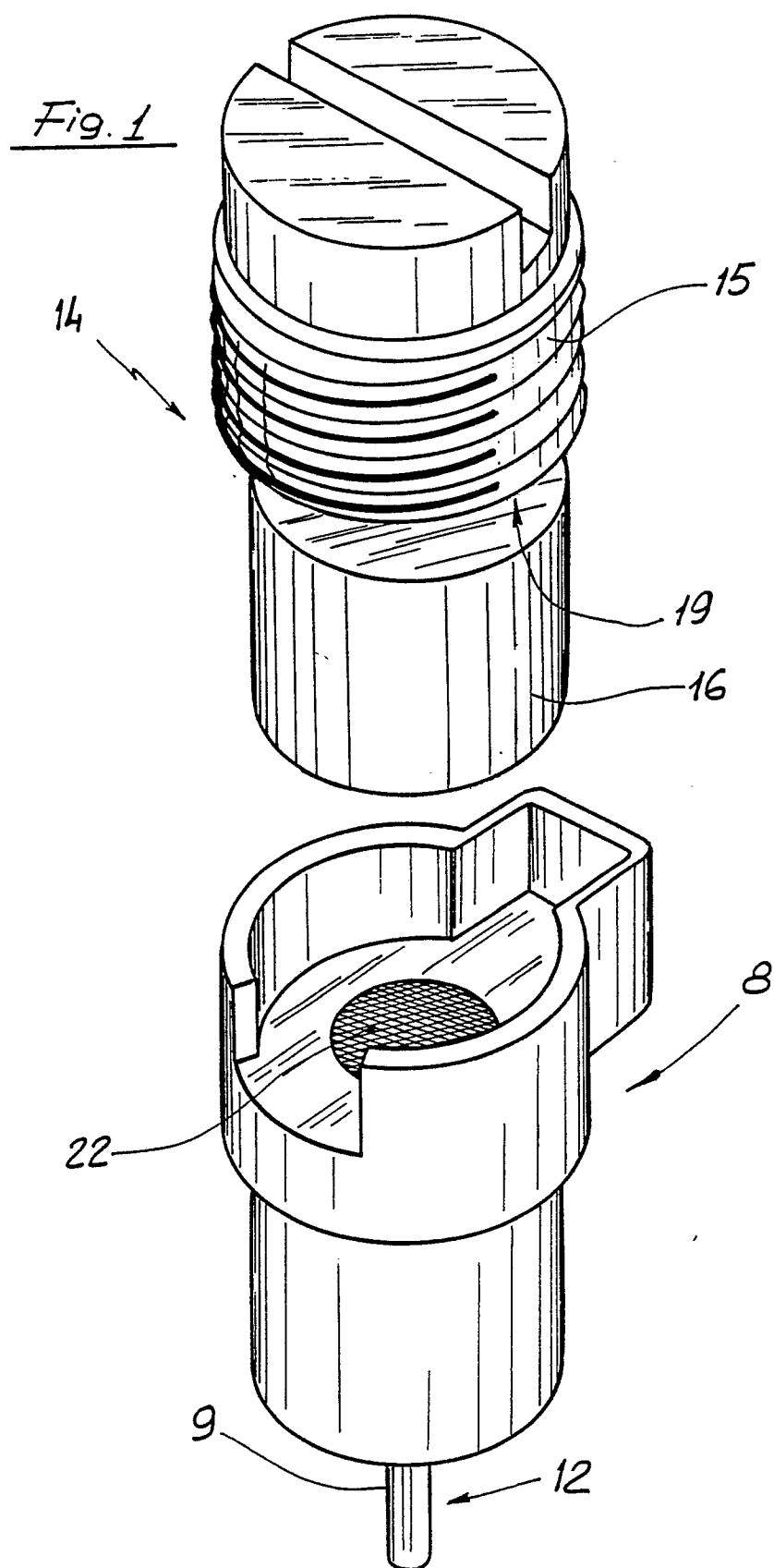
2. Connector according to claim 1, characterised by the fact that the said connector in practice becomes part of the metal casing forming the flush-mounted socket itself; for example for the antenna down-lead.

