April 16, 1929. F. L. HAMMER 1,709,472

STRAINER

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Fig. 1.

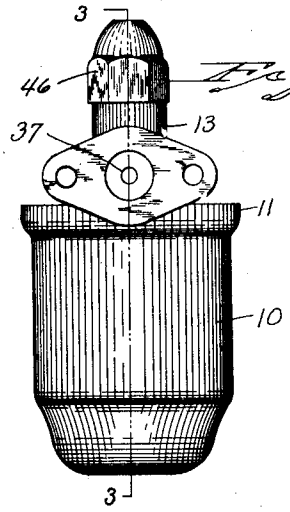


Fig. 8.

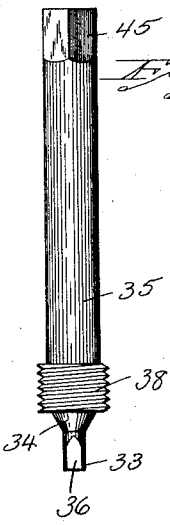


Fig. 2.

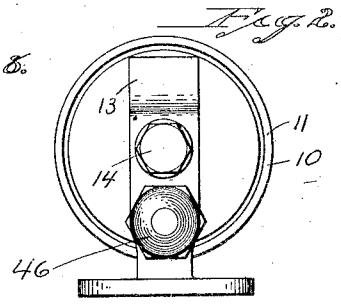


Fig. 9.

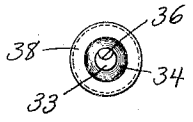
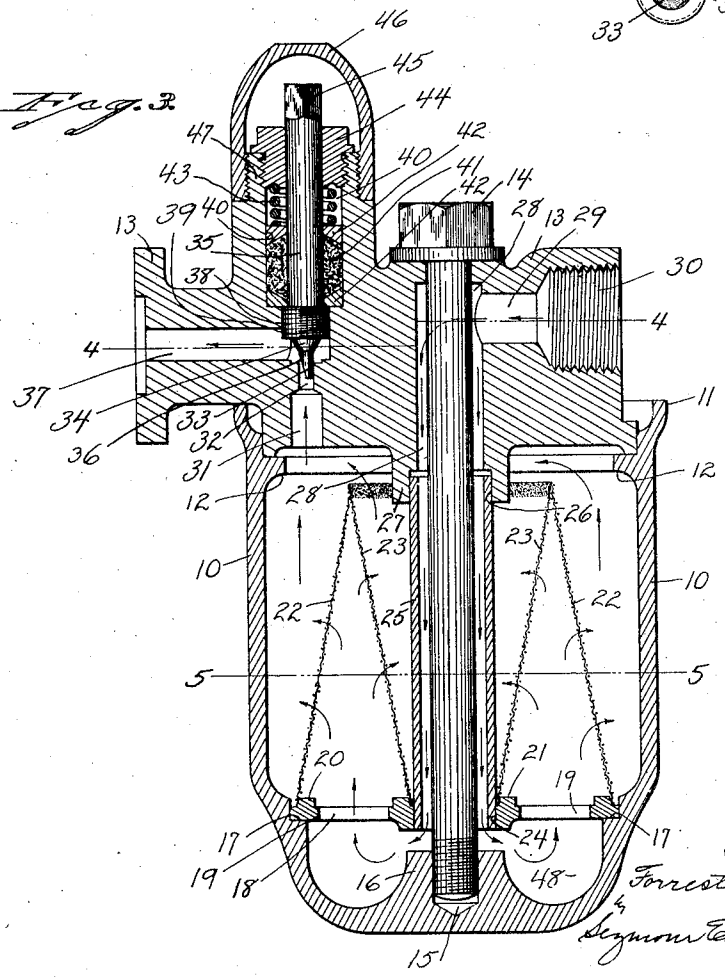


Fig. 3.



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Fig. 5.

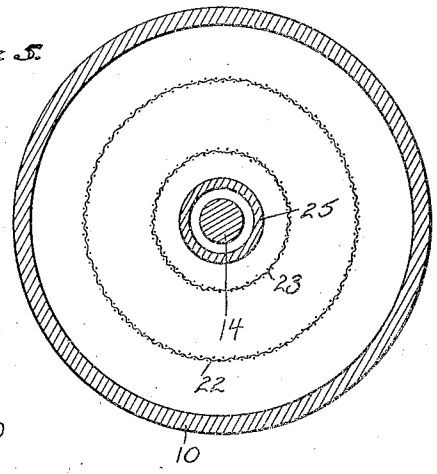


Fig. 4.

