May 17, 1932. A. P. KJERULFF 1,858,509

PIPE AND SEWER ROD

Filed March 20, 1931

Fig. 1.

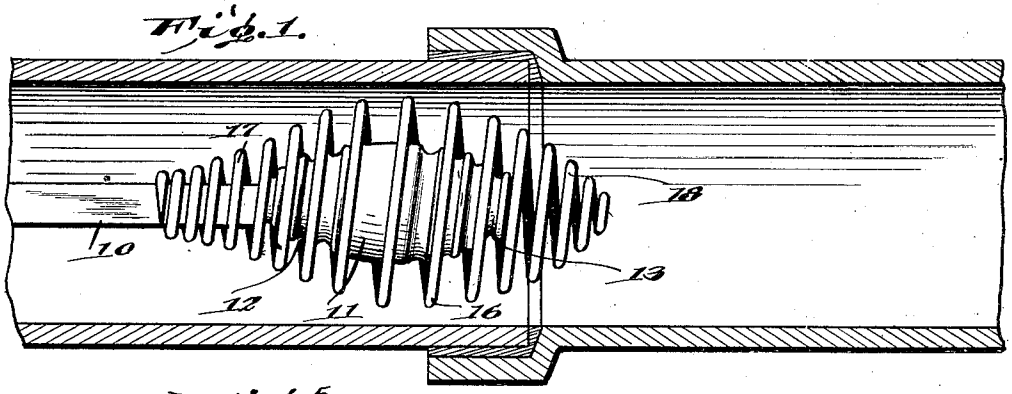


Fig. 5.

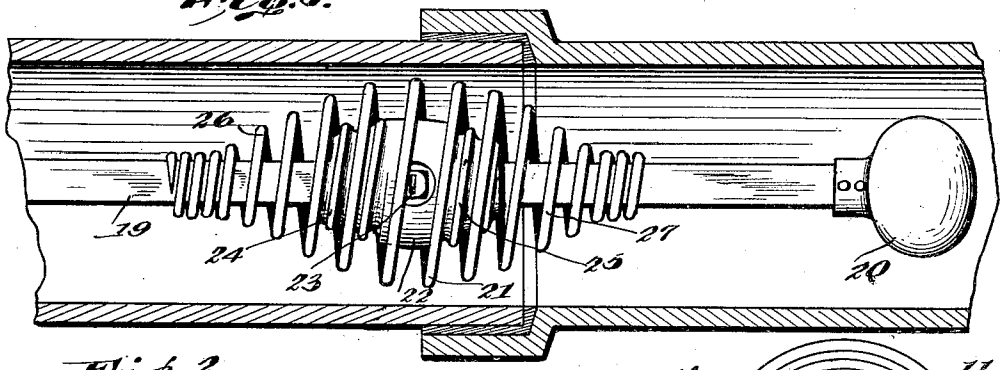


Fig. 2.

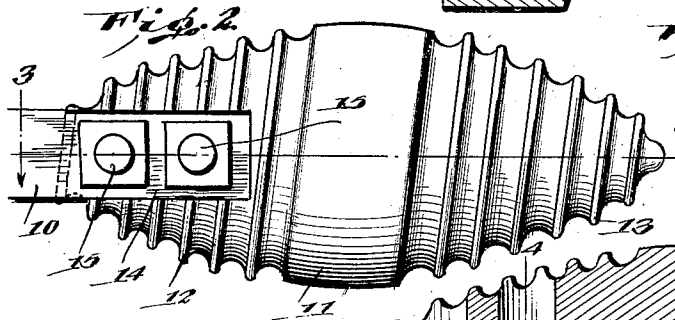
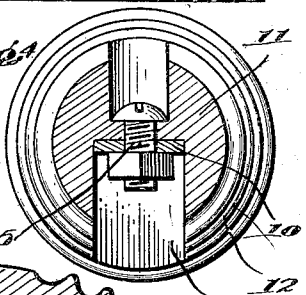


Fig. 4



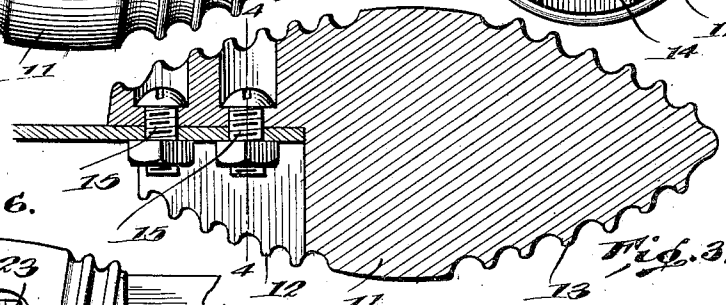


Fig. 3.

Fig. 6.

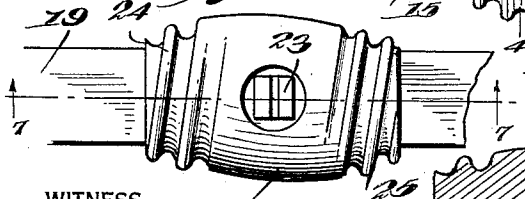
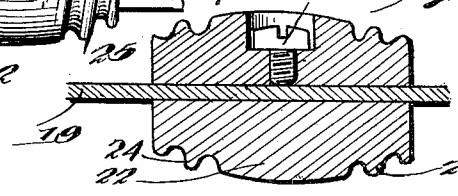


Fig. 7.



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UNITED STATES PATENT OFFICE

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PIPE AND SEWER ROD

Application filed March 20, 1931. Serial No. 524,107.

