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(54) SEALING CAP FOR SANITARY PIPES AND AN ACCESSORY FOR THE CORRECT PLACEMENT OF SANITARY PIPES

(57) Sealing cap for sanitary pipes, which comprises a gasket (2) for watertight sealing of an open end of the sanitary pipe when the sealing cap (1) is fitted in the open end, characterized in that the sealing cap (1) comprises a straight cylindrical part (5) and an adjoining conical portion (7) that tapers.

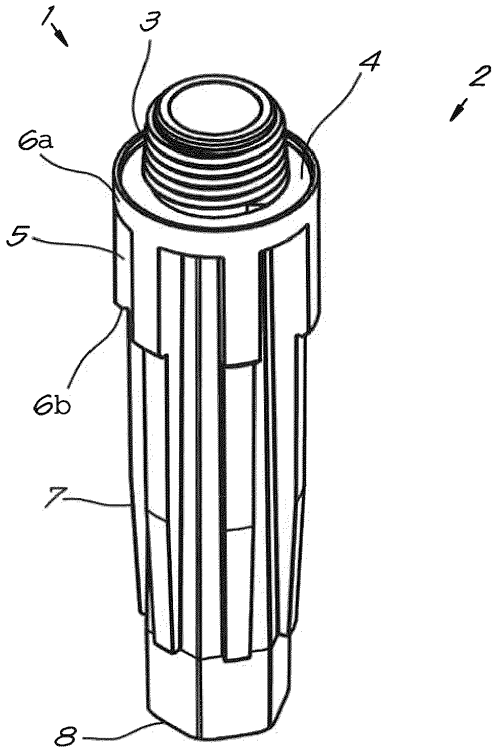

Fig. 1

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Description

[0001] The present invention relates to a sealing cap for sanitary pipes.

[0002] In particular, the invention is intended for sanitary pipes on which a faucet or tap for a bath or shower and other sanitary faucets or taps are mounted on a wall.

[0003] It is known that for the installation use is made of a wall plate which is attached to the wall and which is used to attach the sanitary pipes onto or into the wall and which is provided with suitable connection points for the sanitaire pipes.

[0004] The wall plate forms the transition between the sanitary pipe in the wall and the faucet or tap that will be mounted on the wall.

[0005] On the wall plate, a so-called S-coupling is installed, possibly with a rosette, after which the faucet or tap is mounted.

[0006] During the installation as described above, a sealing cap is placed onto the open end of the sanitary pipe which sticks out of the wall and onto which eventually the faucet or tap will be mounted.

[0007] This sealing cap will make sure that no dirt, tile glue and other contamination can enter the sanitaire pipes and that, when water is brought into the sanitary pipes, the water does not leak out of the sanitary pipes.

[0008] Indeed, during the installation of all the sanitary pipes, it is necessary for control and testing purposes to bring water into the sanitary pipes.

[0009] After installation of the sanitary pipes, and before mounting of the faucet or tap onto the open end of the sanitary pipes, usually the wall is plastered and possibly wall tiles are applied.

[0010] The known sealing caps have the disadvantage that rather large holes need to be provided in the wall tiles which are placed around or over the open end of the sanitary pipes with sealing caps.

[0011] These holes are subsequently not completely covered with the afore-mentioned rosette, thus having an esthetically less than perfect finish.

[0012] Another issue is the fact that during the mounting of the wall plate it is important that it is mounted level and correctly onto the wall.

[0013] This is especially the case when to sanitary pipes are mounted next to each other, for example for cold and warm water faucets or taps.

[0014] In this case both sanitary pipes need to be well aligned relative to each other.

[0015] For this, a rod with spirit level is used which is placed over the sanitaire pipes. These rods will also close of the sanitaire pipes and therefore have to remain in place until the plastering and tiling of the wall is completed.

[0016] A disadvantage is that this rods also have a large diameter, such that again the tiles need large holes to be able to fit over or around these rods, with the same above-mentioned disadvantages.

[0017] Another issue is that when the open end of the sanitary pipe is closed off, it is impossible to know if there is water present in the sanitary pipe and if this is the warm water or cold water pipe.

[0018] It is therefore an objective of the invention to give a solution to one or more of the above-mentioned and other disadvantages.

[0019] The present invention has a sealing cap for sanitary pipes as subject, which comprises a gasket for watertight sealing of an open end of the sanitary pipe when the sealing cap is fitted in the open end, whereby the sealing cap comprises a straight cylindrical part and an adjoining conical portion that tapers.

