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E. J. DREXLER

PIPE LINE STRAINER

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*Fig. 1.*

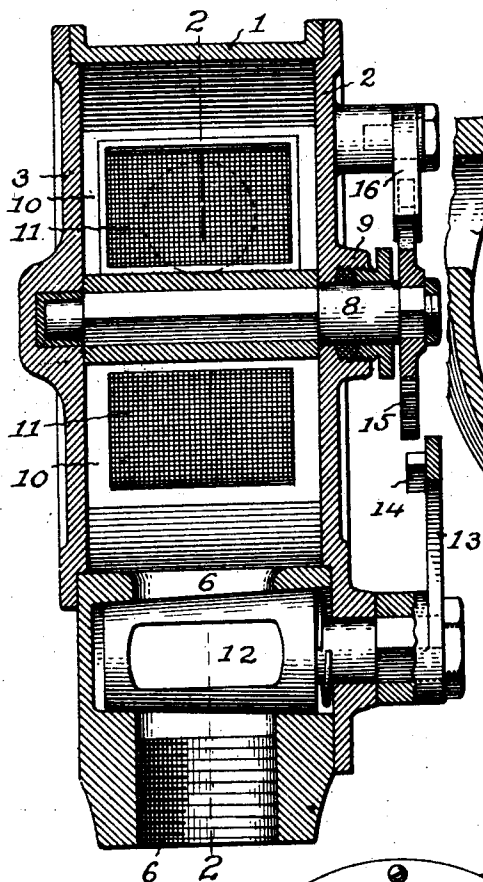


*Fig. 2.*

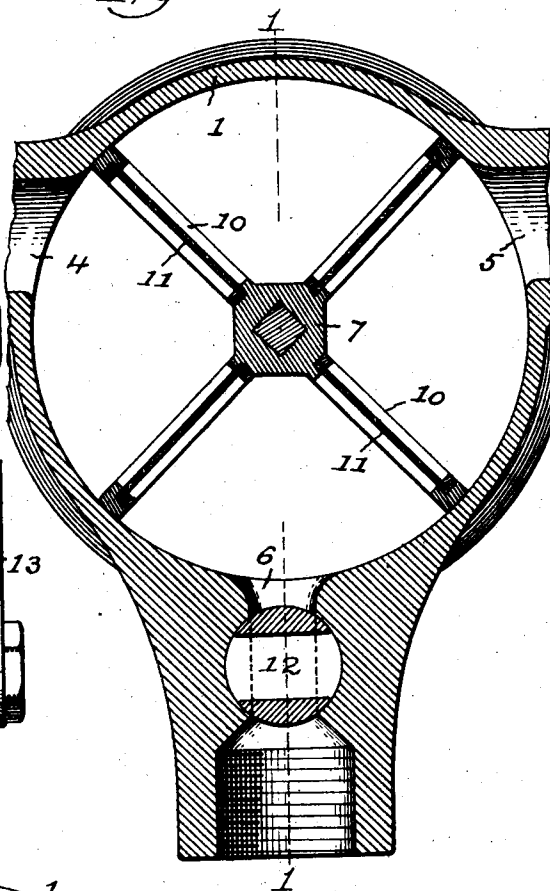
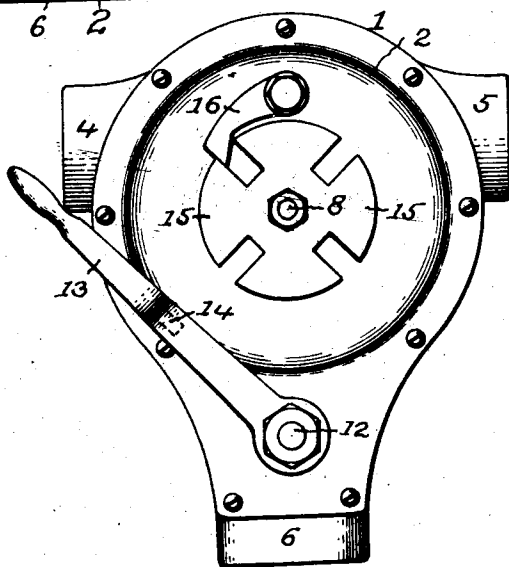


*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

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## PIPE-LINE STRAINER.

Application filed August 3, 1925. Serial No. 47,687.

This invention relates to that type of straining devices for insertion in the water supply pipes or mains or buildings to effect a retention and removal of fish and other solid matters with which the water supply may be contaminated, and the present improvement has for its object:—

To provide a structural formation and combination of parts whereby an effective interception of the solid impurities in the water is attained, with a ready and convenient removal of the same from time to time as required, and with which the meshes of the screening means are cleaned of any matter clogging the same in an effective and automatic manner during the removal of the solid impurities from the device, all as will hereinafter more fully appear.

