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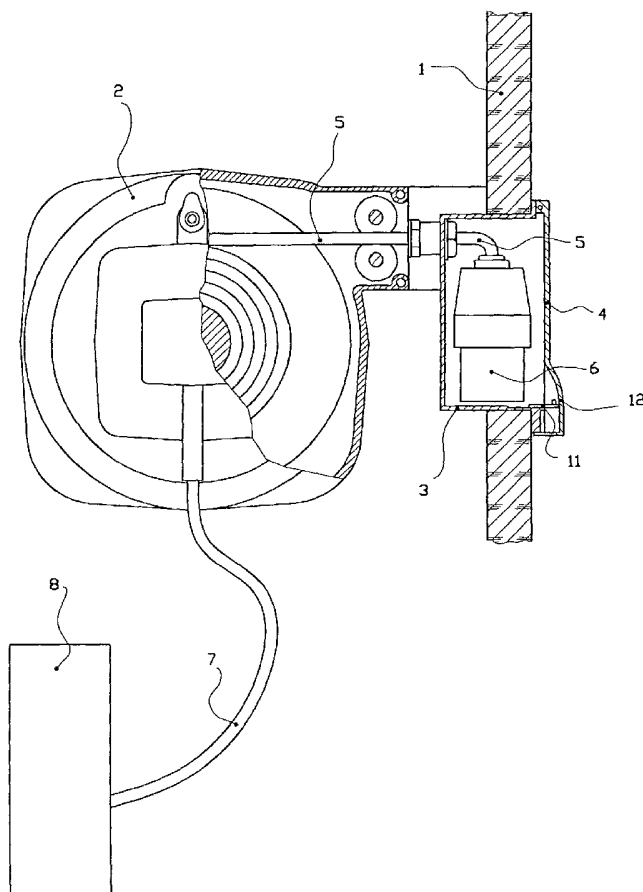
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(54) Title: EQUIPMENT FOR THE UNWINDING AND REWINDING OF ENERGY CONDUCTORS



(57) Abstract: Equipment for the unwinding and rewinding of energy conductors, built-in in a vehicle, having one ending (6) of the extractable conductor (5) that is connected, during stopovers, to stationary points (9) of energy supply networks.

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EQUIPMENT FOR THE UNWINDING AND REWINDING OF ENERGY CONDUCTORS.

FIELD OF THE ART

The present invention pertains to the technology of accessory equipment for vehicles such as motor-homes, campers, caravan, boats, internal combustion or electrical automobiles, industrial vehicles and others.

STATE OF THE ART

It is known that vehicles as the ones listed above need to connect to stationary points of energy supply networks. It is in fact known that campers and other vehicles, during extended stopovers, need to connect to different kinds of energy supply networks, such as electricity, gas, water for domestic use, as well as to different kinds of antennas for radio, television, telephone networks, computer networks or others.

A problematic aspect of the energy supply that often occurs during stopover is the unwinding and rewinding of the long electrical wire, in order not to leave on the ground or inside the camper a skein of conductors, often tangled and cumbersome, which can cause hazards and it is also prone to wear.

A second problem to be solved is to prevent insects to penetrate inside the control box of conductors, especially during the long stopovers of the vehicle. This problem becomes more urgent in places where a protection mosquito net is necessary, especially in tourist resorts during summer periods.

The solution proposed in this invention solves the problems mentioned above and optimizes the unwinding and rewinding of conductors for the supply of different kind of energy, during long stopovers by stationary points of energy distribution networks.

DESCRIPTION

The inventions is now disclosed in details with reference to the figures of the enclosed drawings, that are to be considered as not restrictive examples.

Figure 1 shows a schematic section of an equipment for the automatic unwinding and rewinding of an energy conductor, built-in upon a wall (1) of a vehicle. It also shows an internal conductor (7), connected to a socket box (8) inside the vehicle.