[0020] An advantage of the conical portion that tapers is that the holes which need to be provided in the wall tiles which are placed around or over the open end of the sanitary pipes with sealing caps, can be smaller.

[0021] As a consequence these smaller holes can subsequently be completely covered with the afore-mentioned rosette, thus having an esthetically perfect finish.

[0022] Another advantage is that, due to the straight cylindrical portion, the sealing cap will not be plastered in when the wall is plastered, and can still be easily removed.

[0023] By providing the sealing cap with a straight cylindrical portion, it can be avoided that the adjoining conical portion is plastered in.

[0024] The sealing cap can be made in any material of combinations of materials.

[0025] The length of the sealing cap and of the straight cylindrical part and the adjoining conical portion can vary without leaving the scope of the invention.

[0026] Following a preferred embodiment the cylindrical part is at least 20 millimeters long and preferably 25 millimeters long.

[0027] This minimum length will ensure that when plastering the wall, plaster will only come in contact with the straight cylindrical part.

[0028] Thus, even if the sealing cap is partly plastered in, it will still be able to remove it from the sanitary pipe.

[0029] Preferably the sealing cap is provided with a chip or sensor which can be read by a reading system, whereby the chip can detect whether there is water present in the sanitary pipe and/or can detect the temperature of the water present in the sanitary pipe.

[0030] The aforementioned chip or sensor can be a microchip or similar, whereby the reading system can be a chip scanner for example.

[0031] An advantage is that in a very easy and fast way, one can detect if in the sanitary pipe onto which the sealing cap is attached water is present or not and the temperature of the water can be determined.

[0032] In this way, one can very easily check if the installation of the sanitary pipes is correct.

[0033] Especially in a large building with a large and complex sanitary installation, it will be very easy and fast to check if the installation is correct.

[0034] The present invention also relates to an accessory for the correct placement of sanitary pipes, whereby

the accessory comprises a fitting element and at least one sealing cap according to the invention, whereby the fitting element is provided with at least one spirit level element and with at least one passage in which the sealing cap fits.

[0035] The accessory will make it possible to install the sanitary pipes correct, level and well aligned in the same way a normal water level or a rod with water level will do.

[0036] However, the use of the accessory will be easier and more practical than the use of a normal water level or a rod with a water level.

[0037] By applying the sealing cap to the open end of the sanitary pipe and then placing the fitting element with its passage over the sealing cap, one can check if the sanitary pipe is level with the use of the spirit level element.

[0038] After checking the fitting element can be removed before finishing the wall with plaster and wall tiles.

[0039] By providing two or more passages, the fitting element can be placed over two or more sealing caps to be able to align and make sure two or more sanitary pipes are level with respect to each other.

[0040] With the intention of better showing the characteristics of the invention, hereafter, as an example without any limitative character, some preferred embodiments are described of a sealing cap and accessory according to the invention for sanitary pipes, with reference to the accompanying drawings, wherein:

figure 1 schematically represents a perspective view sealing cap according to the invention;
figure 2 schematically represents a side view of the sealing cap of figure 1;
figure 3 schematically represent a view according to arrow F3 in figure 2;
figure 4 is a cross section according to line IV-IV in figure 3;
figure 5 is a fitting element of an accessory according to the invention;
figure 6 is a cross section according to line VI-VI in figure 5.

[0041] The sealing cap 1 represented in figures 1 to 4 comprises at one end a gasket 2 with a screw thread 3 for the watertight sealing of an open end of a sanitary pipe.

[0042] The gasket 2 also comprises an O-ring 4.

[0043] The sealing cap 2 is provided with a straight cylindrical part 5.

[0044] This straight cylindrical part 5 is preferably at least 20 millimeters long and in this case it is 25 millimeters long.

[0045] One end 6a of the straight cylindrical part 5 is provided with the afore-mentioned gasket 2 with a screw thread 3, whereas the other end 6b of the straight cylindrical part 5 adjoins a conical portion 7 that tapers.

[0046] The conical portion 7 will become more narrow towards it's free end 8, i.e. the further away from the straight cylindrical part 5, the more narrow the conical portion 7 will become.

[0047] The free end 8 of the conical portion 7 that tapers is provided with an opening 9 that can cooperate with a tool for applying and removing the sealing cap 1 on the sanitary pipe.

[0048] In this case the opening 9 has a hexagonal shape.

