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

(11) EP 0 857 919 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.08.1998 Bulletin 1998/33

(51) Int Cl.[6]: **F24D 3/10**, E03C 1/042

(21) Application number: **98200311.3**

(22) Date of filing: **03.02.1998**

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **05.02.1997 NL 1005183**

(71) Applicant: **J. van Walraven B.V.**
NL-3641 RK Mijdrecht (NL)

(72) Inventor: **Van Walraven, Jan**
3641 GP Mijdrecht (NL)

(74) Representative: **Boelsma, Gerben Harm, Ir. et al**
van Exter Polak & Charlouis B.V.,
P.O. Box 3241
2280 GE Rijswijk (NL)

(54) A built-in box containing at least one elbow tube for connection to a conduit

(57) An built-in/connector box (1) containing at least one elbow tube (10) for connection to a conduit (15) surrounded by a pipe sleeve (7), comprising a casing with an upper side excessible for placing the elbow tube and having opposite side walls (3) extending from a bottom (2) and having at least one end wall (5) which is provided with at least one passage/connecting opening (6) for a pipe sleeve (7) positioned opposite to the conduit connecting end of the elbow tube (10). The elbow pipe (10) is mounted in the housing for adjustment in the direction of the axis of the passage/connecting opening.

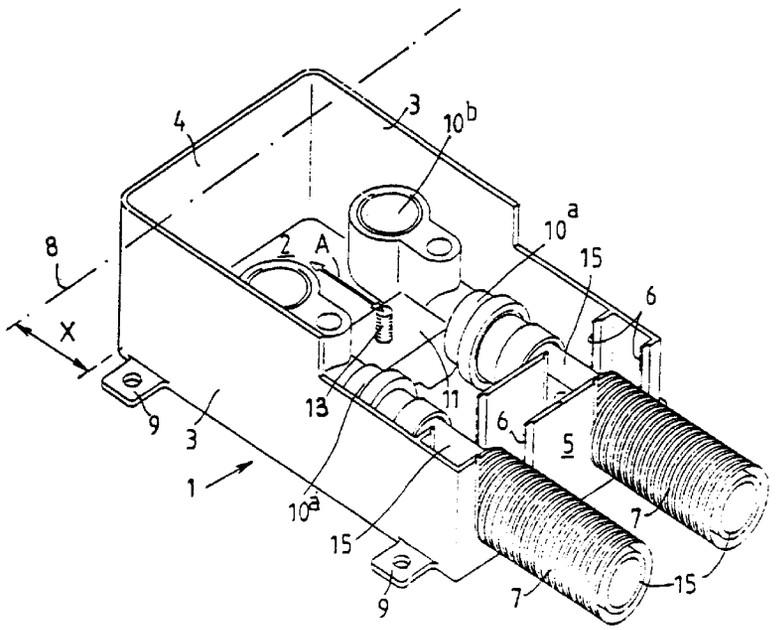

FIG 1

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Description

The invention relates to a built-in box containing at least one elbow tube for connection to a conduit surrounded by a pipe sleeve, comprising a casing with an upper side excessible for placing the elbow tube and having opposite side walls extending from a bottom and having at least one end wall which is provided with at least one passage/connecting opening for a pipe sleeve positioned opposite to the conduit connecting end of the elbow tube.

Such built-in boxes are known and are practically used when installing water conduits in walls in houses and the like. Such boxes are placed in recesses in walls at locations where taps have to be provided or appliances have to be connected. (See FR-A-2 609 522).

The pipe sleeve is received in chases which are previously cut in the walls and ultimately filled up, said sleeve pipe constituting a guide tube for the proper conduit formed of a flexible plastic material, said conduit being connected, on the one hand, to a centrally positioned distribution block and, on the other hand, to said elbow tube, the latter being connected in turn to a cock or the like.

The hitherto known built-in boxes have a casing with a fixed seat for the elbow tube to be received therein.

The invention aims at providing an improved built-in box of the type above referred to, which is particularly suitable for use at locations, where heat exchangers (radiators) of a central heating system have to be connected to supply and return conduits which are received in pipe sleeves embedded in floors.

It should be taken into consideration that such connecting locations are, in general, at a predetermined distance from the adjacent walls in the finished state of the latter. However, the location where supply and return conduits have to come out of the floor, has to be determined already in the structural building stage, e.g. in the stage, wherein the said walls have not been finished yet.

