

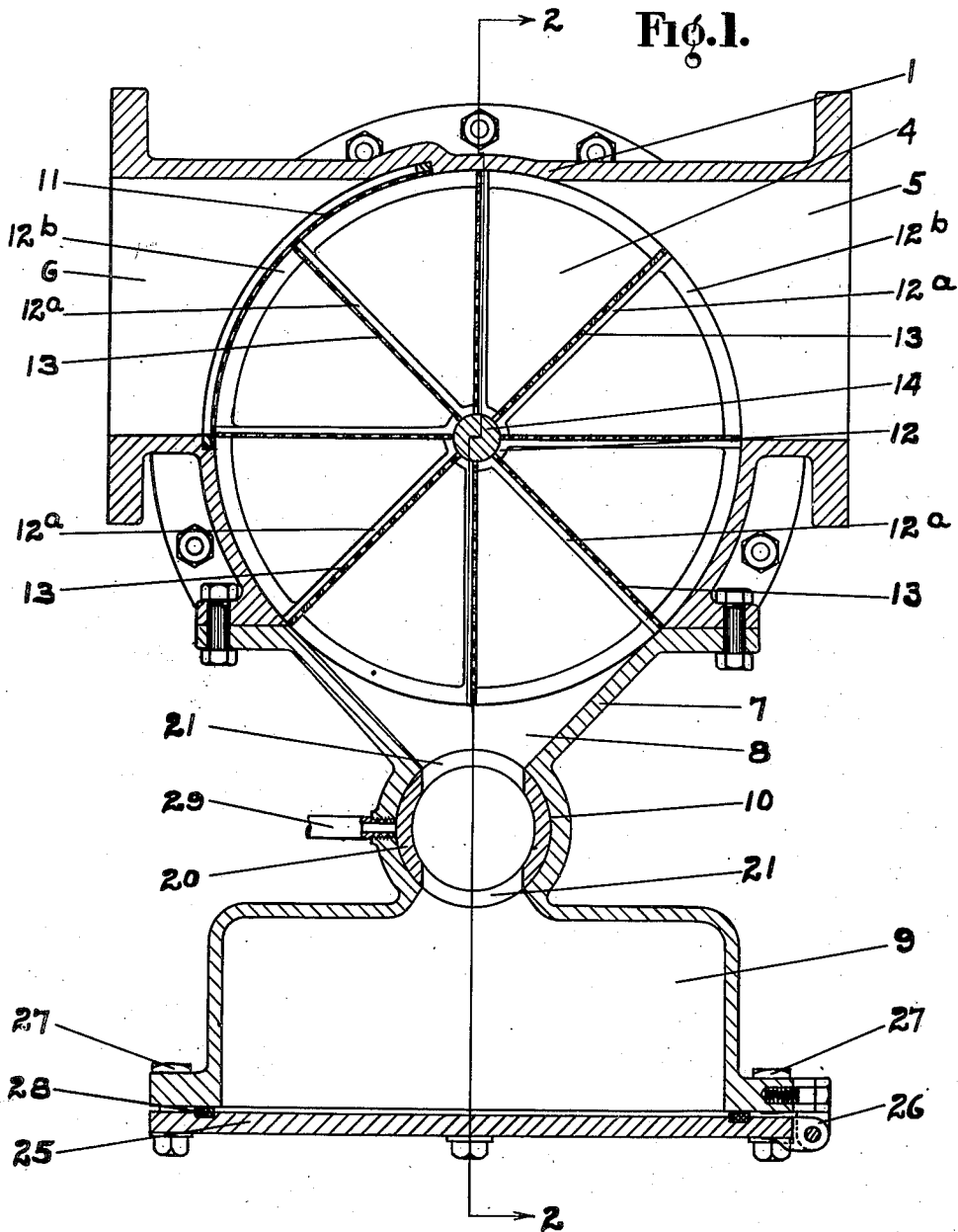
E. E. HAUER.
STRAINER.

APPLICATION FILED NOV. 11, 1912.

Patented July 7, 1914.