In the accompanying drawing:

Fig. 1, is a transverse section on line 1—1, Fig. 2 of a strainer involving the preferred form of the invention.

Fig. 2, is a longitudinal section on line 2—2, Fig. 1.

Fig. 3, is a side elevation illustrating the operating mechanism of the revoluble elements of the strainer.

Like reference numerals indicate like parts in the different views.

The main casing or shell 1 of the strainer is formed with a circular chamber closed at its respective ends by heads 2 and 3, formed with axially arranged bearings for the journal spindle of the hereinafter described revoluble strainer head. Near its upper end the shell 1 is formed with complementary necks 4 and 5, tangential to the circular cavity of the shell and constituting the inlet and the outlet necks for the water flowing through the device. The aligned relation of the necks 4, 5, as shown, permit of a ready application of the device in a pipe line of the water system and with either neck 4 or 5 acting as the inlet or the outlet neck. At its lower end the casing 1 is formed with a drain neck 6, the passage of which is normally closed by a valve head or other usual means, until a drainage or "blow-off" of the impurities from the device is desired, and in which case the valve or other passage controlling means will be opened.

The revoluble strainer head of the device comprises a central hub portion 7 formed with end bearing spindles by which it is journaled in the casing heads 2, 3, aforesaid, with one spindle 8 passing in fluid tight

manner out through a stuffing box 9 on one of the casing heads and carrying the operating means hereinafter described. In the present improvement the hub portion 7 carries a plurality of radially extending screen carrying frames 10, the outer and side rails of which have a close sliding fit upon the inner surfaces of the circular chamber of the casing 1. The central open portions of said frames carry webs 11 of woven wire or like foraminous material adapted to function as a screening means in the present structure.

With the construction above described, the interior of the casing 1 is subdivided into a plurality of sub-chambers through which the water passes in its travel from the inlet to the outlet neck of the structure, with said sub-chambers adapted, by a partial rotation of the strainer head, to be successively brought into communication with the aforesaid drain neck 6 so that the trapped and impure contents may be blown out or discharged.

The closure means of the drain neck 6 in the construction shown is the ordinary form of a revoluble plug 12, the operating stem of which carries an operating handle or lever 13 by which the plug 12 may be turned from an open to a closed position and vice-versa, while in the preferred construction of parts, the lever 13 carries a lug or tappet 14 for operative engagement with the revoluble strainer head aforesaid by intermediate means as follows:

A ratchet wheel 15 formed with a plurality of ratchet recesses corresponding in number with the radial screen frames 10 aforesaid, is fixed on the journal spindle 8 of said frames, and is adapted for engagement by a holding dog or pawl 16 to insure a proper operative position of the screen frames in the interior of the containing chamber and with relation to the inlet and outlet necks 4, 5, and said holding pawl 16 is of the reversible form, so that it may be reversed as required, to prevent accidental rotation of the strainer head in a direction the same as the flow of water through the device, and thus meet the requirements where the flow is either to the right or to the left.

With the above described construction of the operating lever 13, valve head or plug 12, and ratchet wheel 15 of the screen frames 10, an automatic movement control between

the parts is provided, in that as the lever 13 is given a partial turn to open the valve head or plug 12, the lug 14 on said lever is adapted to engage in an adjacent notch or recess of the ratchet wheel 15, and during such opening movement of the valve head or plug 12, impart a partial turning movement to the screen head and bring a succeeding sub-chamber thereof into communication with the drain neck 6 of the structure. With such arrangement a series of revolutions of the lever 13 is adapted to bring the entire series of sub-chambers into successive connection with the drain neck 6.

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

In a strainer for water pipes, a casing having a circular chamber, inlet and outlet passages at its respective sides, and a con-

trollable drain passage at bottom, a revoluble valve member controlling said drain passage, a revoluble strainer head arranged in the aforesaid circular chamber, the same comprising a series of screen frames mounted radially on a central hub and carrying the screening webs of the structure, means for positioning said strainer head in its turning adjustments, the same comprising a ratchet wheel on the carrying hub of the strainer head, and a holding pawl pivoted on the side of the casing in operative relation to said ratchet wheel, and an operating lever engaging the valve member aforesaid and having a projecting stud adapted for operative engagement with the ratchet wheel.

Signed at Chicago, Illinois, this 30th day of July, 1925.

EARL J. DREXLER.