[0049] Moreover, the outer circumference of the free end 8 also has a hexagonal shape to be able to cooperate with a suitable tool.

[0050] In this case, the sealing cap 1 is provided with a chip or sensor 10.

[0051] The chip or sensor 10 is provided in the straight cylindrical part 5 near the screw thread 3.

[0052] The chip or sensor 10 can be read by a reading system, such as for example a chip scanner.

[0053] The chip or sensor 10 can detect whether there is water present in the sanitary pipe and/or can detect the temperature of the water present in the sanitary pipe when the sealing cap 1 is placed in an open end of a sanitary pipe.

[0054] Figures 5 and 6 show a fitting element 11 for an accessory according to the invention for the correct placement of sanitary pipes.

[0055] The accessory comprises the fitting element 11 and at least one sealing cap 1 as shown in figures 1 to 4. Preferably, it is provided with two sealing caps 1.

[0056] The fitting element 11 is provided with at least one spirit level element 12.

[0057] In this case, it has two spirit level elements 12, placed perpendicular to one another.

[0058] It is also provided with at least one passage 13 in which the sealing cap 1 fits.

[0059] In this case it has three such passages 13 which are situated at a distance A, A' from each other.

[0060] The passages 13 in the fitting element 11 of figures 5 and 6 taper, such that their shape corresponds to the shape of the sealing cap 1.

[0061] In this particular embodiment, the fitting element 11 is shaped as a plate 14 with one or more passages 13 of which the axial direction X-X' extends in the plane of the plate 14.

[0062] The accessory is in this case provided with one or more chips or sensors 10, of the same type as described above.

[0063] This chip or sensor 10 can be placed in the fitting element 11, as shown in figure 6. In this case, one chip or sensor 10 is provided near each passage 13.

[0064] Such a fitting element 11 can be combined with a sealing cap 1 without such a sensor 10 or chip.

[0065] Alternatively, the chip or sensor 10 can be placed in the sealing cap 1 and the fitting element 11 doesn't need to be provided with a chip or sensor 10.

[0066] The use of the accessory and the sealing cap 1 according to the invention is very easy and as follows.

[0067] First the sanitary pipes which are situated on or into the wall, need to be fixed to or in the wall.

[0068] On the sanitary pipes a wall plate will be fixed.

[0069] On the open ends of the sanitary pipes, a sealing cap 1 will be placed and screwed tight by means of the screw thread 3, such that the open ends of the sanitary pipes is closed off water tight.

[0070] A suitable tool can be used to do this.

[0071] Next, the fitting element 11 will be placed over the sealing caps 1 by placing the sealing caps 1 in the passages 13 of the fitting element 11.

[0072] The position sanitary pipes can now be adjusted, while taking care that the fitting element 11 is level by checking the spirit level elements 12.

[0073] If the fitting element 11 is level, the sealing caps 1 and thus the sanitary pipes will also be level and correctly positioned to make a correct assembly of the faucet or tap possible.

[0074] The sanitary pipes can than be fixed to or in the wall.

[0075] The fitting element 11 can now be removed and the wall can be finished by plastering and wall tiling. The fitting element 11 can be re-used.

[0076] It is important to notice that the sealing caps 1 at this stage will still be present in the open ends of the sanitary pipes.

[0077] Due to the straight cylindrical part 5, it will not cause any issues when the plastering will cover the sealing cap 1 as the plastering will in this case cover only the straight cylindrical part 5 and the sealing cap 1 will still be removable afterwards.

[0078] At the location of the sealing caps 1, a hole will need to be provided in the wall tiles to be able to let the end of the sanitary pipes go through the tiles.

[0079] Because the sealing caps 1 have a tapering end, these holes can be made just as large as the outer diameter of the sanitary pipes.

[0080] The tapering sealing cap 1 will make sure a certain play will exists when the tile is placed over the sealing caps 1, such that this can be done easy and fast without having to exactly align the hole in the tile with the sealing cap 1.

[0081] The present invention is in no way limited to the form of embodiment described by way of an example and represented in the figures, however, such a sealing cap and accessory according to the invention for sanitary pipes can be realized in various forms without leaving the scope of the invention.

Claims

1. Sealing cap for sanitary pipes, which comprises a gasket (2) for watertight sealing of an open end of the sanitary pipe when the sealing cap (1) is fitted in the open end, **characterized in that** the sealing cap (1) comprises a straight cylindrical part (5) and an adjoining conical portion (7) that tapers.

