July 30, 1929. F. E. WILT 1,722,512

WASTE PIPE CLEANER

Filed April 9, 1928

Fig. 1.

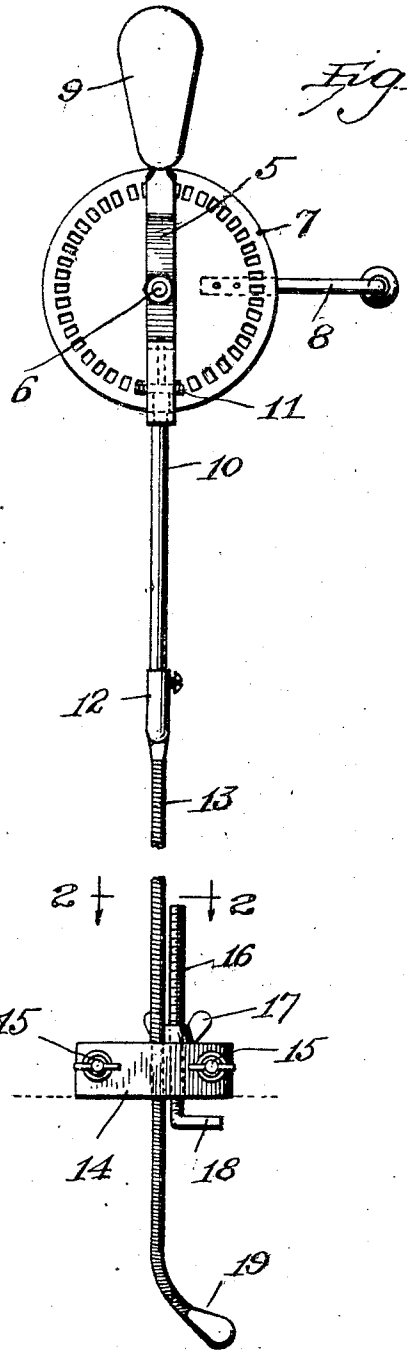
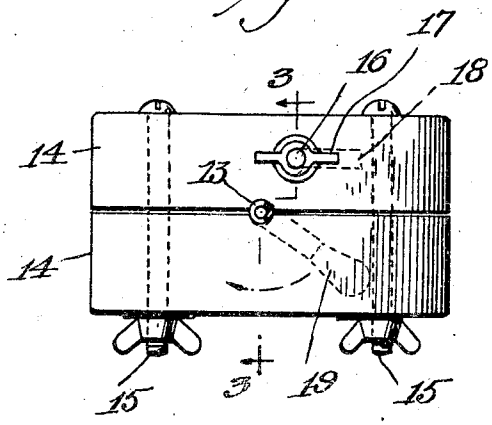


Fig. 2.



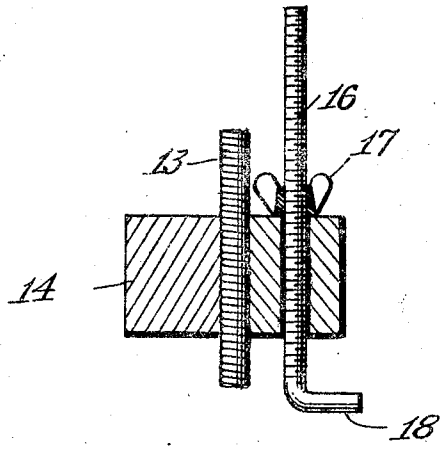


Fig. 3.

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Patented July 30, 1929. 1,722,512

UNITED STATES PATENT OFFICE.

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WASTE-PIPE CLEANER.

Application filed April 9, 1928. Serial No. 268,786.

The object of this invention is to provide a simple tool for use in unplugging the waste-pipe of sinks, basins, bath tubs, etc., as more fully hereinafter set forth.

In the drawing—

Fig. 1 is a side elevation of my device complete;

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2.

Referring to the drawing annexed by reference-characters, 5 designates a frame in which is journalled a shaft 6 carrying a driving-gear 7, this driving-gear being provided with a crank or handle 8 for manual rotation. The frame 5 is provided with a grasping-handle 9, and at the other end there is journalled a rigid shaft 10 carrying a pinion 11 meshing with the aforesaid driving-gear 7. By this mechanism, the operator, by grasping with one hand the handle 9, may rotate the shaft 10 by means of the crank-handle 8.

Attached to the lower end of the shaft 10, by means of a removable coupling-sleeve 12, is a long flexible shaft 13, which is desirably made of closely-wound steel wire, this flexible shaft being a well-known article on the market. This flexible shaft 13 threads through a clamp which consists of a pair of blocks 14 clamped together on said flexible shaft by means of a pair of clamp-screws 15. This clamp 14 forms virtually a nut, since by revolving the flexible shaft 13 the clamp-blocks ensure the advancement or retardation of the shaft 13, the coils of the flexible shaft serving as screw-threads.

