

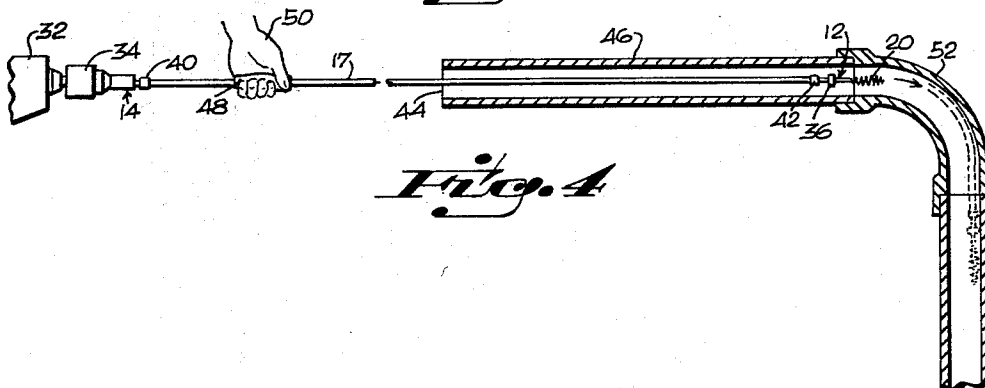
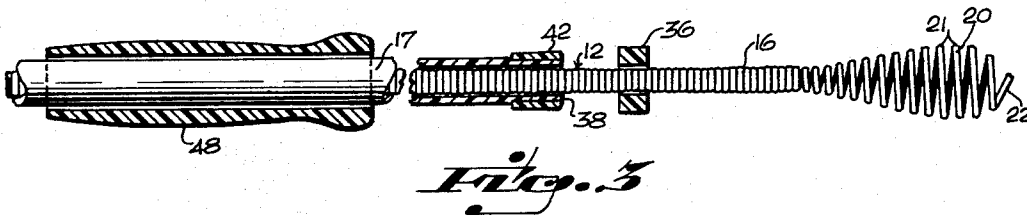
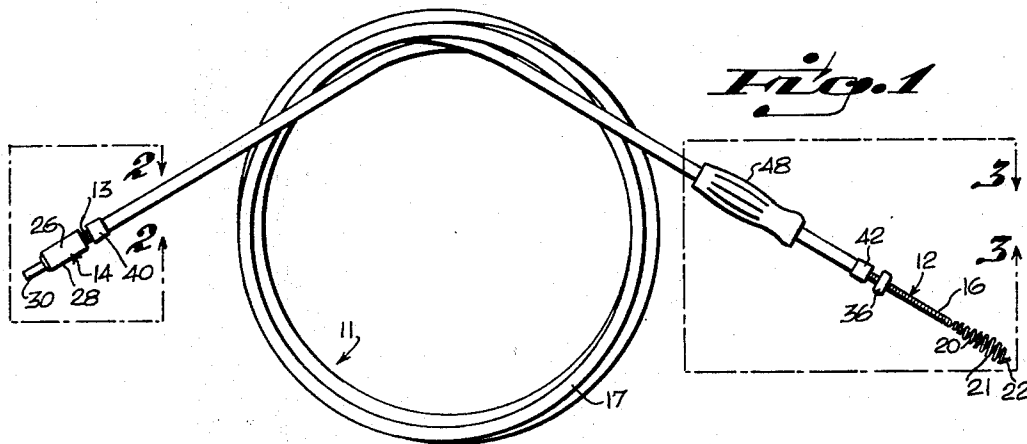
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PLUMBER'S SNAKE UNIT

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3,283,353

PLUMBER'S SNAKE UNIT

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1 Claim. (Cl. 15-104.3)

This invention relates to an improvement in a snake unit for use in dislodging material in clogged pipes.

In the past, numerous devices have been invented and utilized to clean out material lodged in a length of pipe and inaccessible except by means of an elongated member or snake insertable in the pipe. Ordinarily, a coiled length of spring steel has been fed into a clogged pipe by turning it at the entrance point. Generally, the snakes of the prior art have been made of tempered helical wound members provided with a crank or other means to turn it. However, on turning such snakes have often failed because of snarls in the member intermediate the length thereof and within the pipe, instead of transmitting the movement of rotation to the distal working end, or, in the case of a snake provided with an auger head, the auger end. The instant invention provides a snake which includes means to restrain or prohibit such snarling or failure intermediate the length of the snake and to transmit the rotational movement and forces to the working end of the snake.

It is, accordingly, an object of this invention to provide a snake unit for use by a plumber or other person which is adapted to be inserted into a pipe to be cleaned and which includes means to restrain snarling of the snake for the purpose of transmitting rotational forces to the working end of the snake.

It is another object of this invention to provide a snake unit for use in cleaning clogged pipes which includes a member adapted to be rotated in the pipe, which member is housed within a flexible tubular housing with the working end of the snake projecting outwardly therefrom within the pipe and with the other end of the member adapted to be driven by a driving means.

It is another object of this invention to provide a snake unit for use by a plumber, the intermediate portion of which snake is housed within a flexible tubular hose to prohibit snarling and which includes an adapter connected to one end of the rotational member which is adapted to be connected to a driving device.

