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(71) Applicant: **Deltacalor S.r.L.**
20050 Verano Brianza (Milan) (IT)

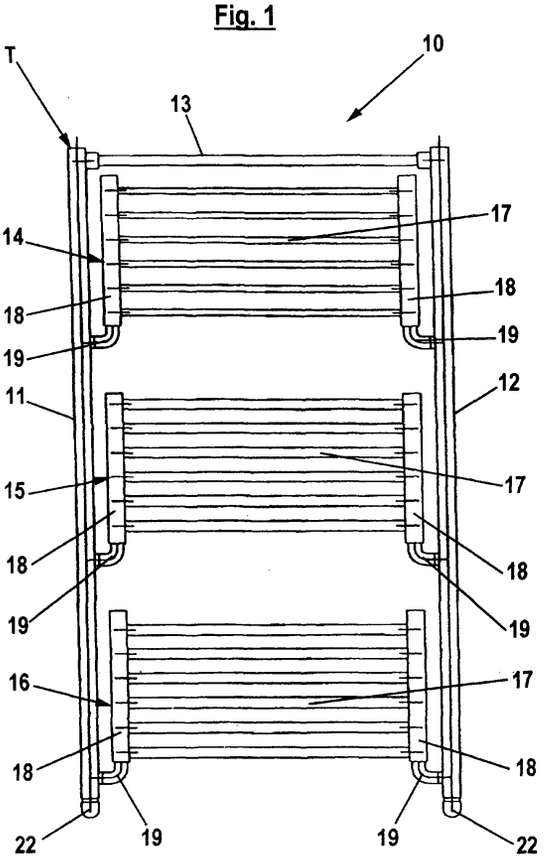
(72) Inventor: **Pastorino, Giovanni**
23900 Lecco (IT)

(74) Representative: **Carloni, Franco**
c/o Calvani, Salvi & Veronelli S.r.l.,
Piazza Duca d'Aosta, 4
20124 Milano (IT)

(54) Radiator for drying and/or warming towels and household linens

(57) The radiator for drying and/or warming towels and household linens, as well as for heating domestic rooms, comprises a wall-mountable frame (T) consisting of a pair of vertical members (11,12) connected to each other by at least a horizontal member (13). The frame (T) is provided with at least a towel and/or household linen supporting member (14,15,16) formed of a plurality of horizontal tubular elements (17) connected at each end thereof to a pair of supporting arm members (18) which are rotatably linked to the vertical members (11,12) of the frame (T) so as to permit them to be rotated from a first substantially vertical position to a second substantially horizontal position and viceversa both of which are adapted for drying and/or warming towels and/or household linens.

Fig. 1



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Description

[0001] The present invention generally relates to a radiator particularly intended for drying and/or warming towels and household linens, but also suitable for heating domestic rooms.

[0002] The prior art discloses radiators of the above mentioned kind which are generally adapted to be mounted to a wall and comprise supporting means for supporting towels and/or household linens so as to permit these to be dried and/or warmed. Inside the towel and/or household linen supporting means of the device an electrical resistor is provided or a hot fluid is circulated so as to permit the towels and/or household linens to be dried and/or warmed and, at the same time, a domestic room to be heated owing to the heat released via thermal exchange thereby. The towel and household linen supporting means of the radiators according to the prior art are generally in the form of horizontal tubular elements which are arranged in a fixed upright position or are pivotally connected to the radiator so as to be capable of swivelling in a horizontal plane. This configuration has proved to be poorly satisfactory because it does not permit the towels and household linens to be dried and/or warmed quickly.

[0003] The object of the present invention is to overcome this disadvantage of the prior art radiators for drying and/or warming towels and household linens.

According to the present invention the radiator for drying and/or warming towels and household linens, as well as for heating domestic rooms is characterised in that it comprises a wall-mountable frame consisting of a pair of vertical members connected to each other by at least a horizontal member, said frame being provided with at least a towel and/or household linen supporting member formed of a plurality of horizontal tubular elements connected at each end thereof to a pair of supporting arm members which are rotatably linked to said vertical members of the frame so as to be capable of swivelling in a vertical plane.

