E. E. HAUER.

STRAINER.

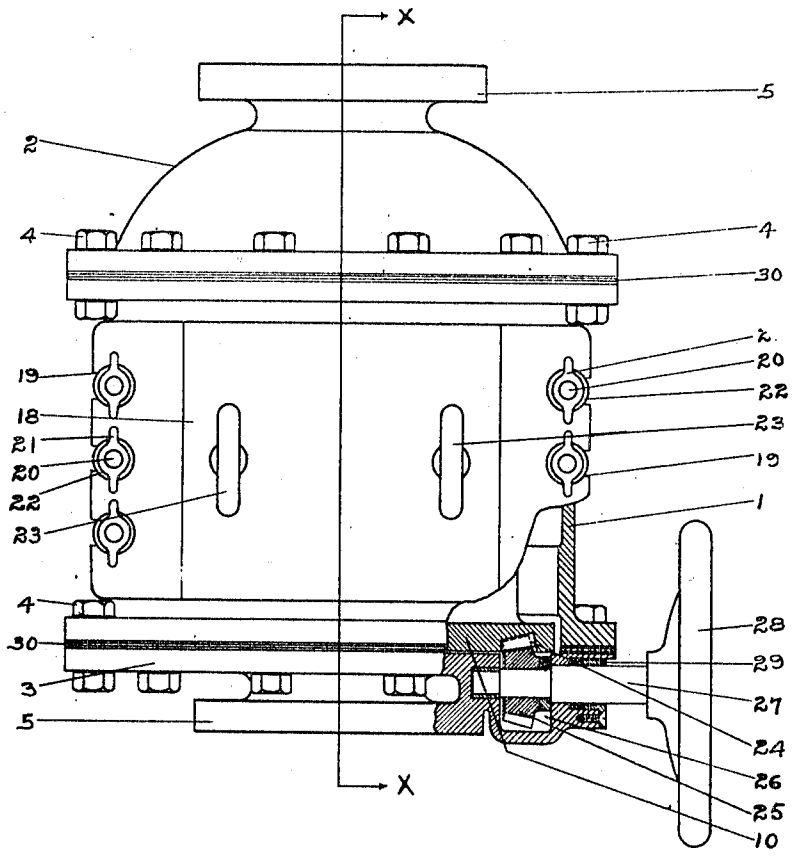
APPLICATION FILED MAY 16, 1910.

1,001,025.

Patented Aug. 22, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



Inventor

Witnesses

Howard Ogden

Virgil Baker.

By Elmer E. Hauer

Percy Norton

Attorney

E. E. HAUER.

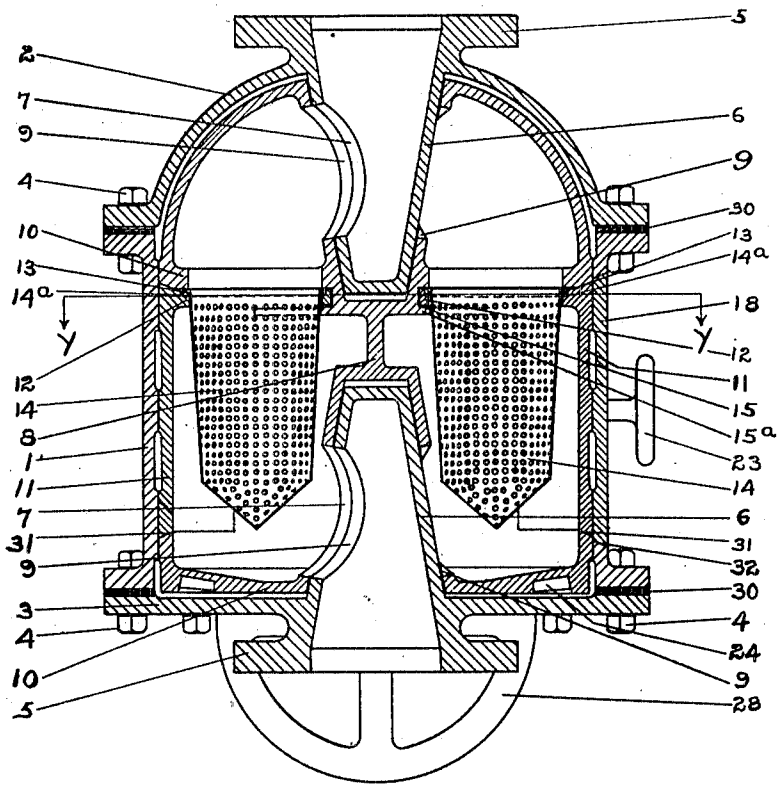
STRAINER.

APPLICATION FILED MAY 16, 1910.

1,001,025. Patented Aug. 22, 1911.

3 SHEETS—SHEET 2.

Fig. 2.