It can be noticed that the box, which contains the coiler (2), is fixed to the wall (1) and that the external energy conductor (5) has one ending equipped with a plug-in device (6) located in the control box (3) closed by the lid (4). It should be pointed out that the control box, in closing position, is made hermetic by the shutter (11), which fits exactly the shaping (12) of the lid (4).

It should be explained that the number 8 can indicate also an accumulator battery to be recharged, for example in an electrical automobile, or a water or compressed air tank.

It should be added that the coiler (2) can be automatic, with a return spring or also with auxiliary battery-operated electrical engine typical of car accessories such as window lifters or other electrically controlled devices.

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Figure 2 shows a vehicle during a stopover in a filling station with the plug (6) extracted from the box (3). It can be noticed that conductor (5) has been unwound from the coiler (2) and that the box (3) has the lid (4) in closed position.

Figure 3 highlights in details the fact that, during long stopovers, the control box (3) is kept in hermetic conditions by the lid (4), which has a shaping (12) that fits the shape of the extracted conductor (5).

Figure 4 is a horizontal section of the control box 3 hermetically closed by the shutter (11).

Figure 5 shows, in vertical section, an enlarged detail of the shutter (11) hermetically closed.

Figure 6 is a horizontal section of the control box (3) with the ending (6) extracted.

Figure 7 shows, in vertical section, an enlarged detail of the shaping (12) of the lid (4) to keep the box (3) in hermetic conditions even when the conductor (5) is extracted .

In the figures of the attached drawings each single detail is marked as follows:

- 1 indicates the wall of a vehicle
- 2 indicates the box containing the coiler
- 3 indicates a control box
- 4 indicates the lid of a control box
- 5 is the energy conductor
- 6 is the ending of the conductor

7 is the internal conductor

8 is the internal socket box of the vehicle

9 is the stationary supply point of an energy distribution network

10 is the wheel of the vehicle

11 is the hermetic shutter

12 is the shaping of the lid

The evidence of the figures highlights the simplicity of the equipment object of the present invention. The invention allows for different embodiments as far as the dimensioning and the proportioning are concerned, as well as for the different construction materials.

It is understood that the vehicle could be a boat, a caravan, a motor-home or others, as well as an electrical automobile.

Therefore, any equipment for the unwinding and rewinding of energy conductors that will feature the characteristics as basically described, shown and hereinafter claimed, will be considered as part of the protection sphere of the present invention.

CLAIMS

- 1) Equipment for the unwinding and rewinding of energy conductors characterized by the fact that it includes an automatic coiler (2), applied to a vehicle, and that an ending of a conductor (5) is provided with a plug (6), located in a control box (3), being said plug (6), together with its conductor (5), extractable from said box (3) to allow the connection to fixed points (9) of energy supply networks, and then, after disconnection, rewindable by coiler (2) to be relocated inside the control box (3) closed by the lid (4) .
- 2) Equipment for the unwinding and rewinding of energy conductors, as in claim 1, characterized by the fact that the connection between the automatic coiler (2) and the appliances (8) of the vehicle is realized through a conductor (7), that allows the energy's supply from fixed points (9) of energy supply networks.
- 3) Equipment for the unwinding and rewinding of energy conductors, as in previous claims, characterized by the fact that the box's shaping (12) allows its hermetic closing when the conductor (5) is extracted.
- 4) Equipment for the unwinding and rewinding of energy conductors, as in previous claims, characterized by the fact that the box (3) is provided with a sliding shutter (11) that allows the hermetic closing of the box when the conductor (5) is inside the control box.

