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(54) **PIPE MECHANISM**

(57) The invention relates to a horizontal pipe (1), preferably made of PVC, suitably installed in the area of the main pipe to which pressurised water is to be applied, and which has a cross-section with a rubber gasket (2) for hermetic sealing. The pipe is fitted with a gate (3), with a

water inlet (4) between the gate and the area where pressurised water is to be introduced, connected to a hose connected at the opposite end to the water mains by means of a shut-off valve.

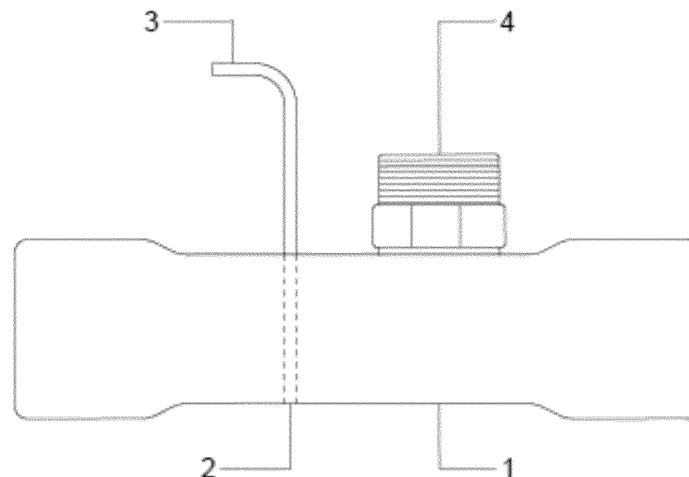


Fig. 1

Description

OBJECT OF THE INVENTION

[0001] The present invention, as indicated in the title, relates to a mechanism installed in pipes, more specifically in sinks, washbasins, or other drains, designed to keep such pipes always clean and unblocked in an easy and economical way.

[0002] The purpose of this invention is to provide a hitherto unknown solution to the problems that will be discussed below. The main aim is to achieve a final result that makes it possible to have a system installed in the pipe capable of making it difficult for blockages to appear, or even, if they do appear, to solve them.

[0003] The device in question provides essential characteristics of novelty and significant advantages over the means known and used for the same purposes in the current state of the art.

[0004] The appearance of blockages in pipes is one of those unwanted incidents in the home that are quite common.

[0005] Such incidents cause inconvenience, discomfort, accidents, loss of time and additional costs.

[0006] A good way to prevent clogs especially in sinks and washbasins could be preventive maintenance, however, there are currently no known systems to provide such a resource in households.

[0007] The maintenance and treatment of sewerage networks, like any other construction element in our buildings, plays a very important role, as their deterioration due to lack of maintenance can affect other more delicate construction elements, which in turn would have an impact on the general deterioration of the construction, such as foundations affected by sewage leaks or water leaks from sanitary pipes.

[0008] When this is not the case, but due to lack of maintenance or accumulation of dirt, a blockage of a duct or pipe occurs, it is necessary to clean and remove all the dirt accumulated in the bed and walls of the ducts.

[0009] To carry out these unblocking operations, individuals and professionals use different tools, from the application of pressurised air with a manual applicator, the use of a wire roller, the use of corrosive acids, etc.

[0010] During such work, it is necessary to use different tools, particularly adapters or couplers, to apply the debri-riding medium, which can range from wire rollers, pressurised water application, to pressurised air application, as well as the necessary knowledge and skills.

[0011] Until now, there has been no known small, easy-to-install and easy-to-use system for preventive anti-clogging maintenance of pipes.

[0012] The mechanism proposed in the invention solves the above-mentioned problem in a fully satisfactory manner, providing a series of advantageous and novel characteristics, without reducing its performance in other aspects.

[0013] The proposed invention aims to provide an

economical, environmentally friendly, practical, simple and easy-to-use solution, the effect of which would be less clogged pipes, without the need for tools, specialised skills or training.

[0014] The present invention has its field of application in the sanitary or industrial installations sector (oil, compressed air, etc.), in order to keep the ducts clean.

BACKGROUND TO THE INVENTION

[0015] In the state of the art we find some documents related to the sector of the invention in question, although none of them fulfils the same function or provides the same advantageous features.

