H. A. GREENAN.

DEVICE FOR CLEANING PIPE LINES.

APPLICATION FILED DEC. 14, 1906.

**914,824.** Patented Mar. 9, 1909.

Fig. 1.

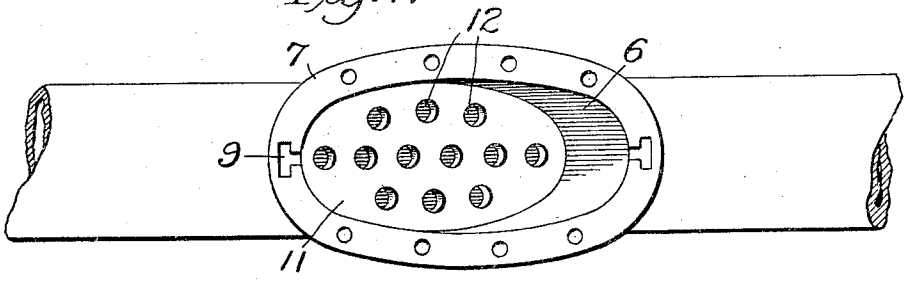



Fig. 2.

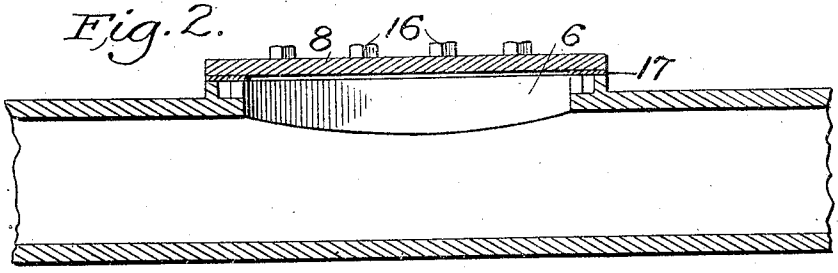



Fig. 3.

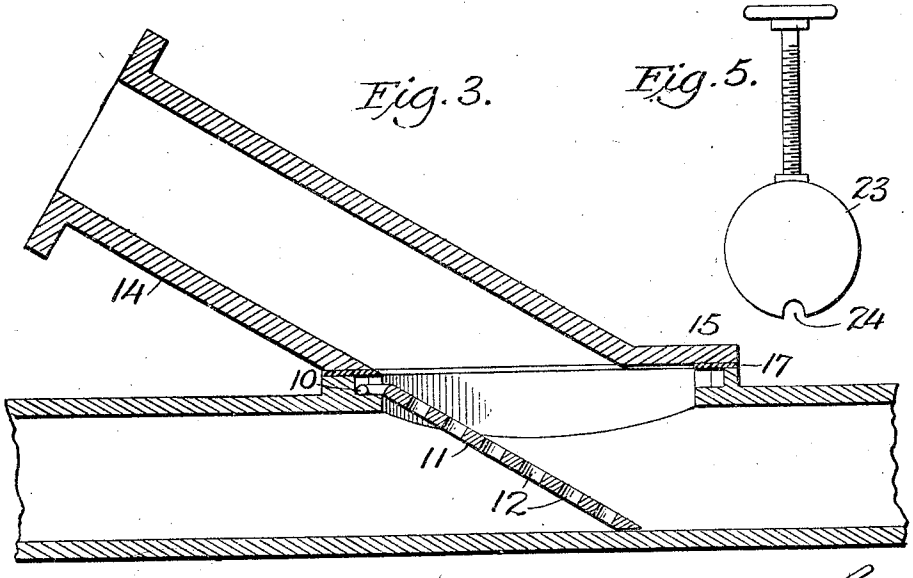
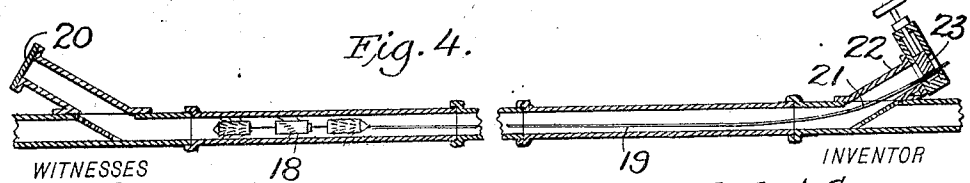



Fig. 5.




Fig. 4.




WITNESSES

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## DEVICE FOR CLEANING PIPE-LINES.

No. 914,824. Specification of Letters Patent. Patented March 9, 1909.

Application filed December 14, 1906. Serial No. 347,907.

*To all whom it may concern:*

Be it known that I, HUGH A. GREENAN, a citizen of the United States of America, and a resident of New York, county of New York, New York, have invented certain new and useful Improvements in Devices for Cleaning Pipe-Lines, of which the following is a specification.