Inventor

Witnesses

Grover Algen

Virgil Baker

By Elmer E. Hauer

Percy Morton

Attorney

E. E. HAUER.

STRAINER.

APPLICATION FILED MAY 16, 1910.

1,001,025.

Patented Aug. 22, 1911.

3 SHEETS—SHEET 3.

Fig. 3.

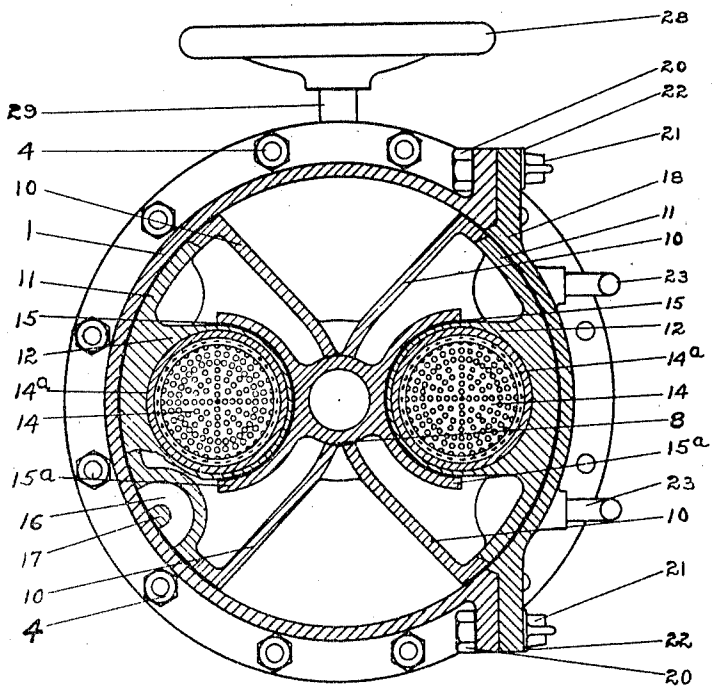
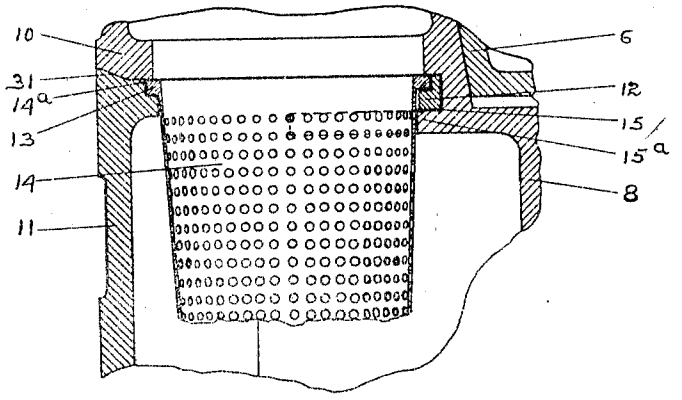


Fig. 4.



Witnesses

Inventor

Elmer E. Hauer

By Percy Norton

Attorney

UNITED STATES PATENT OFFICE.

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

STRAINER.

1,001,025. Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed May 16, 1910. Serial No. 561,676.

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 for use in pipe lines, arranged to remove solid impurities without interrupting the flow of the fluid.

The object of my invention is to provide a simple, strong and durable strainer that will stand the shocks and strains incident to its use, and so arranged that it can be easily cleaned without interrupting the flow of the fluid.

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 accompanying drawings Figure 1 is a side elevation partly in section of a strainer, embodying my invention. Fig. 2 is a section on the line *x*—*x* of Fig. 1. Fig. 3 is a section on the line *y*—*y* of Fig. 2, and Fig. 4 is a detail showing a fragment of the strainer basket and its support.

In the drawings 1 represents a casing having an inlet head 2 and an outlet head 3 removably secured thereto by bolts 4. Said heads are each provided with suitable flanges 5 to attach to the main through which the fluid to be strained flows; and said heads are further provided with inwardly projecting tapered portions 6 forming the inlet and outlet having ports 7 arranged as shown. Within the chamber formed by said casing, a valve 8 is adapted to rotate on the tapered portions 6 of the heads. Said valve has a plurality of chambers secured thereto or formed therewith, two being shown in the drawings, each being provided with ports 9 adapted to register with the ports 7 so that upon rotating or turning the valve any one of said chambers may be brought into position to form a passage way from the inlet to outlet of the casing through the side of the chamber formed by the casing into which the ports 7 open, the arrangement being such that the ports to the other valve chambers are closed. In the drawings the valve chambers are formed by the walls 10 extending from the valve 8, and each chamber is provided with an opening having a removable closure 11 with an inwardly extending projection 12 at its upper end having an opening therethrough. Flanges 13 of baskets 14 rest in annular recesses 14ª of said projections with the baskets extending through said openings and below said projection. Said projections rest in recesses 15 of U shaped extensions 15ª projecting from the valve 8. The removable closures 11 of the valve chambers are preferably provided with one or more recesses 16 and cross-pieces 17 forming handles for the easy removal of the closures 11, their projections 12 and the baskets 14.

