D. AKERS.

SEDIMENT REMOVE

APPLICATION FILED MAR. 17, 1920.

1,367,449. **Patented Feb. 1, 1921.**

Fig. 1.

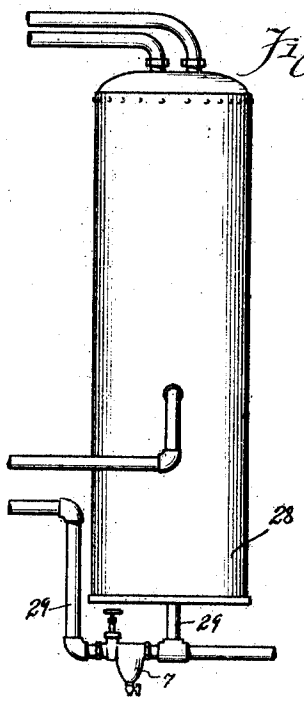


Fig. 2.

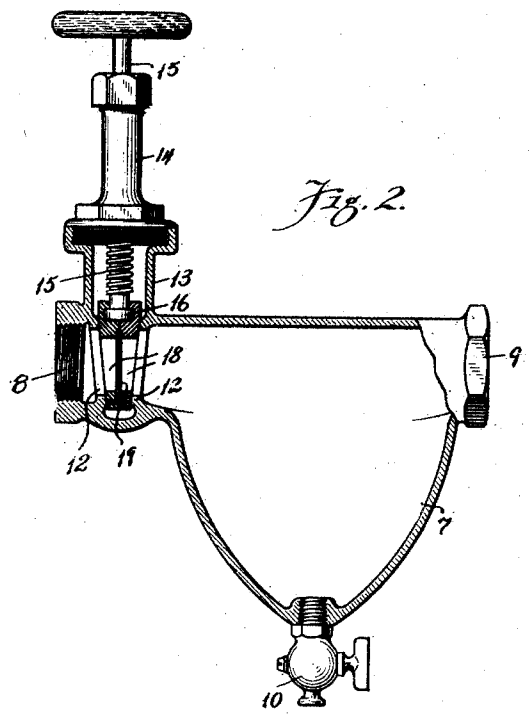


Fig. 3.

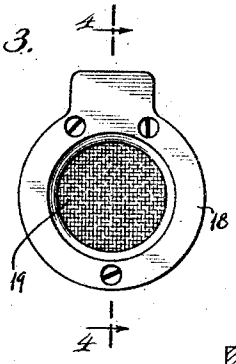


Fig. 4.

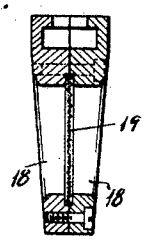
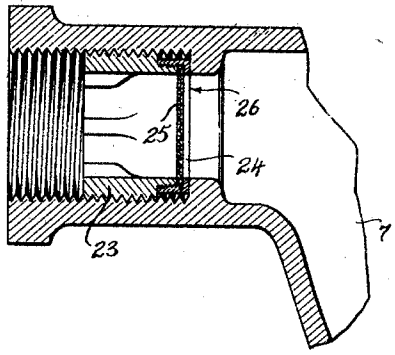


Fig. 5.



WITNESSES

C. N. Leibman

J. C. Lalbetter

INVENTOR

David Akers,

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

DAVID AKERS, OF CARLSTADT, NEW JERSEY.

SEDIMENT-REMOVER.

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To all whom it may concern:

Be it known that I, DAVID AKERS, a citizen of the United States, and a resident of Carlstadt, in the county of Bergen and State of New Jersey, have invented a new and Improved Sediment-Remover, of which the following is a full, clear, and exact description.

This invention relates to plumbing equipment, such as removable strainers, and more particularly relates to sediment removers.

It is a well-known fact that water-transmission systems and hot-water systems for domestic and other uses, and more particularly hot-water boilers in the home, and pipes connected thereto, quite often become clogged and stopped up with sediment. This sediment is a deposit formation or a precipitate formed through the heating and boiling of water. The sediment collects as a hard insoluble scale in the joints and low places of a water-transmission system, and hinders the circulation of the water, prevents the efficient heating thereof, and, in general, offers many difficulties which usually require the expense and services of a plumber to open up the pipes and remove the sediment.

It is fitting, therefore, that an object of my invention is to produce an improved sediment remover which adequately functions to cure the foregoing troubles in hot-water systems.

Furthermore, it is an object of my invention to produce an improved combination strainer and sediment remover which is comparatively inexpensive to manufacture and which may be quickly installed for use on hot-water systems generally found in the home and other institutions.

With the above principal objects and others in view, my invention relates to the combination of parts herein disclosed, and the construction of same. as set forth in the claims defining the invention, as described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 shows a conventional type of hot-water boiler with the sediment remover included in one of the pipes connected with the boiler.

Fig. 2 illustrates a sectional view through the combination strainer and sediment remover.

