C. J. SHEAHAN.

BOILER ATTACHMENT.

APPLICATION FILED DEC. 20, 1907.

899,192. Patented Sept. 22, 1908.

Fig. 1.

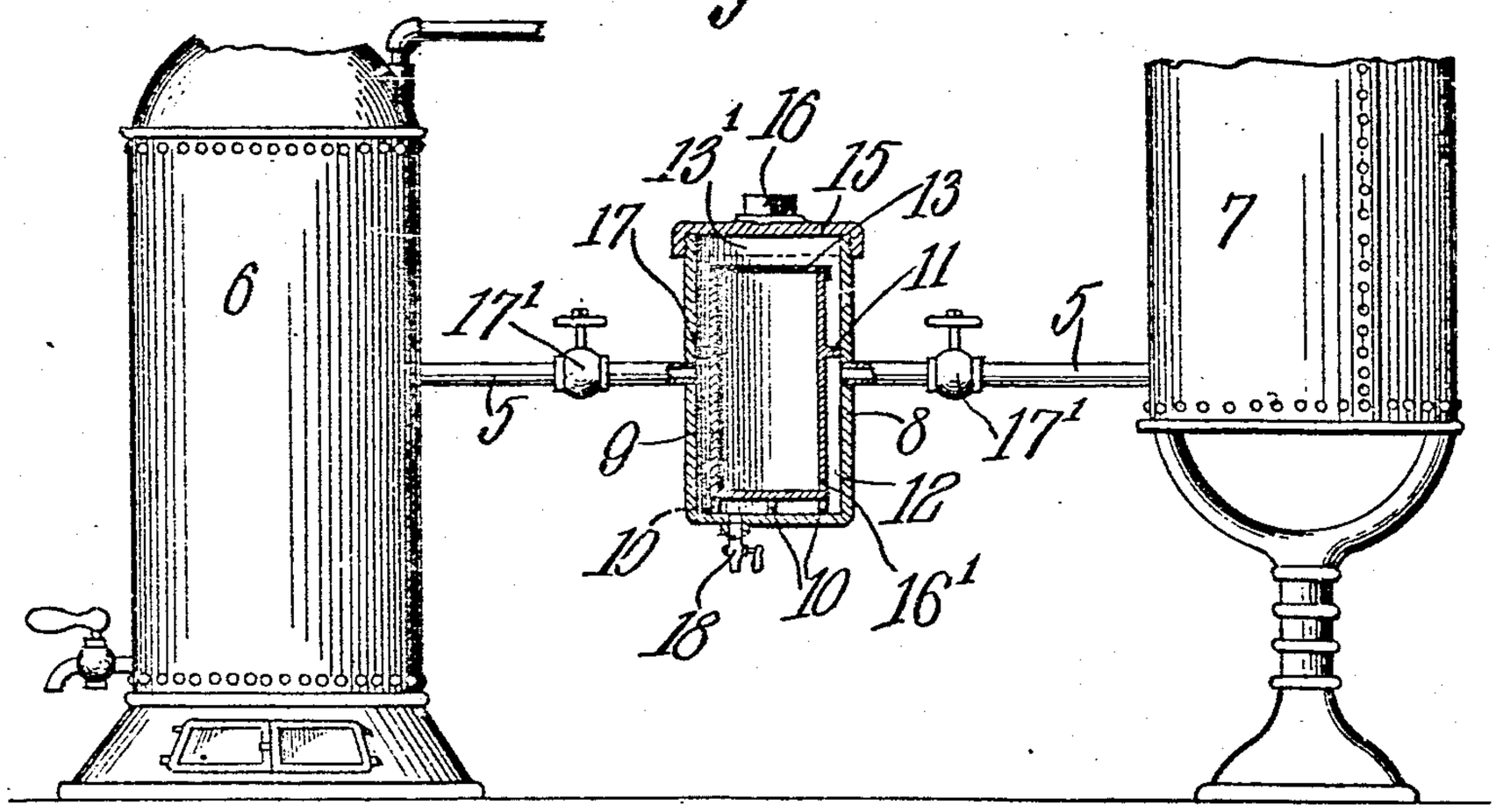
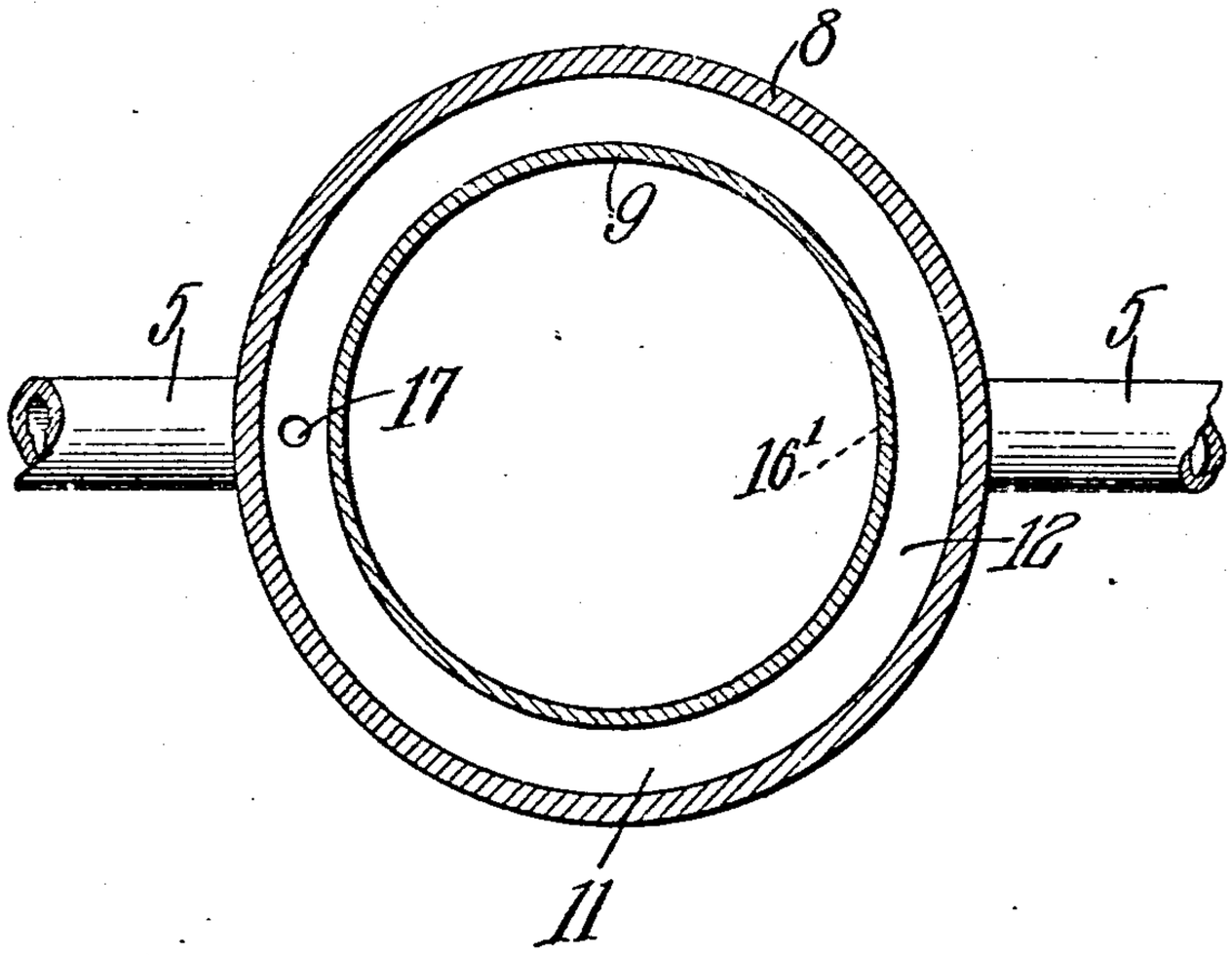