[0016] Thus, in document ES 1195 183 U we find an unblocking assembly characterised by the fact that it comprises:

- a transparent rubber sleeve with a reinforced structure and fitted at both ends with clamps for attachment to the mouth of the duct or pipe to be unblocked or to a connecting piece and/or adaptor parts
- a connection piece mounted and fixed on one end of the rubber hose. A first adaptor to allow pressurised water to enter the rubber sleeve a second adaptor to allow pressurised air to enter.

[0017] On the other hand, document ES2676 736 A1 provides a drain unblocking and cleaning device which, applicable for incorporation in a drainage conduit comprising an initial tubular section with an initial end, which starts from the sump of the tank and/or toilet to which the drain corresponds and from which the flow to be drained enters, a central section with a siphon and a final tubular section with a final end which joins the general drainage pipe of the installation, is characterised by comprising between the initial tubular section with an initial end and the siphon a mechanism for opening and closing the flow passage comprising - a central tubular section with a larger diameter than the initial tubular section - a floating element located inside the central tubular section which in the rest position allows the flow between the initial section and the siphon - an orifice in the tubular section into whose mouth it is connected, an orifice in the tubular section to the mouth of which a flow inlet from the sanitary water mains is connected by means of a hose, so that when the siphon is clogged and flow through the siphon is prevented, the pressurised water entering through the orifice pushes the floating element upwards (blocking position), blocking the initial section of the drain pipe and preventing the sanitary water from returning to the drain and, at the same time, pushing, with the force of the pressure exerted, any residues from any other section of the drain pipe, especially from the siphon.

[0018] In these documents we find devices that require changes to the siphon or more complex and costly systems that are even more difficult to install and use.

[0019] Thus we see that, until now, there has been no

known mechanism that, due to its novel characteristics, solves the disadvantages mentioned above, both with regard to the documents cited and to other inventions or traditional systems that we find in the state of the art.

[0020] Taking into consideration the aforementioned cases and analysing the combined arguments, the invention proposed in this document gives rise to a final result in which significant differentiating aspects are provided compared to the current state of the art, and where a series of advances in the already known elements with their corresponding advantages are provided.

[0021] In particular:

- Easy installation, without the need for a bulky system that takes up a lot of space.
- It is a simple but effective product.
- It is compact.
- It is easy to use.
- It does not require the manipulation of elements such as releasing a siphon for example.
- It is an economical product.
- No specialised training is required for its use.
- Avoid complex home automation systems that are expensive to maintain and consume electricity.

DESCRIPTION OF THE INVENTION

[0022] Thus, the present invention is made up of the following elements:

A horizontal pipe, preferably made of PVC, suitably installed in the area of the main pipe to which pressurised water is to be applied, and which has a cross-section with a rubber gasket for hermetic sealing, in which there is a gate that can be raised to allow the water to pass through, this tube has a water inlet between the gate and the area to be filled with pressurised water, connected to a hose connected at the opposite end to the water mains by means of a shut-off valve.

[0023] When you want to carry out a preventive maintenance task against clogging, or you want to unblock the pipe, we proceed to lower the gate, thus preventing the pressurised water that will enter from flowing towards that area, then we open the shut-off valve, allowing the pressurised water from the network to enter the pipe towards the area to be treated, leaving the water inlet open for a few seconds or a few minutes. Then, close the shut-off valve again to prevent water from entering and lift the gate so that the water continues to flow normally in the pipe.

[0024] Unlike other systems, this one does not manipulate a siphon, if there is one, or make changes to it. Moreover, it is a simple and very practical invention that allows the use of the water pressure itself for maintenance and unblocking.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] For a better understanding of this descriptive

report, a drawing is attached which, by way of a non-limiting example, describes a preferred embodiment of the invention:

Figure 1.- Lateral elevation view of the invention.

[0026] The following numbered elements are highlighted in these figures:

1. Pipe
2. Rubber gasket
3. Gate
4. Water intake

PREFERRED EMBODIMENT OF THE INVENTION

[0027] A preferred embodiment of the proposed invention consists of the following elements: a horizontal pipe (1), preferably made of PVC, suitably installed in the area of the general piping to which pressurised water is to be applied, and which has a cross-section with a rubber gasket (2) for hermetic sealing, in which there is a gate (3) which can be raised to allow the water to pass through or lowered to shut off water flow, this tube has a water inlet (4) between the gate and the area to be filled with pressurised water, connected to a hose connected at the opposite end to the water mains by means of a shut-off valve.

