



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 443 285 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
04.08.2004 Bulletin 2004/32

(51) Int Cl.7: **F24H 9/12**

(21) Application number: **03404001.4**

(22) Date of filing: **22.01.2003**

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

(71) Applicant: **T.M.S. Türker Makina Sanayi Ve Ticaret
Limited Sirketi
Bursa (TR)**

(72) Inventor: **Cilingir, Türker Bursa Organize Sanayi
Bursa (TR)**

(74) Representative: **Esinoglu, Emine
Alacamescit Mah. Tuzpazari Sok. No. 16
Bursa (TR)**

(54) **Connection assembly for panel radiator**

(57) The invention is relating to the combining of the connection pipes by means of spherical parts that enable hot water to enter panel radiator and to circulate in panel radiator. The characteristic of this part is such that it provides a center-connection to the panel radiator, thus, providing an easy assembling from the right and

left and consists of two parts, namely, installation upper group and lower group. Therefore, because of the adaptation of hot water pipe to various length and the modular structure of it, when required, the weld assembly can be made providing an easiness in stocking and conveying and, thus, minimizing costs of stocking.

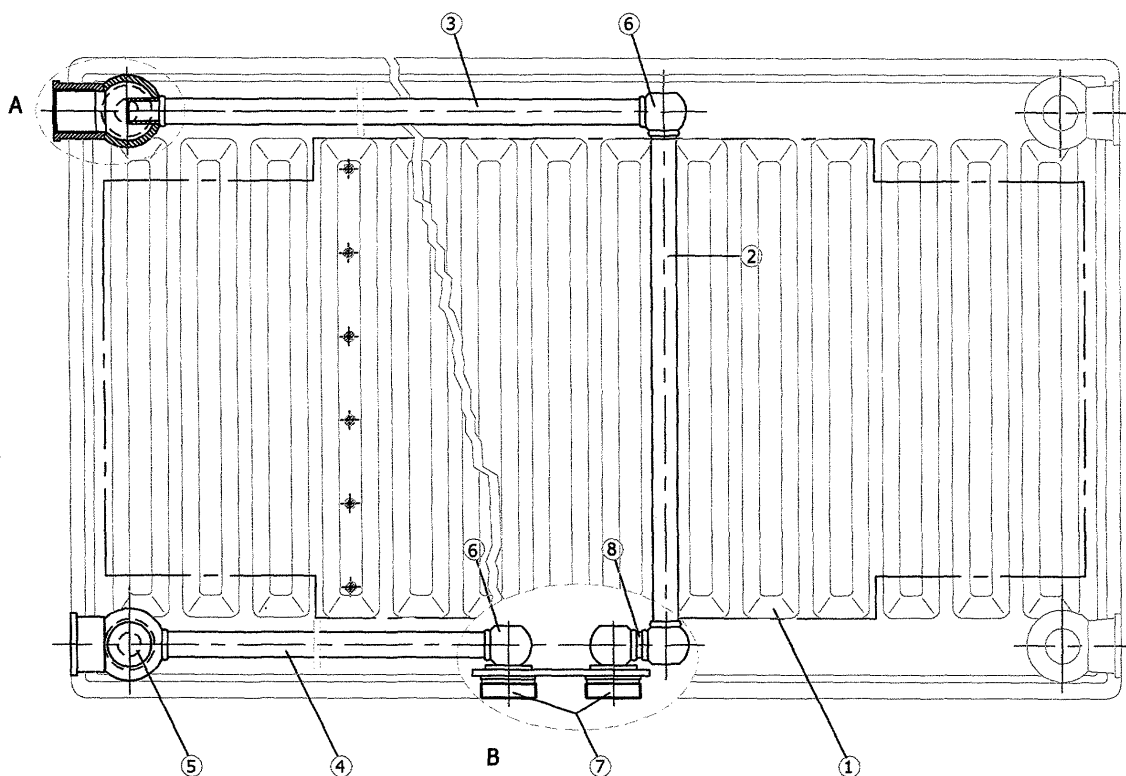


FIGURE 1

EP 1 443 285 A1

Description

7. Sleeves for lower connection group

8. Fitting for installation lower group

Technological Area :

[0001] The invention is relating to the combining of the connection pipes by means of spherical parts that enable hot water to enter panel radiator and to circulate in panel radiator. The characteristic of this part is such that it provides a center-connection to the panel radiator, thus, providing an easy assembling from the right and left and consists of two parts, namely, installation upper group and lower group. Therefore, because of the adaptation of hot water pipe to various length and the modular structure of it, when required, the weld assembly can be made providing an easiness in stocking and conveying and, thus, minimizing costs of stocking.