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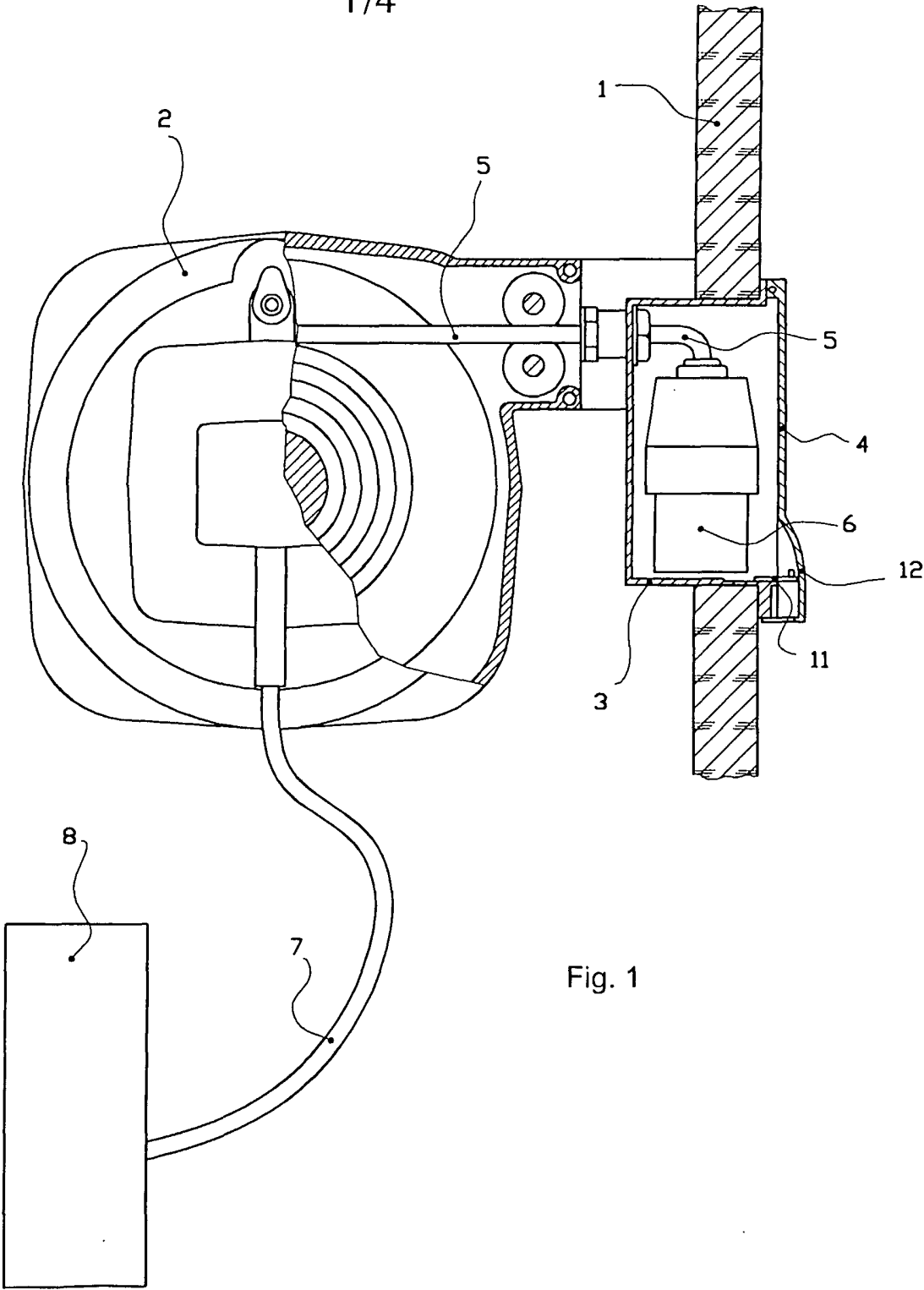
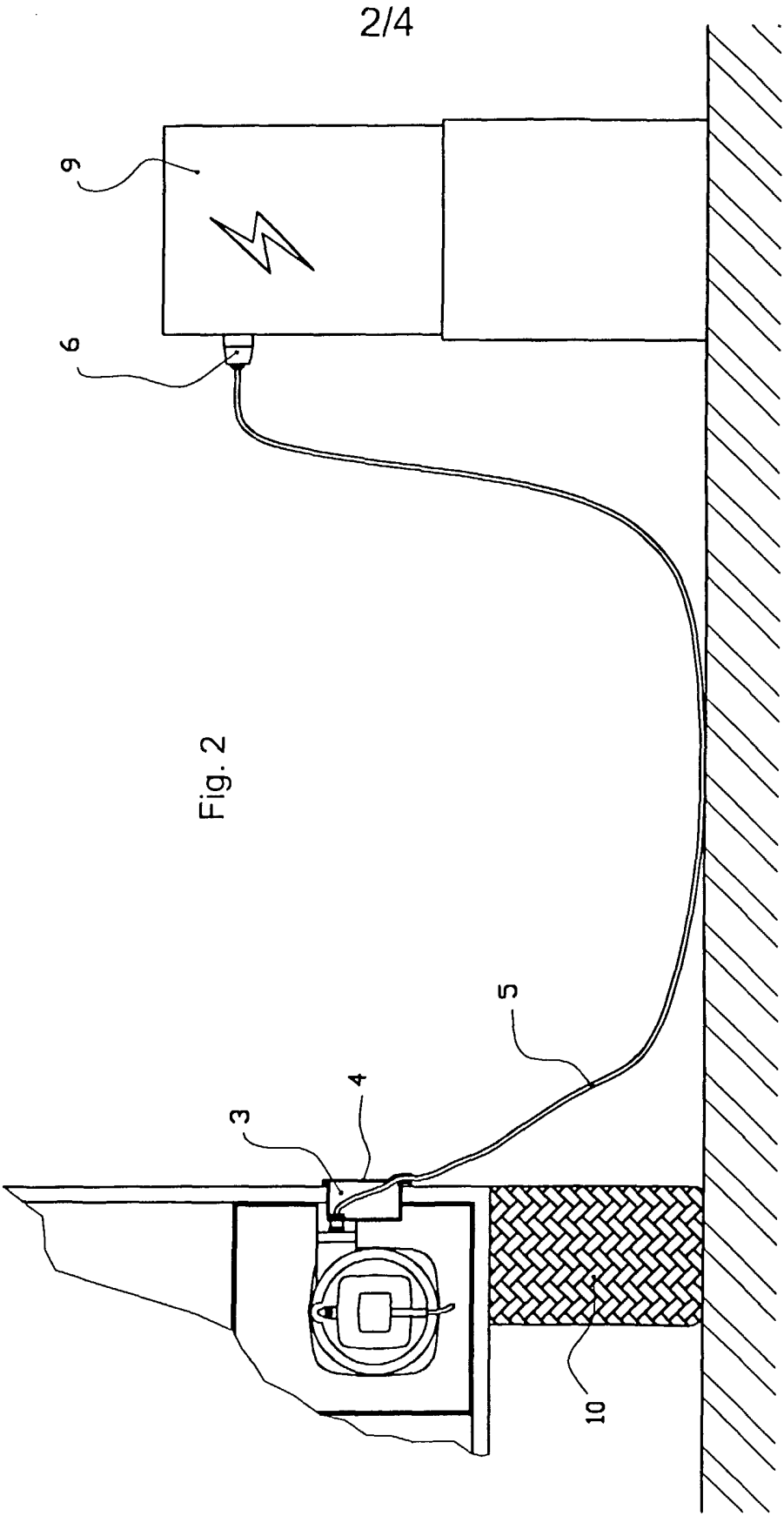