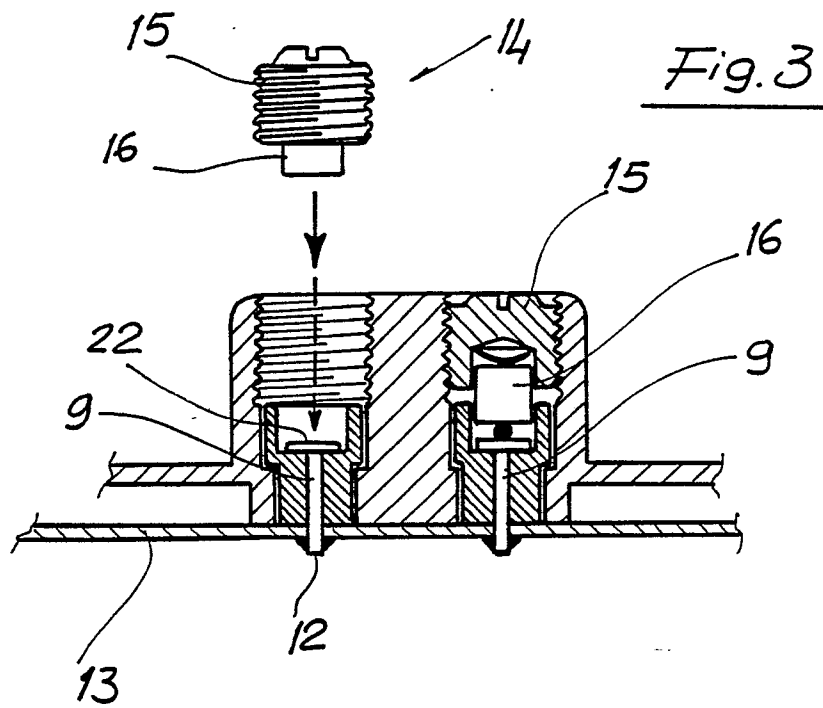
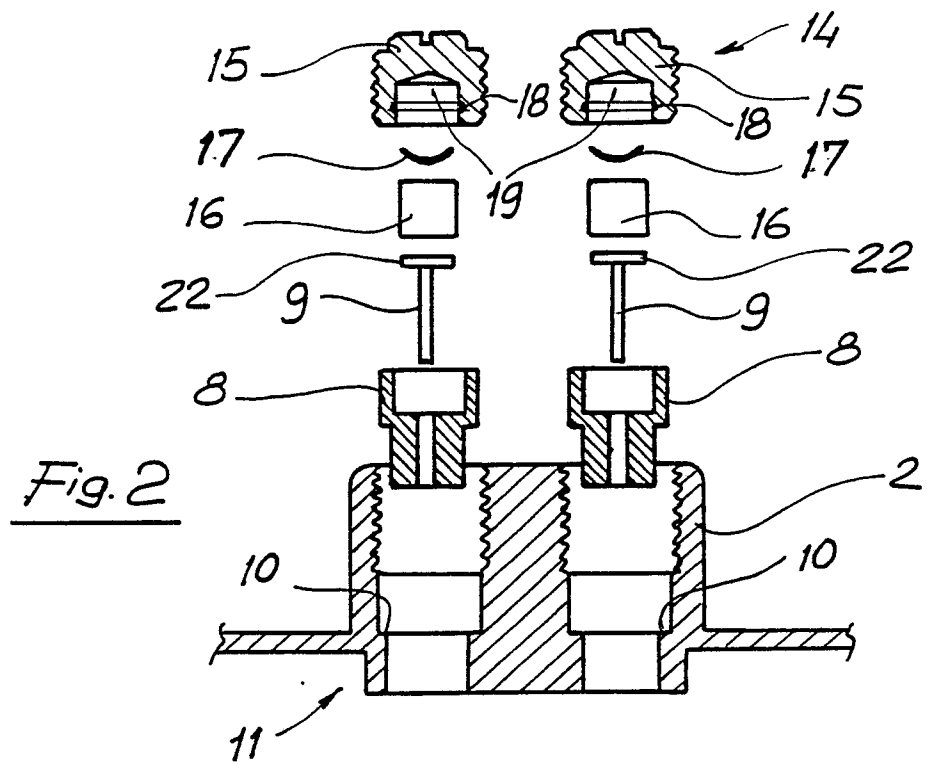
3. Connector according to claim 1, characterised by the fact that the stop dowel includes an insulated sleeve which is capable of exerting the necessary locking pressure on the live lead of the coaxial cable resting on the head of the pin, preferably knurled, in order to ensure a perfect electrical connection and at the same time reducing to practically a minimum the interference produced by parasitic inductance.

