



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 653 015 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
03.05.2006 Bulletin 2006/18

(51) Int Cl.:
E03C 1/06 (2006.01)

(21) Application number: **04025849.3**

(22) Date of filing: **30.10.2004**

(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 PL PT RO SE SI SK TR**
Designated Extension States:
AL HR LT LV MK

(72) Inventor: **Fan, Chen-Yueh**
Taipei (TW)

(74) Representative: **Schildberg, Peter**
Neuer Wall 41
20354 Hamburg (DE)

(71) Applicant: **Winner Double-H Co., Ltd.**
Taipei (TW)

(54) Adjustable showerhead assembly

(57) A adjustable shower device has a mounting fixture (1), a showerhead assembly (2) and an adjustment assembly (3). The mounting fixture (1) is attached securely to a wall and has a shaft (10). The adjustment assembly (3) connects the showerhead assembly (2) to the mounting fixture (1) and has a base (30), a locking

assembly (40) and a shaft lock (50). The base (30) is mounted around the shaft (10). The locking assembly (40) pivotally attaches the showerhead assembly (2) to the base (30) the showerhead assembly (2) can be pivoted. The shaft lock (50) attaches the base (30) securely to the shaft (10), and the base (30) can slide along the shaft (10).

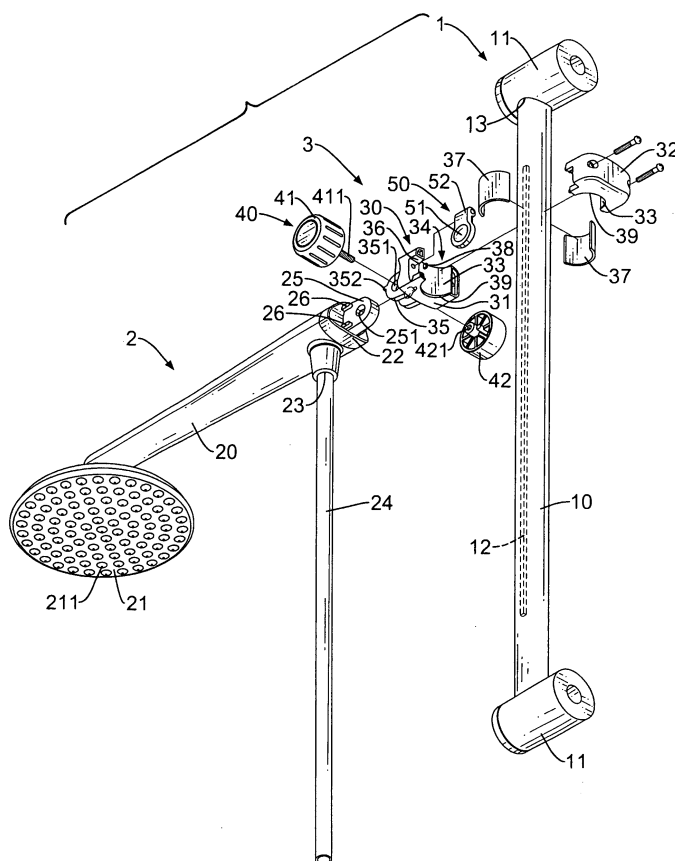


FIG.1

EP 1 653 015 A1

Description

1. Field of the Invention

[0001] The present invention relates to a showerhead assembly, especially to an adjustable showerhead assembly.

2. Description of the Prior Arts

[0002] Showerheads include portable and fixed devices. A portable showerhead can be removed from a wall fixture to spray water anywhere. The fixed showerhead device is mounted securely on the wall and can be pivoted somewhat to spray water down. However, the location of the conventional fixed showerhead cannot be changed to accommodate people of different heights.

[0003] To overcome the shortcomings, the present invention provides an adjustable showerhead assembly to mitigate or obviate the aforementioned problems.

[0004] The main objective of the present invention is to provide an adjustable showerhead assembly.

[0005] The adjustable shower device has a mounting fixture, a showerhead assembly and an adjustment assembly. The mounting fixture is attached securely to a wall and has a shaft. The adjustment assembly connects the showerhead assembly to the mounting fixture and has a base, a locking assembly and a shaft lock. The base is mounted around the shaft. The locking assembly pivotally attaches the showerhead assembly to the base so the showerhead assembly can be pivoted. The shaft lock attaches the base securely to the shaft, and the base can slide along the shaft.

