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

(11) Publication number: **0 165 908**
A2

(12) EUROPEAN PATENT APPLICATION

(21) Application number: 85830054.4

(22) Date of filing: 28.02.85

(51) Int. Cl.⁴: A 47 L 5/38

(30) Priority: 19.06.84 IT 2898484 U

(43) Date of publication of application:
27.12.85 Bulletin 85/52

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

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(54) A coupling point for central air-extraction systems.

(57) The invention relates to a coupling point for central air-extraction systems, and comprises: a base (2), fixed either direct to the wall or to the open side of a pattress (20) and having a hollow cylindrical socket (3); a base-insert (5) whose rear face exhibits a protruding tubular element (6) which fits coaxially into the hollow cylindrical socket (3); a flat shutter (8) which slides transversely across the open front end of the tubular element (6), is provided at one end with a hole (9) of diameter no less than the internal diameter of the tubular element (6), and is guided by a retaining-component (11) fitted to the front of the base-insert (5); and an outer panel (12) fitted over the retaining-component (12).

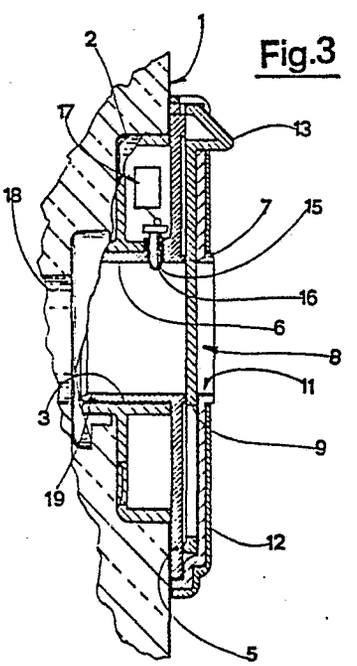

Fig.3

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A coupling point for central air-extraction systems

The invention described herein relates to a coupling point for central air extraction systems.

Such a coupling point is intended in particular, though not exclusively, to produce an airtight fit between the hose of a suction appliance and the central extraction system, and thus provide the means whereby the former is connected to the latter.

In existing wall-mounted coupling points of the type, which are either flush- or surface-fitting, the actual socket part of the assembly, into which the end of the suction appliance hose inserts, is closed off by a hinged flap, rotatable about a fixed axis which in most instances is located directly above the socket.

Such coupling points are difficult to use in practice, precisely because of the swinging action of the hinged flap.

The object of the invention described herein is that of providing a coupling point for central air-extraction systems which, whether flush- or surface-mounted, embodies features of a design and of a functional nature which render application simple and troublefree.

The object stated, and other objects besides, may be realised with the invention disclosed, which relates to a coupling point for central air-extraction systems, characterised in that it comprises:

- a base, fixed either direct to the wall or to the open side of a pattress, and incorporating a centrally-located hollow cylindrical socket;

- a base-insert of substantially flat shape whose rear face exhibits a centrally-located protruding tubular element of cylindrical shape which fits coaxially into the hollow cylindrical socket and is allowed a predetermined degree of clearance relative thereto, and whose front face exhibits a protruding rim which is integral with and extends forward coaxially from the open front end of the tubular element;
- a flat shutter which slides transversely across the open front end of the cylindrical tubular element while making direct contact with the protruding rim offered by said element, is provided at one end with a hole of diameter no less than the internal diameter of the cylindrical tubular element, and is guided and held flush against the protruding rim during its transverse sliding motion by guides incorporated into a retaining-component fitted frontally to the base-insert and fixed to the base in the same fashion as the base-insert;
- an outer panel fitted frontally over the retaining-component.

Two preferred embodiments of the invention will now be described in detail, by way of example, with the aid of the accompanying drawings, in which:

fig 1 shows a cutaway of the first embodiment of the invention, seen in perspective;

fig 2 is a vertical elevation of the embodiment shown in fig 1;

fig 3 is the section through II-II in fig 2;

fig 4 is a similar section to that shown in fig 3, taken through the second embodiment of the invention.

Referring to the drawings, 1 denotes the vertical wall of a building into which a base 2, fashioned from plastic material and incorporating a centrally-located hollow cylindrical socket 3, is sunk and fixed.