4. Connector according to claim 3, characterised by the fact that the said stop dowel also has an elastic element, located in the housing seat of the insulated sleeve, by means of which the necessary contact between the live lead of the coaxial cable and the electrical connection pin is permanently maintained, even if the dowel is not fully screwed down.

5. Connector according to claim 1, characterised by the fact that the elimination of parasitic inductance permits the impedance which is typical of coaxial cables to be maintained practically unaltered, with particular reference to those used in radio and television equipment.

6. Connector for coaxial cables as previously described and as illustrated in the various drawings attached hereto, for the objects specified above.





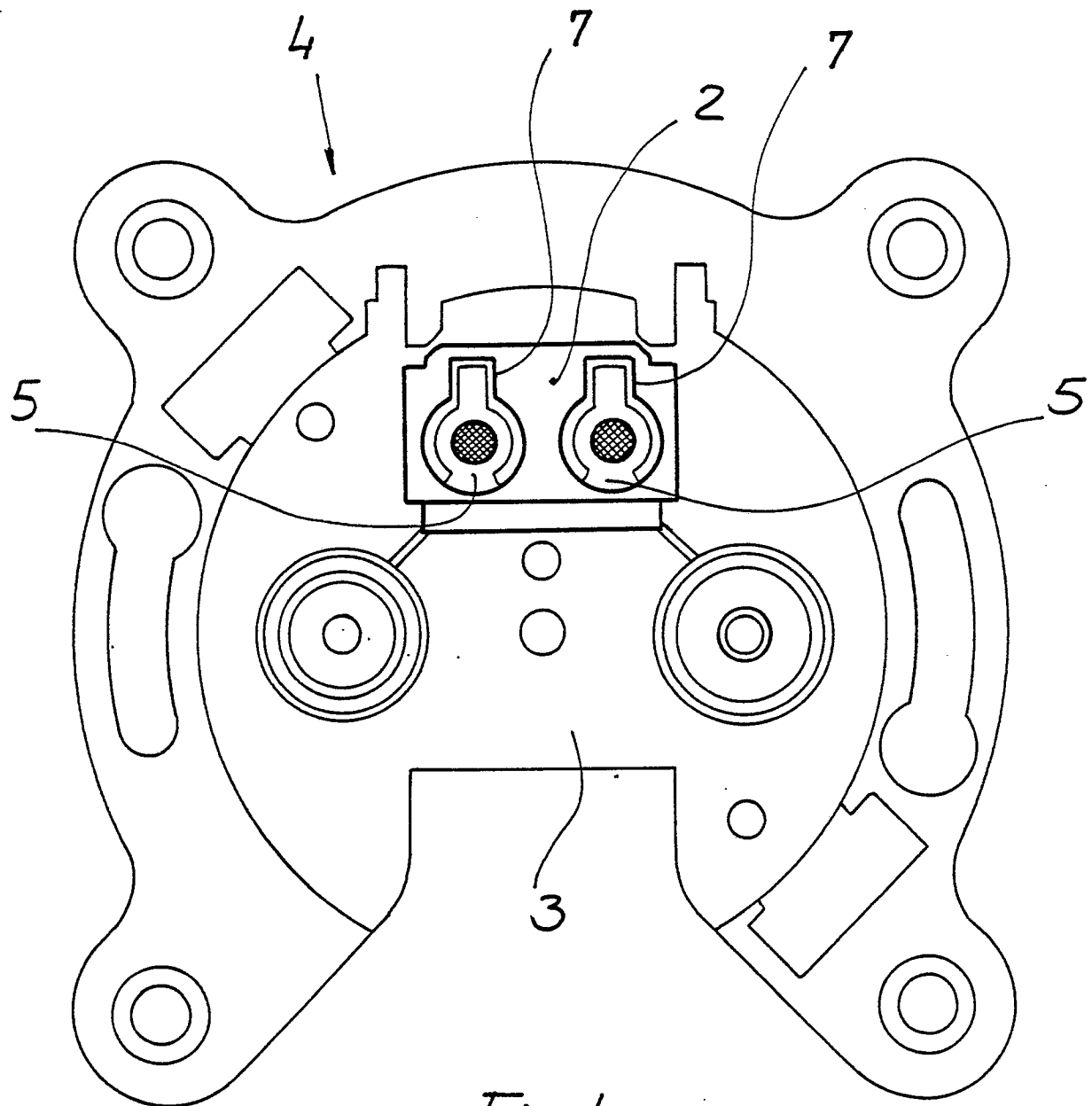
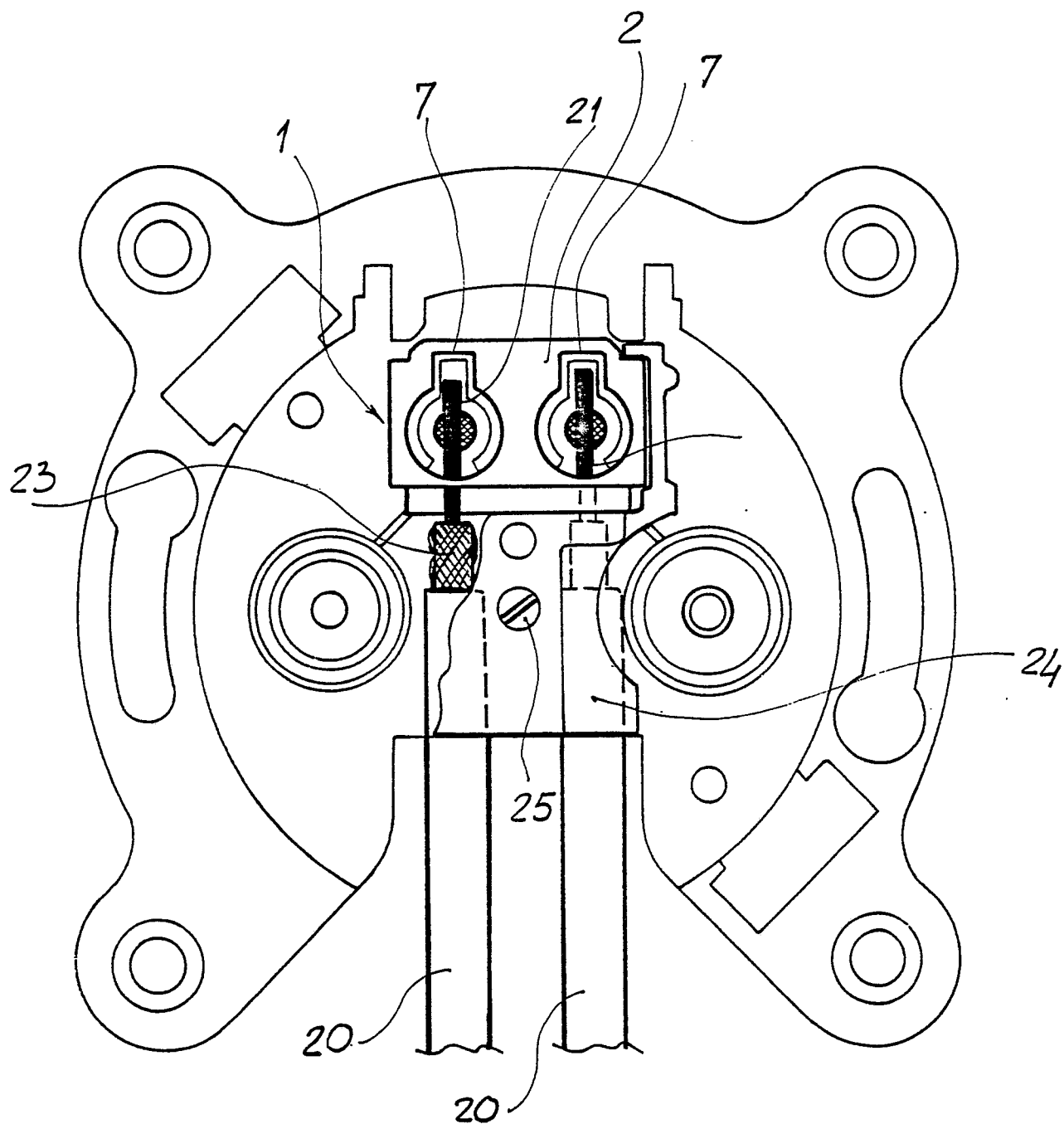


Fig. 4

Fig. 5Fig. 6