The Current State of the Technique

[0002] During the circulation of hot water in the panel radiators, owing to the manufacturing and combining method, the fittings used for the water flow and return by means of combined piping cause the low quantities of production in the unit time. Because of these reasons, cost of installation is found high.

[0003] Moreover, since the valve installations of particular size is required for panel radiators of particular height and length, cost of stocking is increased.

Explanation of Figures:**[0004]**

- Figure-1 The figure showing the position of invention on the panel radiator (with outlet from the right)
- Figure-2 The figure showing the position of invention on the panel radiator (with outlet from the left)
- Figure-3 Detailed illustration of central-attached thermostatic valve installation part.
- Figure-4 Various versions of the installation lower group.

References :**[0005]**

A Installation upper group

B Installation lower group

1. Panel radiator (casing)
2. Inter-fitted-pipe (vertical)
3. Inter-fitted-pipe (top-horizontal)
4. Inter-fitted-pipe (bottom-horizontal)
5. Valve box for return of the water
6. Spherical part for combining of inter-fitted-pipes

An Illustration of the invention

[0006] The flow to upper installation group(A) of the hot water entering from the sleeves of lower connection group (7) in the panel radiator chasing (1) is performed by means of the inter-fitted pipes (2) and (3), and the returning cold water is conducted through inter-fitted pipe (4) to installation lower group (B) by means of valve box group (5). The connection between installation upper group (A) and installation lower group (B) is accomplished by means of inter-fitted pipes of (2,3,4) . Modular inter-fitted pipes (2,3,4) are fitted according to the length of panel radiator so as to provide sealing, being connected to each other with the welded assembling method. Thanks to the small spherical parts (6) contained in the installation lower group, a smooth flow with the exit of hot water and the return of cold water is established. Since there is no turbulence occurred throughout the process, there is no any sound coming out of the radiator.

[0007] A facility for manufacturing of radiators by means of modifying length of the fitting (8) for installation lower group according to all convector intervals is provided.

[0008] The position of the left-hand outlet of inter-fitted pipe according to the radiator convector interval is illustrated in Figure 2.

[0009] The general view of the invention is demonstrated in Figure 3.

[0010] Installation lower group can be produced in all the connection versions (B1, B2, B3, B4) showed illustrated in Figure4. These connections are achieved by designing a plate in various forms and fixing sleeves(7) to each other (B1,B2,B3). In Figure4, the sleeves(7) are fixed by a spherical part in place of a plate.

Claims

1. This invention relates to the combining of the connection pipes by spherical parts that enable the hot water to enter panel radiators and to circulate in panel radiator (1), and its characteristic is such that the connection between installation upper group (A) and installation lower group (B) is accomplished by means of inter-fitted pipes of (2,3,4) . Modular inter-fitted pipes (2,3,4) are fitted according to the length of panel radiator so as to provide sealing, being connected to each other with the welded assembling method.
2. The interconnection pipe (vertical)(2) mentioned in the claim 1 can be manufactured at desired lengths according to the height of radiator (1).

3. The interconnection pipe mentioned in the claim 1 is both top-horizontal) and bottom-horizontal(4) and can be manufactured at desired lengths according to the length of radiator (1).

5

4. Radiator (1) can be combined as the installation group fitting(8) with right-hand outlet (Figure 1) or left-hand outlet (Figure 2), according to the convective interval.