Claims

1. Pipe Mechanism, **characterised by** being made up of a horizontal pipe (1), preferably made of PVC, suitably installed in the area of the general pipe on which it is desired to apply pressurised water, and which has a cross-section with a rubber gasket (2) for hermetic sealing, the pipe has a gate (3) with a water inlet (4) between the gate and the area where pressurised water is to be introduced, connected to a hose connected at the opposite end to the water mains by means of a shut-off valve.

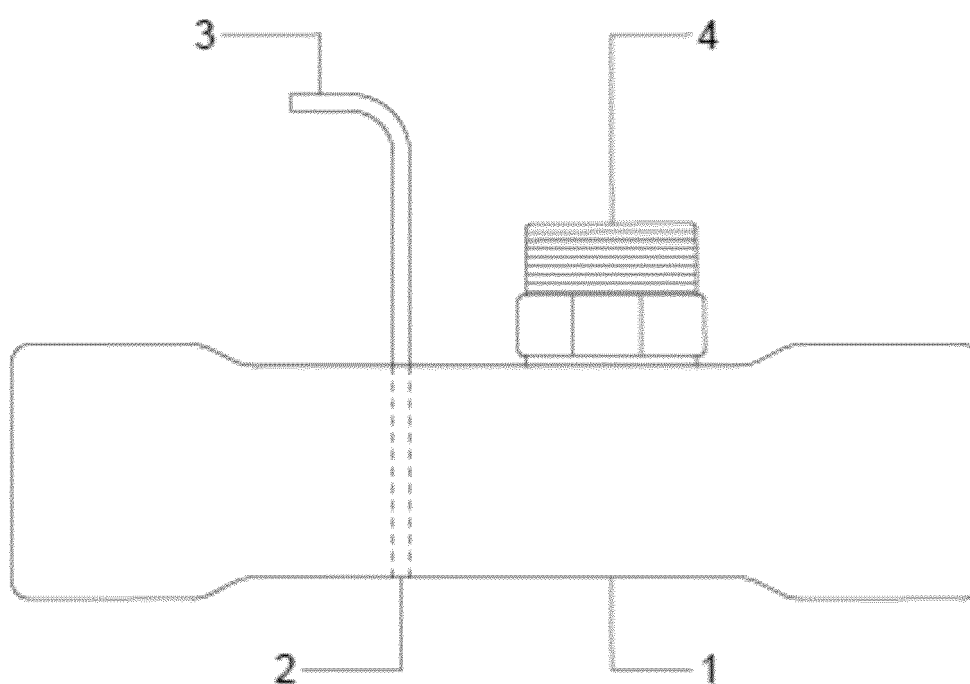


Fig. 1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2023/070143

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E03C, B08B, F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005274415 A1 (SHORES JEROME P) 15/12/2005, paragraphs [0012], [0013]; figures 1, 2.	1
Y	CN 104315179 A (KUNSHAN ALL BEST TECHNOLOGY CO LTD) 28/01/2015, paragraphs [0025]-[0029]; figures 1-5.	1
A	US 2021131083 A1 (SHELTON CLINTON) 06/05/2021, paragraphs [0017]-[0020]; figures 1-5.	1
A	WO 9216315 A1 (FUNK DOUGLAS H) 01/10/1992, pages 6-16; figures 1-4.	1
A	US 2013025039 A1 (ARMSTRONG TIMOTHY D) 31/01/2013, paragraphs [0014]-[0031]; figures 1-9.	1

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance.

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"O" document referring to an oral disclosure use, exhibition, or other means.

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
20/04/2023

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INTERNATIONAL SEARCH REPORT

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C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2017356175 A1 (DOUNG TONY) 14/12/2017, Paragraphs [0017]-[0028]; figures 1-3.	1
A	US 3936892 A (MILLER FREDRICK A) 10/02/1976, column 1, line 31 - column 2, line 14; figures 1-3.	1
A	US 1164892 A (TOWNSEND ORE E) 21/12/1915, page 1, lines 44-73; figures 1, 2.	1
A	US 831722 A (HOLMES HENRY J) 25/09/1906, page 1, lines 45-101; single figure.	1
A	CN 202302024U U (ANHUI RONGDA VALVE CO LTD) 04/07/2012, paragraphs [0005]-[0012]; figure 1.	1

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2023/070143

Information on patent family members

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INTERNATIONAL SEARCH REPORT

International application No.
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CLASSIFICATION OF SUBJECT MATTER

E03C1/306 (2006.01)
B08B9/032 (2006.01)
F16K3/02 (2006.01)

REFERENCES CITED IN THE DESCRIPTION

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