A. A. BROOKS.

GAS PIPE CLEANER.

APPLICATION FILED FEB. 18, 1920.

1,435,277. Patented Nov. 14, 1922.

FIG. 1

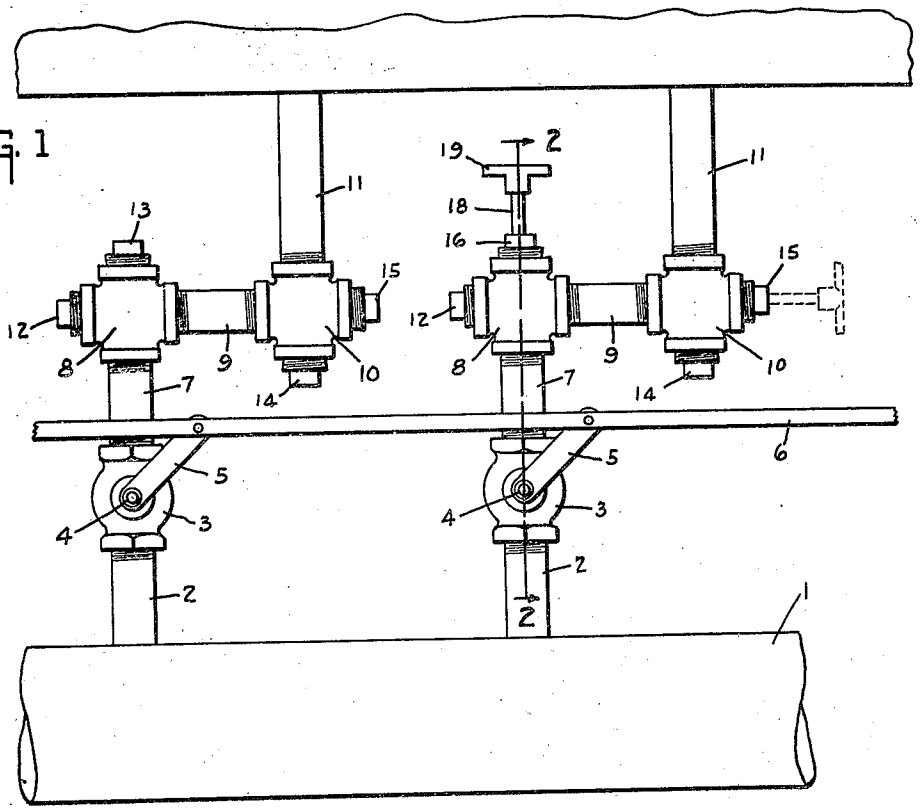
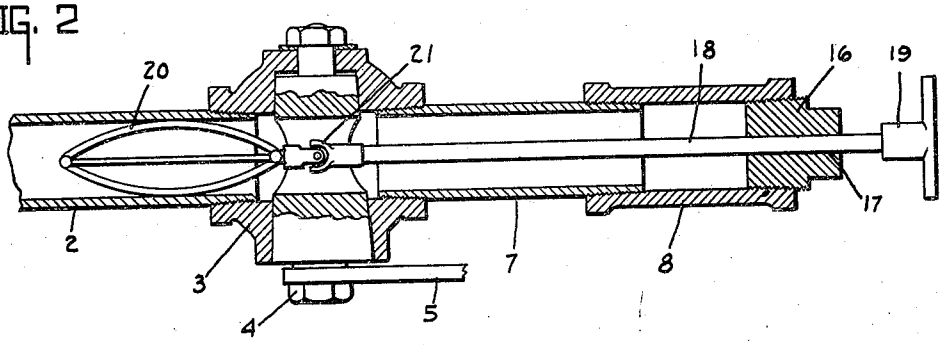


FIG. 2



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UNITED STATES PATENT OFFICE.

ALBERT A. BROOKS, OF INDIANAPOLIS, INDIANA.

GAS-PIPE CLEANER.

Application filed February 18, 1920. Serial No. 359,597.

To all whom it may concern:

Be it known that I, ALBERT A. BROOKS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Gas-Pipe Cleaners, of which the following is a specification.

This invention relates to cleaners, more especially to one adapted to be used to clean gas pipes, particularly those used in connection with gas heated ovens or retorts which are quickly clogged by accumulations of tar or other impurities in the gas, rendering it necessary to clean such pipes as many as three times a day when the retorts are operated continuously. In such cases gas mains running along the benches of retorts are usually provided, the mains having a series of valved branch pipes carrying burners extending in proximity to the retorts.