My invention relates to improvements in pipe and sewer rods used in cleaning and removing obstructions from pipes and sewers.

The primary object of the invention is to provide an improved form of head which will greatly increase the efficiency of the rod in breaking down and removing obstructions and one which will eliminate all possibility of the rod being caught in the pipe.

Another object is to provide a device which will permit of a hammering action in the removal of obstructions and one which will readily go around bends in pipes.

Other objects and advantages of the invention will become apparent during the course of the following detailed description when read in conjunction with the accompanying drawings which form a part of this specification and in which:

Figure 1 is a side elevation of a sewer rod embodying my invention, showing the same within a pipe;

Fig. 2 is a side elevation of the core member of Fig. 1;

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

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a side elevation of a modified form of the invention;

Fig. 6 is a side elevation of the core member thereof, and

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 6.

Referring now to the drawings in detail and more particularly to Figs. 1 to 4 inclusive, 10 indicates a sewer rod of conventional type. The rod 10 has a casting 11 secured to the forward end thereof. The casting 11 tapers from the center toward each end and the tapered ends are threaded as at 12 and 13 for a purpose to be presently described. The end of the casting to which the rod 10 is secured is provided with a recess 14 within which the end of the rod is seated. Suitable fastening elements such as nuts and bolts 15 serve to secure the casting to the rod.

A coiled spring member 16 is received over the casting 11. The spring member or head 16 is formed in the shape of a double spiral or helix, oppositely tapering from a central portion of greatest diameter to end portions of reduced diameter. In practice, the threaded ends 12 and 13 of the casting are adapted for threaded engagement with the tapered ends 17 and 18 respectively of the spring head, the convolutions of the spring ends and the threaded ends 12 and 13 being formed for interfitting engagement, as explained hereinafter.

The spring head 16 and casting 11 are of such relative size that the casting is capable of an appreciable amount of longitudinal movement within the spring before engagement with one of the ends thereof.

In operation, a push or pull upon the rod 10 engages the casting 11 with one end of the spring head 16, urging the same along the pipe; now if an obstinate obstruction is encountered, the spring will elongate under the force of the head 11 thereby slightly reducing its diameter and permitting a gradual breaking down of the obstruction and preventing injury to the pipe or jamming of the cleaner. Rotation of the rod 10 when an obstruction is met will result in threaded engagement of the core and head and further turning of the rod will permit the spring to be twisted to a smaller diameter and screwed through the obstruction without danger of injuring the pipe.

Also due to the longitudinal movement of the casting 11 within the spring head 16, a hammering action on said head may be produced by reciprocation of the rod 10.

In the modified form of the invention shown in Figs. 5 to 7, the sewer rod 19 is shown with a conventional round head 20 on the forward end thereof. In this instance the coiled spring member 21 is formed substantially the same as in the first form of the invention, except that the rod 19 passes entirely through the spring longitudinally thereof.

The casting or core 22 is slidably disposed on the rod 19, the rod passing longitudinally therethrough as clearly shown in Figs. 6 and 7. A suitable set screw 23 is provided for locking the core 22 in any desired position on the rod. The casting 22 also terminates in

tapered threaded ends 24 and 25 which engage the tapered ends 26 and 27 respectively of the spring member 21.

The operation of this form of the invention is substantially identical to that of the first form as set out above.

It will of course be understood that the spring members 16 and 21 are freely rotatable with respect to the rods and that the rods are freely movable longitudinally thereof, motion and force being transmitted through the castings or core members 11 and 22 respectively. It will also be understood that the springs and cores can be made in various diameters to fit various sizes of pipes to be cleaned.

Although a preferred embodiment of the invention has been shown and described, it will be understood that various changes in the details of construction may be made without departing from the spirit of the invention as defined by the appended claims.

I claim:

1. A pipe cleaning device comprising a flexible rod, a tapered coiled spring member slidably mounted thereon and means for transmitting motion from said rod to said spring member.

2. A pipe cleaning device comprising a flexible rod, a coil spring member slidably mounted thereon, said spring member being tapered from the center toward each end thereof, and means for transmitting motion from said rod to said spring member.

3. A pipe cleaning device comprising a flexible rod, a tapered coil spring member loosely carried thereon, and a tapered core member carried by said rod to be engaged within the tapered portion of said coil, said core member having threads thereon for engaging the convolutions of said spring.

4. A pipe cleaning device comprising a flexible rod, an oppositely tapered coil spring member loosely carried thereon, and an oppositely tapered and threaded core member carried by said rod and engageable within either tapered end of said coil.

5. A sewer rod having a tapered coil spring member slidably mounted on the forward end thereof and a core member carried by said end for engagement with said spring in forcing the same through a pipe.

6. A sewer rod having a tapered coil spring member loosely mounted on the forward end thereof and a tapered core member carried by said end to be engaged within the tapered portion of said spring.

7. A sewer rod having an oppositely tapered coil spring member loosely mounted on the forward end thereof and an oppositely tapered core element carried by said end and engageable within either tapered end of said spring.

8. A sewer rod having a tapered coil spring member loosely disposed thereon and a longitudinally adjustable core member carried by said rod and engageable with said spring.

9. A sewer rod having a tapered coil spring member loosely mounted thereon and a longitudinally adjustable tapered and threaded core member carried thereby and engageable within the tapered end of said spring.

10. A sewer rod having an oppositely tapered coiled spring member loosely mounted thereon and a longitudinally adjustable oppositely tapered and threaded core member carried by said rod and engageable within either tapered end of said spring.

ANTON P. KJERULFF.