April 8, 1941. E. VON BON HORST ET AL 2,237,880

SANITARY DRAIN PIPE CLEANER

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Fig. 1.

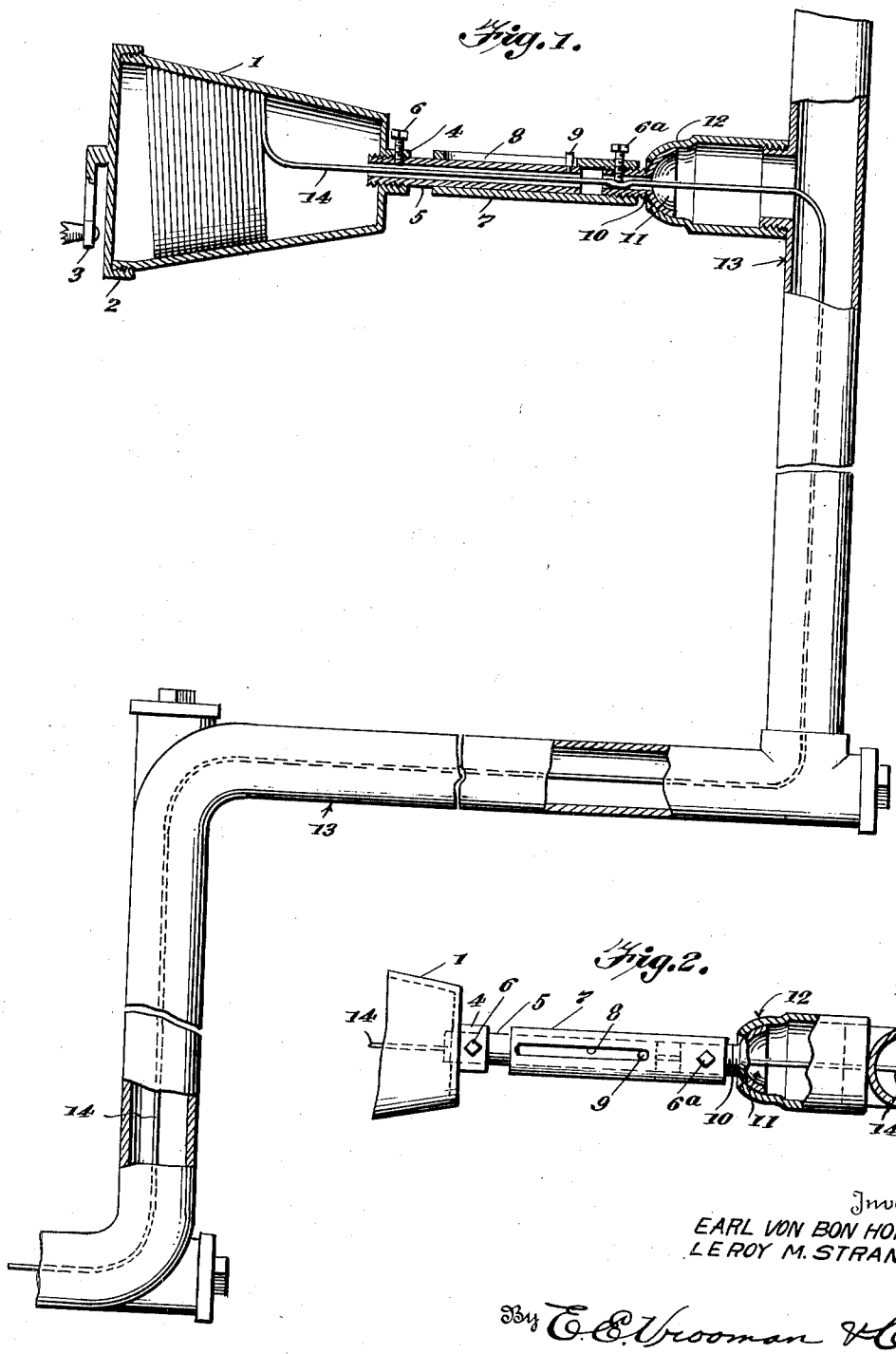


Fig. 2.