It is another object of this invention to provide a snake unit of the type described hereinafter which includes a slidable hand grip on the surface of the said housing for use in manipulating and feeding the snake into a clogged pipe.

It is a general object of this invention to provide a snake unit for use by a person in cleaning a clogged pipe which is relatively inexpensive to manufacture, which is reinforced for durability of use and which is adapted for connection to a hand drill for utilization by a home owner in cleaning clogged pipelines.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings in which:

FIG. 1 is a side view of a preferred embodiment of a snake unit constructed in accordance with this invention;

FIG. 2 is a partial side elevation view, which has been partly broken away to describe the construction of an end of a preferred embodiment of the invention, as indicated by that portion of FIG. 1 with the arrowed line 2-2 therearound;

FIG. 3 is a partial side elevation view which has been partly broken away to describe the construction of the other end of the preferred embodiment of the snake unit,

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as indicated by that portion of FIG. 1 with the arrowed line 3-3 therearound; and

FIG. 4 is a side elevation view, partly in cross section and illustrating the operation of the preferred embodiment of the instant invention.

Referring more particularly to the drawings, wherein like reference characters designate like or corresponding parts throughout the different views, and referring particularly to FIG. 1, the numeral 11 generally designates a preferred embodiment of a snake unit constructed in accordance with this invention.

The numeral 12 indicates a snake proper or a member adapted to be rotated about its longitudinal axis within a pipe for transmitting rotational forces from an end 13 exterior of a clogged pipe, which is provided with an adapter 14, to the working end or auger end 16. Intermediate the ends 13 and 16, a flexible tubular hose housing 17 is provided. The snake or rotatable member 12 is preferably of helically coiled spring wire which has been properly tempered so as to be sufficiently stiff, yet of necessary flexibility for negotiating bends and turns in passing through a pipe. The hose housing 17 is preferably constituted of a flexible plastic material of a diameter less than that of a pipe to be unclogged to facilitate passage of it through the pipe with the member 12 within the housing. The member 12 is of a relatively uniform diameter intermediate its ends and the inside diameter of the housing is larger than the aforesaid diameter of the member to permit rotation of it within the housing 12 for a purpose to be explained.

Referring to FIG. 3, the end 16 preferably includes an auger head 20 which is a bulbous end section consisting of several turns of wire spaced apart somewhat and of gradually increasing diameter from the juncture of the auger end portion and the main length of the member 12 to a point 21 of greater diameter and then decreasing in diameter to a tip 22 of the auger. Preferably the auger is of integral construction with that of the main body of the member; however, various types of designs for working ends are satisfactory for use.

Referring to FIG. 2, the end 13 is receivable in an axial bore 24 of the adapter 14 in a driving connection such that the adapter is rotatable with the member 12. The exterior surface 26 of the adapter is enlarged on the end 28 thereof which is connected to the member 12 and, on the other end 30 thereof, is of reduced diameter for a driving connection to a hand tool 32 as indicated in FIG. 4. Thus, the member 12 is adapted to be driven by a hand drill of the type including a chuck 34 and which is common in many households. Referring to the drawing in general showing the preferred embodiment, it is seen that the member 12 is thus captivated for rotation within the housing by the adapter at one end and the auger head at the other. It has been found that a washer 36 of nylon or other durable plastic material intermediate the auger head and the end 38 of the hose housing provides increased operative effects and prohibits excessive wear of the hose end. Further, the ends 35 and 38 of the hose housing are provided with cups 40 and 42 respectively of nylon or other durable plastic material to reduce wear on the ends of the hose housing and to increase the life of the device.

The operation of the snake unit will best be understood on reference to FIG. 4. The reduced end of the adapter is connected in the chuck 34 of a hand tool 32 in the conventional manner. The working end or auger head is inserted into the open end 44 of a length of pipe 46. A slidable handlebar-type grip 48 is provided on the exterior of the housing which is grasped as indicated by the hand 50. When the drill is turned on to rotate the member 12, the auger head is fed into the pipe by pushing

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with one hand on the driving means or drill and manipulating the other hand 50 by sliding it along the exterior surface of the hose housing. The turn in the pipe 52 is readily negotiated by the snake unit since the hose as well as the member 12 are sufficiently flexible. It will be seen that the member 12 will turn about its longitudinal axis within the hose housing so that the heretofore common snarling and fouling will not occur and that the movement of rotation will be transmitted directly to the auger head.

While the instant invention has been shown and described herein in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein but is to be accorded the full scope of the claim so as to embrace any and all equivalent apparatus and articles.

What is claimed is:

A snake unit for use in combination with a portable hand drill chuck or the like comprising a flexible hose of a plastic material; a flexible snake member rotatably received in said hose and having end portions projecting beyond adjacent ends of said hose, said hose and snake member being axially displaceably mounted with respect

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to each other, said snake member comprising a tempered, flexible, helically coiled spring wire and including at one end portion auger head means; and an adapter secured to the other end portion of said snake member, said adapter terminating in a reduced portion for removable securement in the hand drill chuck, said flexible hose including cups of a synthetic material at the respective ends thereof for reducing wear at the ends of the hose from which said snake member end portions project and when said snake member is rotated within said hose.

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