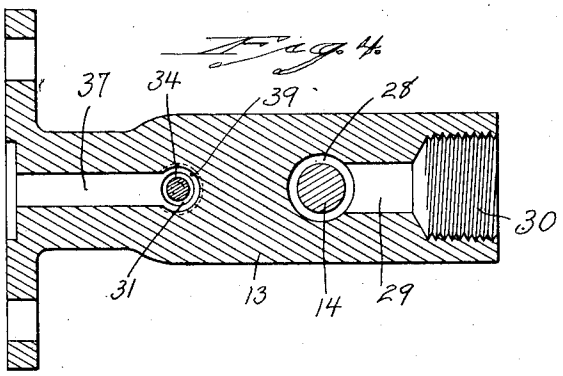
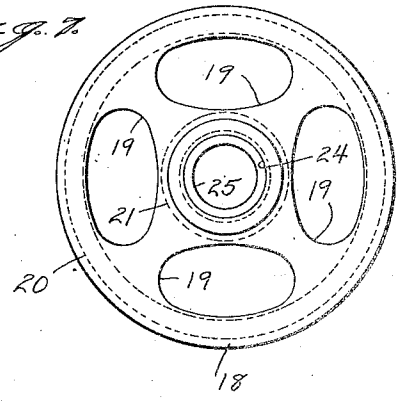


Fig. 7.



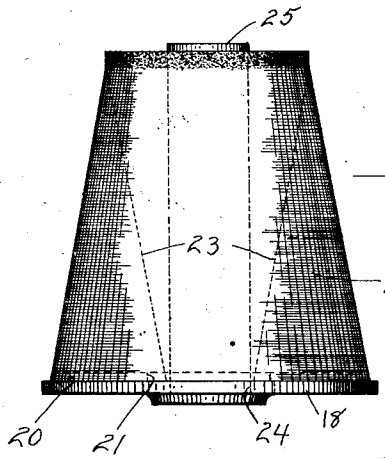


Fig. 6.

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UNITED STATES PATENT OFFICE.

FORRESTER L. HAMMER, OF BRANFORD, CONNECTICUT.

STRAINER.

Application filed May 19, 1927. Serial No. 192,592.

This invention relates to an improvement in strainers, and has for its object the production of a simple and efficient device of the class described constructed with particular reference to ease of assembly and disassembly.

With this object in view, my invention consists in a strainer having certain details of construction and combination of parts as will be hereinafter described and particularly recited in the claims.

In the accompanying drawings:

Fig. 1 is a view in side elevation of a strainer constructed in accordance with my invention;

Fig. 2 is a top or plan view thereof;

Fig. 3 is a view in central vertical section on the line 3—3 of Fig. 1 on an enlarged scale;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a corresponding view on the line 5—5 of Fig. 3;

Fig. 6 is a detached view in side elevation of the strainer-unit;

Fig. 7 is an underside view thereof;

Fig. 8 is a detached side view of the valve and valve-stem; and

Fig. 9 is an underside view thereof.

In carrying out my invention as herein shown, I employ a cup-shaped body-member 10 provided at its upper end with an outwardly and upwardly turned guard-flange 11 and upon its inner surface near its upper end with an annular inwardly-extending seat-flange 12 against which is seated the lower end of a cap-member 13.

For the purpose of firmly uniting the cap-member 13 and body-member 10, I provide a long axially-arranged coupling-bolt 14 which extends downward through the cap and engages with a threaded bore 15 formed in a boss 16 upstanding from the lower end of the body-member 10.

Within the body-member 10, near its lower end, I form an annular seat 17 for the reception of a skeletonized assembly-plate 18 which is provided with an annular series of fluid-passages 19 and with an annular outer positioning-flange 20 and a corresponding inner positioning-flange 21, both upstanding from its upper face. Soldered or otherwise secured, at its lower end, to the outer flange 20 is gauze cone 22, preferably made of metal, and inclined upward and inward from the said flange 20. At its upper end the cone is soldered or otherwise secured to the upper end of a complementary inner gauze cone 23 also formed of metal and inclined reversely with respect to the cone 22 and soldered or otherwise secured at its lower end to the positioning-flange 21 aforesaid, as clearly shown in Fig. 3. In addition to the passages 19 aforesaid, the plate 18 is also provided with a central bore 24 in which is soldered an upstanding feed-tube 25, slidably fitting at its upper end into a socket 26 formed in a boss 27 depending from the underface of the cap-member 13.