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Fig. 3.

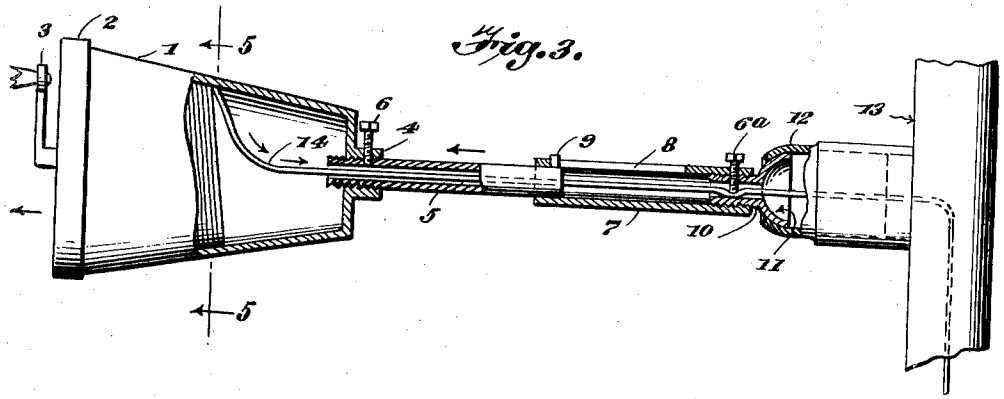


Fig. 4.

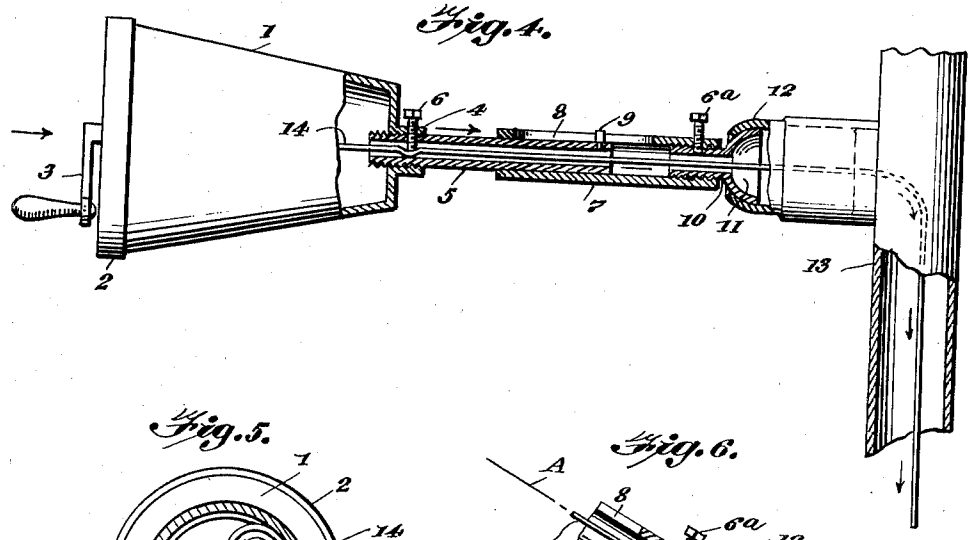


Fig. 5.

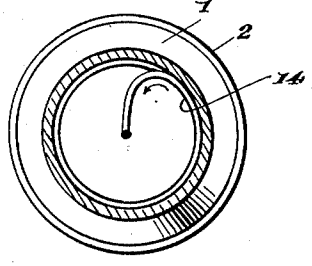
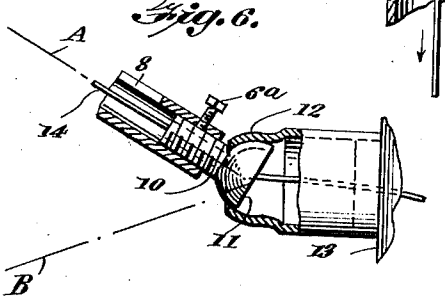


Fig. 6.