10

15

20

25

30

35

40

45

50

55

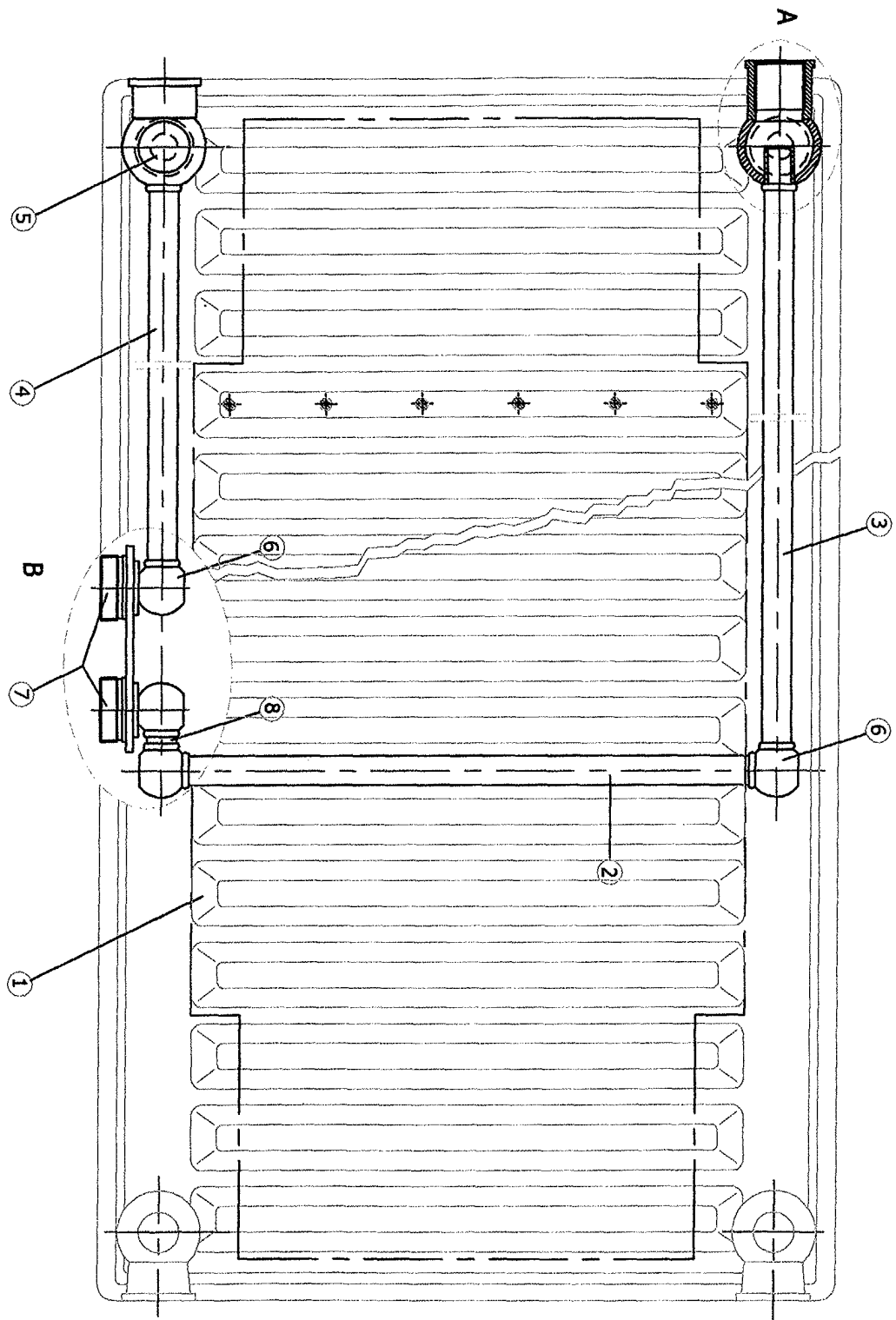


FIGURE 1

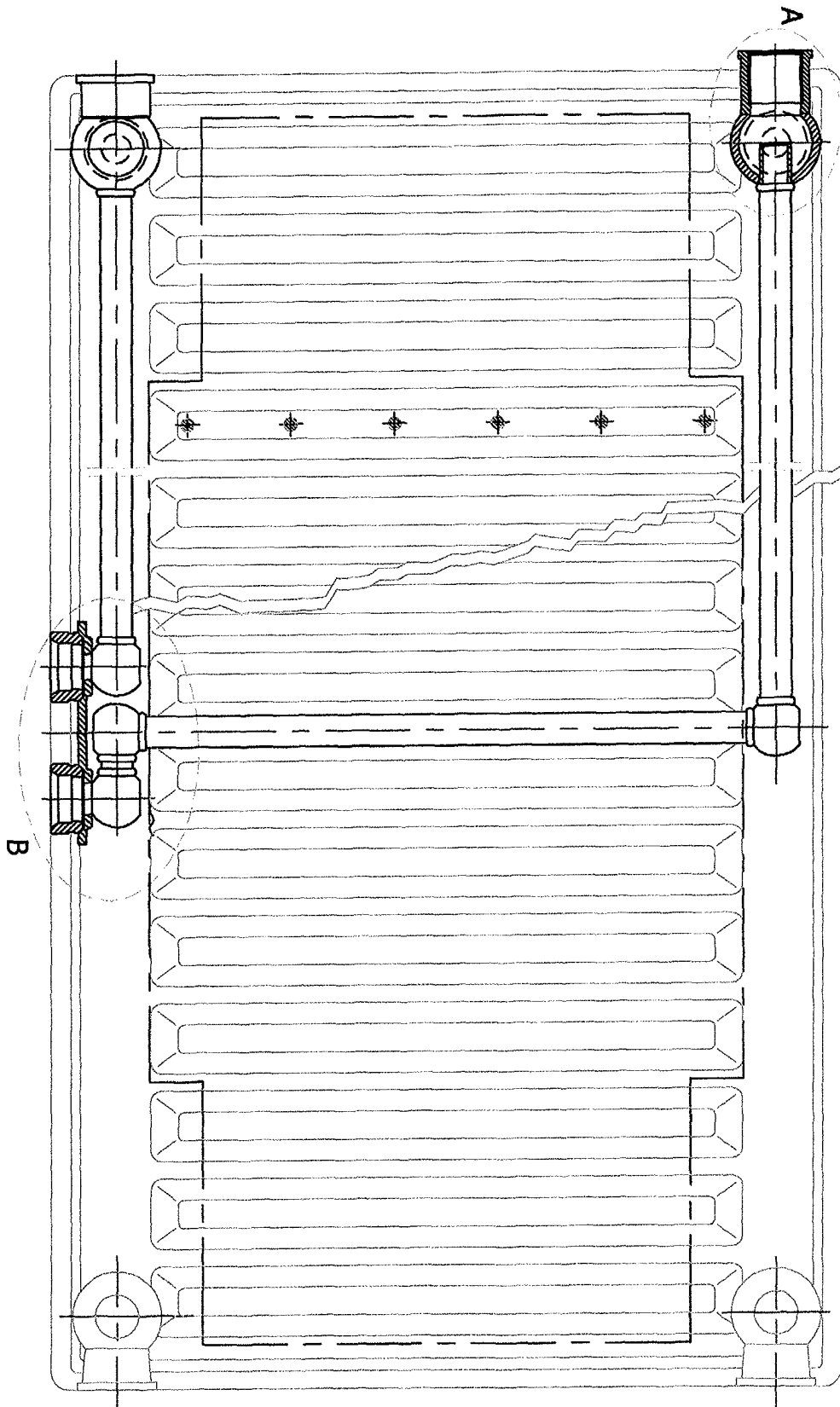


FIGURE 2

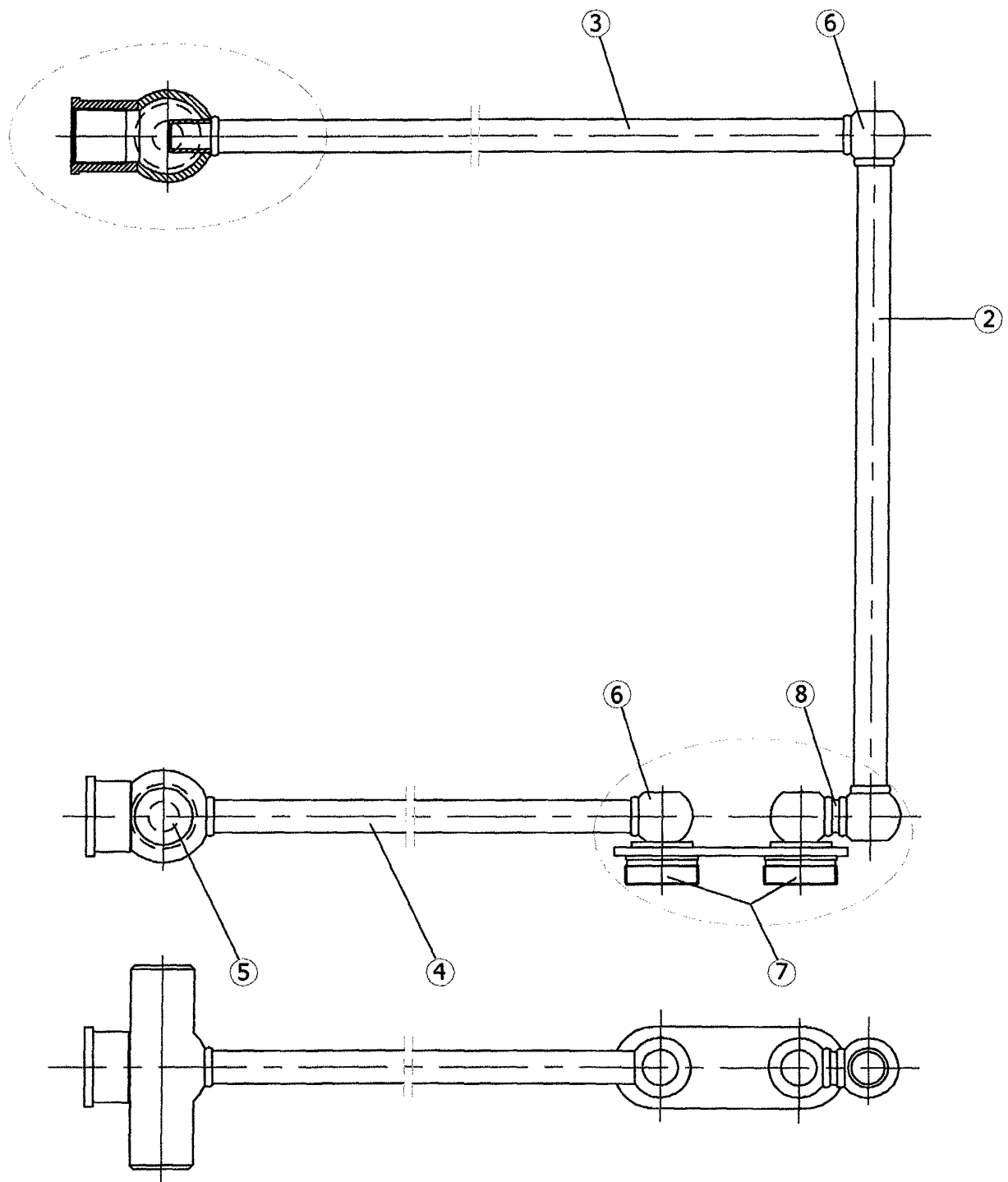


FIGURE 3

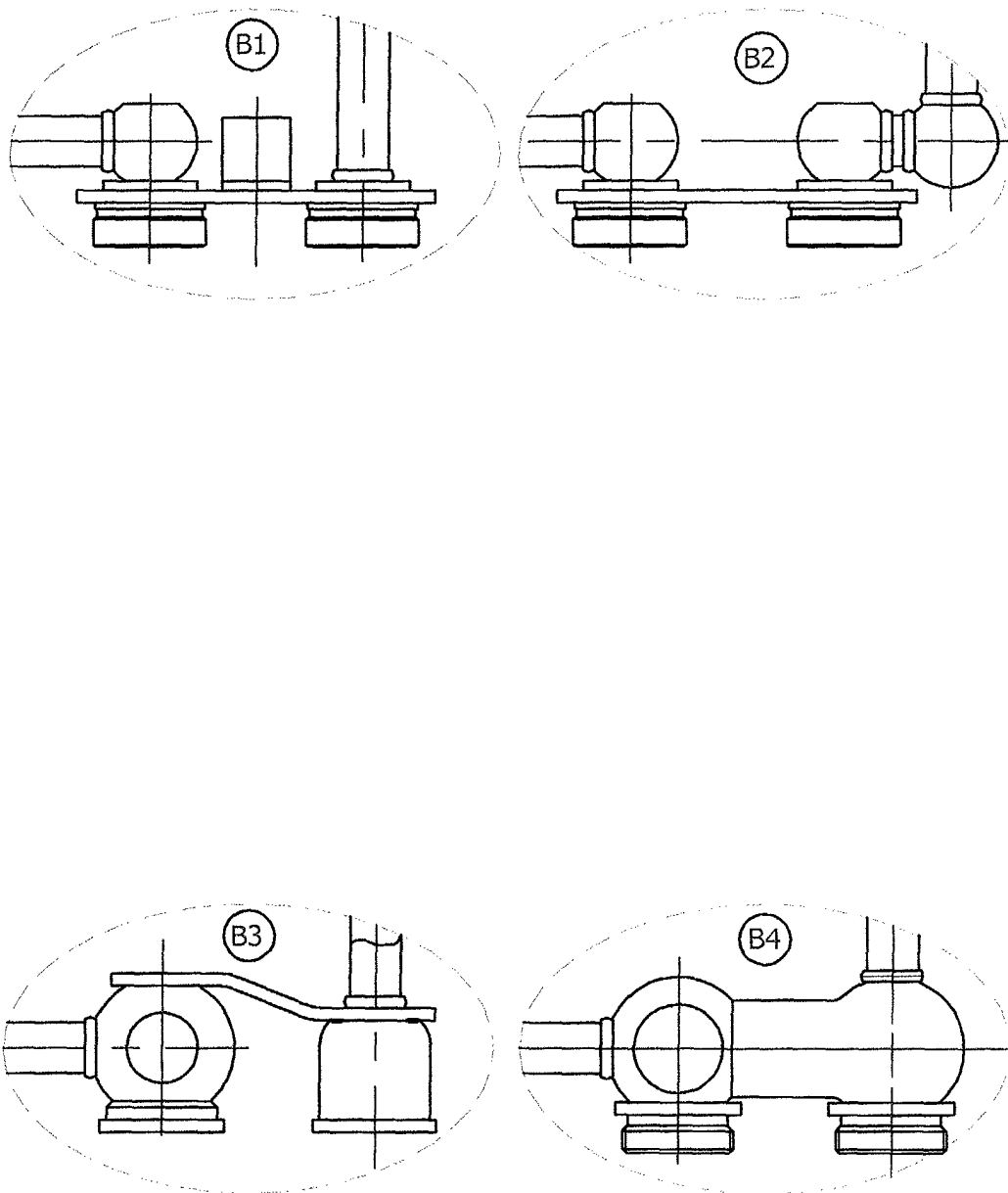


FIGURE 4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 40 4001

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.7)