Fig. 3 shows a face view of a frame containing a water-screening element; and Fig. 4 illustrates a cross-sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 illustrates a modified form of a screening device constructed in the form of a sleeve and screwed into the sediment receptacle.

A combination strainer and sediment remover constructed in accordance with the principles of this invention includes a sediment receptacle having a screen mounted therein. The device may be readily inserted in a water pipe to screen the sediment to prevent clogging the pipes.

Presenting a more complete disclosure of my invention, there is shown in the drawings a sediment receptacle 7 which has threaded ports 8 and 9 to connect the receptacle with water pipes. The ports are made at the upper portion of the receptacle in order that sediment carried with water into the receptacle may gravitate to the bottom thereof. A drain valve 10 is provided at the bottom of the receptacle to drain the solid matter and remove sediment from the receptacle.

It is necessary to employ any appropriate means for impeding the travel of the sediment through the receptacle 7, this being accomplished by the use of a screen either permanently set in the passage defined by the ports 8 and 9, or removably placed therein. A casing 13 is made on the receptacle 7, with a threaded tubular cap and stuffing box 14. A stem 15, with attached hand wheel, is confined in the cap member 14 and is capable of traveling up and down therein, due to the threaded engagement between the stem 15 and tubular cap 14. The lower end of the stem 15 has a turn head 16 for lifting the strainer frame 11 up and down to open and close the passage defined by the valve seats.

The strainer frame 11, comprising two sections 18, has fitted therebetween a screening disk 19 of any suitable character. It is practical to employ chamois, fine noncorrosive screen mesh, or any other suitable material designed to permit the discharge of water but restrict the passage of sediment or solid matter. The two frame sections 18 are secured together with the screening disk 19 placed therebetween to securely hold it in position. The sections 18 may be held together by screws, or any other appropriate means, in order that the screening disk 19 may be periodically replaced with a new screen in case the disk 19 deteriorates. The

outer faces of the sections are made to correspond with the seats 12 to effect a closed joint between the sections 18 and seats 12. The turn head 16 is confined in a cylindrical recess in the section 18 to permit relative turning of the stem 15.

When the stem 15 is rotated in one direction, the frame 11, containing the sediment barrier, moves downwardly into engagement with the seats 12, thus closing the passage against sediment but admitting the discharge of clear water. If for any reason whatsoever it should become necessary to clean out the water pipe systems, it is then practical to open the sediment barrier by rotating the stem 15 in the opposite direction, which retracts the frame 11 upwardly into the neck 13 and opens the passage through the sediment receptacle to admit a stream of water under pressure to be passed through the water system for cleaning out the pipes or for other purposes.

It is seen, therefore, how the device above described, and portrayed in Fig. 2 of the drawings, may be conveniently used with or without the sediment barrier 19.

A modified form of the sediment barrier is illustrated in Fig. 5, which shows a simplified form of a sediment remover. A sediment remover constructed in accordance with the plans illustrated in Fig. 5 eliminates the frame 11 and substitutes a simple tubular screen holder therefor. A threaded sleeve 23 has an internally threaded ring 24 which screws upon the reduced end of the sleeve; and a sediment screen or barrier, such as a chamois or mesh disk 25, is anchored between the sleeve 23 and the ring 24. In this form of sediment remover, it is desirable to make a shoulder 26 in the threaded port of the receptacle against which the sleeve 23 is set when it is screwed into the port. The sleeve 23 may be removed at any time by a suitable wrench. The sleeve does not interfere with the reception of the threaded end of a pipe or nipple used to connect the sediment remover in a water-pipe line. The sediment barrier 19 may be replaced by taking the plug 23 and ring 24 apart and inserting a new one.

Fig. 1 discloses the use of the sediment removing device in a water-pipe line. A typical water boiler 28 has connected therewith the pipes constituting a hot water system for homes, or for use in any other institution. The sediment remover 7 is readily connected into the pipe system 29. Water flowing from the boiler 28 outwardly through the pipes 29 necessarily passes through the sediment barrier 19, whereupon the sediment and solid matter in the water are caused to gravitate to the bottom of the receptacle 7. The receptacle 7 is made large enough to hold the sediment for a long period of time, after which it is removed therefrom by opening the valve 10.

Having thus described my invention, I desire to claim and secure by Letters Patent:

1. A removable strainer for water pipes comprising a casing having oppositely positioned openings, one acting as an inlet and the other an outlet, a depending section for receiving sediment and an upstanding neck section adjacent one of said openings, said opening being formed with a pair of seats, a frame adapted to fit between and engage said seats, means carried by said neck section for shifting said frame off of said seats and a screening member secured to said frame and movable therewith.

2. A removable strainer for water pipes comprising a casing having an inlet and an outlet adjacent the upper part, a neck section merging into said casing adjacent said inlet, said inlet being provided with a pair of inclined seats, a web-shaped frame adapted to fit between and engage said seats, a removable screening member carried by said frame and manually actuated means for moving the frame and screening member into and out of said neck section.

DAVID AKERS.