Formerly when it was desired to clean the pipes, especially the pipe carrying the valve, it was necessary to insert a swab, opening the valve and holding the hand on the end of the pipe to prevent escape of gas during the cleaning operation. This was extremely dangerous owing to the closeness of the pipes to the hot retorts (they being about eight inches from the bottom of the retorts) and the liability to the gas catching fire and burning the attendant, or otherwise injuring him owing to the escape of gas, it being among the objects of this invention to produce a cleaning device which is simple, reliable, and safe to use.

In carrying the objects of my invention into effect, I provide gas pipes carrying the usual extensions thereon and closed by ordinary plugs. I include an especially constructed swab member, which is preferably jointed, to allow of ready use in confined places. I further provide a plug having a hole therein in which the stem of the swab is closely fitted. A perforated plug is inserted in the pipes in cleaning them, replacing the ordinary solid plug, so that the swab may be manipulated in perfect safety for cleaning the valve and lower portion of the extension when the gas is turned on.

Referring to the accompanying drawings forming a part thereof and in which similar reference characters denote similar parts,

Figure 1, illustrates a side view of a gas main showing two of the series of extensions to which my invention is applied, and

Figure 2, a cross section on line 2—2 of Figure 1, some parts being shown in elevation.

The gas main 1 has thereon, preferably equally spaced, a series of vertical extensions or main right pipes 2 there being probably forty or more such extensions for each gas main. The extensions 2 are fitted with valves 3 having valve stems 4 upon which are operating handles 5 detachably secured to a rod 6 so as to allow of an individual valve to be disconnected in cleaning. The rod 6 is secured to the entire series of operating handles 5 and is operated automatically by clock work to reverse the valves.

For each set of retorts there is provided two parallel gas mains with their extensions, valves, rods, etc., so that the heating of the retorts is conducted through one main for a definite length of time, about one-half hour, after which the clock automatically closes that set of valves by pushing rod 6 at the same time opening the set of valves on the other main to begin the heating from the other side of the retorts.

From the top of valve 3 a short extension 7 extends upwardly, a cross 8 being secured to its upper portion; a horizontal cross pipe 9 is secured in one of the openings of cross 8 and connects with another cross 10 from the top of which extends a burner pipe 11 extending into the heating space between retorts. The top of cross 8 is generally about eight inches from the bottom of the retorts. Plugs 12, 13, 14 and 15 of solid construction are provided to close the opening in crosses 8 and 10. In cleaning the pipes the various plugs are removed and a swab inserted in such directions as to clean pipes 2, 7, 9 and 11, it being comparatively simple to clean pipes 7, 9 and 11, but difficult to clean pipe 2 and valve 3 on account of the escape of gas which would naturally occur upon opening valve 3.

To prevent this I provide a perforated plug 16 which is fitted into the upper end of cross 8 and has a central opening 17 in which is closely fitted the stem or cable 18 of the swab, a handle 19 being provided at the upper end. Any suitable swab may be used. I preferably provide a swab of the type shown in the drawings where the swab member 20 is secured on the inner end there

being a universal joint 21 between the swab and stem. This swab is preferably formed by fastening at the ends a plurality of metallic members bowed to permit a small amount of distortion upon entering the pipe. When this member is screwed in place, as shown in Figure 1, the pin (not shown) which connects rod 6 with operating handle 5 is removed (if the valve is closed) and the valve opened by hand, there being no escape of gas into the air owing to the plug 16 being in place. The swab may be manipulated with perfect safety in the valve 3 and main right pipe 2, the universal joint 21 being used so as to allow the swab to be easily inserted in the top of cross 8, which is ordinarily very difficult owing to the low ceiling of the retorts. The cleaning operation may be conducted either when the valves 3 are open or when they have been closed by the clock work.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

A device for cleaning gas mains having valves therein, comprising a plug for closing the end of the main and having an opening therein, a shank operating in the opening of the plug, a handle at one end of the shank, a universal joint at the other end and a swab secured to said universal joint comprising a plurality of bowed members connected at their ends whereby tar may be collected from the walls of the pipes, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana this 14th day of February, A. D. nineteen hundred and twenty.

ALBERT A. BROOKS. [L. S.]

Witnesses:
H. C. BIERMAN,
M. L. SHULER.