In practice it seldomly occurs, that the site where the supply and return conduits come out of the floor, exactly corresponds with the site of the supply and return connections of the heat exchanging elements (radiators and the like).

According to the invention the above mentioned objections are met and thereby the objective of the invention is achieved in that said elbow pipe is mounted within said casing for a slidable adjustment in the direction of the axis of said passage/connecting opening.

This permits the elbow tube, in the so-called finishing stage of the house or building in question, to be adjusted with its connecting end turned away from the bottom of the built-in box in exact alignment with the corresponding connecting opening of the heat exchanger (radiator) installed in said finishing stage, by slidingly adjusting said elbow tube within said box embedded in the floor, whereby the conduit connected to the second connecting end of the elbow pipe is correspondingly slidingly displaced within said pipe sleeve. The hitherto usual corrections, such as by bending the usually metallic connecting tube towards the radiator, need no longer be carried out.

The built-in box proposed by the invention also means a considerable simplification as compared with the special auxiliary pieces in the form of curved guiding pieces to be mounted on the floor, as disclosed in document EP 0627587, and hitherto used when installing central heating systems.

It is to be noted that GB-1,194,009 discloses a connector box for attachment to the unfinished surface of a vertical wall (see fig. 5 and 6). The box contains two juxtaposed elbow tubes, each of which having one connecting end directed downwardly for connection to the curved upper end of a heating fluid admission/return pipe and a second connecting end projecting beyond the (open) front side of the box for connection to a radiator box. The heating fluid admission and return pipes are deposited on the unfinished floor and the elbow tubes are held on the curved ends of the pipes by means of downwardly pressing clamping screws. The fluid admission and return pipes are not surrounded by pipe sleeves, sothat there seems to be no possibility for the fluid admission and return pipe to shift once they have become embedded in the finished floor.

A preferred embodiment of the built-in box according to the invention, containing two juxtaposed elbow tubes, is characterized in that the two elbow tubes are connected by a bridge piece extending transversely to the slidable adjustment direction and having a projection that is guided in a guideway formed in the bottom of the box.

The invention will be hereinafter further explained by way of example with reference to the accompanying drawing.

Fig. 1 shows a perspective view of a built-in box according to the invention, containing two elbow tubes;

Fig. 2 is a perspective view on a reduced scale of the built-in box according to fig. 1, in a disassembled state;

Fig. 3 is a perspective view of the built-in box according to fig. 1 and 2, wherein the box compartment at the pipe sleeve connecting end is closed;

Fig. 4 is a perspective view, in which the box is sunk into a finished floor and wherein two connecting tubes are inserted into the upwardly facing connecting ends of the two elbow tubes and

Fig. 5 shows a view as that shown in fig. 4, wherein the assembling opening of the box is closed by a cover.

The built-in/connector box 1 shown in the drawing is of a substantially rectangular shape, with a bottom 2, two opposite side walls 3, a first end wall 4 and a second

end wall 5, the latter being provided with two inserting slots 6 for connection of two pipe sleeves 7.

The box 1 is adapted to be fastened on the rough surface of an unfinished floor, at a predetermined distance of X from an intended reference line 8, which also serves as a reference basis for a later instalment of a heating radiator or similar heat exchanger.

The box 1 is provided with fastening tabs 9 for attachment to the rough floor surface.

In the example shown the box is adapted to receive two elbow tubes 10 (see also fig. 2), which are interconnected by a bridge piece 11 at a mutual spacing of e.g. 50 mm. The bridge piece 11 has a through opening 12, by means of which the elbow tube assembly 10/10 can be put on a pin 13 that extends perpendicularly from the bottom 2 and is slidably guided in a longitudinal guideway 14 formed on the bottom 2. This permits the elbow tube assembly 10/10 to be slightly displaced within the box 1 in the arrow direction A (see fig. 1).

Fig. 1 shows the built-in/connector box 1 in a stage, in which the horizontally directed connecting ends 10a of the elbow tube assembly 10/10 are each connected to an end of a conduit 15 which slidably extends through a pipe sleeve 7, one of the two conduits 15 constituting e.g. the supply conduit and the other of said conduits constituting the return conduit for the heating radiator to be installed.

