

April 25, 1967

R. A. KRENN

3,315,280

DRAIN OPENING DEVICE

Filed Dec. 21, 1964

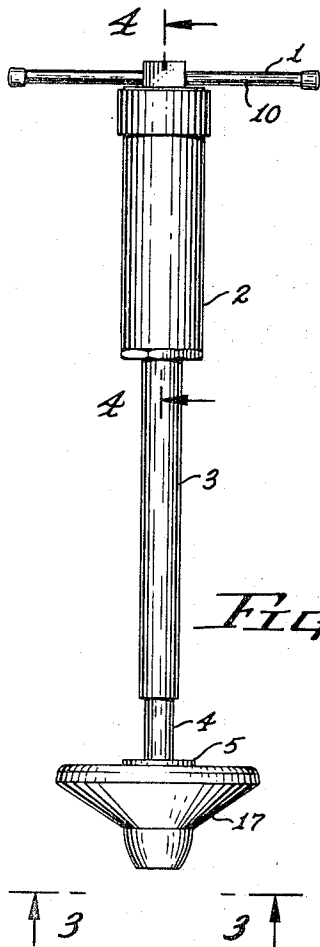


FIG. 1

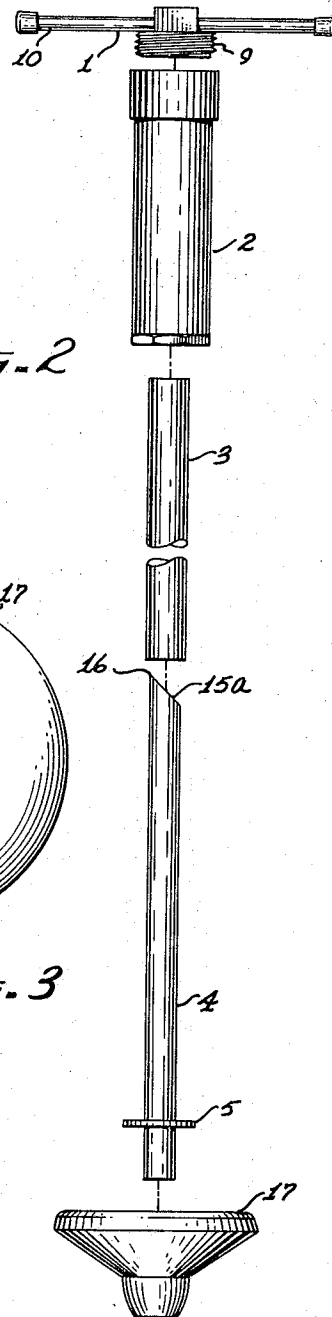


FIG. 2

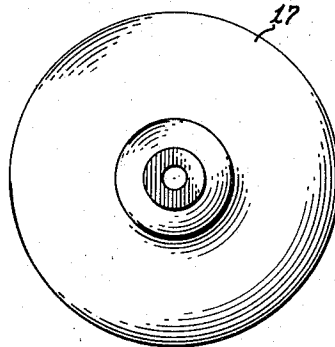


FIG. 3

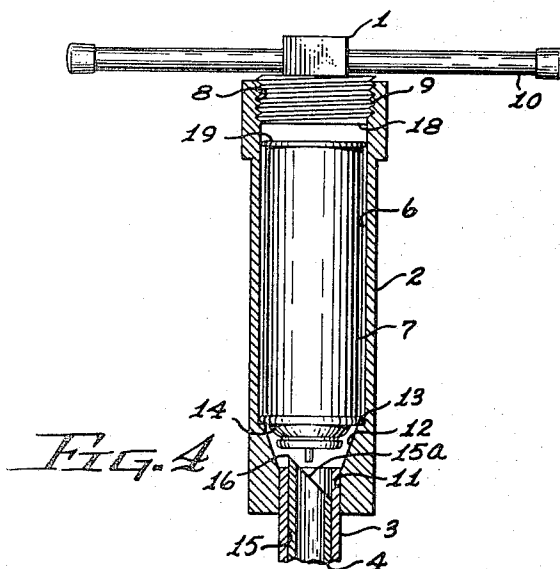


FIG. 4

INVENTOR.
ROBERT A. KRENN
BY
Willard L. Green
ATTORNEY

1

3,315,280

DRAIN OPENING DEVICE

Robert A. Krenn, 4242 N. 11th St.,
Phoenix, Ariz. 85014

Filed Dec. 21, 1964, Ser. No. 419,728
2 Claims. (Cl. 4-255)

This invention pertains to improvements in pipe clean-out tools for plumbers and is particularly directed to a drain opening device.

