May 17, 1949. A. SILVERMAN 2,470,225

PLUMBER'S SEWER SNAKE APPARATUS

Filed April 3, 1948

Fig. 1

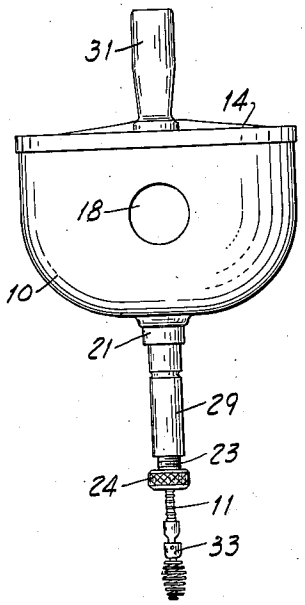


Fig. 3

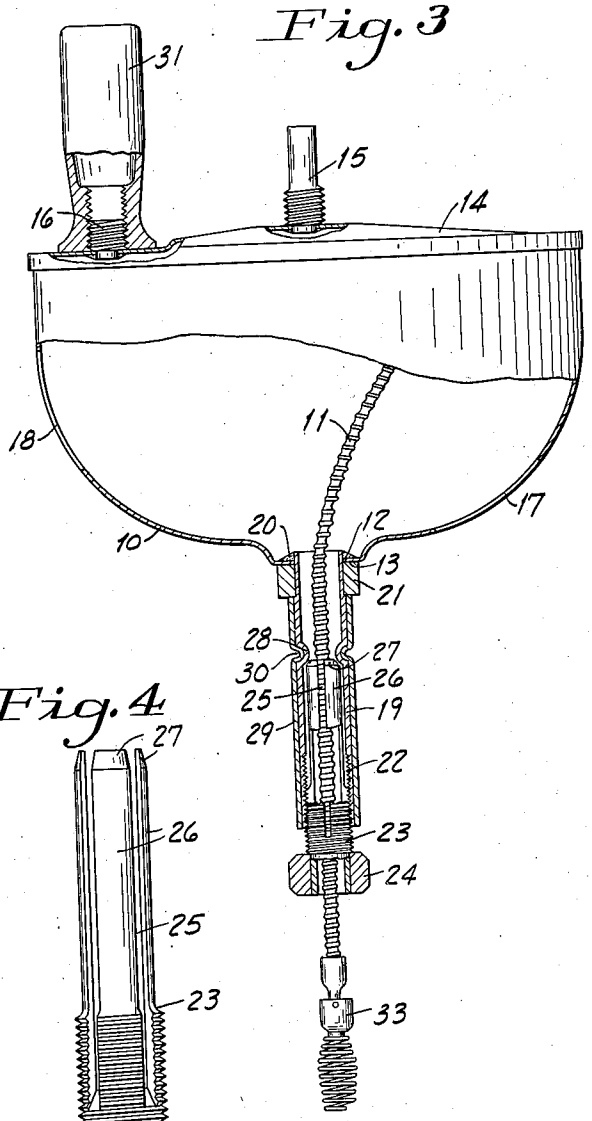


Fig. 2

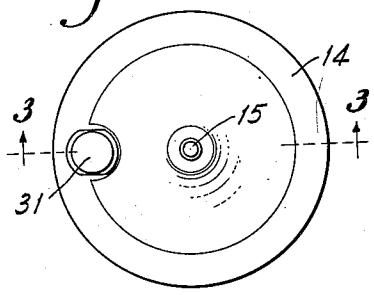
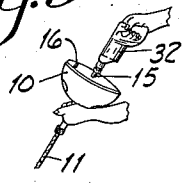


Fig. 4

Fig. 5



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PLUMBER'S SEWER SNAKE APPARATUS

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1 Claim. (Cl. 15—104.30)

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More particularly my present invention relates to the type of apparatus comprising what is known as a sewer snake and a shell for housing the same.

Among the objects which I have in view is the provision of new and improved means for rotating the snake in the sewer.

Another object in view is the provision of improved means for reversing the snake in the housing shell so that either end of the snake may be inserted into the sewer.

Another object in view is the provision of improved means for clamping the snake to the shell so that by turning the shell the snake may be rotated in the sewer.

Other objects will be apparent from the following description.

In the accompanying drawings, wherein is illustrated a practical embodiment of the invention,

Fig. 1 is a side elevation of the shell with the snake protruding from the neck of the shell and the handgrip mounted on the eccentrically located threaded stem of the shell;

Fig. 2 is a top plan view of the shell with the handgrip mounted eccentrically on the shell;

Fig. 3 is in part an elevation on enlarged scale and looking from the right in Fig. 1, and in part a vertical section taken in the plane of the dotted line 3—3 in Fig. 2;

Fig. 4 is an enlarged elevation of the clamp member.

Fig. 5 is an elevation showing an electric drill mechanism attached to the axial threaded stem of the shell to rotate the snake in the sewer.