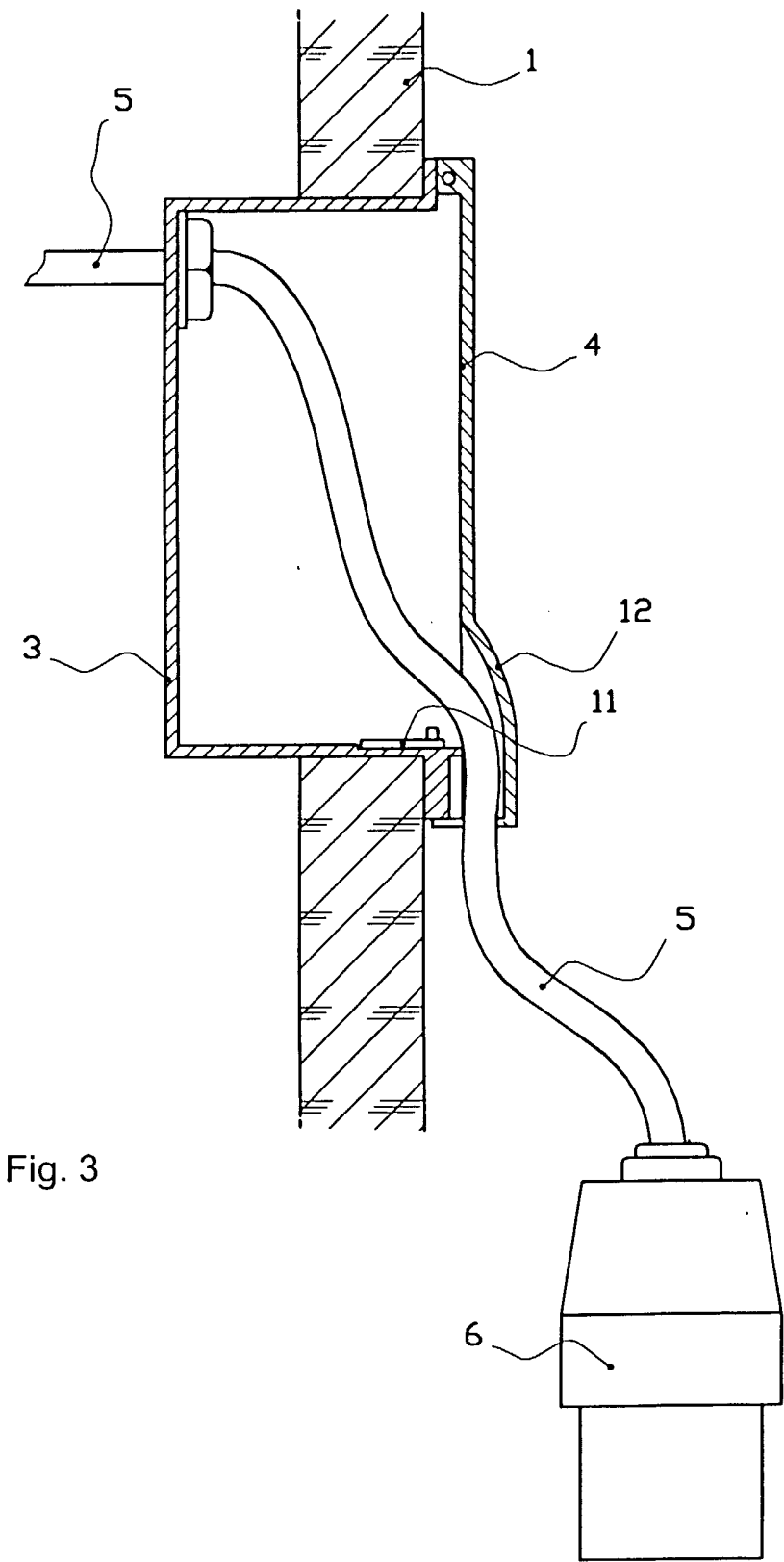