5 denotes a base-insert of substantially flat shape which is offered to the base 2 and fixed thereto by means of screws 4. The rear of the base-insert 5 exhibits a protruding tubular element 6 of cylindrical shape which is centrally located and fits into the hollow cylindrical socket 3, whilst the front of the base-insert 5 exhibits a protruding rim 7, coaxial and integral with the open front end of the tubular element and extending forward therefrom.

A flat shutter 8 located flush against the outermost edge of the protruding rim 7 is designed to slide relative thereto through a vertical path. The shutter 8 is provided at its bottom end with a hole 9 of diameter not less than the internal diameter of the cylindrical tubular element 6, and is guided and held flush against the protruding rim 7 during its sliding motion by means of guides incorporated into a retaining-component 11 which fits over the base-insert 5. Both the retaining-component 11 and the base-insert 5 are made fast to the base 3 by way of screws 4.

12 denotes an outer panel which fits over the retaining-component 11.

The shutter 8, which is capable of motion through a vertical path as aforesaid, is furnished at its top end with a projection 13 by means of which to impart such motion. The bottom end of the shutter 8 has a protruding

lip 14 embodied such as to make contact, when slid upwards, with the rim 7 at the open end of the tubular element 6; that is, the lip 14 acts as a mechanical stop which determines the limit on upward travel of the shutter 8, and in addition, serves to ensure alignment of the shutter hole 9 with the open end of the tubular element 6 on arrival at this limit. Thus, access to the socket and alignment of the shutter hole 9 with the open end of the tubular element 6 are rendered simple, and there is no possibility of the shutter's being separated from its seating when slid upwards to provide access to the socket.

The flush fit between the outermost surface of the protruding rim 7 and the rear face of the shutter 8 is such as to provide an efficient, airtight seal.

15 denotes a radially-disposed through hole in the tubular element 6, located near to its open front end, which accommodates the plunger 16 of a switch 17 housed in a space existing between the base 2 and the base-insert 5. The switch plunger 16 is seated in the radial hole 15 in such a way as to remain proud of the inner cylindrical surface of the tubular element 6 which accommodates the end of an appliance connecting-hose when inserted. Insertion of such a hose will cause the plunger 16 to shift and engage the switch 17, which triggers start-up of the extraction system to which the coupling point is connected via a system conduit 18.

19 denotes an O-ring type seal seated in a groove located at the rear end of the tubular element 6, which ensures an airtight fit between the respective outer

and inner cylindrical surfaces of the tubular element 6 and the socket 3.

In the surface-mounted embodiment illustrated in fig 4, the base 2 is fitted to the open front of a box, or pattress 20. In this instance the system conduit 18, instead of being sunk into the wall, exits from the bottom side of the pattress.

A coupling point according to the invention thus affords simple access to and closure of the socket, with nothing more required than to slide the shutter 8 upwards or down by hand, utilizing the projection 13 as a handle.

Claims

1) A coupling point for central air-extraction systems, characterised in that it comprises:
- a base (2), fixed either direct to the wall or to the open side of a pattress (20), and incorporating a centrally-located hollow cylindrical socket (3);
- a base-insert (5) of substantially flat shape whose rear face exhibits a centrally-located protruding tubular element (6) of cylindrical shape which fits coaxially into the hollow cylindrical socket (3) and is allowed a pre-determined degree of clearance relative thereto, and whose front face exhibits a protruding rim (5) which is integral with and extends forward coaxially from the open front end of the tubular element (6);
- a flat shutter (8) which slides transversely across the open front end of the cylindrical tubular element (6) whilst making direct contact with the protruding rim (7) offered by said element, is provided at one end with a hole (9) of diameter no less than the internal diameter of the cylindrical tubular element (6), and is guided and held flush against the protruding rim (7) during its transverse sliding motion by guides incorporated into a retaining-component (11) fitted frontally to the base-insert (5) and fixed to the base (2) in the same fashion as the base-insert;
- an outer panel (12) fitted frontally over the retaining-component (11).

2) A coupling point as in claim 1, wherein the shutter (8), which is capable of sliding motion through a vertical path, exhibits a projection (13) at its top end by way of which to impart such motion, and a protruding lip (14) issuing from the periphery of the hole (9) at its bottom end, which makes contact with the protruding rim (7) issuing from the open front end of the tubular element (6), thereby functioning as a mechanical stop limiting travel of the shutter (8) when sliding upwards and ensuring alignment of the hole (9) with the open front end of the tubular element.

