Oct. 17, 1939. J. F. WALZ ET AL 2,176,553

SANITARY SEWER CLEAN-OUT

Filed June 14, 1938

Fig. 1

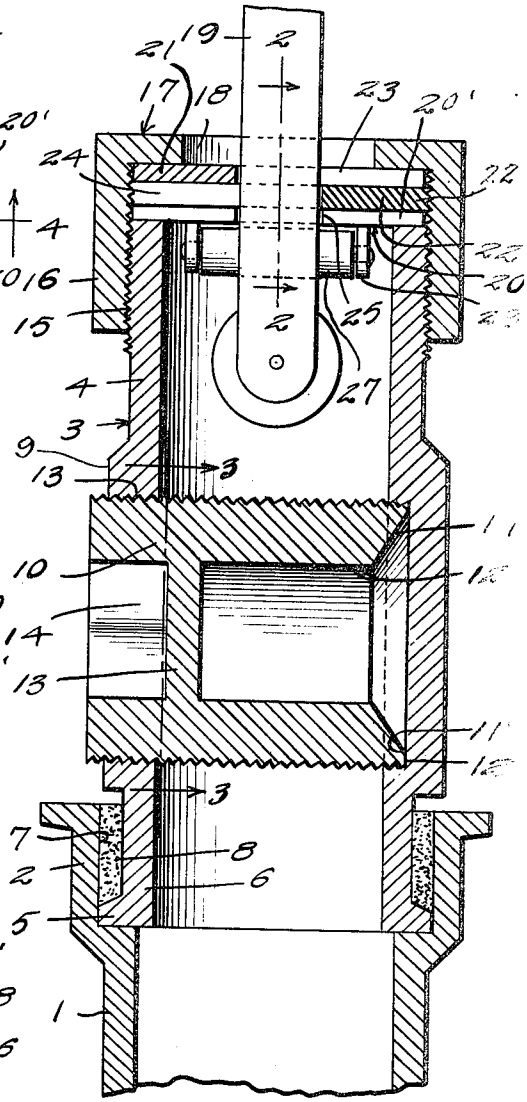


Fig. 2

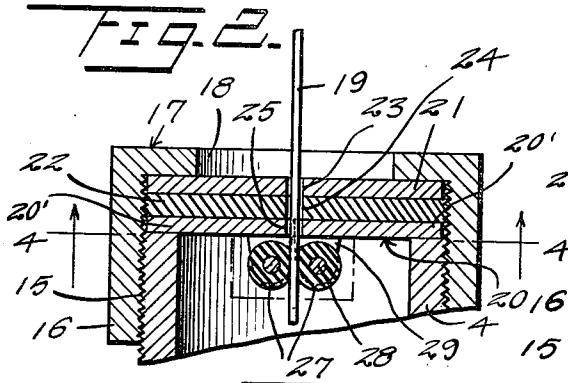


Fig. 3

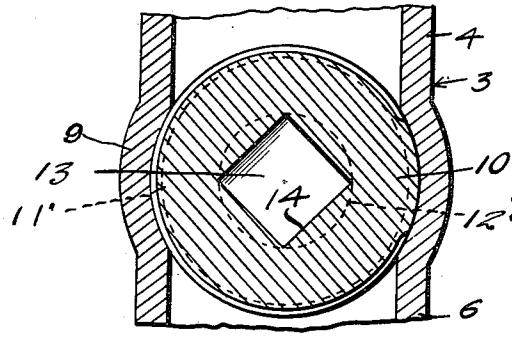
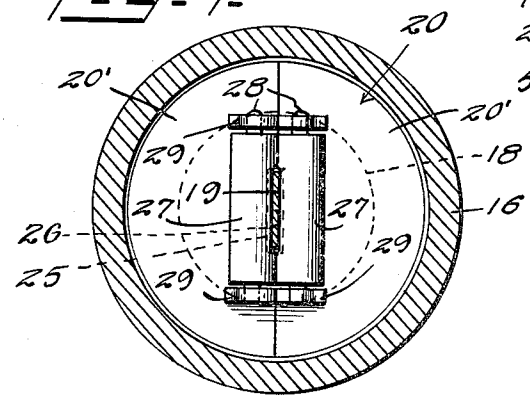


Fig. 4



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Patented Oct. 17, 1939

2,176,553

UNITED STATES PATENT OFFICE

2,176,553

SANITARY SEWER CLEAN-OUT

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Application June 14, 1938, Serial No. 213,697

3 Claims. (Cl. 15—104.30)

This invention relates to the art of plumbing and pertains particularly to an improved sewer clean-out device.

