



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.12.2007 Bulletin 2007/51

(51) Int Cl.:
E03C 1/304 (2006.01)

(21) Application number: **06380163.3**

(22) Date of filing: **13.06.2006**

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

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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) **Device for unblocking sanitary plumbing pipes**

(57) IMPROVED DEVICE APPLICABLE TO THE UNBLOCKING OF PLUMBING SANITARY PIPES, by means of the application of compressed air from a bottle (1) with a "DIN" thread adapter (3) at its mouth which converts it into a half inch thread allowing its fitting, by

means of assembly elements (4) and (5), respectively to a long hose (6) with a mouse (7) or metallic mouthpiece of conical end and a little hole, or a short hose (8) with a rubber conical body at its end with a threaded area (10) for its fitting to the same and at the opposite side it has a mouth (11).

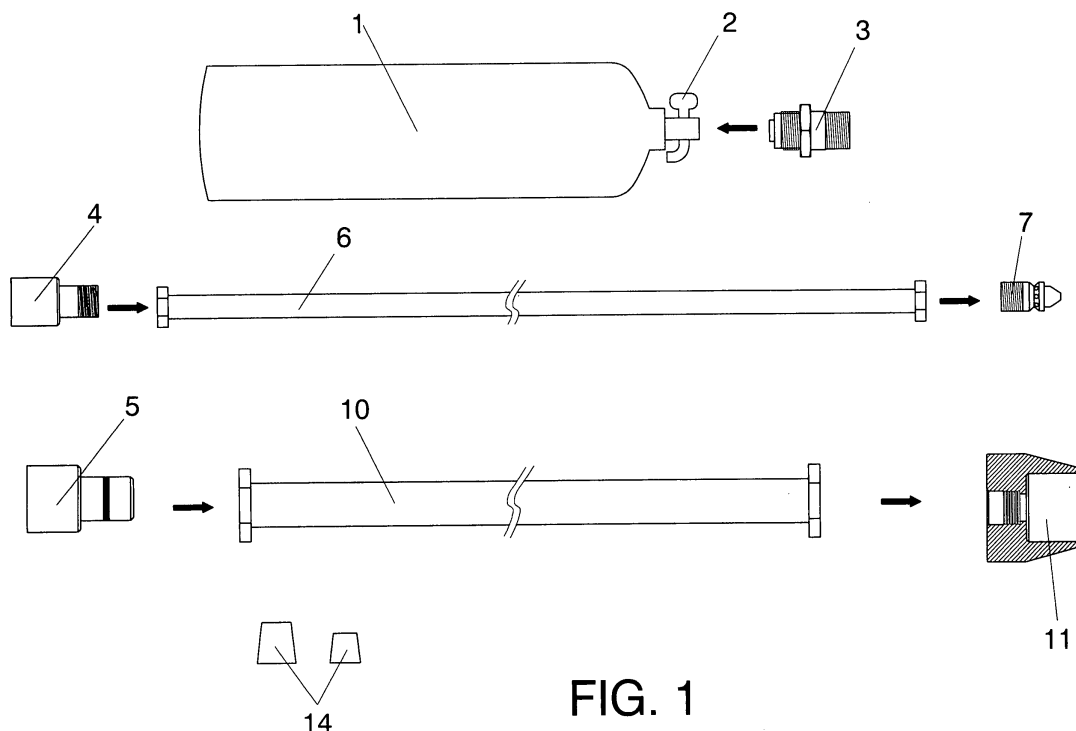


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] The invention refers to, as expressed on the wording of this descriptive report, an improved device applicable to the unblocking of plumbing sanitary pipes which provides to the function it is assigned to, a number of advantages and characteristics, apart from those inherent to its organization and constitution, to be detailed afterwards, which imply an innovative improvement in this field.

[0002] Specifically, the object of the invention consists of an improved device which, by means of the application of compressed air, is specially assigned to an exhaustive elimination, or at least the significant reduction, of internal blockages in the plumbing sanitary pipes, thus allowing its action in every type of pipes, U-bends, small chests, downspouts, etc., without deterioration of the same, advantageously avoiding brickworks to remove the affected areas, as well as the use of acids and abrasive agents which may cause damages.