2. Sealing cap according to claim 1, **characterized in that** the cylindrical part (5) is at least 20 millimeters long and preferably 25 millimeters long.

3. Sealing cap according to claim 1 or 2, **characterized in that** one end (6a) of the straight cylindrical part (5) is provided with the afore-mentioned gasket (2) and the other end (6b) of the straight cylindrical part (5) adjoins the conical portion (7).

4. Sealing cap according to any one of the previous claims, **characterized in that** the free end (8) of the conical portion (7) is provided with a opening (9) that can cooperate with a tool for applying and removing the sealing cap (1) on the sanitary pipe.

5. Sealing cap according to any one of the previous claims, **characterized in that** the sealing cap (1) is provided with a chip or sensor (10) which can be read by a reading system, whereby the chip or sensor (10) can detect whether there is water present in the sanitary pipe and/or can detect the temperature of the water present in the sanitary pipe.

6. Accessory for the correct placement of sanitary pipes, whereby the accessory comprises a fitting element (11) and at least one sealing cap (1) according to any of the previous claims, whereby the fitting element (11) is provided with at least one spirit level element (12) and with at least one passage (13) in which the sealing cap (1) fits.

7. Accessory according to claim 6, **characterized in that** the fitting element (11) is provided with three passages (13) which are situated at a distance (A, A') from each other.

8. Accessory according to claim 6 or 7, **characterized in that** the accessory is provided with chip or sensor (10) which can be read by a reading system, whereby the chip or sensor (10) can detect whether there is water present in the sanitary pipe and/or can detect the temperature of the water present in the sanitary pipe.