This invention relates to means for facilitating the introduction of cleaning devices into water pipes and mains to be cleaned and the removal of such cleaning devices, and means for making a water main, while being cleaned, immediately available for use as a water supply in case of an emergency, such as a conflagration, without the removal of the cleaning device therefrom, all as set forth in the specification and the claims and illustrated in the drawings, in which—

Figure 1 is a plan view of an opening for the insertion of a cleaning device. Fig. 2 is a longitudinal section of a pipe, showing the point where the opening is made. Fig. 3 is a longitudinal section, showing a Y branch pipe attached to the opening, through which the cleaning device is inserted. Fig. 4 is a sectional view of a main showing the extreme points of the main to be cleaned with the devices located at these points. Fig. 5 is a detail view of a valve used in an outlet gate.

The device consists of a pipe section having an oval shaped opening, 6, with a flange 7, the latter provided with the necessary holes to bolt thereon a lid 8 and also T-shaped grooves 9 to receive similarly shaped ends of stems 10 at the end of an elliptical perforated plate or diaphragm 11, which is adapted to fit across the pipe at the opening 6, in the manner shown in the drawings. The perforations 12 of the plate 11 are adapted to allow a certain volume of water to pass through the main, in which such a plate is placed.

At the top of the opening 6 is attached a Y branch pipe, 14, by means of a flange 15 and bolts 16 which same bolts may also be used to secure the lid 8, a gasket 17 being used in both instances at this joint.

By reference to Fig. 3 it will be seen that the Y pipe 14 forms an opening with an inclination to the main, and through the same is introduced the cleaning device 18 attached to a cable 19, shown in Fig. 4. When the said cleaner 18 has been placed in the pipe a cap 20 is placed upon the top of the Y pipe 14.

At the end of the portion of the main pipe to be cleaned in one operation is a similar opening 21 to which is secured a Y pipe 22, carrying at its outer end a gate-valve 23, as will be seen in Fig. 5. This valve is formed with a small cut or indentation 24 in its lower edge, which permits of the closing of the valve in the presence of a cable at the bottom of the main without appreciable leakage.

The device is used as follows: The Y branch pipes are attached at the terminals of the section to be cleaned, the cleaning device is then introduced at one terminal after which the cap 20 is applied to the Y pipe at this terminal. The gate valve 23 is applied to the Y pipe at the other terminal. The cable is pulled through the opening of the valve. In case a supply of water should be needed, all that is necessary is to close the gate valve and turn on the water in case it should not already have been turned on. In case a pipe of large size, such as a 12 inch pipe, is to be cleaned, an automatic cleaning device is preferably used, in which case the cable is dispensed with. In the preliminary work of introducing the cable by means of an automatic device, the valve gate is placed at the forward terminal of the section to be cleaned and the cap at the rear end. The plates or diaphragms, 11, have relatively large perforations so as to allow a sufficient amount of water to pass through the main or pipe while they rest therein. On account of their oblique position these diaphragms make the introduction and the removal of the cleaning device expeditious and easy.

In case the cleaning is to be effected by means of an automatic cleaning device the forward opening in the section to be cleaned may, if desired, be permanently closed before the propulsion of the device is commenced, in which case the Y branch pipe is needed only at the rear end of the section to be cleaned.

If the perforations in the diaphragm or cross plate 11 should be omitted it would still be available for the purpose of facilitating the introduction and removal of a cleaning device into and from a pipe, although in such a case the flow of water through the pipe would be much impeded.

It is of course understood that the presence of any cleaning device in a water pipe materially impedes the flow of water therethrough, but by using the device shown a sufficient

amount of water will pass around and through the device to make the pipe useful as a source of water supply.

While the invention is described with reference to cleaning water pipes I do not limit myself thereto.

While the plates 11 are very effective as guides for the cleaning device, their omission will not prevent the use of the Y branches in the introduction and removal of cleaning devices into and from water pipes, but such use is neither as easy nor as expeditious as when plates are used.

What I claim as new is:

1. In a device of the character described the combination of a pipe, a Y branch pipe adapted to be attached thereto and a perforated plate adapted to pass obliquely across the former pipe.

2. In a device of the character described the combination of a pipe, a Y branch pipe adapted to be attached thereto, a valve on the branch pipe and a plate adapted to pass obliquely across the former pipe.

3. In a device of the character described the combination of a section of a water main, Y branch pipes at each end of the section and two plates passing obliquely across the main at each end of the section and so arranged that their lower edges are turned toward each other.

4. In a device of the character described the combination of a section of a water main, Y branch pipes at each end of the section, plates passing obliquely across the main at each end of the section thereof, a cap adapted to cover one Y branch pipe and a valve placed at the end of the other branch pipe.

5. In a device of the character described, the combination of a section of a water main, Y branch pipes at each end of the section, a plate passing across the main at one end of the section a cap adapted to cover the Y branch pipe at this end of the section and a valve placed at the other branch pipe.

Signed at New York this 6th day of Dec. 1906.

HUGH A. GREENAN.

Witnesses:
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