FIELD OF THE INVENTION

[0003] This invention has its field of application in the industry dedicated to the manufacturing of equipment, devices and accessories for plumbing and heating.

BACKGROUND OF THE INVENTION

[0004] Nowadays, and as a reference to the status of technique, it has to be mentioned that the applicant is aware of the use, for the purpose herein concerned, of different types of equipment and devices consisting of pressure groups formed by elements which incorporate acids inside the pipes thus generating the breaking and elimination of the adhered elements causing the blockage, as well as the use of big compressors and chemical substances able to inevitably deteriorate the treated pipes, or of several mechanical devices which not always achieve effective results.

[0005] On the other hand, the applicant itself is the holder of an application for a utility model related to a device for eliminating blockages inside plumbing sanitary pipes consisting of an equipment which operates by applying compressed air similarly to the one presented herein, which even though significantly solves the problems posed by the already known devices, still has aspects to be improved, being such the main objective of the present invention.

[0006] It has then to be remarked that the device applicable to the unblocking of plumbing sanitary pipes supported by this invention includes improvements which provide technical, structural and constitutive innovative characteristics which substantially differentiate it from the already known systems for such purpose.

EXPLANATION OF THE INVENTION

[0007] In this way, the device supported by the invention, as stated, achieves the elimination of the blockages by means of the application of compressed air, thus avoiding the use of chemical substances highly abrasive, sharp mechanical equipment and devices which may be equally aggressive and, consequently, able to cause important deterioration to the treated pipes.

[0008] To this end, specifically, the improved device applicable to the elimination of blockages in plumbing sanitary pipes supported by this invention is formed by a deposit of compressed air, advantageously furnished in its mouth with a "DIN" thread adapter which converts it into a half inch thread, thus allowing its direct coupling through the pertinent assembly elements, without intermediate elements, to tubes and hoses with larger or smaller diameter and length depending on the type of pipe to be unblocked, at which end incorporate - also depending on the type of pipe - a mouse or metallic wind-
ed mouthpiece with conic end and small orifice to release the air pressure into narrow ducts or, alternatively, a quite bigger rubber conical body able to fit to bigger ducts, such as the WC.

[0009] It has to be also stated that the invention additionally foresees the application of conical tops of different dimensions and sizes in order to plug tubes or drain-pipes not to lose the compressed air thus obtaining a higher effectiveness of the device.

[0010] The new improved device applicable to the elimination of blockages in plumbing sanitary pipes consequently represents an innovative structure with structural and constitutive characteristics not known so far for such purpose, reasons which, together with its practical usefulness, grant enough basis to obtain the exclusiveness privilege applied for.

DESCRIPTION OF THE DRAWINGS

[0011] In order to complete this description and to ease a better understanding of the invention, we attach to this descriptive report, making part of the same, a set of layouts where, with an illustrative non limitative character, the following has been represented:

Figure number 1.- Shows a sight of the lateral elevation of the different constitutive elements of the improved device for the unblocking of plumbing sanitary pipes, as per the invention, showing the different configuration of the same.

Figure number 2.- Shows an enlarged sight of the lateral and plant elevations of the mouse or metallic wind-
ed mouthpiece included in the device of the invention able for narrow pipes and bends.

Figure number 3.- Shows a sight, also enlarged, of the lateral elevation, conveniently sectioned along a

longitudinal cut, of the conical body adaptable to WC ducts which, alternatively, may be included in the device.

PREFERENTIAL EXECUTION OF THE INVENTION

[0012] In the light of the said figures, and according to their numbering, it may be seen that the device in question is essentially formed by a bottle (1) with pressured air at the adequate bars inside, at which mouthpiece, by the regulation tap (2), there is a "DIN" thread (3) adapter which converts it into a half inch thread, optionally allowing its direct coupling through the pertinent assembly elements (4) and (5) to a long and narrow hose (6) able to narrow pipes, chests, etc. with a mouse (7) or metallic winded mouthpiece with conic end (8) and small orifice (9) as shown on figure 2, or a significantly shorter and wider hose (10) with a rubber conical body (11) with a threaded area (12) for its fitting to the same and at the opposite end has a considerably big mouth (13), as shown on figure 3, being also foreseen the additional application of conical tops (14) of different sizes in order to plug tubes or drainpipes not to lose the compressed air during the operation of the device.