Opening into the socket 26, so as to be in connection with the interior of the tube 25, the cap-member 13 is provided with a vertical cylindrical passage 28 intersecting at its upper end a horizontal inlet-passage 29, which latter is enlarged at its outer end and internally threaded as at 30 for the reception of a pipe or other suitable conduit.

At one side of the central passage 28 aforesaid the cap 13 is formed with a vertical passage 31 contracted at its upper end as at 32 for the reception of a valve 33 formed with a conical portion 34, which latter is formed integral with a valve-stem 35. The valve 33 aforesaid is cut away as at 36 on an angle with respect to its axis, so as to co-act with the passage 32 in controlling the flow of liquid between the same and a horizontal outlet-passage 37, which it intersects and which is located in the cap 13 at a point diametrically opposite the inlet-passage 29 aforesaid.

To raise and lower the valve 33 in the contracted portion 32 of the passage 31 for controlling the flow of fluid, the valve-stem 35 is provided with an enlarged threaded portion 38, the threads of which co-act with an internally-threaded passage 39 arranged axially in line with the passage 31 and opening at its upper end into a gland-chamber 40.

For the purpose of preventing the fluid from leaking upward past the valve-stem, I locate in the said gland-chamber and around the valve-stem 35 a mass of fibrous packing 41 clamped between two complementary washers 42 by means of a helical spring 43 which encircles the said stem and bears at its lower end against the upper washer 42 and at its upper end against the upper face of a plug 44 screwed into the extreme upper end of the gland-chamber 40. As shown, the valve-stem 35 extends upward through the plug 44, and at its upper end it is squared as at 45 for the application of a wrench or other suitable tool. To protect the upper end of the valve-stem

from accidentally being turned, the same is covered by a domical cap 46 which is internally threaded at its lower end for co-action with the external threads of a neck 47 upstanding from the cap-member 13 as shown.

The fluid is adapted to enter my improved strainer through the inlet-passage 29, thence travel downward through the passage 28, tube 25, and into the sediment-chamber 48 in the bottom of the body-member 10. From this point the fluid flows upward through the passages 19 of the assembly-plate 18 and out through the oppositely-inclined walls of the gauze cones 22 and 23, and upward through the passage 31, past the valve 36, and ultimately out through the intersecting outlet-passage 37.

As thus constructed and arranged, my improved strainer may be readily and conveniently taken apart for cleaning by first removing the coupling-bolt 14, which thereby permits the separation of the cap 13 from the body-member 10. The strainer-unit, comprising the gauze cones 22 and 23, assembly-plate 18, and feed-tube 25, may now be readily lifted out of the body-member and cleansed of any foreign matter adhering to it.

I claim:

1. A strainer comprising a cup-like body-member; a cap for the said body-member; an inlet and an outlet port formed in the said cap; a vertical passage also formed in the said cap in communication with one of the said ports; a separately-organized strainer-unit comprising a perforated assembly-plate positioned above the bottom of the said body-member to form a fluid-chamber at the bottom thereof, and a gauze element upstanding from the said assembly-plate; a vertically-arranged imperforate tube extending axially through the said gauze element between the vertical passage in the said cap and the said fluid-chamber in the body-member; and a coupling-bolt smaller in diameter than the internal diameter of the said tube, and extending axially through the fluid-passage in the cap-member, through the interior of the said tube and into the bottom of the said body-member for coupling the said cap-member and body-member together.

2. A strainer comprising a cup-like body-member; a cap for the said body-member; an inlet and an outlet port formed in the said cap; a vertical passage also formed in the said cap in communication with one of the said ports; a separately-organized strainer-unit comprising a perforated assembly-plate positioned above the bottom of the said body-member to form a fluid-chamber at the bottom thereof, and a gauze element upstanding from the said assembly-plate; a vertically-arranged imperforate tube secured to and upstanding from the said assembly-plate so as to be unitary therewith and extending axially through the said gauze element between the vertical passage in the said cap and the said fluid-chamber in the body-member; and a coupling-bolt smaller in diameter than the internal diameter of the said tube, and extending axially through the fluid-passage in the cap-member, through the interior of the said tube and into the bottom of the said body-member for coupling the said cap-member and body-member together.

In testimony whereof, I have signed this specification.

FORRESTER L. HAMMER.