X	EP 1 154 207 A (CARADON HEATING EUROP BV) 14 November 2001 (2001-11-14) * the whole document *	1-4	F24H9/12
X	EP 0 952 410 A (KERMI GMBH) 27 October 1999 (1999-10-27) * the whole document *	1-4	
X	WO 95 27176 A (STELRAD RADIATOREN GMBH) 12 October 1995 (1995-10-12) * abstract; figures *	1-4	
A	DE 201 04 459 U (BERG HANS GMBH & CO KG) 17 May 2001 (2001-05-17) * abstract; figures *	1-4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F24H
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		23 June 2003	Van Gestel, H
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 40 4001

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

23-06-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 1154207	A	14-11-2001	DE	10022748 A1	22-11-2001
			CZ	20011584 A3	16-01-2002
			EP	1154207 A2	14-11-2001
			PL	347454 A1	19-11-2001
EP 0952410	A	27-10-1999	DE	29807226 U1	16-07-1998
			CZ	9901388 A3	17-11-1999
			EP	0952410 A2	27-10-1999
			PL	332587 A1	25-10-1999
WO 9527176	A	12-10-1995	AT	404188 B	25-09-1998
			AT	68994 A	15-01-1998
			WO	9527176 A1	12-10-1995
			CZ	9602809 A3	11-06-1997
			EP	0753126 A1	15-01-1997
			HU	74794 A2	28-02-1997
			SK	123396 A3	08-10-1997
DE 20104459	U	17-05-2001	DE	20104459 U1	17-05-2001

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82