[0004] The present invention will be now described in detail in connection with the accompanying drawings, wherein:

Figure 1 and 2 are a front and side elevation view, respectively, of a first embodiment of the radiator according of the present invention,

Figure 3 and 4 are a front and side elevation view, respectively, of a second embodiment of the radiator according to the present invention,

Figure 5 is a cross-section view of the first embodiment showing the joint used for rotatably connecting the supporting arm members to the vertical members of the radiator frame according to the present invention,

Figure 6 is a cross-section of a second embodiment of the joint of Figure 5, and

Figure 7 is a cross-section of a third embodiment of the joint of Figure 5.

[0005] Referring to Figures 1 and 2 of the drawings, there is shown a first embodiment of the radiator according to the present invention. The radiator, generally designated by 10, comprises a frame T consisting of a pair of vertical members 11,12 which may have any shape in cross-section and are preferably, although not necessarily, connected to each other by at least a horizontal member 13. The frame T is adapted to be mounted onto a wall P of a domestic room. One or more supports for towels and/or household linens, e.g. an upper, an intermediate and a lower support 14,15 and 16, respectively, are connected to the vertical members 11,12 of the frame. Each support 14,15 and 16 is formed of a plurality of horizontal tubular elements 17 which are connected at their ends to supporting arm members 18. Each supporting arm member 18 is connected at its lower end to one of the vertical members 11,12 of the frame by means of a suitable joint 19 which permits the supporting arm member 18 to swivel in the vertical plane with respect to the vertical member 11,12 of the radiator. Further, each supporting arm member 18 is connected to the respective vertical member 11,12 by means of two links 20,21. These links 20,21 are connected to each other at one end thereof so as to be pivotable as the legs of a drawing compass, whereas at their other ends they are connected to the vertical members 11,12 and to the upper free end of the supporting arm member 18 or to an intermediate point thereof located between the upper free end and the lower end rotatably connected to the vertical member 11,12. The tubular members 17 of each support 14,15,16 may have various shapes in cross-section and are preferably, but not necessarily arranged in a staggered relationship with respect to those of the upper or lower support.

[0006] Referring to Figures 3 and 4 of the drawings, there is shown a second embodiment of the radiator 10 according to the present invention. According to this second embodiment, the supporting arm members 18 of the upper support 14 for the towels and/or household linens are connected to the vertical members 11,12 of the frame so as to swivel in the vertical plane on their upper end, whereas the supports 15 and 16 have substantially the same configuration as that described in connection with the first embodiment of the radiator 10.

[0007] The radiator 10 may be connected to the domestic heating system via suitable connectors 22 preferably arranged at the lower end of the vertical members 11,12 of the frame. These connectors permit the heating water to be circulated in the vertical members 11,12, the tubes 17 and the supporting arm members 18 of the supports 14,15,16 for the purpose of drying and/or warming the towels and/or the household linens, and at the same time for heating the domestic room wherein the radiator is installed.

[0008] Alternatively, the radiator 10 may be electrically operated by means of the domestic electric mains. In

this case, the radiator 10 comprises one or more electric resistors arranged in the vertical members and the tubes 17 of the supports 14,15,16 and connected to the electric mains through electric conductors passing through the supporting arm members 18 and the vertical members 11,12.

[0009] Referring to Figure 5 of the drawings, there is shown a cross-section of a first embodiment of the joint 19 connecting each supporting arm member 18 to the respective vertical member 11,12. In this first embodiment, the joint is generally designated by 23 and comprises a pair of sleeves 24,25 which are attached to the vertical members 11,12 and to the supporting arm members 18, respectively, and are connected to each other via a connecting ring 26 so as to permit the sleeves 24,25 to rotate on each other. Suitable annular sealing elements 27 and 28 are interposed between the sleeves 24,25 so as to assure a liquid-tight connection therebetween.