The end wall 4 and an adjacent portion of the opposite side walls 3 connected therewith have a height, which is selected such, that the upper edges of said end wall and adjacent wall portions will become positioned flush with or slightly above the surface of the finished floor (see fig. 4).

The end wall 5 and the adjacent portions of the opposite side walls 3 have a smaller height and confine a lower portion of the box, in which the connections to the conduits 15 are received. This portion may be closed by a cover prior to the application of the finishing layer of the floor and will then become embedded within the finished floor. Upon applying the finishing layer of the floor the upwardly directed connecting ends 10b of the elbow tube assembly 10/10 are still accessible (fig. 4) for the connecting work to be carried out.

After the vertical walls of the house or building in question having also been finished and the heating radiator to be connected having been placed, use is made of the described possibility to slidably displace the elbow tube assembly 10/10; the elbow tube assembly is displaced in the arrow direction into a position such, that the axes of the two upwardly facing connecting ends 10b, 10b are in one common plane with those of the supply/return connectors of the radiator. If desired the elbow tube assembly 10/10 may be fixed in its final position by means of a nut 16 that is screwed onto the pin 13.

Fig. 4 shows two connecting tubes 17, which are connected to the supply/return connectors respectively of the radiator.

After the connection being completed the higher box portion is closed by means of a suitable partial cover 18. By removal of the cover 18 the elbow tube assembly 10/10 remains accessible for future activities, such as the repair of a leaking connection between a connecting end 10a and a conduit 15 or the disconnection of the perpective radiator by closure of the valves within the elbow tubes.

The above described built-in/connector box is adapted to be formed of plastics material, whereas the conduits 15 and the pipe sleeves 7 may be formed of a flexible plastic.

It will be understood that the invention is also applicable with boxes containing a single coupling piece (elbow tube) in which case the box may have a correspondingly reduced width. Use in vertical walls may also be considered.

Claims

1. A built-in box containing at least one elbow tube for connection to a conduit surrounded by a pipe sleeve, comprising a casing with an upper side excessible for placing the elbow tube and having opposite side walls extending from a bottom and having at least one end wall which is provided with at least one passage/connecting opening for a pipe sleeve positioned opposite to the conduit connecting end of the elbow tube, characterized in that the elbow tube is mounted within said casing for a slidable adjustment in the direction of the axis of said passage/connecting opening.

2. A built-in box according to claim 1, characterized in that in case of two juxtaposed elbow tubes said elbow tubes are connected by a bridge piece extending transversely to the slidable adjustment direction and having a projection that is guided in a guideway formed in the bottom of the box.

3. A built-in box according to claim 2, characterized in that said bridge piece has a through opening, by means of which the elbow tube assembly may be put on a pin that extends perpendicularly from the bottom and is slidably guided in a longitudinal guideway formed on the bottom.