The present invention has for its primary object to provide an improved and novel device designed for connection with a sewer pipe to facilitate the ready cleaning out of such pipe by the use of the usual flexible tape and roller employed by plumbers, when such cleaning is necessary, and without interfering with the normal use of the plumbing system.

Another object of the invention is to provide an improved sewer pipe clean-out attachment which is designed to form a permanent part of the clean-out pipe or elbow of a sewer pipe and to be opened when necessary for the insertion of a flexible clean-out unit into the sewer pipe for the removal of obstructions.

Still another object of the invention is to provide in a device of the above described character, a closure means adapted by its construction to cooperate with a clean-out tape whereby the tape may be used for opening the pipe and the possibility of sewage escaping back through the clean-out device is avoided.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in longitudinal section of the device embodying the present invention.

Figure 2 is a sectional view on the line 2—2 of Figure 1.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is a sectional view on the line 4—4 of Figure 2.

Referring now more particularly to the drawing the numeral 1 generally designates a portion of a sewer pipe having the enlarged flange or lip 2 at its end, which pipe section may constitute one arm of an elbow which is connected in a regular drain or soil pipe of a sewerage system and is ordinarily kept closed or plugged until the necessity for cleaning out or opening the sewer pipe requires the removal of such plug for the insertion of a clean-out tape.

The device embodying the present invention is indicated as a whole by the numeral 3 and consists of a short cylindrical or tubular body 4, one end of which is adapted to be inserted into the flanged end 2 of the pipe section 1 in the manner illustrated. In the construction shown the inserted end of the body 4 is encircled by a lip 5 which is of an overall diameter equal to the interior diameter of the pipe flange 2 and the adjacent part of the body 4 is of reduced diameter, as indicated at 6, so that when the lip 5 is inserted into the flanged end of the pipe, an area 7 will be formed for the insertion of a packing 8 which will form a water tight joint. While a packed joint has been shown between the inserted end of the body 4 of the clean-out device and the flanged end of the sewer pipe, it is to be understood that the invention is not to be restricted to this specific construction as it is contemplated to make this joint screw threaded where desirable for inside or outside threaded connection.

Intermediate its ends the body 4 is suitably formed, as indicated at 9, to receive a threaded plug 10, the said intermediate part of the body being of sufficient heaviness or thickness to allow for the formation of heavy threads therein for engagement by the plug. This plug at its inner end, is cut away, as indicated at 11, to form the seating end face portion 11' for engagement with the shoulder seat 12 formed in the wall of the body 4 opposite the opening 13 into which the plug is extended. The central part of the plug is provided with the central circular bore 12' which extends partway longitudinally therethrough and is divided by the wall 13' from the longitudinally extending socket 14 which is formed in the plug from the outer end and which is designed to receive a socket wrench by which the turning of the plug is effected. This depressed seat area against which the end of the plug engages together with the bore 12' in the inner end of the plug serves to receive any material which may be trapped between the plug and the seat when the plug is threaded into place so that such material will not prevent or interfere with the proper seating of the plug and the tight closing of the body 4 thereby. While there has been illustrated a plug having a recess in its outer end which is formed to receive a socket wrench, it will be understood that the invention is not confined to this specific means of connecting a wrench with a plug, as it will be obvious that in place of the socket the outer end of the plug may be solid and have a head of polygonal

outline extending therefrom so that an ordinary jaw wrench may be used for gripping and turning the plug.

Upon its outer end, the body 4 is exteriorly screw threaded, as indicated at 15, for engagement by the interiorly threaded skirt portion 16 of a cap 17 and this cap is provided with the central opening 18 which is of sufficient size to have extended therethrough the roller unit which is carried upon the forward or advancing end of the clean-out tape which plumbers use in opening pipes and which is operated in the sewer pipe through the device embodying the present invention. Such a tape and roller is diagrammatically illustrated and generally designated by the numeral 19.

Secured by the cap 17 against the outer end of the hollow or tubular body 4 are two disks of metal which are indicated by the numerals 20 and 21, separated by a disk 22 of a resilient or compressible material such as rubber, leather or the like, and which operates as a packing disk or washer. The outer disk 21 is provided with a radial slot 23 and the intermediate disk 22 has a similar slot therein, which is indicated by the numeral 24. These disks have the clean-out tape 19 extended through their slots and as the disks are slipped onto the tape from opposite edges, it will be seen that an unslotted portion of one disk will extend across the end of the slot in the other disk so that the two disks together will substantially close the opening 18.