[0010] Referring to Figure 6 of the drawings, there is shown a second embodiment of the joint 19 connecting each supporting arm member 18 to the respective vertical member 11,12. According to this second embodiment, the joint is generally designated by 29 and is formed of a substantially L-shaped tube 30 which is provided at one end with a joint member 31 adapted to be threadedly connected to the vertical member 11,12, and at the other end with a joint member 32 adapted to be threadedly connected to the supporting arm member 18. The joint 29 is provided with two annular sealing elements 27,28 for the purpose of assuring a liquid-tight connection to the supporting arm member 18.

[0011] Referring to Figure 7 of the drawings, there is shown a third embodiment of the joint 19 connecting each supporting arm member 18 to the respective vertical members 11,12. According to this third embodiment, the joint is generally designated by 33 and is formed of a flexible tube 34 connected at one end to the vertical members 11,12 and at the other end to the supporting arm member 18 by means of a connector 35 which is provided with sealing elements 27,28. The supporting arm members 18 are rotatably connected to the vertical members 11,12 by means of a pivot pin 36 which is fixed to the support arm members 18 and is inserted in a suitable pin housing 37 provided on the vertical members 11,12.

[0012] The radiator according to the present invention offers some important advantages resulting from the provision of swivelling supports 14,15,16 for the towels and/or household linens.

[0013] A first advantage relates to the fact that when the supports 14,15,16 are in the horizontal position it is possible to obtain the following configuration. The supports 14,15,16 can act as shelves on which towels and/or household linens are laid preferably, although not necessarily, along all the width thereof or can act as supports for suspending the towels and/or household linens so that they can be dried. Alternatively, the supports 14,15,16 may serve as shelves for folded towels and/or household linens so as to keep them warm.

A second advantage relates to the fact that an improved flow of heat is obtained because of the staggered position of the tubes 17 of the supports 14,15,16, thus permitting the towels and/or household linens to be dried or warmed more quickly.

A third advantage relates to the fact that with the radiator according to the invention two operative positions can be obtained. As a matter of fact, the supporting arm members 18 can be positioned in a first substantially vertical position in the case little space is available and in a second substantially horizontal position in the case more space is available, in which case the supporting arm members 18 can be employed as shelves on which towels and/or household linens can be laid or suspended.

Claims

1. A radiator for drying and/or warming towels and household linens, as well as for heating domestic rooms, **characterised in that** it comprises a wall-mountable frame (T) consisting of a pair of vertical members (11,12) connected to each other by at least a horizontal member (13), said frame being provided with at least a towel and/or household linen supporting member (14,15,16) formed of a plurality of horizontal tubular elements (17) connected at each end thereof to a pair of supporting arm members (18) which are rotatably linked to said vertical members (11,12) of the frame (T) so as to permit them to be rotated from a first substantially vertical position to a second substantially horizontal position and viceversa both of which are adapted for drying and/or warming towels and/or household linens.

2. A radiator according to claim 1, **characterised in that** the horizontal tubular elements (17) of one of the towel and/or household linen supporting members (14,15,16) is arranged in a staggered relationship with respect to the horizontal tubular elements (17) of another towel and/or household linen supporting member (14,15,16) located in an upper or lower position.

3. A radiator according to claim 1, **characterised in that** a heating medium is distributed by the domestic mains to the radiator (10) via connectors (22) provided at the end of the vertical members (11,12) and is passed through the horizontal tubular elements (17) and the supporting arm members (18) of the towel and/or household linen supporting members (14,15,16) and the vertical members (11,12) of the frame (T).

4. A radiator according to claim 1, **characterised in that** one or more electric resistors are arranged inside the horizontal tubular elements (17) and are connected to the domestic electric mains via electric conductors passing through the vertical members (11,12) and the supporting arm members (18).

5. A radiator according to claim 1, **characterised in that** the supporting arm members (18) are connected to the vertical members (11,12) of the frame (T) by means of joints (23,29,33) which permit the supporting arm members (18) to be swivelled about a horizontal axis.