Referring to the drawings, 10 indicates the conical shell in which the snake, indicated at 11, is stored and from which it is fed into the sewer to clean the latter. At its apex the shell is provided with a feed opening 12 surrounded by a flattened rim 13. The floor 14 which closes the large end or bottom of the shell is provided with two threaded studs 15 and 16, the stud 15 being axially secured to the floor 14 exteriorly thereof while the second stud 16 is eccentrically mounted on the shell.

The perimetral wall of the shell 10 is provided with the hand-openings 17 and 18, formed in the opposite sides of the shell, the opening 17 being adjacent the feed opening 12, while the opening 18 is more adjacent the floor 14.

A tubular throat member 19 has its inner end inserted in the feed opening 12 and is welded in place as at 20. 21 indicates a collar which has a drive-fit on the throat member 19 and fits closely against the flattened rim 13.

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The outer end portion of the throat member 19 is internally threaded as at 22. 23 indicates a tubular clamp member having its outer end provided with a knurled annular knob 24 fixed thereon. The outer portion of the clamp 23 is exteriorly threaded to engage the interior threaded portion 22 of the throat member 19. 25 indicates an annular series of equally spaced slots cut in the wall of the clamp member 23, forming a series of spaced tongues 26 which extend at a point intermediate the threaded portion of the clamp member 23 to the inner end thereof, the free extremities of the tongues being beveled inwardly, as shown at 27, to engage the curved surface of an annular internal shoulder in the throat member 19 provided by the inner wall of a circumferential groove 28 rolled or otherwise formed in the wall of the throat member 19. 29 indicates a sleeve rotatably surrounding the throat member and bearing at its inner end against the collar 21. The sleeve is preferably of brass or copper and is held against longitudinal movement on the throat member by having a groove 30 spun thereon and fitting in and engaging the groove 28. The sleeve 29 is held by the hand of the operator when the shell and snake are being rotated in the removal of a sewer obstruction.

31 indicates a handgrip having a tubular internally threaded base portion so that it may be selectively screwed onto the axial stud 15 or the eccentric stud 16. When the shell and snake are to be rotated by hand, the grip 31 is mounted on the eccentric stud 16 or the axial stud 15, whichever the operator prefers.

Where it is desired to use power to rotate the snake, an electric motor, such as that of an electric hand drill, indicated at 32 in Fig. 5, is used, its chuck being applied to the axial stud 15 for that purpose.

33 indicates the down head of the snake consisting of an enlarged boring portion connected by a universal joint to the snake. When the down head is to be inserted into the sewer the snake is loaded and coiled in the shell by feeding it inwardly through the throat 19, the clamp member 23 being retracted to permit the tongues to separate. When the down head approaches the outer end of the throat the clamp member is screwed in, causing the tongues to engage the inner wall of the groove and to be forced inwardly to clamp the snake against movement relative to the shell. When the snake is to be fed into the sewer the clamp is retracted to release the grip of the tongues on the snake and the latter is drawn out and fed into the sewer. When an obstruction

in the sewer is met, the clamp member is screwed up to tightly clamp the snake and the handgrip may be shifted to its eccentric position on the stud 16 and the shell is rotated by hand. If electric current is available the jaws of an electric drill may be clamped on the axial stud 15 and power applied to rotate the shell and the snake.

When it is desired to reverse the snake in the shell and present the other unenlarged end for insertion in the sewer, the snake is entirely withdrawn from the shell through the throat and its small end is inserted into the shell through the port 18 in one side of the wall of the shell, and the fingers of the operator are inserted through the second port 17 of the shell and the small end of the snake is pushed outwardly through the throat until but a small portion of the snake remains within the shell, which portion is then adjusted by the hand to the proper coiling position in the shell, and the snake is then fed back through the throat until it has coiled therein and a short portion of the snake protrudes from the shell, whereupon the clamp member is tightened in the throat to hold the snake against accidental movement. Then the clamp may be retracted and the snake projected from the shell and introduced into the sewer until it meets an obstruction; whereupon the clamp may be tightened to hold the snake against rotation relative to the shell and the shell rotated to rotate the snake in the sewer.

I claim:

In plumber's sewer snake apparatus, the combination with a flexible sewer snake of a shell in which the snake may be coiled, said shell having a floor closing one of its ends and a feed aperture in its wall through which the snake may be projected, a tubular neck member fixed to the shell

and axially aligned with the feed aperture, the outer portion of the bore of the neck member being internally threaded, a tubular clamp member exteriorly threaded and arranged to be screwed into the bore of the neck member and through which the snake may be projected, an annularly arranged set of gripping fingers formed at the inner end of the clamp member, a sleeve rotatably mounted on the neck member and arranged to be gripped by one hand of the operator while the shell is rotated to rotate the snake in the sewer, said sleeve being held against longitudinal movement relative to the neck member by nested annular depressions in the walls of the neck member and the sleeve, the inner surface of the depression in the wall of the neck member forming means engageable by the gripping fingers to clamp said fingers against the snake as the tubular clamp member is screwed into the bore of the neck.

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