2 SHEETS—SHEET 1.

1,102,747.



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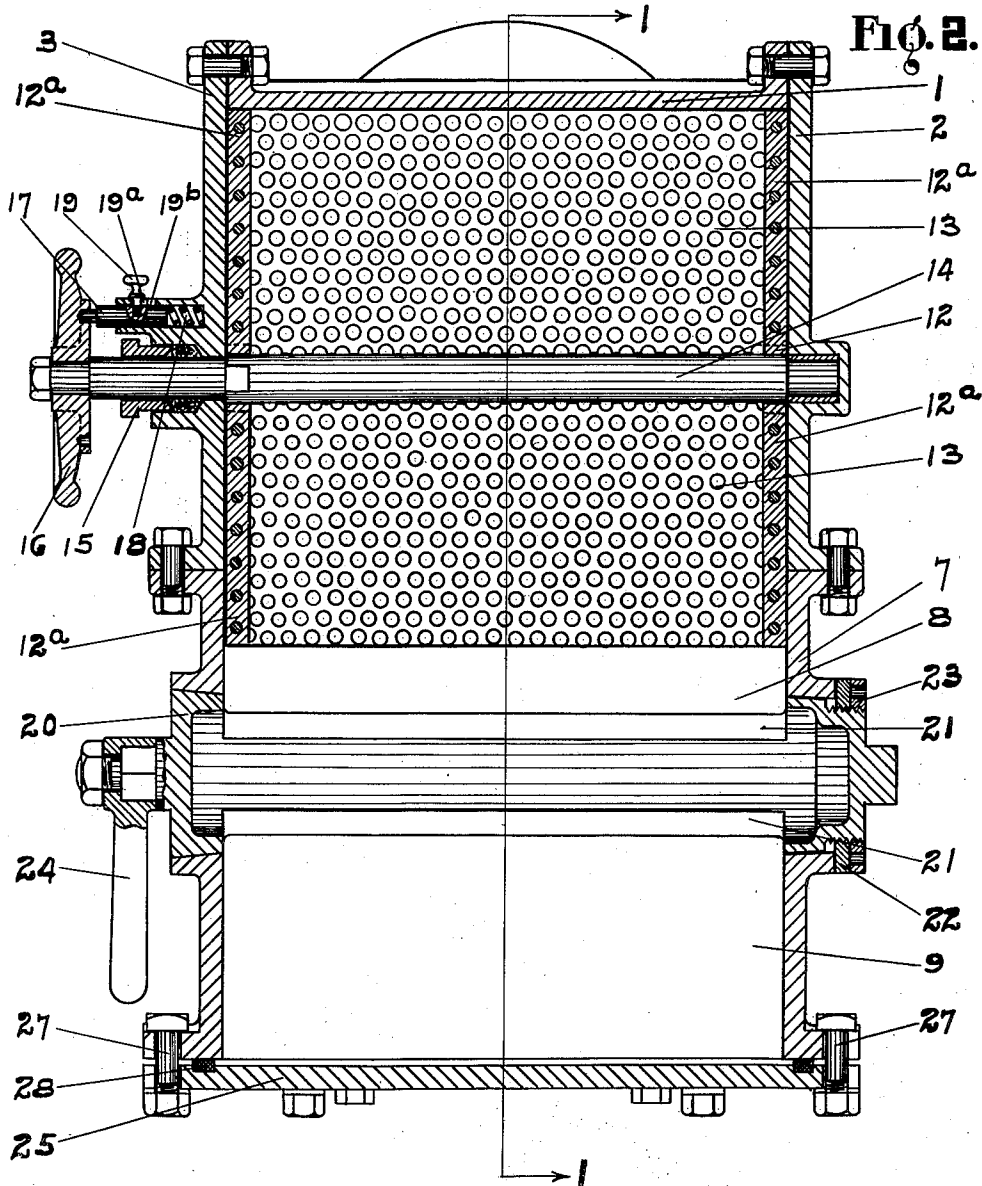
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UNITED STATES PATENT OFFICE.