[0013] Summarizing, in one case the conical body (11) fitted to the short hose (8), specially designed for its mouth (13) to perfectly adapt to big size ducts, such as WC, or in the other case the mouse (7) fitted to the long hose (6), able to be introduced into narrower ducts which conical end (8) and small orifice (9) are specially designed to attack quite specific points and narrow bends together with the co-operation of the mentioned elements and by means of the action of the compressed air contained into the bottle (1), the device makes that such air flows inside the duct with strength enough as to eliminate or significantly reduce the blockage without causing any deterioration or damage to the surface of the same.

[0014] Being already described the nature of this invention, as well as the way to put it into practice, it is not considered necessary to make an extensive description for an expert in the field understands it reach and the derived advantages, stating that, within its essentiality, it might be put in practice in other ways differing in detail from such indicated in the title of the example, to which the protection requested will also reach, provided the its main principle is not altered, changed or modified.

Claims

1. IMPROVED DEVICE APPLICABLE TO THE UNBLOCKING OF PLUMBING SANITARY PIPES, of the type which, by means of the application of the compressed air contained in a bottle (1) furnished with the corresponding regulation valve (2), is specially dedicated to the exhaustive elimination or significant reduction of blockages formed inside the plumbing sanitary ducts, **characterized by** the fact

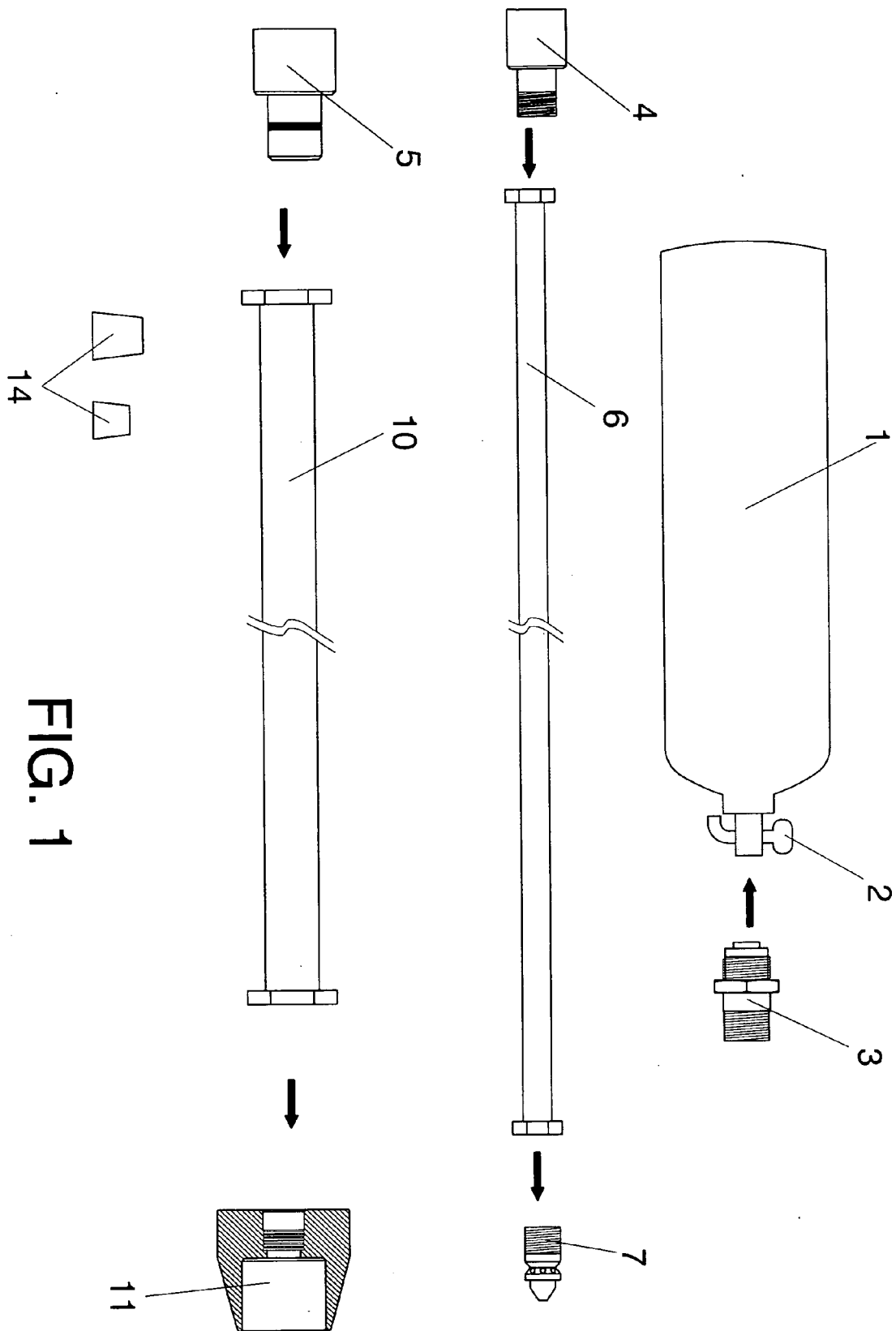
of including such bottle (1) with compressed air inside at the adequate bars, at its mouth a "DIN" thread (3) adapter which converts it into a half inch thread, optionally allowing its coupling by means of pertinent assembly elements (4) and (5) respectively to a long hose (6) able to narrow pipes, chests, etc. with a mouse (7) or metallic mouthpiece, or a short hose (8) with a rubber conical body (9) at its end.