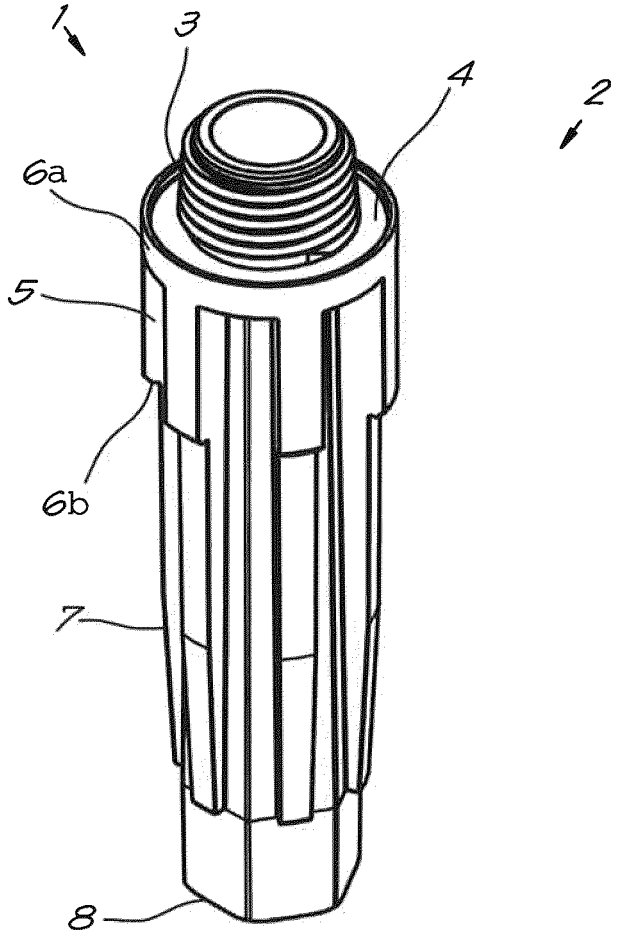

Fig. 1

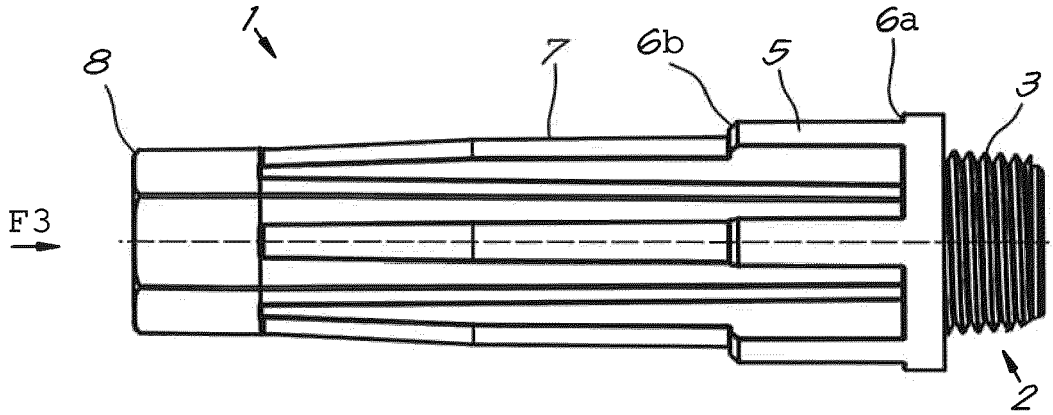

Fig. 2

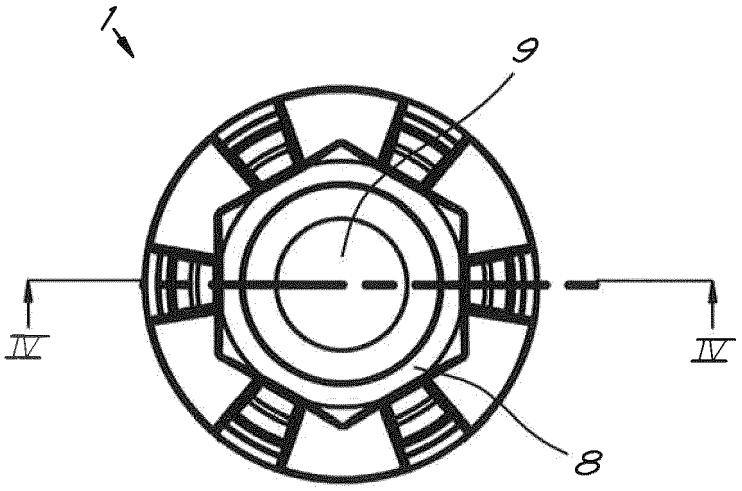

Fig.3

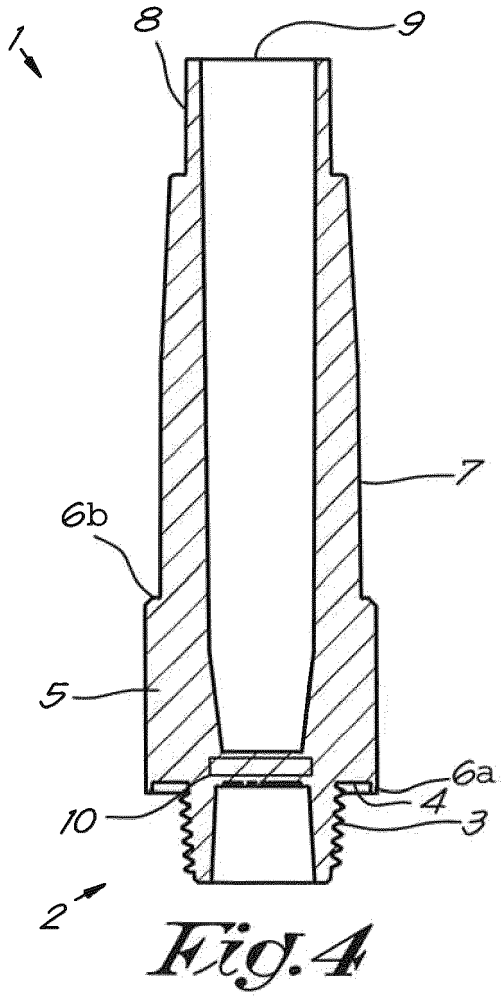

Fig.4

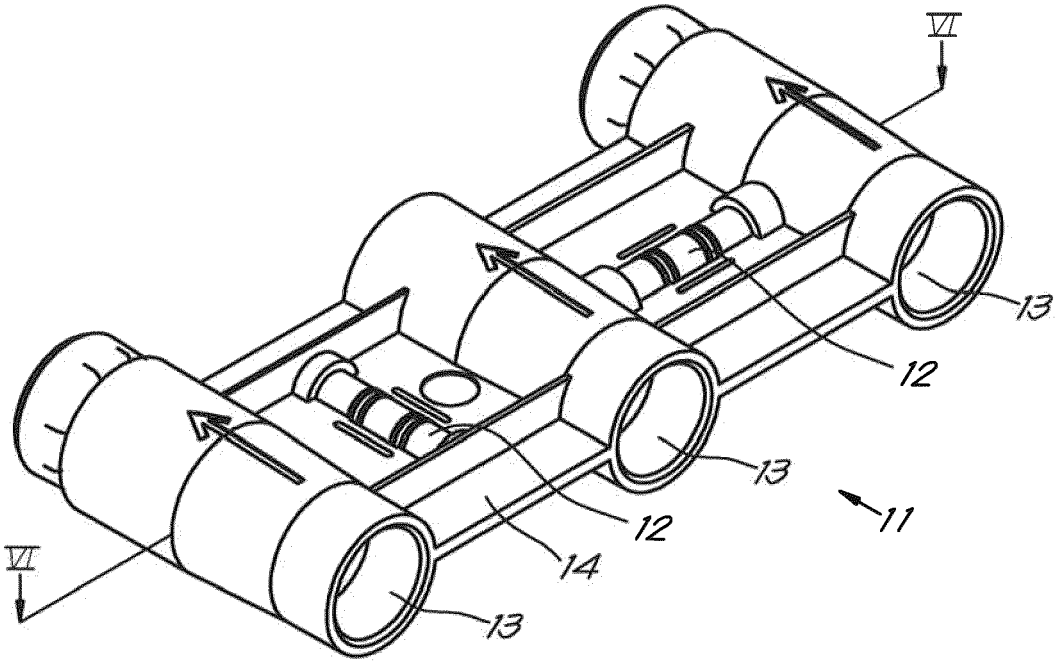

Fig.5

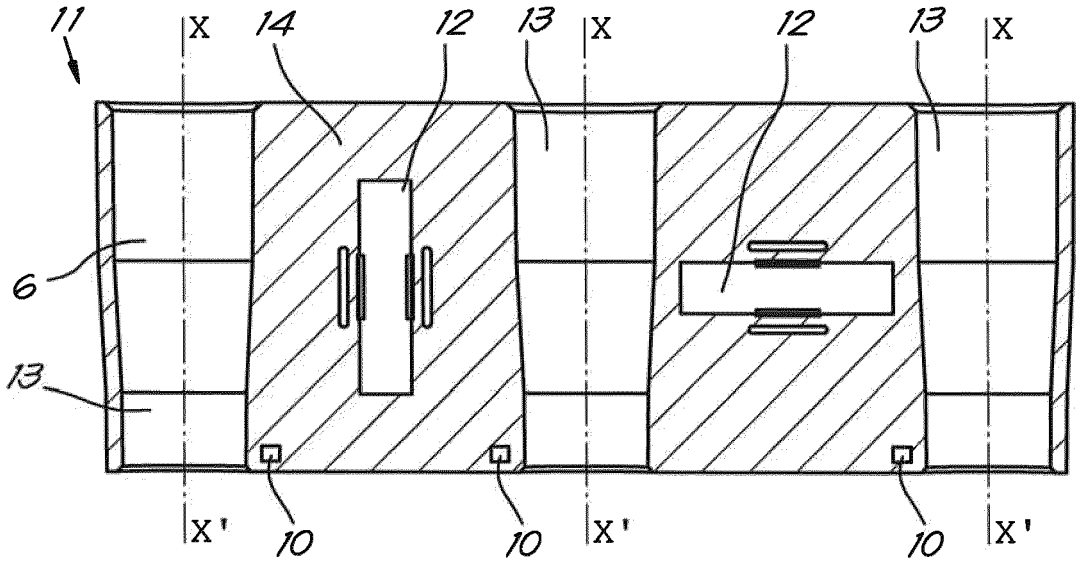

Fig.6

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EUROPEAN SEARCH REPORT

Application Number
EP 21 18 5771

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	BE 1 027 751 A1 (TORMANS BVPA [BE]) 9 June 2021 (2021-06-09) * the whole document *	1-8	INV. E03C1/02 E03C1/042
X	DE 86 32 306 U1 (FOITZIK, BRUNO) 19 February 1987 (1987-02-19) * abstract; figures 1-5, 9 * * page 8, line 7 - page 11, line 6 *	1-8	
X	EP 3 567 168 A1 (NOBILI FABRIZIO [CH]) 13 November 2019 (2019-11-13) * abstract; figures 2, 3, 7, 8 * * paragraphs [0034] - [0055] *	1-8	
			TECHNICAL FIELDS SEARCHED (IPC)
			E03C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	1 December 2021	Varelas, Dimitrios

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 21 18 5771

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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01-12-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
BE 1027751 A1	09-06-2021	NONE	
DE 8632306 U1	19-02-1987	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82