6. A radiator according to claims 3,4 and 5, **characterised in that** the joints (23,29,33) comprise a rigid or flexible tubular element (24,25,30,34) intended to establish a fluid communication between the vertical members (11,12) of the frame (T) and the supporting arm members (18) or to permit an electric conductor to be passed through said vertical members (11,12) of the frame (T) and said supporting arm members (18).

Fig. 1

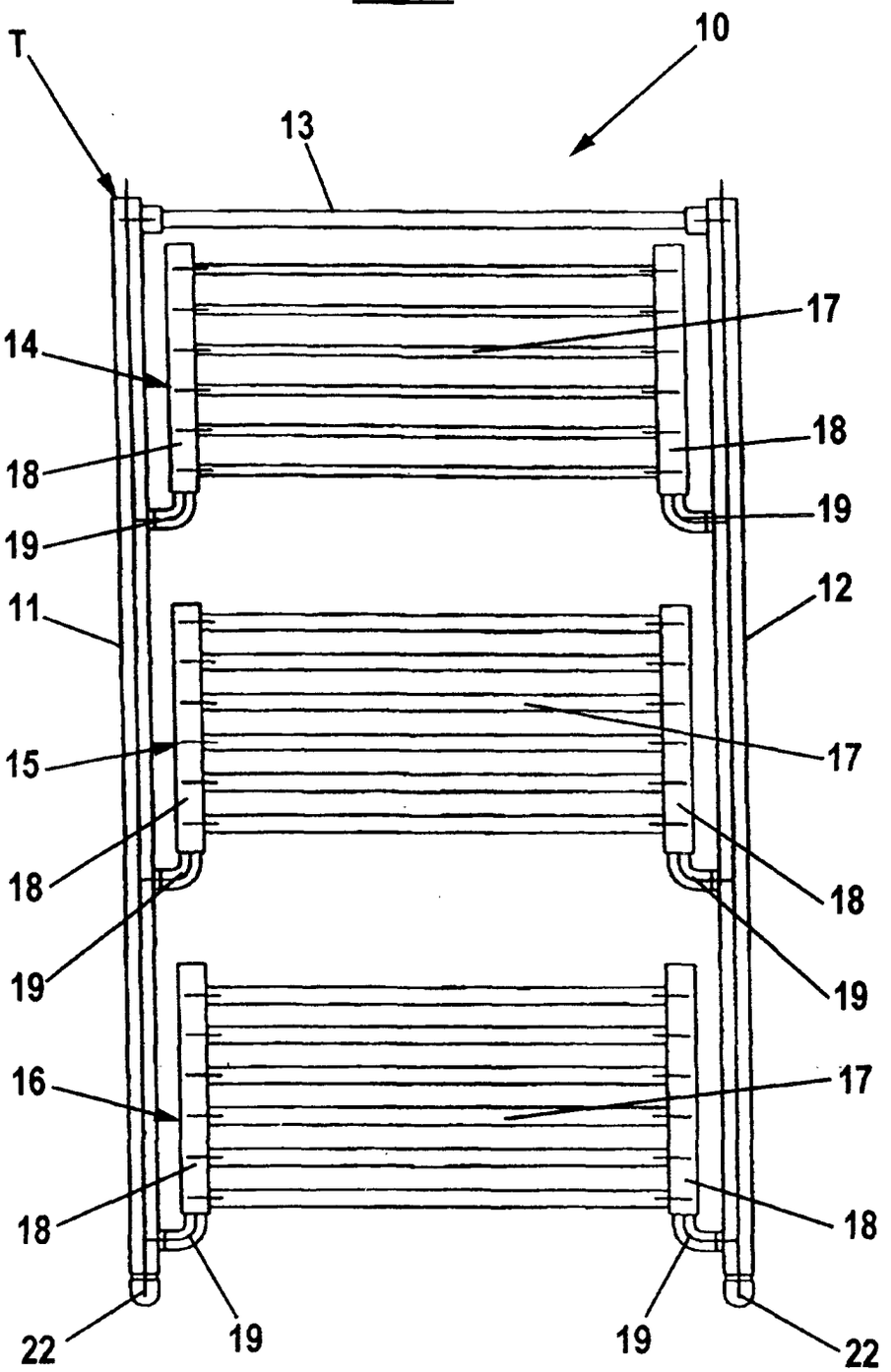

Fig. 2

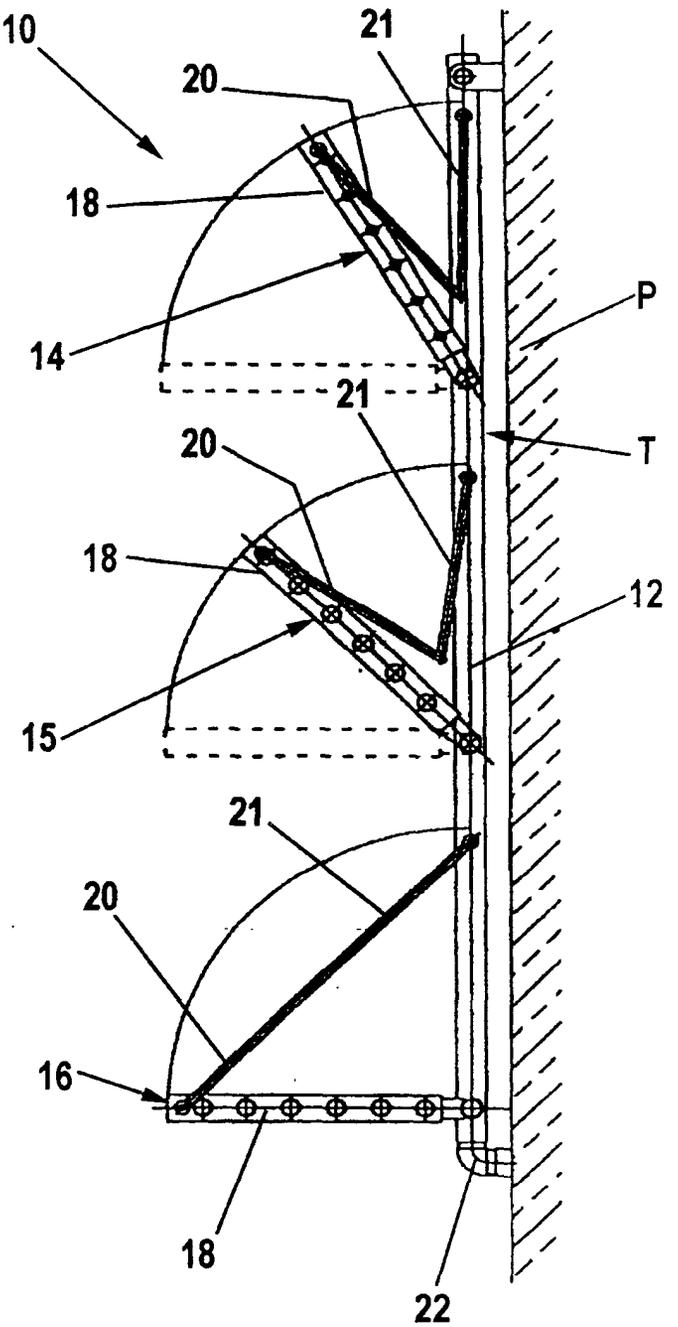

Fig. 3

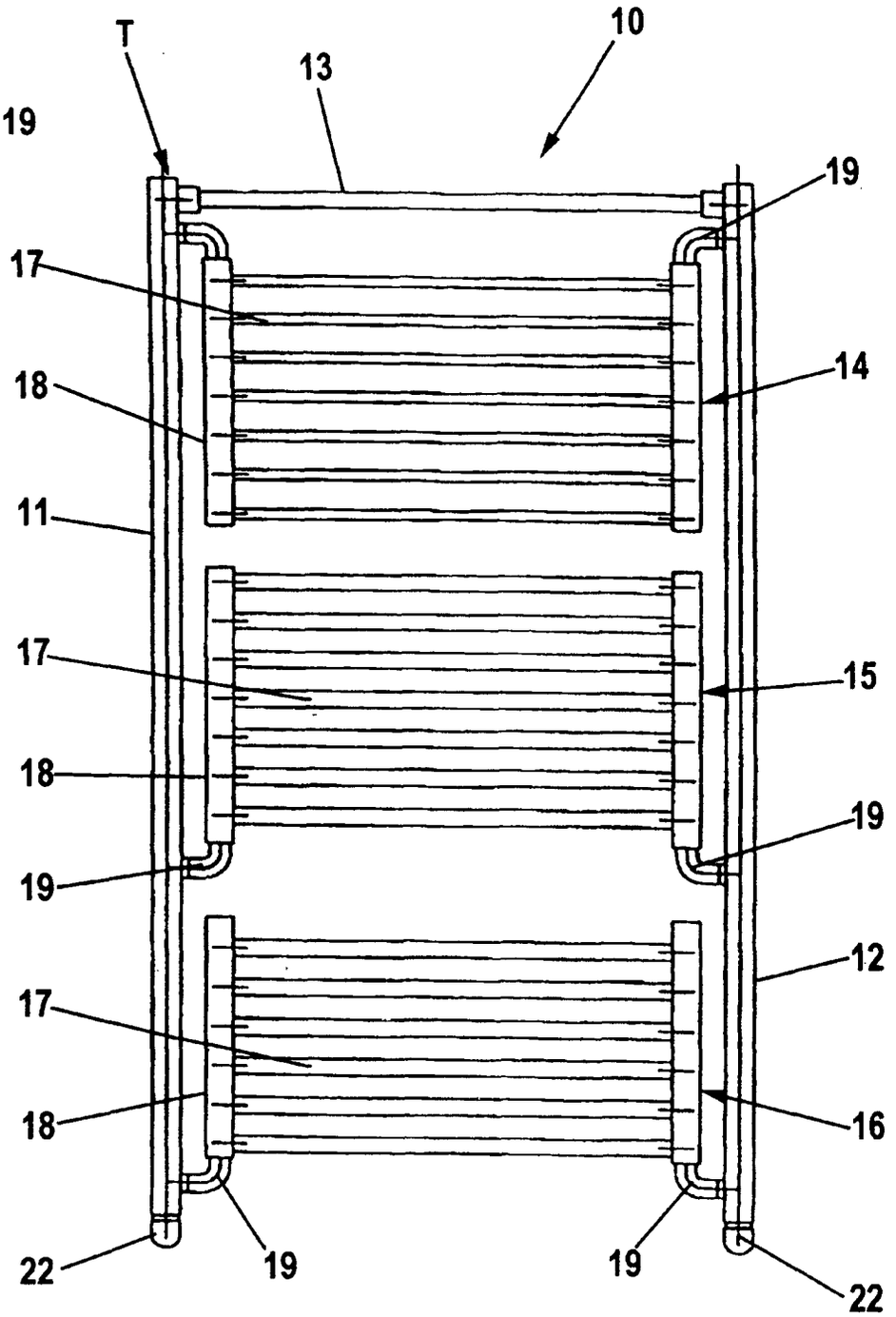

Fig. 4