3) A coupling point as in claim 1, wherein the tubular element (6) of the base-insert (5) comprises a radially-disposed through hole (15) which accommodates the plunger (16) or other sensing component of a switch (17) housed in a space existing between the base (2) and the base-insert (5); and wherein the plunger (16) is seated in the radial hole (16) in such a way as to remain proud of the inner cylindrical surface of the tubular element (6), thereby occasioning engagement of the plunger (16) by contact with the end of a suction appliance connecting-hose upon insertion of such a hose into the open front end of the tubular element.

4) A coupling point as in claim 1 wherein the base-insert (5) incorporates an annular groove located in that part of the tubular element (6) accommodated by the hollow

socket (3) located in the base (2), in order to seat an O-ring type seal (19) the purpose of which is to ensure an airtight fit between the respective outer and inner cylindrical surfaces of said tubular element and said socket.

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Fig.2

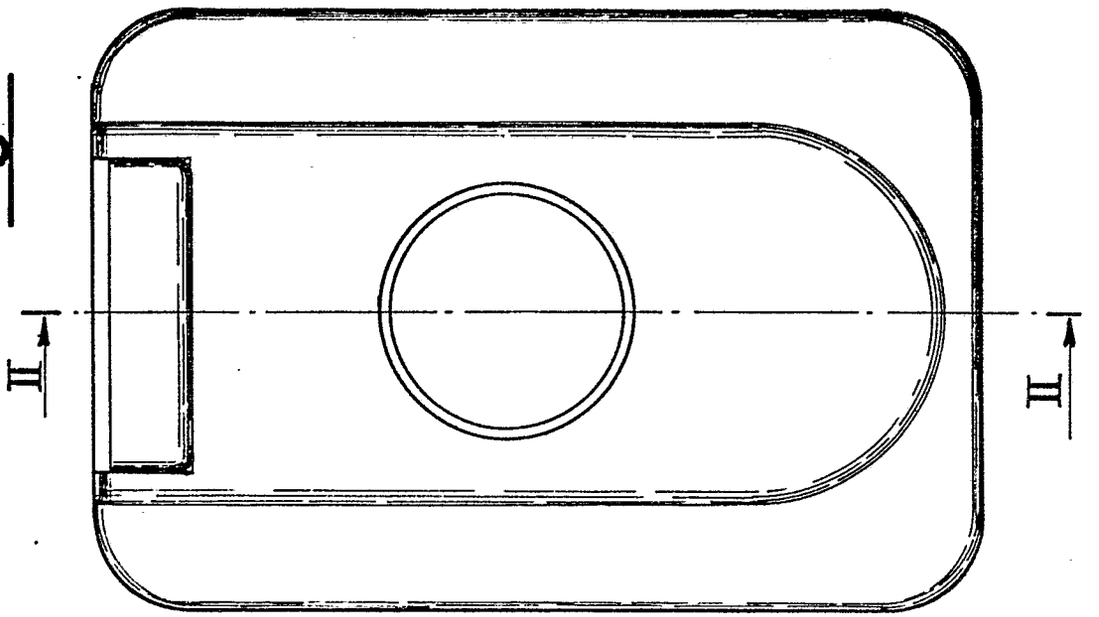
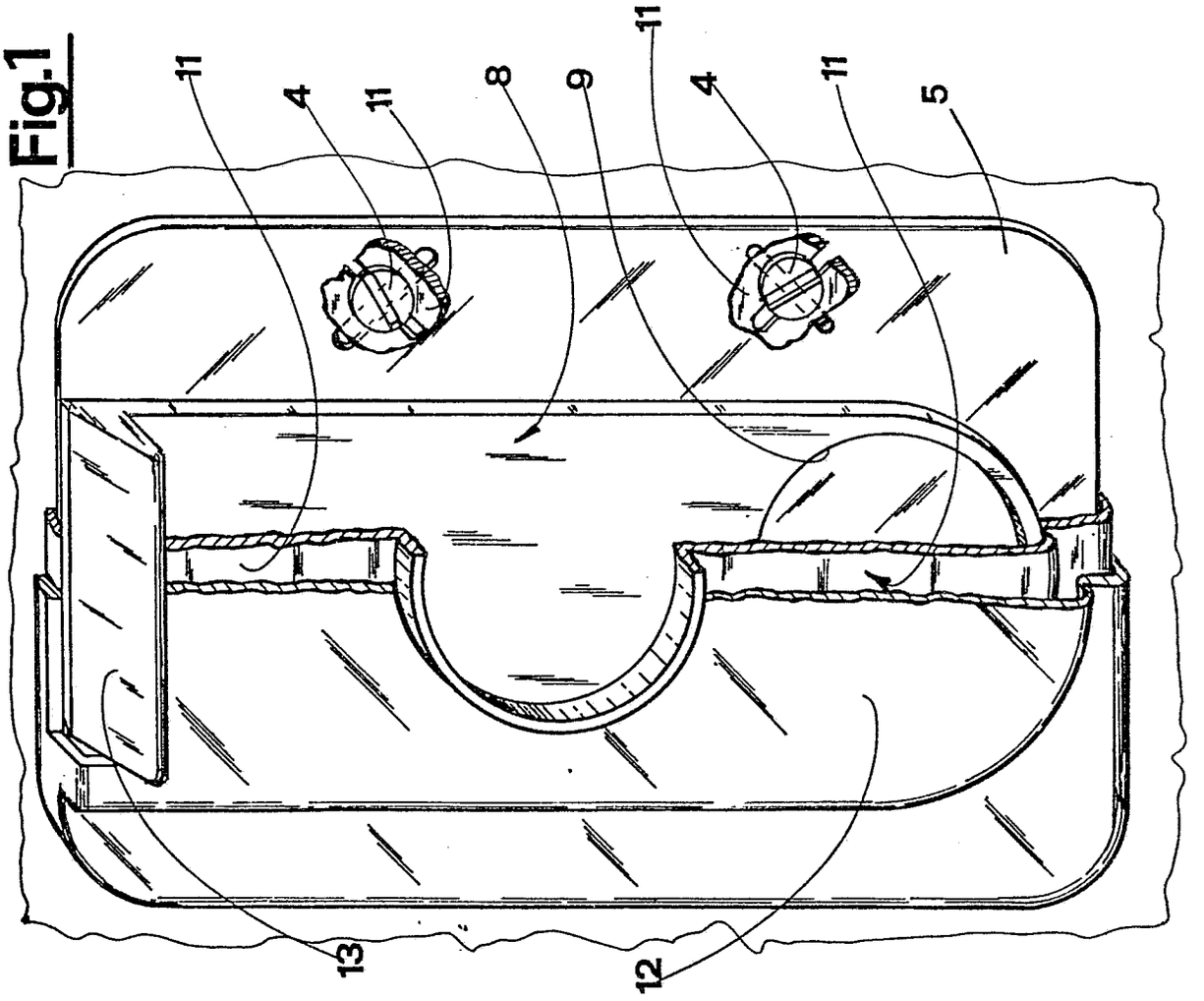