2. IMPROVED DEVICE APPLICABLE TO THE UNBLOCKING OF PLUMBING SANITARY PIPES, as per claim 1, **characterized by** the fact that the mouse (7) or metallic mouthpiece at the end of the long hose (6) has conical end and little dimensions; and that the rubber conical body (9) of the short hose (8) has a threaded area (10) for its fitting to the same and at the opposite end has a considerably big mouth (11).

Amended claims in accordance with Rule 137(2) EPC.

1. DEVICE APPLICABLE TO THE UNBLOCKING OF PLUMBING SANITARY PIPES, by means of the application of compressed air (1) from a bottle, specially dedicated to the exhaustive elimination or significant reduction of blockages formed inside the plumbing sanitary ducts, **characterized by** the fact of including such bottle **characterized by** the fact of having the said bottle (1) at its mouth (2) a standard thread adapter (3) and half inch adapter at its other end, allowing its coupling to long (6) and short (10) hoses by means of its coupling elements (4) and (5); where the long hose (6) able for narrow pipes, chests, etc. is furnished with a mouse (7) or metallic mouthpiece, and the short hose (19) is furnished with a rubber conical body (11) at its end.

2. DEVICE APPLICABLE TO THE UNBLOCKING OF PLUMBING SANITARY PIPES, as per claim 1, **characterized by** the fact that the mouse (7) or metallic mouthpiece at the end of the long hose (6) has conical end (8) and exit orifice (9) of little dimensions; and because the rubber conical body (11) of the short hose (10) has a joint area of circular rubbers (12) for its pressured fitting to the same and at the opposite end has a considerably big mouth (13) able for big size ducts such as those of the WC.