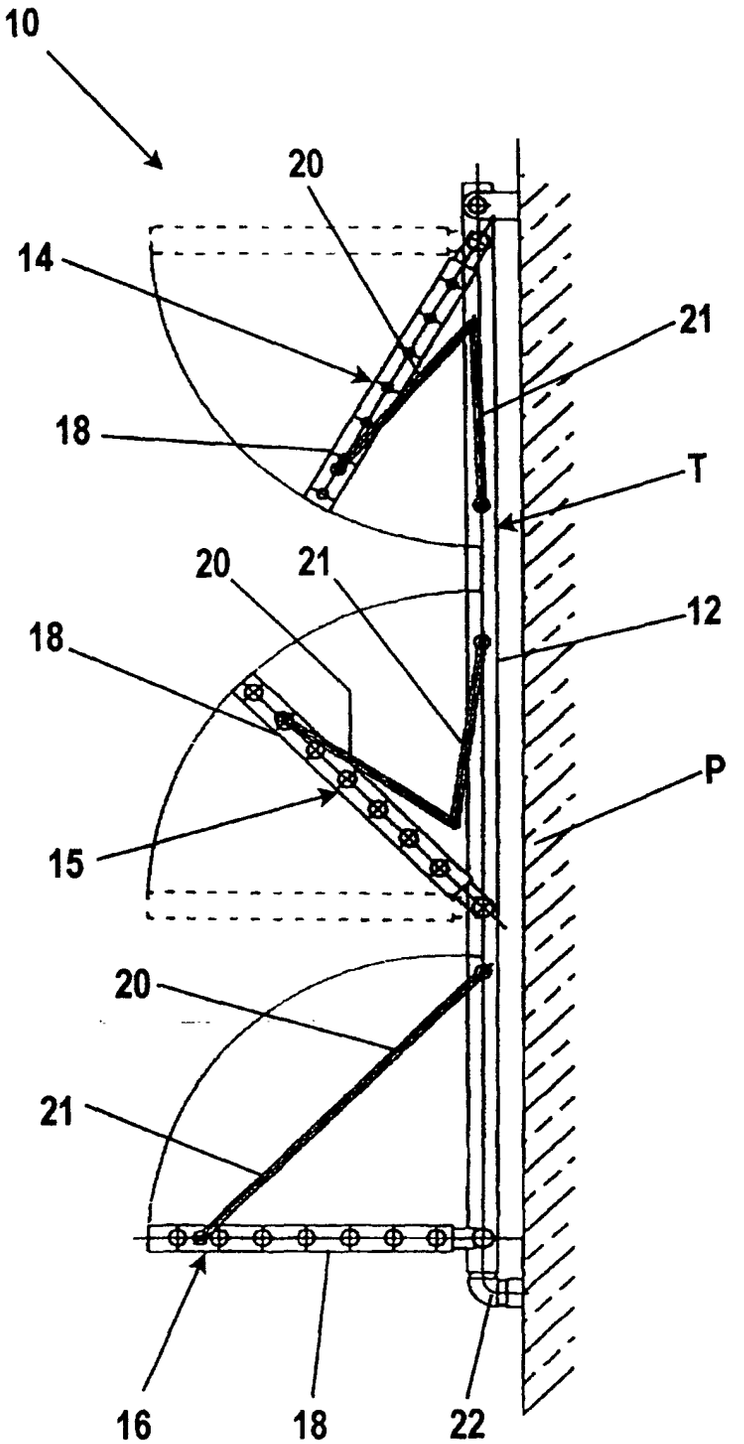

Fig. 5

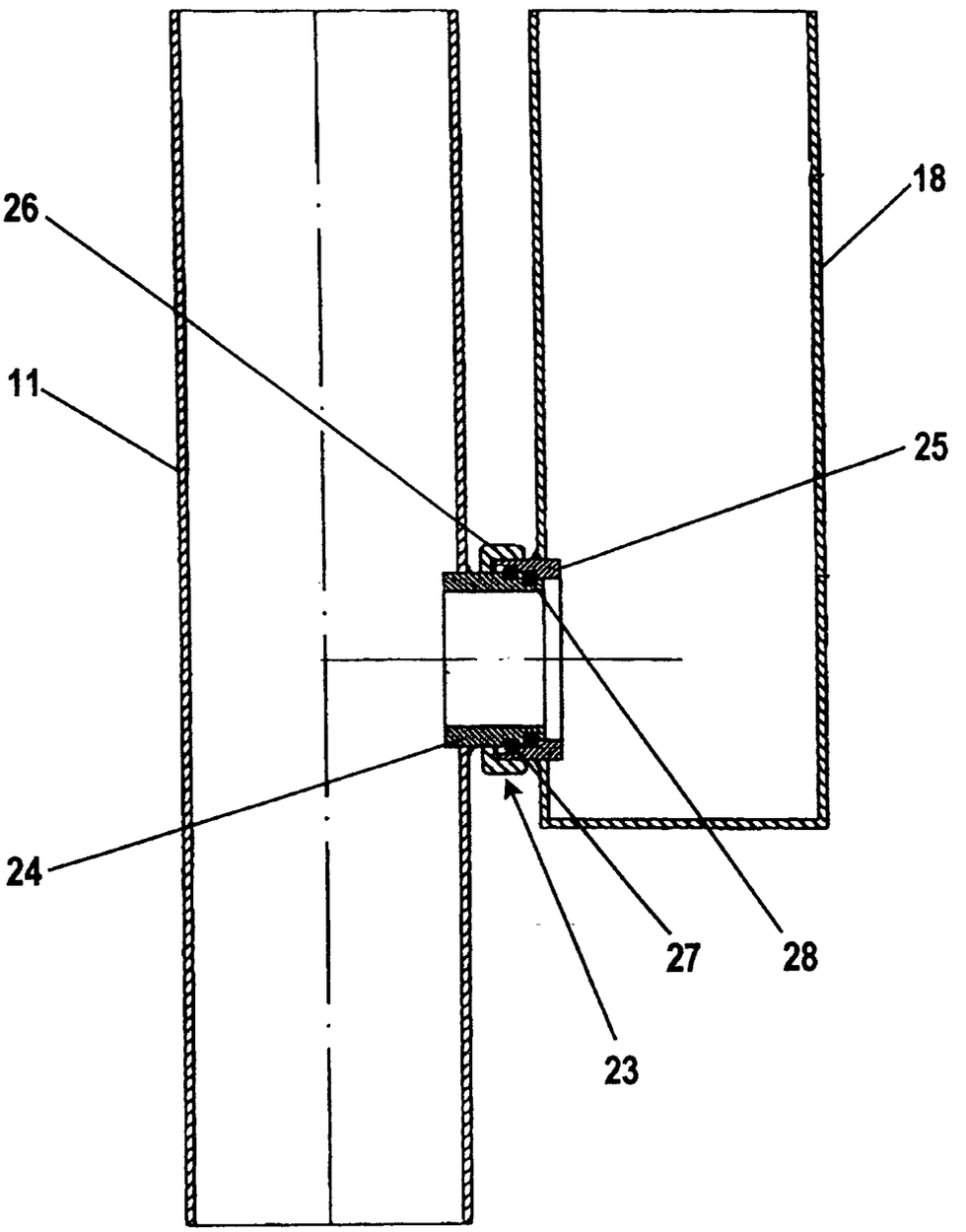

Fig. 6

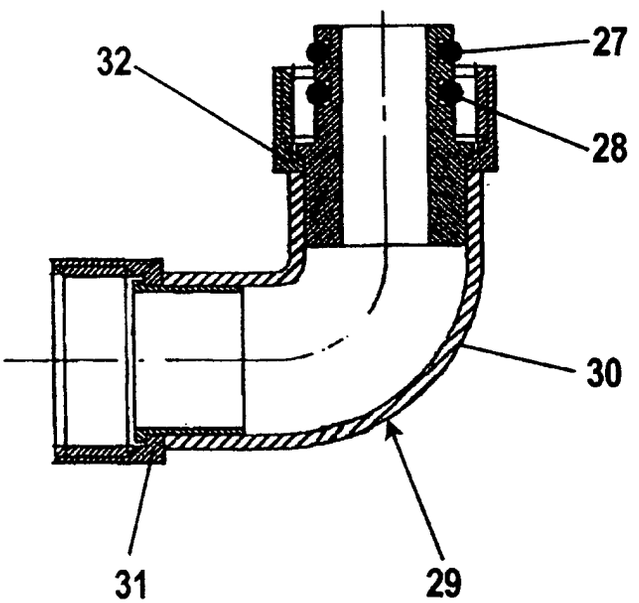

Fig. 7