Fig.1



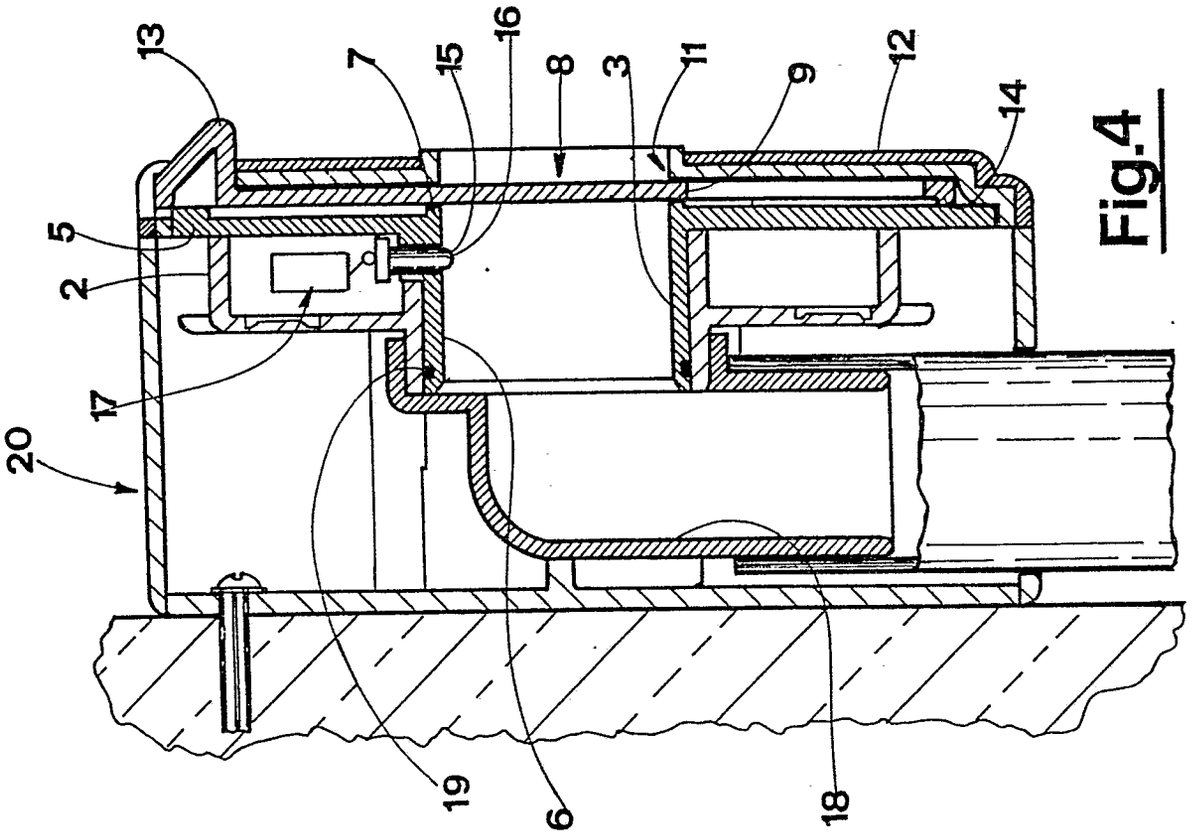

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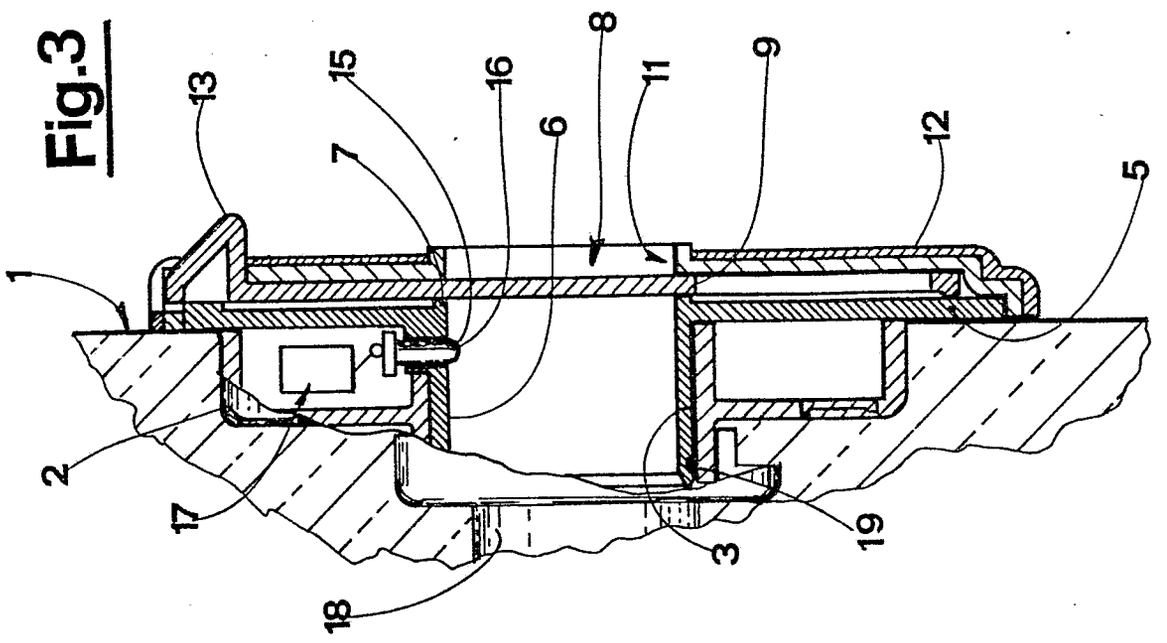
Fig.4

Fig.3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