[0006] Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

IN THE DRAWINGS

[0007]

Fig. 1 is an exploded perspective view of an adjustable showerhead assembly in accordance with the present invention;

Fig. 2 is a perspective view of the adjustable showerhead assembly in Fig. 1;

Fig. 3 is a side view in partial section of the adjustable showerhead assembly in Fig. 1;

Fig. 4 is a rear view of the adjustable showerhead assembly in Fig. 1 with the base locked in position;

Fig. 5 is an operational rear view of the adjustable showerhead assembly in Fig. 1 with the base moved to another position;

Fig. 6 is a side view in partial section of the adjustable showerhead assembly in Fig. 1 with the showerhead pivoted up; and

Fig. 7 is a front view of the adjustable showerhead

assembly in Fig. 1 with a portable showerhead assembly.

[0008] With reference to Fig. 1, an adjustable showerhead assembly in accordance with the present invention comprises a mounting fixture (1), a showerhead assembly (2) and an adjustment assembly (3).

[0009] The mounting fixture (1) comprises two mounting posts (11) and a shaft (10). The mounting posts (11) are attached securely to a wall, and each mounting post (11) has a mounting hole (13). The shaft (10) has two ends, an outer surface and an optional longitudinal slot (12). The ends of the shaft (10) are mounted respectively in the mounting holes (13) in the mounting posts (11). The longitudinal slot (12) is formed in the outer surface of the shaft (10).

[0010] The showerhead assembly (2) comprises a shower arm (20), a showerhead (21), a water inlet (23), a water hose (24) and an ear (25). The shower arm (20) has an inner space, a proximal end (22) and a distal end. The showerhead (21) is mounted on the distal end of the shower arm (20) and has multiple sprinkler holes (211). The sprinkler holes (211) are formed in the showerhead (21). The water inlet (23) is mounted on the shower arm (20) near the proximal end (22) of the shower arm (20) and communicates with the inner space in the shower arm (20). The water hose (24) is mounted in and has an inner space. The inner space in the water hose (24) communicates with the water inlet (23). The ear (25) is formed on the proximal end (22) of the shower arm (20) and has a pivot hole (251) and two optional positive stops (26). The pivot hole (251) is formed in the ear (25). The positive stops (26) are formed on the ear (25) adjacent to the proximal end (22) of the shower arm (20).

[0011] The adjustment assembly (3) connects the showerhead assembly (2) to the mounting fixture (1) and comprises a base (30), a locking assembly (40) and a shaft lock (50).

[0012] With further reference to Figs. 2 and 3, the base (30) is mounted around the shaft (10) and has a pivot end, an optional clamp end, a lower surface, a central hole (34), a pivot connection, an opening (36), an optional flange (39), two optional gaskets (37) and an optional sliding key (38). The central hole (34) is formed vertically through the base (30), is mounted around the shaft (10) and has an inner surface (33). The pivot connection is formed on the pivot end of the base (30) and has a proximal end, a distal end, a pivot hole (351) and an optional positive stop (352). The pivot hole (351) is formed through the pivot connection and corresponds to the pivot hole (251) in the ear (25) on the shower arm (20). The positive stop (352) is formed on the distal end of the pivot connection. The pivot connection may be an ear or a pair of wings (35). The opening (36) is formed radially in the base (30) and communicates with the central hole (34). The flange (39) is formed on the lower surface of the base (30) around the central hole (34). The gaskets (37) are mounted on the inner surface (33) of the central hole

(34) around the shaft (10) and abut the flange (39). The sliding key (38) is formed on the inner surface (33) of the central hole (34) and is slidably mounted in the longitudinal slot (12) in the shaft (10). The base (30) may be split into a pivotal segment (31) and a clamp (32). The pivotal segment (31) and the clamp (32) respectively have half of the central hole (34).

[0013] The locking assembly (40) pivotally attaches the showerhead assembly (2) to the base (30) and has a knob (41) and a nut (42). The knob (41) has an outer surface, an inner surface and a threaded shaft (411). The threaded shaft (411) is attached to and protrudes from the inner surface of the knob (41) and passes through the pivot holes (251, 351) respectively in the ear (25) of the showerhead assembly (2) and the pivot connection of the base (30). The nut (42) has an outer surface, an inner surface and a screw hole (421). The screw hole (421) is formed in the inner surface of the nut (42) and screws onto the threaded shaft (411) on the knob (41). When the threaded shaft (411) is screwed tightly into the screw hole (421), the knob (41) and the nut (42) squeeze the pivot connection that clamps the ear (25) and keeps the shower arm (20) from pivoting.

[0014] With further reference to Fig. 6, the shower arm (20) can be pivoted by unscrewing the threaded shaft (411) from the screw hole (421) so the nut (42) and the knob (41) release the pivot connection. The shower arm (20) can be rotated until the positive stop (352) on the pivot connection of the base (30) abuts the positive stop (26) on the ear (25) on the shower arm (20).