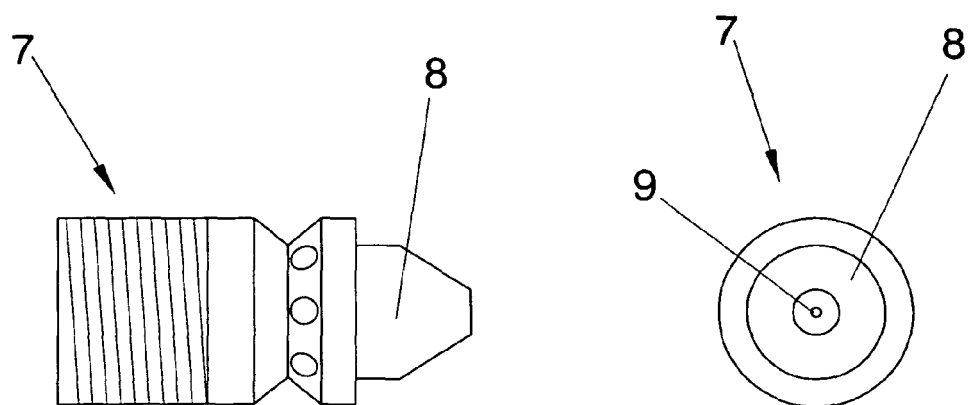


FIG. 2

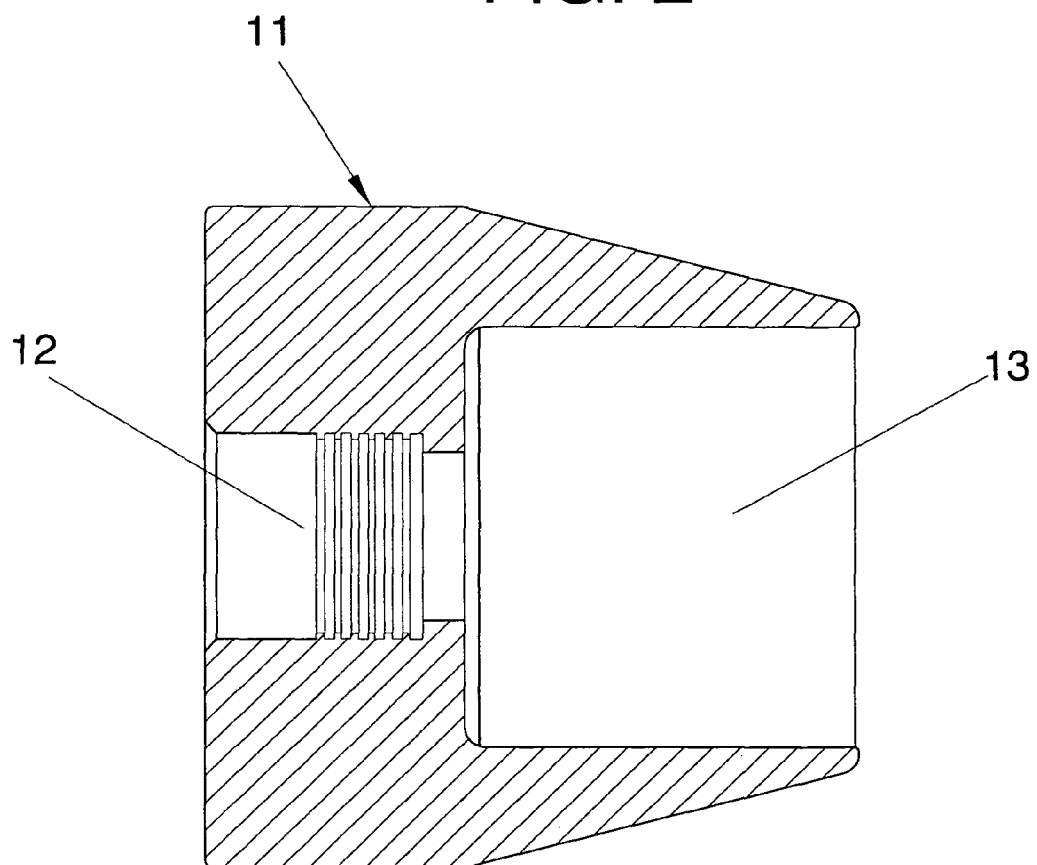


FIG. 3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 38 0163

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 89 05 999 U1 (KOPPENSTEINER, ERWIN, 6480 WAECHTERSACH, DE) 13 July 1989 (1989-07-13) * page 3 *	1	INV. E03C1/304
A	US 2 300 319 A (SMITH ROLAND L) 27 October 1942 (1942-10-27) see the operation of the device as described on page 2	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			E03C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 November 2006	Examiner Flygare, Esa
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			

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EPO FORM 1503 03/02 (P04C01)

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

EP 06 38 0163

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
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15-11-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 8905999	U1	13-07-1989	NONE	

US 2300319	A	27-10-1942	NONE	