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UNITED STATES PATENT OFFICE

2,237,880

SANITARY DRAIN PIPE CLEANER

Earl Von Bon Horst and Le Roy M. Strang, San Clemente, Calif.

Application March 11, 1940, Serial No. 323,483

3 Claims. (Cl. 15—104.30)

This invention relates to a sanitary drain pipe cleaner.

An object of the invention is the provision of simple and efficient means for cleaning a drain pipe.

Another object of the invention is the construction of novel means for feeding a flexible element through the apparatus, either when the operator is starting to remove the obstruction in the drain pipe, or when he wishes to remove the flexible element from the drain pipe and store it in the container of the apparatus.

A still further object of the invention is the construction of an apparatus of the class described, in which there is provided means having a ratchet action, operating upon the flexible element, to eject it from or move it into the container of the apparatus.

With the foregoing and other objects in view, the invention comprises certain novel constructions, combinations, and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a longitudinal central sectional view of the apparatus, showing the same applied to a drain pipe.

Figure 2 is partly a top plan and partly a sectional view of the apparatus.

Figure 3 is a view partly in elevation and partly in longitudinal section, showing the apparatus in an extended position, while

Figure 4 is a similar view of the apparatus in partly a closed position.

Figure 5 is a sectional view taken on line 5—5, Figure 3 and looking in direction of the arrows.

Figure 6 is a fragmentary sectional view of the apparatus, illustrating how it can be operated at different angles.

Referring to the drawings, in which the preferred embodiment of the invention is shown, 1 designates a container on which is detachably mounted a cap 2; cap 2 is provided preferably with an integral handle 3. On the inner end of container 1 is an integral annular sleeve 4; this sleeve 4 is internally screw-threaded. A primary tube 5 is externally threaded on inner end and this end is threaded into annular sleeve 4. A thumb screw 6 is threaded through sleeve 4 and through a portion of the primary tube 5. This thumb screw 6 locks the primary tube 5 in engagement with the sleeve 4, and said thumb screw 6 performs a second important function, as will be hereinafter described.

The outer end of primary tube 5 is slidably mounted within the auxiliary tube 7. Auxiliary tube 7 is provided with a longitudinally-extended slot 8, in its upper portion, and in this slot 8 is a detachable pin 9; this pin 9 is mounted upon the primary tube 5. Pin 9 limits sliding movement of the primary tube 5 by engaging the ends of slot 8. The auxiliary tube 7 is screwed at its inner end upon the annular sleeve 10, which sleeve is an integral part of the swivel section 11. Swivel section 11 fits within the reducer 12. The reducer 12 is part of the waste-pipe or drain unit 13.

A second thumb screw 6a extends through the inner end of the auxiliary tube 7 and through a portion of annular sleeve 10, thereby detachably securing the auxiliary tube upon sleeve 10. Besides, said set screw 6a performs a second useful function, as will be hereinafter described.

A flexible sewer-cleaning element 14, such as a suitable wire, is coiled within container 1 and is fed through the tubes 5 and 7, and into the waste-pipe unit 13 for cleaning the pipe, or dislodging an obstruction therein.