[0015] With further reference to Fig. 4, the shaft lock (50) has a proximal end (52) and a distal end (51). The proximal end (52) has an eccentric head, is pivotally mounted in the opening (36) in the base (30) and selectively presses the shaft (10) or one of the gaskets (37). The distal end (51) is lowered to cause the eccentric head on the proximal end (52) to press the shaft (10). When the proximal end (52) presses the shaft (10), the adjustment assembly (3) is held securely in position on the shaft (10).

[0016] With further reference to Fig. 5, the distal end (51) of the shaft lock (50) is pulled up to rotate the eccentric head on the proximal end (52) and release the shaft lock (50). Then the base (30) can be slid along the shaft (10) to adjust the height of the showerhead assembly (2).

[0017] Therefore, the location of the adjustable showerhead assembly as described can be adjusted by sliding the base (30) along the shaft (10) and pivoting the shower arm (20). The adjustment is performed easily by pulling the distal end (51) of the shaft lock (50) and tightening or loosening the knob (41).

[0018] With further reference to Fig. 7, a portable showerhead assembly (60) can be mounted on the adjustable showerhead assembly and comprises a nozzle fixture (61) and a portable showerhead. The nozzle fixture (61) is mounted slidably on the shaft (10) and has a control knob (62). The control knob (62) is rotated to loos-

en or tighten the nozzle fixture (61) on the shaft (10) so the height of the nozzle fixture (61) can be adjusted.

[0019] Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and features of the invention, the disclosure is illustrative only. Changes may be made in the details, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

Claims

1. An adjustable shower device comprising
 - a mounting fixture (1) having two mounting posts (11) individually having a mounting hole (13); and
 - a shaft (10) having two ends mounted respectively in the mounting holes (13) in the mounting posts (11); and
 - an outer surface;
 - a showerhead assembly (2) adjustably mounted on the mounting fixture (1) and having
 - a shower arm (20) having
 - an inner space;
 - a proximal end (22); and
 - a distal end;
 - a showerhead (21) mounted on the distal end of the shower arm (20) and having multiple sprinkler holes (211) formed in the showerhead (21);
 - a water inlet (23) mounted on the shower arm (20) near the proximal end (22) of the shower arm (20) and communicating with the inner space in the shower arm (20);
 - a water hose (24) mounted in and having an inner space communicating with the water inlet (23); and
 - an ear (25) formed on the proximal end (22) of the shower arm (20) and having a pivot hole (251) formed in the ear (25);
 - an adjustment assembly (3) connecting the showerhead assembly (2) to the mounting fixture (1) and having
 - a base (30) mounted around the shaft (10) and having
 - a pivot end;
 - a lower surface;
 - a central hole (34) formed vertically through the base (30), mounted around the shaft (10) and having an inner surface (33);
 - a pivot connection formed on the pivot end of the base (30) and having
 - a proximal end;
 - a distal end; and
 - a pivot hole (351) formed through the pivot connection and corresponding to the pivot hole (251) in the ear (25) on the shower arm (20);

- an opening (36) formed radially in the base (30) and communicating with the central hole (34); and a locking assembly (40) pivotally attaching the showerhead assembly (2) to the base (30) and having a knob (41) having
 5 an outer surface;
 an inner surface; and
 a threaded shaft (411) attached to and protruding from the inner surface of the knob (41) and passing through the pivot holes (251, 351) respectively in the
 10 ear (25) of the showerhead assembly (2) and the pivot connection of the base (30);
 a nut (42) having
 an outer surface;
 an inner surface; and
 15 a screw hole (421) formed in the inner surface of the nut (42) and screws onto the threaded shaft (411) on the knob (41); and
 a shaft lock (50) having
 a proximal end (52) having an eccentric head pivotally mounted in the opening (36) in the base (30) and selectively presses the shaft (10); and
 20 a distal end (51).
2. The adjustable showerhead assembly as claimed in claim 1, wherein
 25 the ear (25) on the shower arm (20) further has two positive stops (26) formed on the ear (25) adjacent to the proximal end (22) of the shower arm (20); and the pivot connection on the base (30) further has a
 30 positive stop (352) formed on the distal end of the pivot connection and corresponding to the positive stops (26) on the ear (25).
3. The adjustable showerhead assembly as claimed in claim 1, wherein the pivot connection on the base (30) is a pair of wings (35) 35
4. The adjustable showerhead assembly as claimed in claim 1, wherein the base (30) further has
 40 a flange (39) formed on the lower surface of the base (30) around the central hole (34); and two gaskets (37) mounted on the inner surface (33) of the central hole (34) around the shaft (10) and abutting the flange (39); and
 45 the proximal end (52) of the shaft lock (50) selectively presses against one of the gaskets (37).
5. The adjustable shower device as claimed in claim 1, wherein
 50 the base (30) is split into a pivotal segment (31) having half of the central hole (34); and a clamp (32) securely combined with the pivotal segment (31) and having half of the central hole (33) 55
6. The adjustable showerhead assembly as claimed in claim 5, wherein
- the shaft (10) further has a longitudinal slot (12) formed in the outer surface of the shaft (10); and the base (30) further has a sliding key (38) formed on the inner surface (33) of the central hole (34) and slidably mounted in the longitudinal slot (12) in the shaft (10).