To anchor the divided nut 14—14 to the waste-pipe opening, I provide a clamp consisting of a threaded bolt 16 carrying a thumb-nut 17 which clamps against the upper face of one of the blocks 14. The bolt 16 extends down through the clamp-blocks and is provided with a hook 18. By means of this bolt-clamp, the clamp-nut may be readily anchored over the waste-pipe opening. The hook 18 clamps against the annular edge of the waste-pipe opening or against one of the grating-bars thereof, so that the double clamp-nut 14—14 may thus be rigidly mounted in place over the waste opening.

At the lower end of the coil-spring shaft 13, there may be provided any suitable device for digging into the material packed or jammed in the trap or other part of the waste-pipe; in the present instance, I show the end of the shaft permanently bent laterally and provided with a knob 19, but it will be understood that any other digging device may be attached to the lower end of this shaft. The blocks 14 forming the clamp-nut may be made of wood or other sufficiently-soft material to form its own threads when clamped upon the spirally-coiled shaft 13. I have in practice used both wood and rubber, but any other material may be used. In this way, it is unnecessary to employ either a threaded shaft for advancing the cleaner-member or a previously- or specially-threaded nut, since, as stated, by the mere clamping of the members 14 upon the spirally-wound wire 13 the necessary threads are formed in the blocks 14 to ensure screw-thread action. The flexible-wire shaft 13 is made long enough—say, a yard or so—to enable the operator to stand at a suitable distance from the clamp-nut 14 and at the same time giving sufficient length to permit the shaft to enter a considerable distance into the waste-pipe. The shaft 13 has sufficient flexibility to enter and pass through the most tortuous passages and at the same time be capable of rotation through the medium of the driving mechanism.

In operating the device, it is desirable that the operator shall stand a sufficient distance from the waste opening to keep the entire portion of the shaft 13 which is above the clamp-nut straight, so that the same will not whip; and it will be observed that a great advantage of the device is that the operator may stand at any position with reference to the waste opening, thereby enabling this device to be used in locations that are difficult for a plumber to reach in the ordinary way with any other power-driven tool of which I am aware.

It will be understood that the spiral-wire shaft may be of different lengths and also various sizes, for use in different kinds of work, and it will be noted that the use of the removable coupling-sleeve 12 enables different flexible shafts to be attached to the same manual-power device.

In accordance with the provisions of the patent statutes, I have herein described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood

that the apparatus disclosed is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combinations and relations described, some of these may be altered and others omitted and some of the features of each modification may be embodied in the others without interfering with the more general results outlined, and the invention extends to such use.

What I claim as new is:

1. In a tool of the class described, a driving mechanism, a flexible coil-spring shaft, a clamp adapted to be clamped on said coil-spring shaft, the material of this clamp being sufficiently soft to form its own threads when thus clamped on the shaft, and means for anchoring this clamp over a waste opening.

2. In a tool of the class described, a driving mechanism, a coil-spring shaft connected to said driving mechanism and provided at its end with a digging or boring device, a two-part clamp-nut and means for clamping it on this coil-spring shaft, the faces which engage the shaft being of soft material to thereby form its own screw-threads when clamped on the shaft, and means for anchoring this two-part clamp over a waste opening.

3. A tool of the class described embodying a driving mechanism, a flexible coil-spring shaft, a clamp threaded interiorly and means for clamping it on said coil-spring shaft, and adjustable devices for anchoring this clamp over a waste opening.

4. A tool of the class described embodying a driving means, a flexible coil-spring shaft, a support, and adjustable means for anchoring this support over a waste opening, said flexible shaft extending through said support, means being provided on the support for engaging the threads of the shaft.

5. A tool of the class described embodying a driving means, a flexible coil-spring shaft, a support, and adjustable means for anchoring this support over a waste opening, said flexible shaft extending through said support, means being provided on the support for engaging the threads of the shaft, said anchoring means embodying a bolt extending through the support and having its lower end provided with a hook and its upper end provided with a thumb-nut.

6. A tool comprising a flexible coiled shaft, means for rotating the same, a support through which said shaft passes, and means on said support engaging said shaft whereby rotation of said shaft with respect thereto feeds said shaft through said support.

7. A tool comprising a flexible coiled shaft, the coils of which form threads, means for rotating the same, a support through which said shaft is threaded, and means whereby rotation of said shaft with respect thereto feeds said shaft through said support.

In testimony whereof I hereunto affix my signature.

FRANK E. WILT.