The operation of the apparatus is as follows: The flexible element or wire 14 is coiled within the container or casing 1, and is threaded through tubes 5 and 7 and thence to the waste pipe. Referring to Figure 1, the set screw 6a is correctly shown clamping the flexible element. The operator draws outwardly upon the container 1, causing the apparatus to assume the position shown in Figure 3, thus drawing the flexible element 14 out of the container, then by causing set or thumb screw 6 to tightly clamp the element 14, and releasing screw 6a, so that it will not clamp the element 14, the operator can push inwardly upon casing 1, thereby causing the flexible element to be shoved down the waste pipe. Then, when the sliding tube 5 has assumed the position shown in Figure 1, the thumb screw 6a is again tightened upon the flexible element, and the action is repeated. When it is desired to remove the flexible element from the waste pipe, causing said element to be placed back in the container 1, the screw 6a is released off the flexible element, with the screw 6 tightly engaging said element, then the container 1 and tube 5 is drawn outwardly, Fig. 3, thereby drawing a portion of the flexible element out of the waste or down spout or pipe. Then screw 6 is released, as shown in Figure 3 and by forcing in on the casing 1, the flexible element is caused to enter the casing and be retained therein until the next occasion arises for using the apparatus. From

the foregoing, it will be seen that by this "ratchet action", the flexible element or wire is fed through the primary and auxiliary tubes, either for extending the flexible element into the waste pipe, or for the replacement of the flexible element into the container.

The flexible element or wire 14 can be rotated or twisted within the waste pipe by the operator turning the handle 3, whereby the casing and its tubes 5 and 7, as well as swivel section 11, rotate at the will of the operator. In other words, the whole apparatus can be revolved bodily, for efficiently working the flexible element or wire, to clean the waste pipe or drain pipe.

It is to be understood that with our apparatus the same can be worked at an angle, as shown in Figure 6; the various angles are shown by lines A and B in Figure 6. This adjustment is permitted by the swivel structure, including the swivel section 11 and the reducer 12.

Our apparatus is very sanitary, in that the hands of the operator do not come at any time in contact with the soiled flexible element or wire 14. By reason of the construction, it is of a safety nature in that the operator does not become infected, which often happens as a result of handling soiled pipe cleaners.

It is also to be understood that we use the term "tube" in this specification and claims, in a broad sense, meaning a pipe or any suitable hollow unit or member.

While we have described the preferred embodiment of our invention and illustrated same in accompanying drawings, certain changes or alterations may appear to one skilled in the art to which this invention relates, during the extensive manufacture of same, and we, therefore, reserve the right to make such changes or alterations as shall fairly fall within the scope of the appended claims.

What we claim is:

1. In an apparatus of the class described, the combination with a hollow unit, of a tube, said hollow unit and said tube being disposed in overlapping relation, a flexible element within said hollow unit and tube, a fastening member extending through a portion of said hollow unit and said tube and engaging at its inner end said flexible element, and said tube provided with means carrying a swivel unit.

2. In an apparatus of the class described, the combination of a container provided with a sleeve, a primary tube, said sleeve and said tube being disposed in overlapping relation, a fastening member extending through a portion of said sleeve, and said primary tube and into said primary tube, an auxiliary tube, said auxiliary tube and said primary tube being telescopically engaging, a swivel unit provided with a sleeve, said last-mentioned sleeve in overlapping engagement with said auxiliary tube, a fastening member extending through a portion of said auxiliary tube and said last-mentioned sleeve and into said sleeve, and both of said fastening means being adapted to selectively clamp a flexible pipe cleaning element disposed in said tubes.

3. In an apparatus of the class described, the combination of a container provided at its outer end with a detachable cap, said cap provided with a handle, said container provided on its inner end with an integral annular sleeve, a primary tube threaded at one end into said annular sleeve, a thumb screw extending through a portion of said annular sleeve and said primary tube and into said primary tube, an auxiliary tube slidably mounted on said primary tube, said auxiliary tube provided with a longitudinally extending slot, a pin in said slot and secured to said primary tube, a swivel section provided with an annular sleeve, said annular sleeve extending into one end of said auxiliary tube, and a set screw extending through a portion of said auxiliary tube and through a portion of said annular sleeve of the swivel section with the inner end of said set screw capable of clamping a flexible element in said sleeve, substantially as shown and described.

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