Fig. 1



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4/4

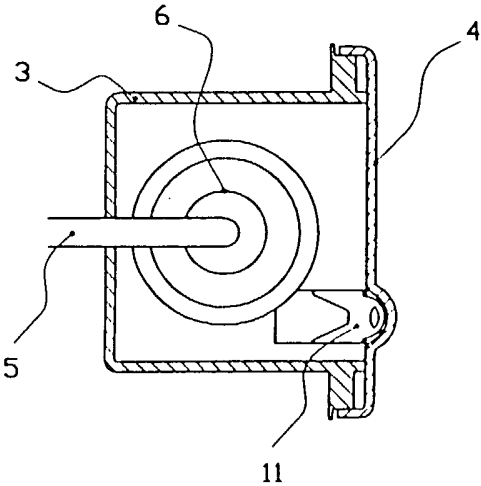


Fig. 4

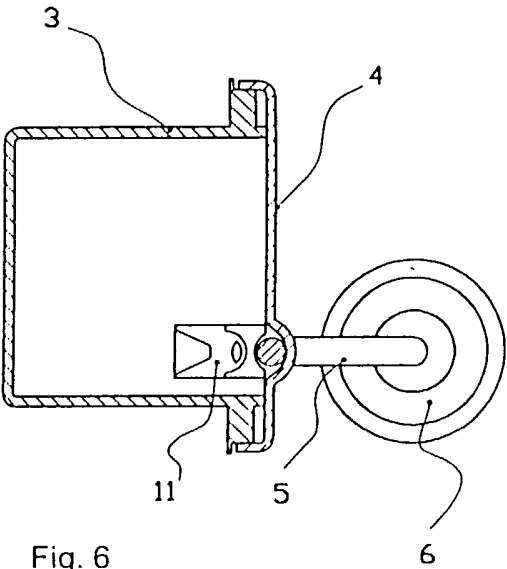


Fig. 6

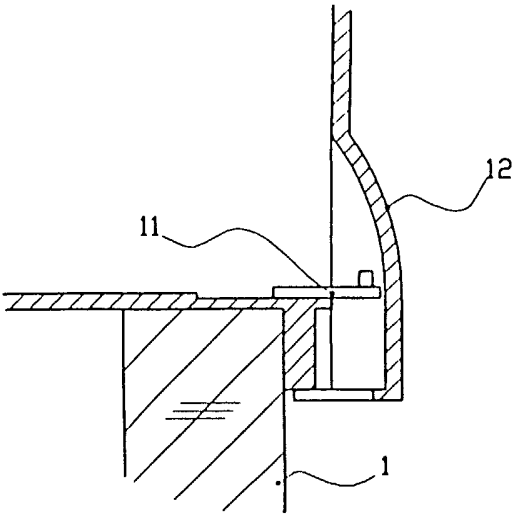


Fig. 5

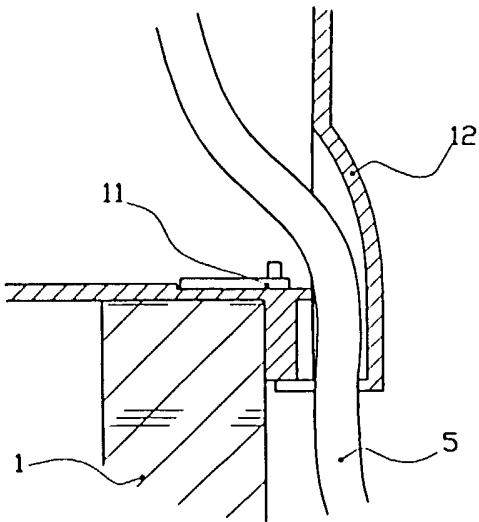


Fig. 7

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H02G11/02 H01R13/72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H02G H01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 079 304 A (BRANDENBURG JOHN D) 14 March 1978 (1978-03-14) column 1, line 56 -column 2, line 48; figures 1,2 ---	1,2
X	US 4 006 952 A (PUCKETT WILLIAM E) 8 February 1977 (1977-02-08) column 2, line 56 -column 3, line 48; figures 3-5 ---	1,2
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A	US 4 138 177 A (VAN VALER ANDREW F) 6 February 1979 (1979-02-06) --- -/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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