One of the objects of this invention is to provide a highly efficient and fast operating drain opening device for use in opening stopped up drains and sewer pipes.

Still another object of this invention is to provide a tool providing a clean and rapid way to open a stopped drain with the use of an aerosol power container without incurring the expense and delay of calling in outside help for the operation.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

FIG. 1 is a side elevation of the drain opening device incorporating the features of this invention.

FIG. 2 is an exploded view of the apparatus shown in FIG. 1.

FIG. 3 is a bottom view of the apparatus indicated by the line 3-3 in FIG. 1.

FIG. 4 is an enlarged fragmentary view on the line 4-4 of FIG. 1.

As an example of one embodiment of this invention, there is shown a drain opening device comprising a cylinder 2 having a bore 6 arranged to contain an aerosol container 7. The upper end of the bore 6 is provided with a suitable threaded portion 8 to receive the mating threaded portion 9 on the cap 1 to which is fixed the operating cross handle 10.

The lower end of the cylinder 2 has a reduced bore 11 in which is suitably rigidly fixed the guide tube 3, the upper portion of the bore 11 having a sloping bore 12 expanding up to the size of the bore 6 to provide a support surface at the point 13 for the lower end 14 of the aerosol container 7 to initially hold the container in operative position.

A piercing tube 4 is telescopically slidable in the bore 15 of the guide tube 3 and has an angularly disposed upper end 15 forming a cutting and piercing point 16. The lower end of the piercing tube 4 is provided with a barrel insert flange 5 to receive and support a sponge rubber head 17 arranged to be sealingly inserted in the end of the clogged pipe to be opened.

In operation: The aerosol container 7 is placed in the cylinder 2 and the cap 1 screwed in place in the threads 8 so that its lower face 18 provides an abutment surface for the upper end 19 of the aerosol container 7, it being noted that the surface 18 does not have to be screwed down tight against the upper end 19 of the container, the support point 13 merely serving to initially position the container in the cylinder so that any length of container may be used in the device. The sponge rubber head 17 is then placed in the opening of the pipe to be cleaned out and while grasping the cross handle 10 the handle and

2

cylinder 2 are rapidly and instantaneously pushed downwardly toward the pipe opening causing the piercing tube to move relatively telescopically up into the guide tube 3 so that the piercing point enters the lower end of the aerosol container allowing the piercing tube to completely enter the aerosol container so as to suddenly and instantly completely empty the pressure in the container 7 thus delivering a surge of violent gas pressure to the pipe opening which blows out the obstructing material therein. Any conventional aerosol container may be utilized in the perforating procedure above since the sealing action between the hole in the end of the container and the outside diameter of the piercing tube is sufficient under the very high volume and instantaneous evacuation of the container of the device as to preclude any significant gas leak between the container and the piercing tube 4.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commercial adaptation as fall within the scope of the appended claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters patent is:

What I claim is:

1. A drain opening device comprising in combination:
(A) a cylinder having a bore for receiving an aerosol container,

(B) a demountable cap on one end of said cylinder to allow insertion and retention of said aerosol container in perforating position in said cylinder,

(C) a piercing tube,

(D) a pipe opening engaging head on the outer end of said piercing tube,

(E) means for mounting said piercing tube on the other end of said cylinder for relative axial movement of said tube and cylinder,

(F) and a piercing point on the inner end of said piercing tube arranged to engage and pierce an end of said aerosol container in said cylinder when said cylinder is moved toward said pipe opening engaging head of said piercing tube.

2. In a drain opening device as set forth in claim 1 wherein said means for mounting said piercing tube on said cylinder includes:

(G) a guide tube fixed to the opposite end of said cylinder from said cap having a bore telescopically receiving said piercing tube so that pressure on said cylinder in the direction of said pipe engaging head causes said piercing tube to perforate and enter completely into the interior of said aerosol container.

References Cited by the Examiner

UNITED STATES PATENTS

2,999,264 9/1961 Stearns ----- 4-255 X
3,138,803 6/1964 Caplan et al. ----- 4-255

60 LAVERNE D. GEIGER, Primary Examiner.

H. GROSS, Assistant Examiner.