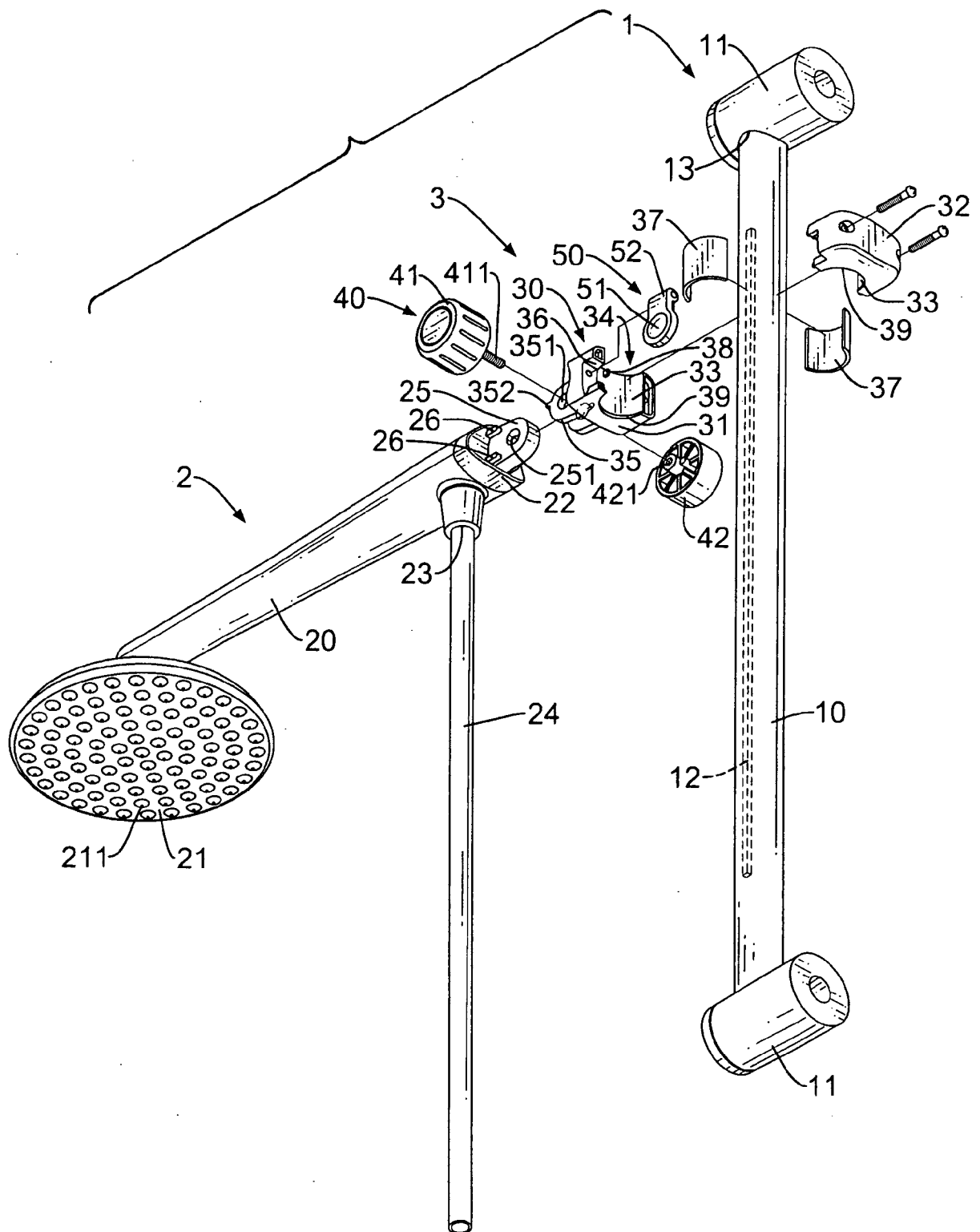


FIG.1

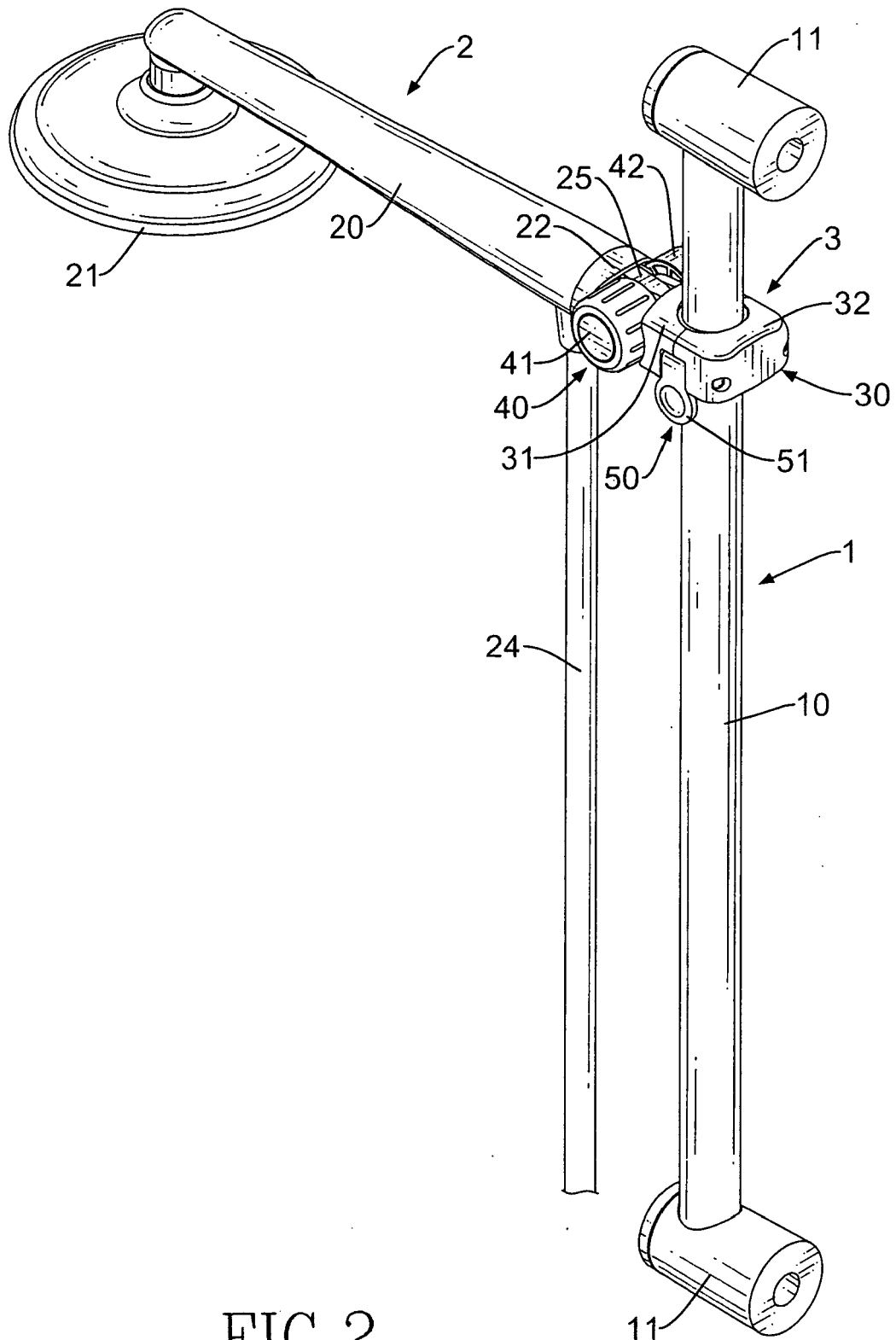


FIG.2

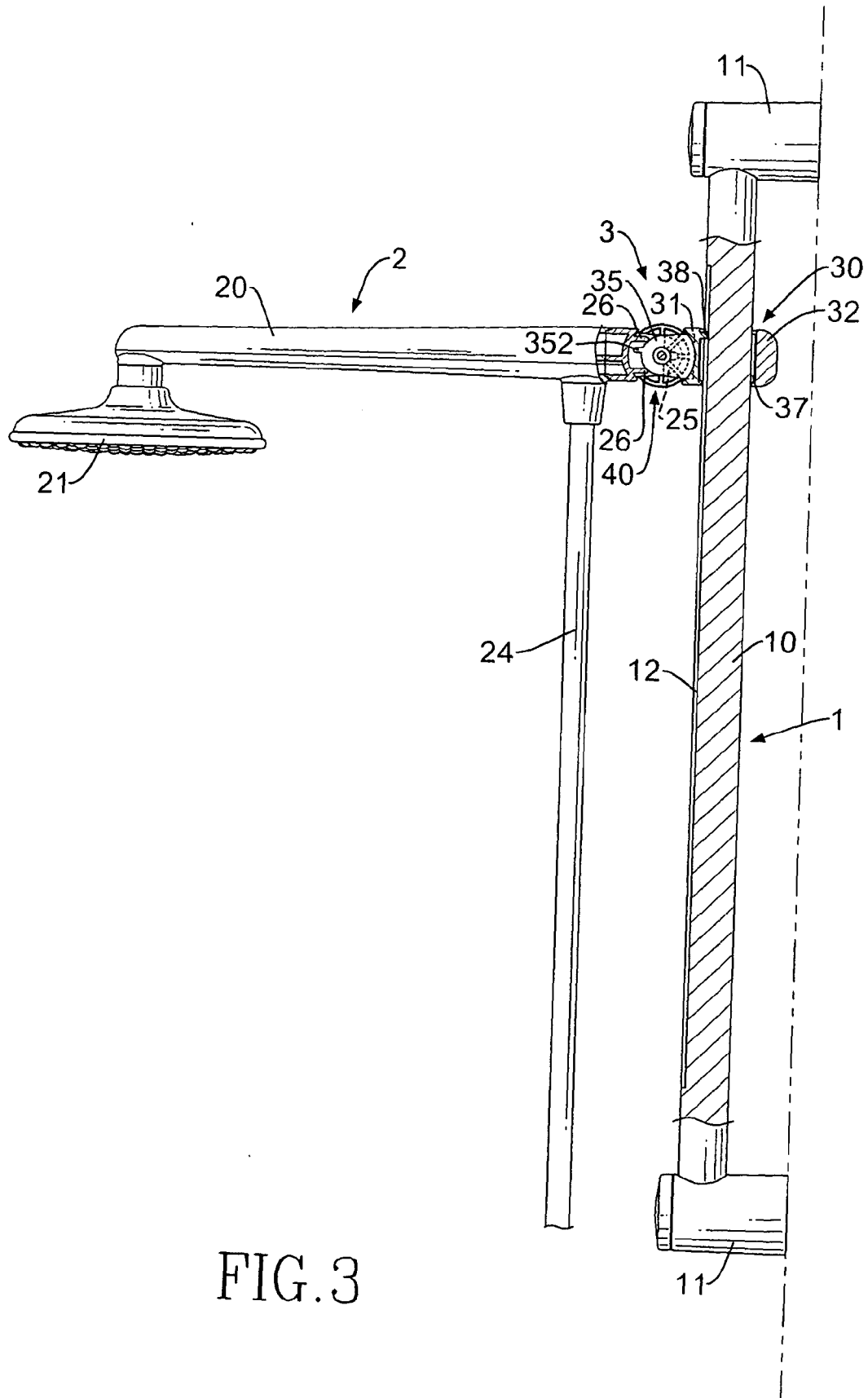


FIG. 3

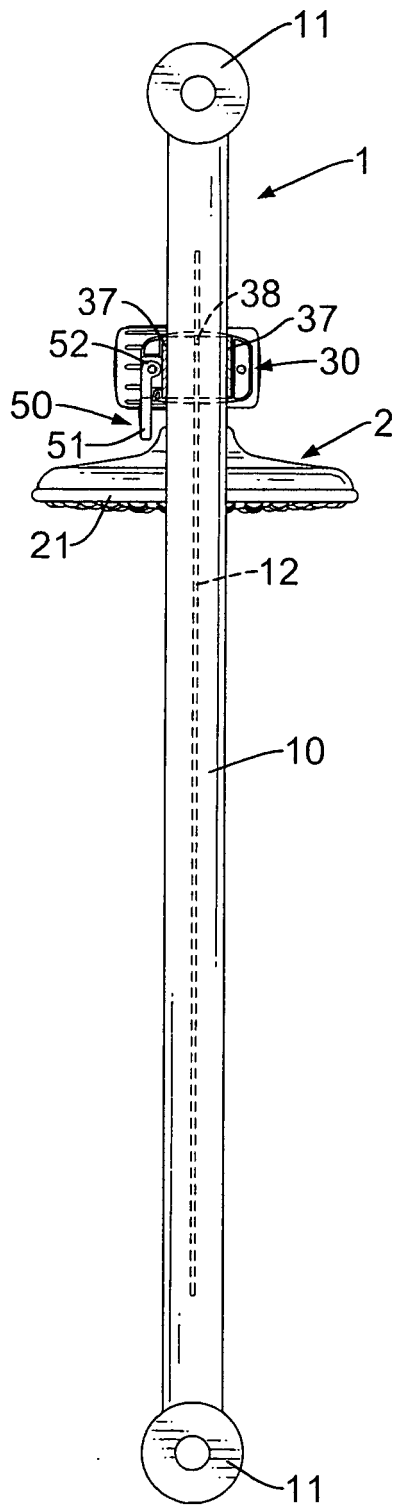


FIG. 4

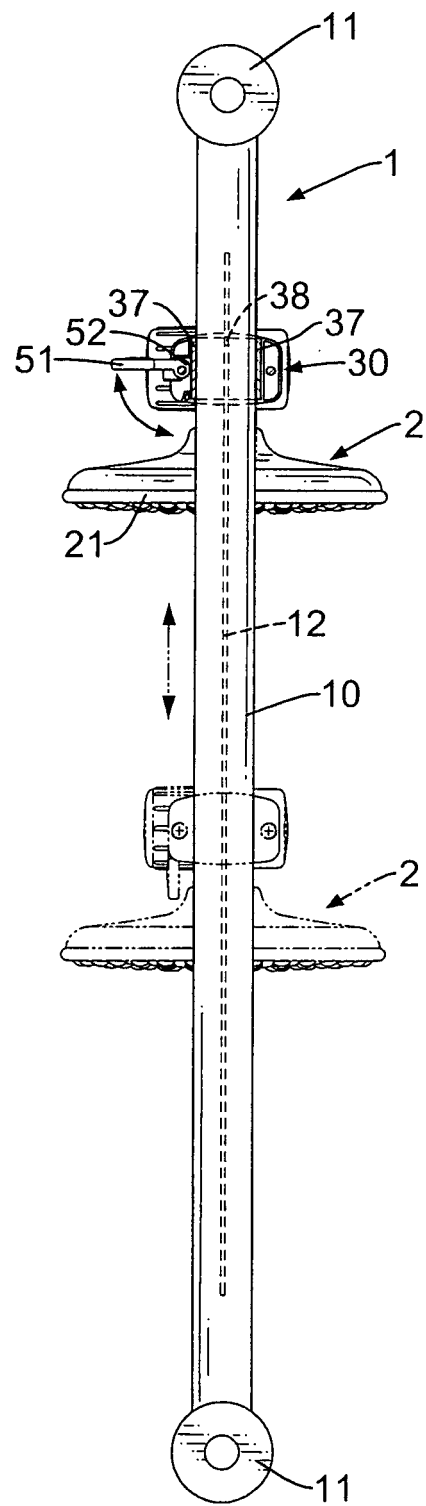


