L. A. CORNELIUS.

TOOL FOR REMOVING OBSTRUCTIONS IN PIPES.

APPLICATION FILED NOV. 5, 1910.

984,473. Patented Feb. 14, 1911.

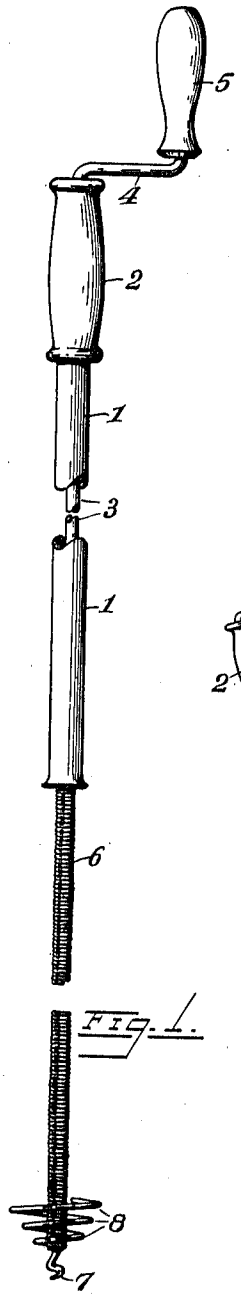

Fig. 1.

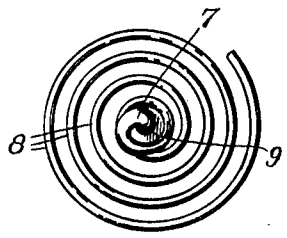

Fig. 3.

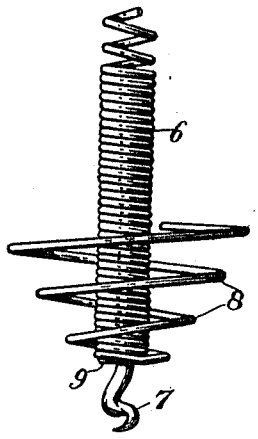

Fig. 4.

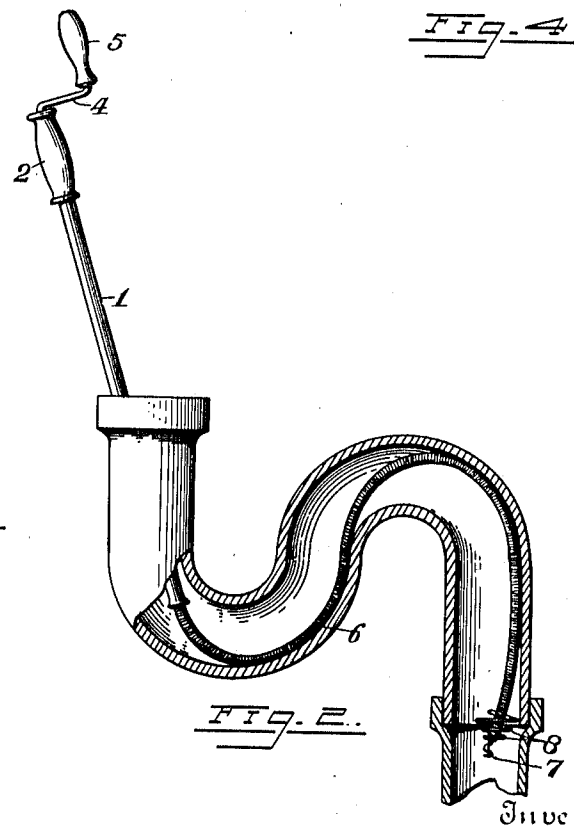

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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TOOL FOR REMOVING OBSTRUCTIONS IN PIPES.

984,473. Specification of Letters Patent. Patented Feb. 14, 1911.

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To all whom it may concern:

Be it known that I, LOUIS A. CORNELIUS, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Tools for Removing Obstructions from Pipes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tools for removing obstructions from pipes, and more particularly from such pipes as soil pipes and the like, and its object is to provide the same with various new and useful features hereinafter more fully described and particularly pointed out in the claims.

My invention consists essentially of a tube of any convenient length provided with a handle for holding and adjusting the same in place for use, a rod rotative in the tube projecting outside the handle and provided with a crank at one end, and also having attached at the other end a flexible shaft of suitable length terminating in a conical coil surrounding the same to engage the inner surface of the pipe and guide the shaft therein with the inner end clear of the wall of the pipe, and a cork screw like terminal projecting from the end of the shaft to engage and enter any obstruction that may be found in the pipe and withdraw the same therefrom, as will more fully appear by reference to the accompanying drawing, in which:

Figure 1 is an elevation of a device embodying my invention with parts broken away to shorten the same; Fig. 2 the same shown on a reduced scale as it appears when used in an S-trap of a soil pipe; Fig. 3 an enlarged end view of the lower end of the device; and Fig. 4 a side elevation of the same.

Like numbers refer to like parts in all of the figures.

1 represents a tube of any convenient proportions, preferably provided with a handle 2 at one end for adjusting and holding the same when in use.

3 is a rod in the axis of the tube, extending outside the same at the upper end and provided with a crank 4 and handle 5 for rotating the same within the tube. Attached to this rod 3 is any convenient length of flexible shafting 6, which will bend freely to follow any curved passage or pipe, such as the trap of a soil pipe or drain pipe. In the other end of this flexible shaft (which is preferably made of a close coil of spring wire) is inserted a plug 9 in which is fixed a cork screw shaped instrument 7 adapted to penetrate and retain thereon any obstruction with which it may be engaged whenever it is rotated by means of the crank 4 and the connecting parts. To guide this flexible shaft and prevent contact of the end thereof with the walls of pipe in which it may be inserted, the end of the coil of wire forming the flexible shaft 6 is extended spirally and conically backward outside the same as at 8, forming a truncated conical spiral coil with its small end integral with the end of the shaft 6, and its larger end surrounding the same and spaced apart therefrom. This coil 8 will operate to guide the end of the shaft 6 axially within a tube or pipe and will yield radially to conform to different internal diameters of pipes, and thus facilitate inserting the device in a pipe until it reaches the obstruction therein, whereupon by turning the crank 4, the parts connected thereto will be rotated and the cork screw shaped implement 7 will penetrate the obstruction and retain the same, whereupon by withdrawing the device, the obstruction will be withdrawn from the pipe.

What I claim is:—

1. A tool for removing obstructions from pipes, comprising a flexible shaft consisting of a close coil of spring wire, a truncated conical guide member consisting of an integral continuation of said wire surrounding the end of said shaft and spaced apart therefrom, a cork screw shaped member attached to the end of the shaft, and means for rotating the shaft.

2. A tool for removing obstructions from pipes, consisting of a tube having a handle at one end, a rod in the tube and projecting through the handle, a crank on the rod, a flexible shaft consisting of a close coil of spring wire attached to the rod at one end,

a guide coil at the other end of the shaft consisting of an integral truncated conical coil of said wire spaced apart from the shaft at the larger end and surrounding the same, a plug fixed in the connected ends of the coils, and a cork screw fixed in the plug and projecting therefrom.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS A. CORNELIUS.

Witnesses:
WALTER H. BROOKS,
PALMER A. JONES.