ELMER E. HAUER, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE LAGONDA MANUFACTURING COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

STRAINER.

1,102,747.

Specification of Letters Patent.

Patented July 7, 1914.

Application filed November 11, 1912. Serial No. 730,727.

To all whom it may concern:

Be it known that I, ELMER E. HAUER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Strainers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to strainers and more particularly to a strainer adapted to be introduced into a pipe line to remove foreign matter from the fluid passing through the line.

The object of my invention is to provide an improved strainer, simple and effective in operation, in which both movable and stationary strainer elements are employed and arranged so that one will clean the other and carry and drop the refuse into a chamber, by the flow of the fluid passing through the line, all of which is accomplished without removing the strainer elements from the casing.

A further object is to provide means whereby the refuse can be removed from the casing without interrupting the flow of the fluid through the line.

With these and other objects in view my invention consists of the constructions and combinations hereinafter described and set forth in the claims.

In the drawings Figure 1 is a vertical section on the line 1—1 of Fig. 2 of a strainer embodying my invention, and Fig. 2 is a like section taken on the line 2—2 of Fig. 1.

Like numerals represent the same parts in the two views.

In the drawings 1 represents a casing with heads 2 and 3 bolted thereto forming a straining chamber 4 having an inlet 5 and an outlet 6 with suitable flanges as shown to connect the same in a pipe line. Said casing has an extension 7 which may be secured thereto in any suitable manner as by bolts as shown. This extension provides a settling chamber 8 and a cleaning or discharge chamber 9 arranged below the straining chamber and having an opening 10 for a valve as shown.

A stationary cleaner element which is shown in the form of a perforated diaphragm 11 is fixed in the outlet 6 of the straining chamber; and a movable strainer element is also provided which is shown in

the form of wheels arranged at opposite ends of the straining chamber and having hubs 12 with spokes 12^a and rims 12^b to which perforated webs 13 are riveted as shown or secured in any suitable way. A shaft 14 upon which the wheels are fixed has its reduced ends journaled in the opposite heads of the casing and extends through one of the heads and is provided with a stuffing box 15 to prevent leakage. A hand-wheel 16 fixed to the shaft is provided with a stop 17 which normally engages a recess in the hand-wheel by pressure of a spring 18; but can be moved and held out of engagement by a handle 19 fixed to the stop, the stop-holder having a longitudinal slot 19^a through which the handle moves and a set-off or recess 19^b into which the handle is turned to hold the stop out of engagement with the hand-wheel.

A hollow plug valve 20 having longitudinally extending ports 21 is seated in the opening 10 between the settling and cleaning or discharge chambers and is tightened and held in place by a nut 22 and a lock-nut 23; and a handle 24 fixed to one end of the valve is provided to operate the same.

A head 25 swings upon a hinge 26 secured to the casing extension and is normally held closed by bolts 27. Said head is provided with an annular groove or recess in which a packing 28 is secured to insure a tight joint when said head is closed.

It will be seen that the inlet 5 and outlet 6 are in line with each other and with the upper half of the wheels and that by reason of this arrangement the flow of the fluid passing through will cause the wheels to rotate and the refuse caught by the webs will be carried by them and dropped into the settling and discharge chambers. The stationary diaphragm 11 not only prevents the escape through the outlet 6 of the refuse caught by the webs but the movement of the webs keeps the stationary diaphragm clean. To remove the refuse from the cleaning chamber, the valve 20 is closed and the head 25 is released and swings on its hinge to open position.

When the strainer is employed in a suction line and the valve is closed and the cleaning chamber open for cleaning, it is essential that no air be admitted to the line, and to prevent leakage through the valve a water-seal is provided, water being intro-

duced to the valve for this purpose through the pipe 29 connected to any suitable source of supply.

That portion of the straining chamber that is occupied by the lower half of the wheels may also be regarded as a settling chamber, but the settling chamber 8 proper is beyond the movement of the webs and will receive the refuse whether the valve is closed or not.

It will be further noted that means are provided to move the movable strainer element and to hold the same stationary at the will of the operator.