An opening having a closure 18 is formed in the casing 1 through which any one of the closures 11 with its basket 14 can be removed. Said closure may be secured to the casing in any suitable way. It is shown with recesses 19 through which bolts 20 extend and the closure is secured by wing nuts 21 bearing against washers 22. Handles 23 are provided for the easy handling of the closure.

The valve 8 may be rotated in any suitable manner. For this purpose I have shown a pair of gears, the teeth of one of which are formed at 24 in the lower wall 10 of the valve chambers, said wall extending from chamber to chamber as shown, and the other gear 25 is housed in a recess 26 of the head 3, a short shaft 27 journaled in said head as shown, and having a hand-wheel 28 being employed to operate said gears; and a stuffing box 29 is employed to prevent leakage from the casing.

It will be noted that the walls of the valve and its chambers fit the casing 1 and the tapered portions of the heads so that the valve and chambers may be rotated; but that some space is allowed between the walls of the valve chambers and the heads, plates or disks 30 between the heads and casing are provided for adjustment to take up the wear between the valves and tapered portions of the heads. The closures 11 of the valve chambers have beveled seats at 31; and the closure 18 is seated in like manner as shown at 32.

It will be seen that by rotating the hand-wheel any one of the valve chambers may be positioned to form the passage way between

the inlet and outlet of the casing, and when the basket in said chamber requires cleaning, the valve may be rotated to close the ports to said chamber and open them to another so as to permit a continuous flow of the fluid; and the valve chamber with the basket to be cleaned will be brought opposite the opening in the casing 1 through which it can be removed. It will be further seen that the closures 11 of the valve chambers carry the baskets and are provided with handles whereby said closures and baskets can be readily taken out of the casing.

Having thus described my invention, I claim:

1. The combination of a casing forming a chamber having an inlet and outlet, a valve having a plurality of strainers removable separately through an opening in said casing, a closure for said opening, and means to move said valve to direct the flow of fluid through any one of said strainers and cut off the others, substantially as described.

2. The combination of a casing forming a chamber having an inlet and outlet, a valve, a plurality of strainers movable in unison with said valve, and each removable separately through an opening in said casing, a closure for said opening and means to rotate said valve to direct the flow of fluid through any one of said strainers and cut off the others, substantially as described.

3. The combination of a casing forming a chamber having an inlet and outlet, a valve having a plurality of chambers, each of which has an inlet and outlet adapted to register respectively with the inlet and outlet of the casing, basket strainers in each of said valve chambers, said casing chamber having an opening and each of said valve chambers having an opening adapted to register therewith for the removal of said strainers, closures for said openings and means to rotate said valve to direct the flow of fluid through any one of said strainers and cut off the others, substantially as described.

4. The combination of a casing forming a chamber having inlet and outlet heads, a valve having a plurality of strainers removable separately through an opening in said casing, a closure for said opening, means to take up the wear between said inlet and outlet heads and said valve and means to move said valve to direct the flow of fluid through any one of said strainers and cut off the others, substantially as described.

5. In a strainer, a casing with a removable head having an inwardly extending tapered portion with an opening therethrough, a valve in said casing having a plurality of straining chambers, each of which has an opening adapted to register with the opening in said head, said valve being journaled on said tapered portion of the head and means to take up the wear between said head and valve, substantially as described.

6. The combination of a casing forming a cylindrical chamber with an inlet and outlet on one side of said chamber and an opening with a closure for same on the opposite side of said chamber, a rotatable valve in said chamber having a plurality of chambers, each of which has an inlet and outlet adapted to register respectively with the inlet and outlet of said casing, each of said valve chambers also having an opening and closure for same, said openings being adapted to register with the opening in the casing, strainers in said valve chambers removable through said openings, and means to move said valve to direct the flow of fluid through any one of said chambers and cut off the others, substantially as described.

7. The combination of a casing having an inlet and outlet, a valve having a plurality of strainers removable through an opening in said casing, a closure for said opening and means including a pair of gears to rotate said valve to direct the flow of fluid through any one of said strainers and cut off the others, substantially as described.

8. The combination of a casing having an inlet and outlet, a valve having a plurality of strainers removable through an opening in said casing, a closure for said opening, a housing in said casing, means including a pair of gears to rotate said valve to direct the flow of fluid through any one of said strainers and cut off the others, one of said gears being journaled in said housing and the other formed on said valve, substantially as described.

In testimony whereof, I have hereunto affixed my signature in the presence of two witnesses.

ELMER E. HAUER.

Witnesses:
GROVER ILGEN,
OLIVER H. HAUSE.