The disk 20, which is disposed against the end of the body 4, is divided into the two portions 20' and the meeting edges of these portions are recessed, as indicated at 25, to form together an opening or slot 26 through which the tape 19 may pass. Upon the inner side of each portion 20' of the disk 20 a roller 27 of soft rubber is supported by trunnions 28 engaged in spaced ears 29 and the peripheries of these rollers come together in the plane of the abutting or meeting edges of the disk sections 20'. By reason of the formation of the rollers 27 of resilient material, it will be readily seen that the tape may pass therebetween and these rollers operate to make easier the longitudinal movement of the tape through the clean-out device and the pipe into which the forward end of the tape is extended.

In small installations of the clean-out device, the two part disk 20 may be replaced by a disk of the same form as the one indicated by the numeral 21 so that the compressible or packing disk 22 will be between the two slotted disks of the form of the disk 21 instead of by a single slotted disk and a two part roller carrying disk.

In the use of the clean-out device, the outer end of the body 4 will normally be kept closed by a suitable solid washer (not shown) which replaces the slotted disks which are used when the device is to be opened to have a clean-out tape extended therethrough. At the same time the plug 10 is kept screwed in to the limit of its movement so as to effectively close the body 4 intermediate its ends. When the clean-out device is to be opened to be put into use, the cap 17 is taken off and there is substituted for the solid washer, which the cap has previously held against the end of the body 4, the slotted disks 20, 21 and 22, the clean-out tape having first been extended through the opening 18 and placed in the slots of the disks. The disks are then secured against the end of the body 4 by the cap 17 and the plug 10 is then unscrewed until it has opened the body 4 sufficiently to permit the roller at the advance end of the clean-out device to move past it and into the sewer pipe 1. The clean-out tape is then used in the usual manner to open the sewer pipe and the escape of sewage or other fluids from the pipe and the clean-out device will be prevented by the disks which the cap 17 secures in place.

After the clean-out operation is completed, the tape is withdrawn from the sewer pipe until the roller at the inner end thereof is past the plug 10 or, in other words, between the plug and the disks which the cap 17 secures to the device. The plug is then screwed into place to close the central part of the body 4. This will prevent the escape of sewage or gases when the cap 17 and the disks are removed for the complete removal of the tape and roller from the body 4. After the tape and roller have been taken out, the outer end of the body will be closed by the previously referred to solid disk which will be pressed into place and maintained secure by the flange portion of the cap 17, thus tightly closing the outer end of the body 4 to prevent the escape of fluids or gases.

While the washers 21 and 22 have been illustrated as being in one piece it will be understood that these washers may be made in halves similar to the washer 20 if desired.

We claim:

1. A clean-out adapted to be secured to an end of a sewer pipe, comprising a tubular body formed at one end for attachment to said sewer pipe end, a cap secured over the other end of the body and having a central opening through which a plumber's clean-out tape may be extended, a pair of metal disks secured over the said other end of the body by the cap, a compressible disk interposed between the metal disks, one of said metal disks being radially divided to form two separable parts and having a tape slot therethrough in the line of the division, the other metal disk and the said compressible disk having a radial tape slot extending through the periphery thereof, the radial slots of the metal and compressible disks being alined and oppositely directed and having their inner ends overlapping, and a soft rubber roller rotatably supported upon each half of the divided disk and paralleling the line of division, the said rollers being in contacting relation and adapted to have the said tape pass therebetween.

2. A clean-out adapted to be secured to an end of a sewer pipe, comprising a tubular body formed at one end for attachment to said sewer pipe end, a plate member adapted for disposition over the other end of the tubular body and having a slot for the extension therethrough of a plumber's clean-out tape, means for securing said plate to the said end of the tubular body, and a pair of soft rubber bodies of cylindrical form rotatably supported in contacting parallel relation upon the inner side of the plate with the plane of contact between the rollers parallel with and extending through said slot, the rollers being designed to have the said tape pass therebetween and longitudinally through the tubular body.

3. A clean-out adapted to be secured to an end of a sewer pipe, comprising a tubular body formed at one end for attachment to said sewer pipe end, a diametrically divided plate adapted to position over the other end of the tubular body, the abutting edges of the portions of the plate having coinciding recesses to form in the center of the plate a slot through which a

plumber's clean-out tape may be extended, means for securing said plate to the said end of the tubular body, a pair of ear members secured to the inner side of each half of the plate on a line paralleling the diametrical line of the plate half, a soft rubber roller member rotatably supported between each pair of ears, said roller members being in parallel abutting relation when the two halves of the plate are together, and adapted to have the said clean-out tape pass therebetween.

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