Having thus described my invention I claim:—

1. In a strainer, a casing, a stationary and a movable strainer element, one of said strainer elements in its normal straining operation being in contact with and adapted to clean the other.

2. In a strainer, a casing, a stationary and a movable strainer element, said movable strainer element being in contact with and adapted to clean said stationary strainer element by the flow of the fluid being transmitted.

3. In a strainer, a casing, a stationary and a movable strainer element, one of said strainer elements in its normal straining operation being in contact with and adapted to clean the other and means to hold and move said movable strainer element at will.

4. In a strainer, a casing, a stationary and a movable strainer element, said movable strainer element being in contact with and adapted to clean said stationary strainer element by the flow of the fluid being transmitted and means to hold and move said movable strainer element at will.

5. In a strainer, a casing having a straining and a cleaning chamber, a stationary and a movable strainer element, said movable strainer element in its normal straining operation being in contact with and adapted to clean said stationary strainer element and to carry the refuse from said straining chamber to said cleaning chamber by the flow of the fluid being transmitted.

6. In a strainer, a casing, a strainer element and means in contact with and adapted to clean said strainer element, said means arranged to act as a strainer and adapted to be operated by the flow of the fluid being transmitted.

7. In a strainer, a casing having a straining and a cleaning chamber, a strainer element and means arranged to act as a strainer and operated by the flow of the fluid being transmitted, to clean said strainer element and carry the refuse from said straining chamber to said cleaning chamber, said means being in contact with said strainer element.

8. In a strainer, a casing having a strain-

ing and a cleaning chamber, said cleaning chamber having a normally closed outlet, a stationary strainer element, means in contact with and adapted to clean said strainer element, said means adapted to be operated by the flow of the fluid being transmitted and a valve between said straining and cleaning chambers to prevent the escape of the fluid when said outlet is open.

9. In a strainer, a casing having a straining and a cleaning chamber, said cleaning chamber having a normally closed outlet, a stationary and a movable strainer element, said movable strainer element being in contact with and adapted to clean said stationary strainer element by the flow of the fluid being transmitted and means between said straining and cleaning chambers to prevent the escape of the fluid when said normally closed outlet is open.

10. In a strainer, a casing having a cylindrical straining chamber, with an inlet and outlet in the upper portion thereof adapted to be connected in a pipe line, a stationary strainer element at said outlet and a rotary strainer element in said straining chamber in contact with said stationary strainer element.

11. In a strainer, a casing having a cylindrical straining chamber and a cleaning chamber having a normally closed outlet, said cylindrical straining chamber having an inlet and outlet in the upper portion thereof adapted to be connected in a pipe line, a stationary strainer element at said outlet, a rotary strainer element in said straining chamber operated by the flow of the fluid and in contact with and adapted to clean said stationary strainer element and means between said straining and cleaning chambers to prevent the escape of the fluid when said normally closed outlet is open.

12. In a strainer, a casing having a cylindrical straining chamber, a settling chamber underneath and open to said straining chamber and a cleaning chamber below said settling chamber with an opening therefrom, a wheel mounted in said straining chamber and having radially disposed perforated webs, said straining chamber having an inlet and outlet adapted to be connected in a pipe line and arranged in line with each other and with the upper half of said wheel, a stationary perforated diaphragm at said outlet with which said wheel contacts, said cleaning chamber having a normally closed outlet and a valve to close the opening between said settling and cleaning chambers when said normally closed outlet is open.

13. In a strainer, a casing having a straining chamber with an inlet and outlet and a cleaning chamber with a normally closed outlet, a strainer element, means in contact with and adapted to clean said strainer ele-

ment and carry the refuse to said cleaning
chamber, a valve between said straining and
cleaning chambers, a water seal for said
valve to prevent the admission of air when
5 said normally closed outlet is open and the
strainer is employed in a suction line.

In testimony whereof I have hereunto

affixed my signature in the presence of two
witnesses.

ELMER E. HAUER.

Witnesses:

M. M. SELLERS,
OLIVER H. HAUSE.