Fig. 2.



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BOILER ATTACHMENT.

No. 899,192. Specification of Letters Patent. Patented Sept. 22, 1908.

Application filed December 20, 1907. Serial No. 407,288.

To all whom it may concern:

Be it known that I, CORNELIUS J. SHEAHAN, a citizen of the United States, residing at Batavia, in the county of Kane and State of Illinois, have invented a new and useful Boiler Attachment, of which the following is a specification.

This invention relates to boiler attachments and more particularly to a water cleaner especially designed for use in connection with boilers of hot water heating systems.

The object of the invention is to provide a tank or receptacle adapted to contain a cleaning compound which is taken up by the water and distributed over the interior walls of the boiler and radiators in the form of a thin film thus preventing the latter from becoming clogged or otherwise obstructed by deposits of lime, magnesia and other impurities in the water.

A further object is to provide a tank or receiver including telescopic receptacles one of which is perforated and adapted to contain a cleaning compound, said receptacles being spaced apart to permit the free circulation of water between the same and through the perforation in the inner receptacle.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability, and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a longitudinal sectional view of a boiler attachment constructed in accordance with my invention. Fig. 2 is a transverse sectional view of the same.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved device forming the subject matter of the present invention is principally designed for use in connection with hot water heating systems and by way of illustration is shown connected in the water supply pipe 5 leading from the furnace 6 to the boiler 7.

The device consists of an outer receptacle 8 having its opposite walls provided with inlet and discharge ports for connection with the adjacent sections of the pipe 5.

Disposed within the outer receptacle 8 is an inner receptacle 9 provided with depending feet 10 which rest on the bottom of the outer receptacle, as shown, there being an annular flange 11 extending laterally from the exterior walls of the inner receptacle and bearing against the interior walls of the outer receptable above the inlet and discharge ports to produce an intermediate passage 12 thereby to permit the free circulation of water between said receptacles.

