June 15, 1926. 1,588,737

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PIPE CLEANER

Filed Dec. 9, 1924

Fig. 1.

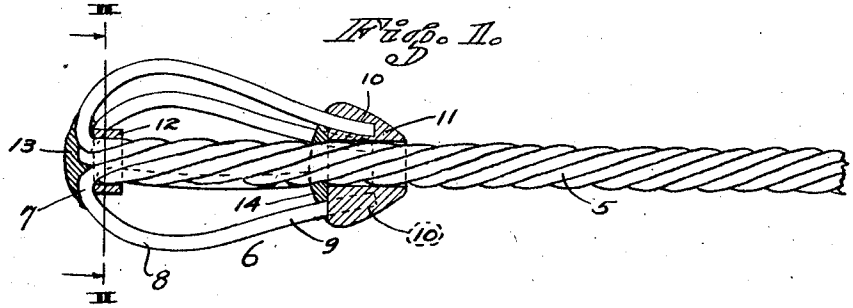


Fig. 2.

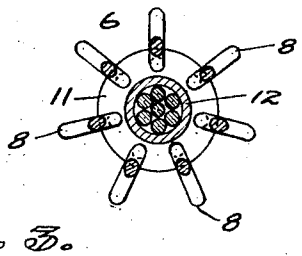
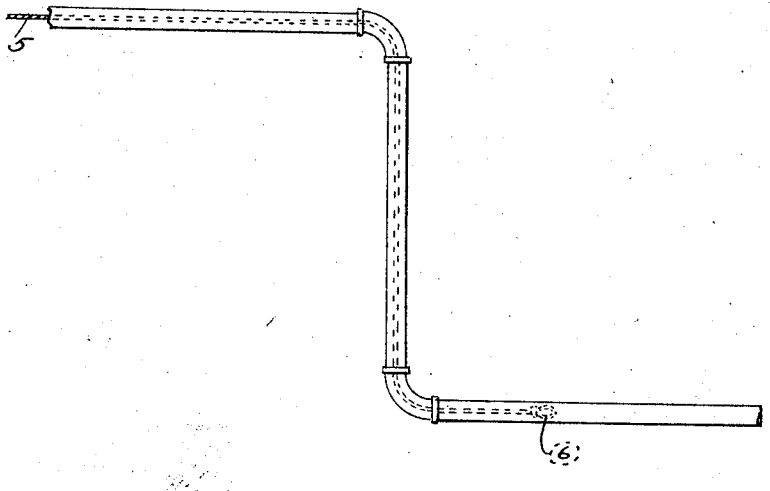


Fig. 3.



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PIPE CLEANER.

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This invention relates to pipe cleaners generally, and particularly to devices for use in cleaning soil and sewer pipes or the like, and has for its primary object the provision of means which may be slidably actuated, reciprocated and gyrated or suitably turned in the pipe so that its cleaning surface may be brought into effective clearing and scraping contact with the internal walls of the pipe.

Another object of the invention is to provide a device of this character consisting of a draft or actuating element which is flexible and preferably springy so as to adapt itself freely to the various connections and joints of the pipe.

Another object of the invention is to provide a device of this character which is positive of action and which will not interfere with the free passage of water, grease, sediment and other foreign matter through the pipe during the cleaning operation.

With the above and other objects in view which will appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangements of parts which will hereinafter be fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a single and preferred form of the invention, it being, however, understood that no limitations are necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

Figure 1 is a view in side elevation of the device with parts in section;

Figure 2 is a section taken on line II—II of Figure 1; and

Figure 3 is a conventional illustration of the invention showing its application during the cleaning operation.

In carrying the invention into practice I use the draft connection or actuating means 5 which preferably consists of a wire cable of suitable transverse diameter and of a length appropriate for the purpose. In other words, the length of the draft connection or actuating means is determined by the length of the pipe with which the tool is to be used. I describe that I prefer to use wire cable as a draft connection and that this may be of suitable gauge. By this I mean that wire cable has the desired tensile strength to permit the tool to be pushed and pulled through the pipe and to be gyrated therein or turned, so to speak. I also prefer to use wire cable on account of springiness of the material which causes the tool to adapt itself to the bends and curvatures of the pipe.

The cable 5 as shown in detail in Figure 1 comprises seven or more strands of wire twisted together in the usual manner common to cable construction. At one end these wires are turned on themselves to constitute a cage-like scraping element 6. This element is formed by curving the individual wires outward at 7 in a direction substantially radial to the axis of the cable, then curving or bulging the wires outward and inward as at 8 and terminally extending their shanks 9 to accommodate themselves in receiving sockets 10 of a cone-shaped disc 11. Before these wire terminals are curved as above suggested, I arrange a collar 12 on the cable and the initial bending at 7 is against the forward edge of this collar. On the outside of the bends 7 I then cap these bends by solder or the like 13. This gives rigidity and firmness to the bands 7 so as to make them capable of resisting strains and pressures that are put against the sides of the cage when the latter is moved in the pipe.

In order that the inner terminals or shanks 9 may be correspondingly held rigidly against the disk 11, I place solder 14 around these terminals and apply same to the forward face of said disk as shown in Figure 1.

The scraping tool formed as described with the prominent bulged portions 8 and the inwardly merging terminals 9 give to the cage substantially the shape of a pear. In using the tool the cage end is first inserted in the pipe and projected thereinto until the clogging obstruction is met. The shank 5 is then preferably moved back and forth and turned or gyrated so that the prominent bulges 8 of the cage act in the capacity of scrapers that engage against the inner walls of the pipe, cutting away the incrustation of sediment, foreign matter, alkali accumulations, etc.

By constructing the scraper of cage form, the pipe is in no way clogged during the cleaning operation, and water and matter is free to clearly pass therethrough. As stated, the disc 11 is cone-shaped, the restricted end facing inwardly with respect to the shank 5. This is preferred in order that the cone will

clear itself of any obstructions, such as the bends or joints within the pipe.

I claim:

1. A tool of the class described formed of a single length of wire cable, the strands at one end portion of which are bent outwardly and rearwardly on outwardly and inwardly curved lines so as to dispose themselves as a substantially pear-shaped cage around the body of the cable, a disk surrounding the cable and provided with a series of sockets in which the free ends of the strands are disposed.

2. A tool of the class described formed of a single length of wire cable, the strands at one end portion of which are bent outwardly and rearwardly on outwardly and inwardly curved lines so as to dispose themselves as a substantially pear-shaped cage around the body of the cable, a disk surrounding the cable and provided with a series of sockets in which the free ends of the strands are disposed, and a collar surrounding the cable and secured at the point of outward bending of the strands.

3. A tool of the class described formed of a single length of wire cable, the strands at one end portion of which are bent outwardly and rearwardly on outwardly and inwardly curved lines so as to dispose themselves as a substantially pear-shaped cage around the body of the cable, a disk surrounding the cable and provided with a series of sockets in which the free ends of the strands are disposed, a collar surrounding the cable and secured at the point of outward bending of the strands, and means secured to the strands at their points of outward bending beyond the collar and thereby fixedly uniting the strands one to the other.

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