FIG. 5

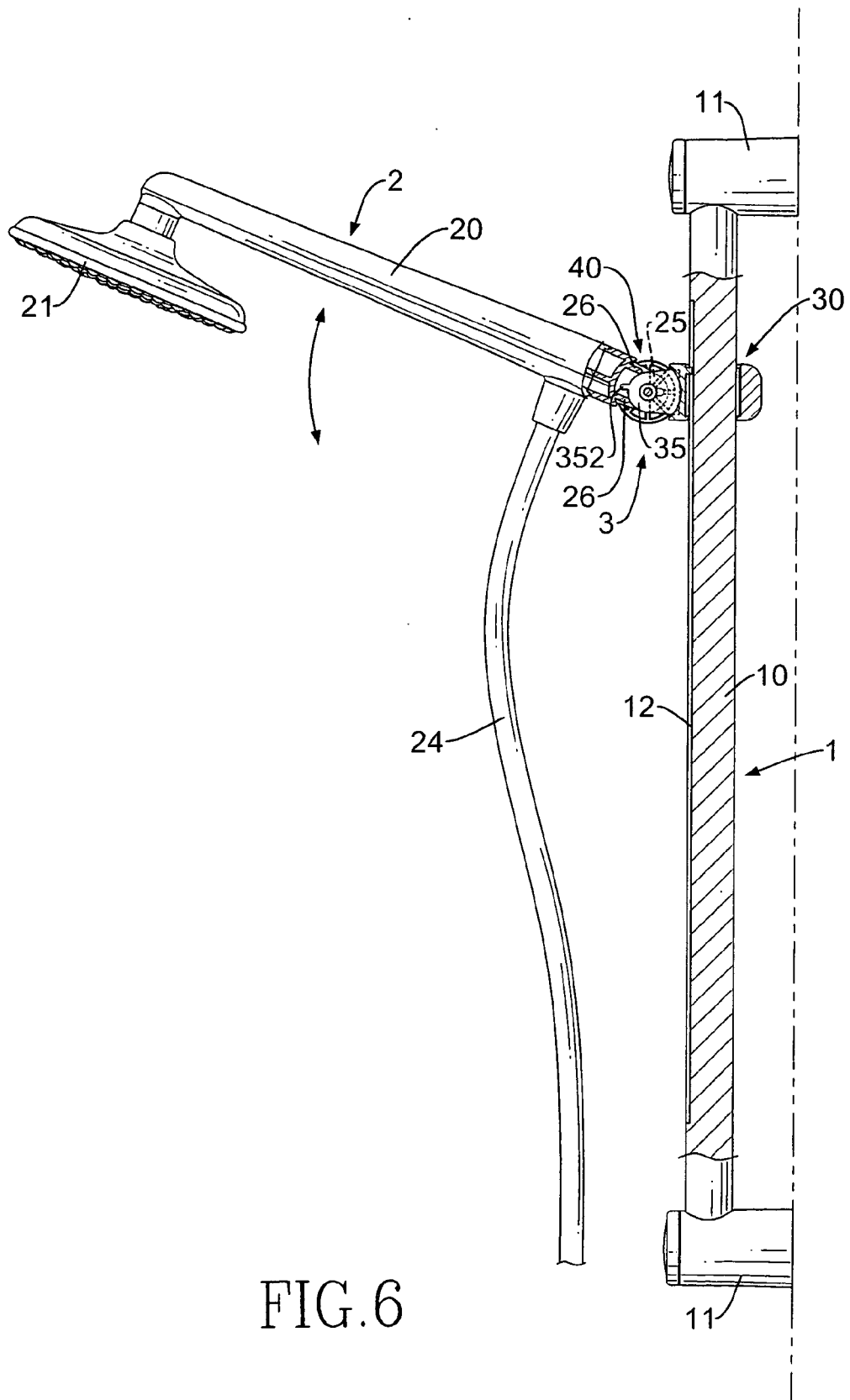


FIG. 6

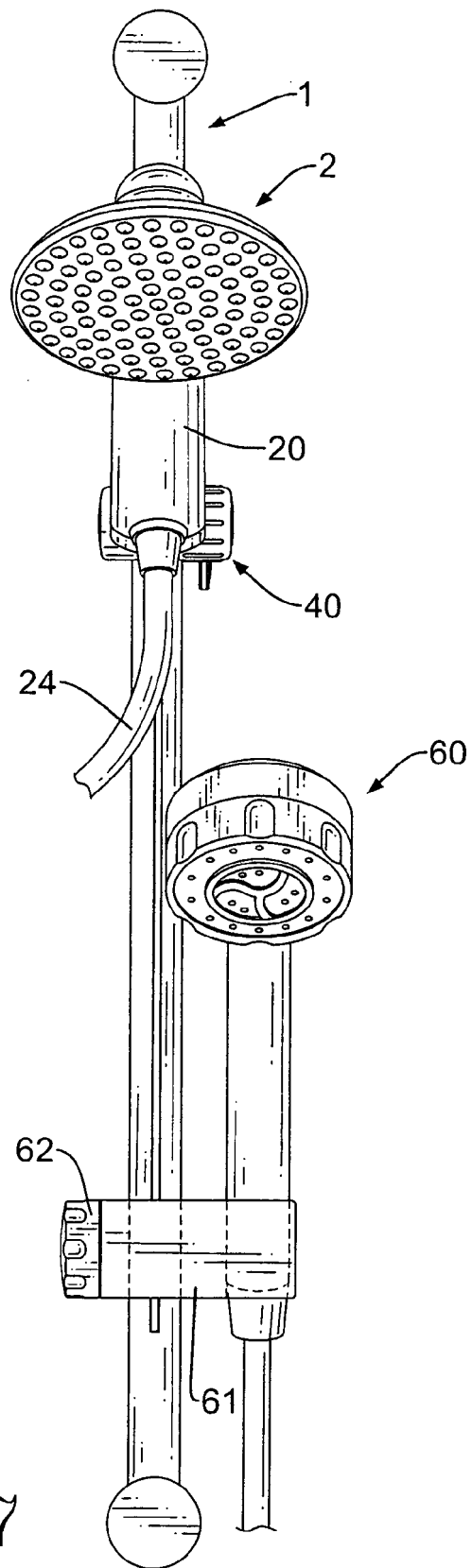


FIG. 7



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)
A	DE 14 89 255 A1 (LAUBRUNN, JOSEF; WENDT, WALTER) 14 August 1969 (1969-08-14) * page 4 - page 5; figure 1 *	1	E03C1/06
A	EP 0 965 699 A (HEWI H. WILKE GMBH; HEWI HEINRICH WILKE GMBH) 22 December 1999 (1999-12-22) * figure 2 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E03C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 March 2005	Examiner Flygare, E
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			

 1
 EPO FORM 1503 03 82 (P04C01)

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

EP 04 02 5849

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.

14-03-2005

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 1489255	A1	14-08-1969	NONE

EP 0965699	A	22-12-1999	DE 19827350 A1 30-12-1999
			AT 275223 T 15-09-2004
			DE 59910377 D1 07-10-2004
			EP 0965699 A1 22-12-1999