The inner receptacle 9 is adapted to contain a suitable cleaning compound which is taken up by the water and distributed over the interior walls of the boiler and radiators in the form of a thin film thereby to prevent the latter from becoming clogged or otherwise obstructed with deposits of lime, magnesia or other sediment in the water. The upper end of the inner receptacle is covered with a strip of wire netting, fabric or other foraminous material 13 and preferably terminates short of the top of the outer receptacle to form an upper water chamber or compartment 13′, said outer receptacle being provided with a removable cap or closure 15 the walls of which are threaded for engagement with the correspondingly threaded walls of said outer receptacle. The cap or closure 15 is preferably provided with an angular extension 16 so that the same may be readily grasped with a wrench or other suitable tool when it is desired to remove the cap so as to expose the contents of the receptacle.

While it is preferred to retain the cap in position on the outer receptacle in the manner described it is obvious that this result may be accomplished in any other suitable manner, as by a clamp.

In the flange 11 above the inlet port is an aperture 17 which forms a source of communication between said inlet port and the chamber 13′, there being a similar aperture 16′ in the walls of the inner receptacle below the flange 11 to permit the passage of water impregnated with the cleaning solution to the boiler and the several radiators and pipes comprising the heating system. The aperture 16′ is preferably disposed opposite the adjacent outlet port so that the water con-

taining the cleaning compound may be forced under pressure through said aperture to the pipe 5.

When the attachment is connected up in the manner shown in Fig. 1 of the drawings the water flowing through the pipe 5 will enter the outer receptacle and circulate around the inner receptacle within the passage 12, a portion of the water flowing upwardly through the aperture 17 to the chamber 13 and thence downwardly through the compound and aperture 16′ to the boiler, in the manner before described.

When the device is used in connection with a hot water heating system the receptacle is preferably connected in the main water supply so that the pressure of the water will distribute the compound over the interior walls of the several pipes and radiators constituting the system.

A suitable valve 17′ is preferably disposed on each side of the tank in order to control the flow of water to and from the same, a cock 18 being also arranged in the bottom of the outer receptacle, in order to drain the latter receptacle.

By positioning the receptacle in the water supply in the manner described the inner receptacle may be readily charged with the cleaning compound and replenished when necessary without the necessity of shutting down the boiler and withdrawing the water from the same.

It will of course be understood that the receptacles may be made in various sizes and shapes and connected in any of the pipes in the heating system.

Having thus described the invention what is claimed is:

1. A device of the class described comprising an outer receptacle having inlet and discharge ports, an inner perforated receptacle spaced from the outer receptacle and adapted to contain a cleaning compound, said inner receptacle being provided with a laterally extending flange disposed above the inlet and discharge ports and forming a partial barrier to the flow of liquid to the top of the inner receptacle.

2. A device of the class described comprising an outer receptacle having inlet and discharge ports, a cap forming a closure for the top of the outer receptacle, a perforated inner receptacle spaced from the outer receptacle and adapted to contain a cleaning compound, and a flange extending laterally from the inner receptacle and forming a partial barrier to the flow of liquid to the top of the inner receptacle.

3. A device of the class described comprising an outer receptacle having inlet and discharge ports, a cap forming a closure for the upper end of the outer receptacle, and a perforated inner receptacle provided with a continuous laterally extending flange adapted to engage the interior walls of the outer receptacle for spacing said receptacles, said flange having an aperture formed therein above the inlet port.

4. A device of the class described comprising an outer receptacle having inlet and discharge ports, a removable cap forming a closure for the outer receptacle, an inner receptacle spaced from the outer receptacle and provided with an intermediate laterally extending flange, said inner receptacle being adapted to contain a cleaning compound, there being an aperture formed in the flange above the inlet port, and a strip of foraminous material secured to the inner receptacle and forming a closure for the upper end thereof.

5. A device of the class described including an outer receptacle having inlet and discharge ports, a cap threaded on the outer receptacle and forming a closure for the same, a drain valve secured to the bottom of the outer receptacle, an inner receptacle adapted to contain a cleaning compound and provided with spaced depending feet adapted to engage the bottom of the outer receptacle, an annular flange extending laterally from the inner receptacle for spacing the latter from the outer receptacle and provided with an aperture disposed above the inlet port, the upper end of the inner receptacle being spaced from the cap and covered with a wire screen, said inner receptacle being provided with an aperture disposed beneath the flange at the discharge port.

6. The combination with a supply pipe, of an outer tank having inlet and discharge ports for connection with the adjacent sections of said pipe, an inner receptacle spaced from the outer receptacle to form an intermediate circulating chamber, said inner receptacle being provided with a perforated wall and adapted to contain a cleaning compound, a perforated flange extending laterally from the inner receptacle above the inlet and discharge ports and forming a partial barrier to the flow of fluid in the circulating chamber, and a valve operating within the supply pipe on each side of the outer receptacle.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CORNELIUS JOS. SHEAHAN.

Witnesses:
PAUL F. FISCHER,
FRANCES E. KELLEY.