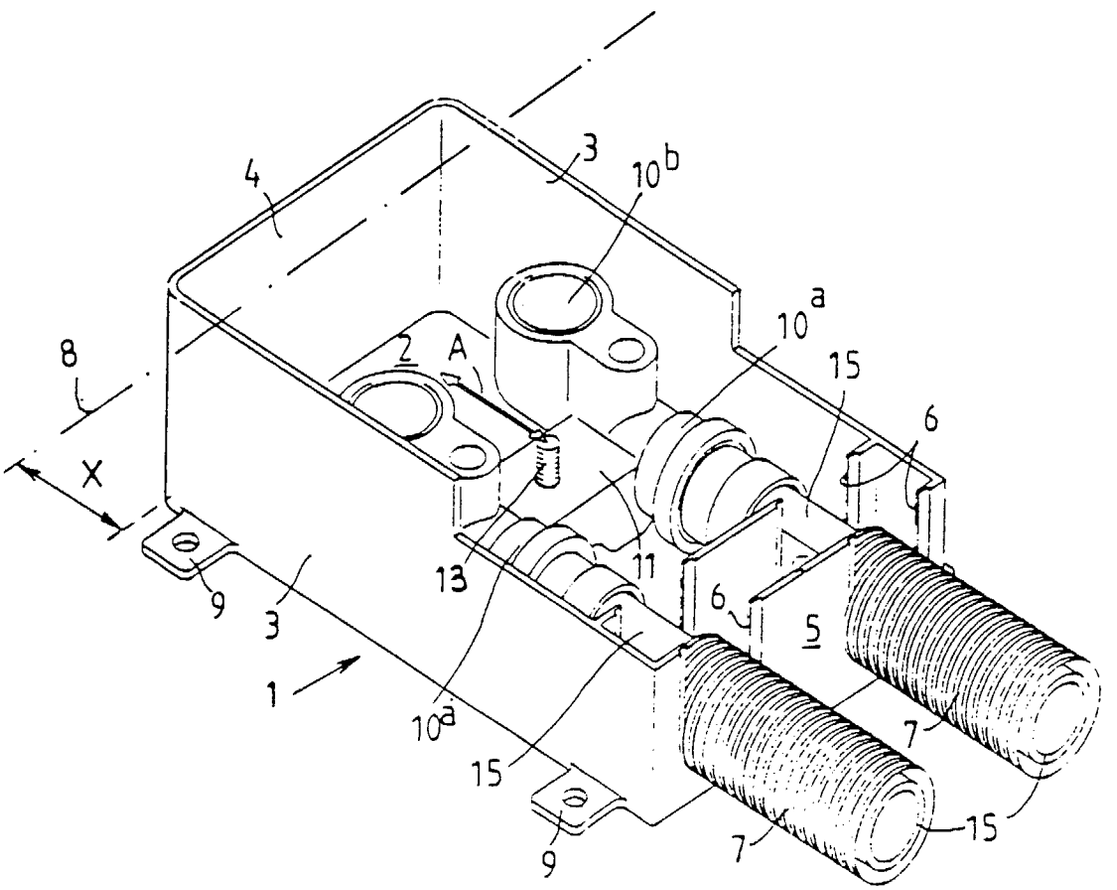

FIG 1

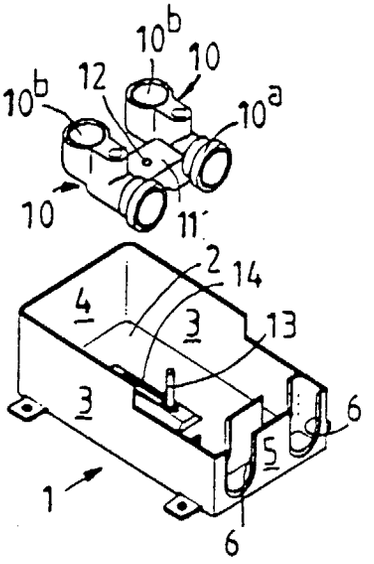

FIG 2

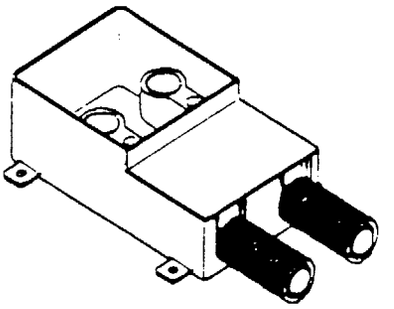

FIG 3

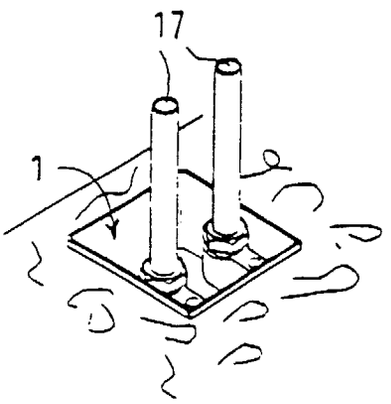

FIG 4

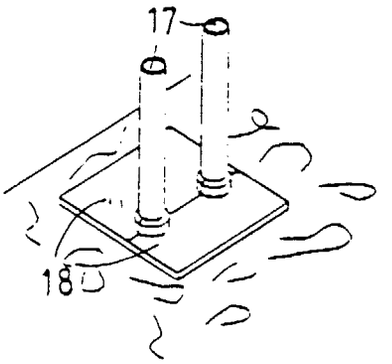

FIG 5

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EUROPEAN SEARCH REPORT

Application Number
EP 98 20 0311

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A,D	FR 2 609 522 A (LEGRIS SA) 15 July 1988 * abstract; figures *	1	F24D3/10 E03C1/042
A	GB 1 194 009 A (ADANI) 10 June 1970 * claims; figures *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

F24D
E03C
F24H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	4 May 1998	Van Gestel, H

CATEGORY OF CITED DOCUMENTS

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