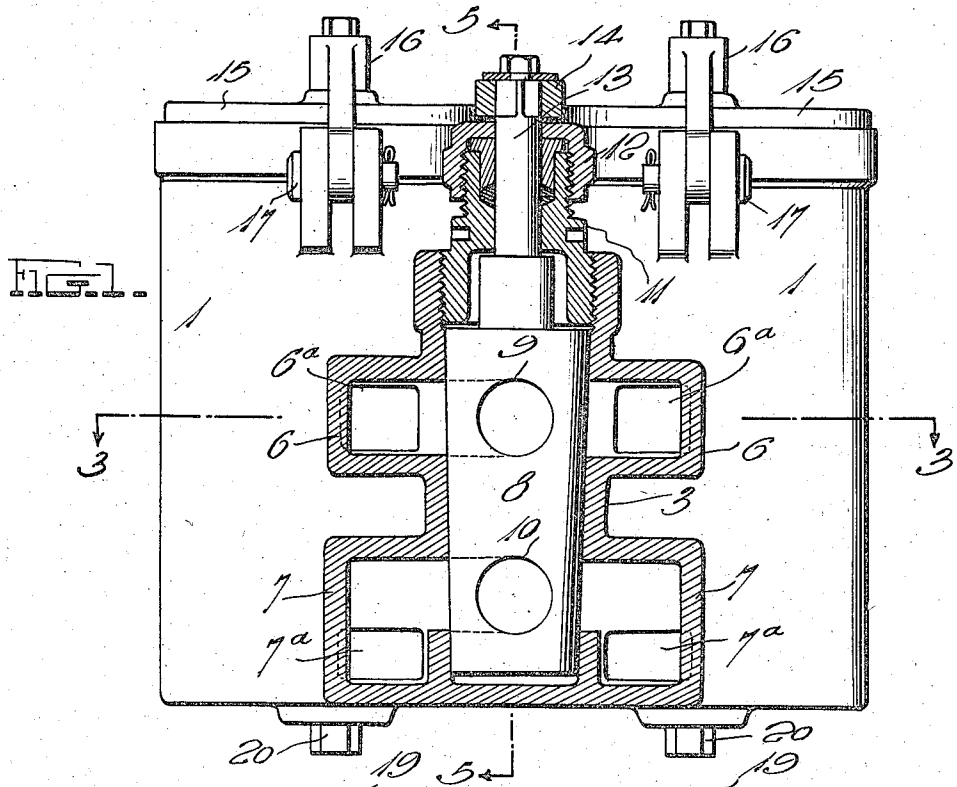
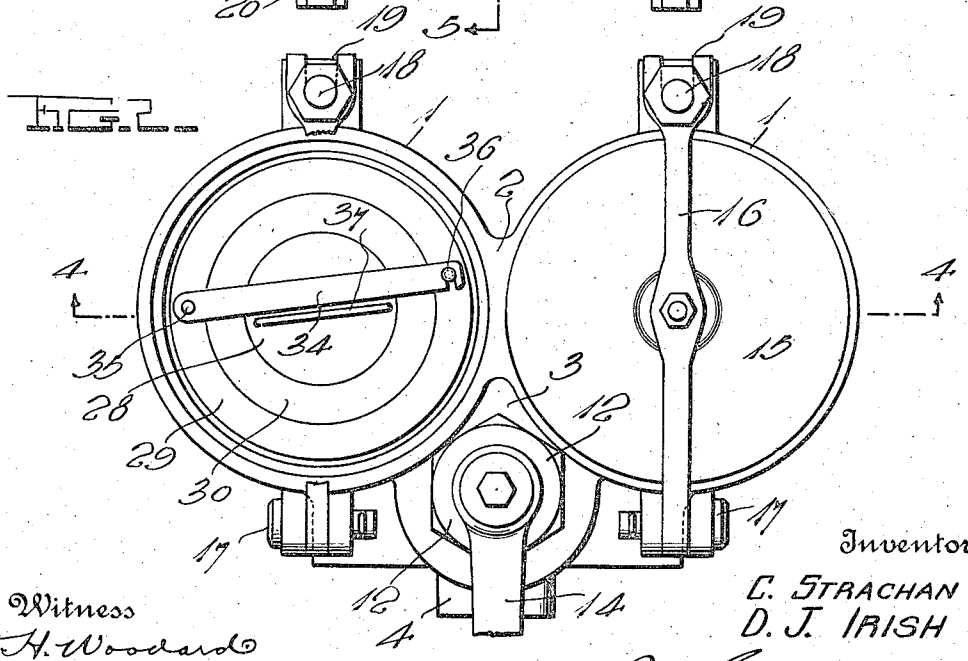
Nov. 11, 1924. 1,515,080

C. STRACHAN ET AL

OIL STRAINER

Filed Dec. 20, 1922 2 Sheets-Sheet 1





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D. J. IRISH

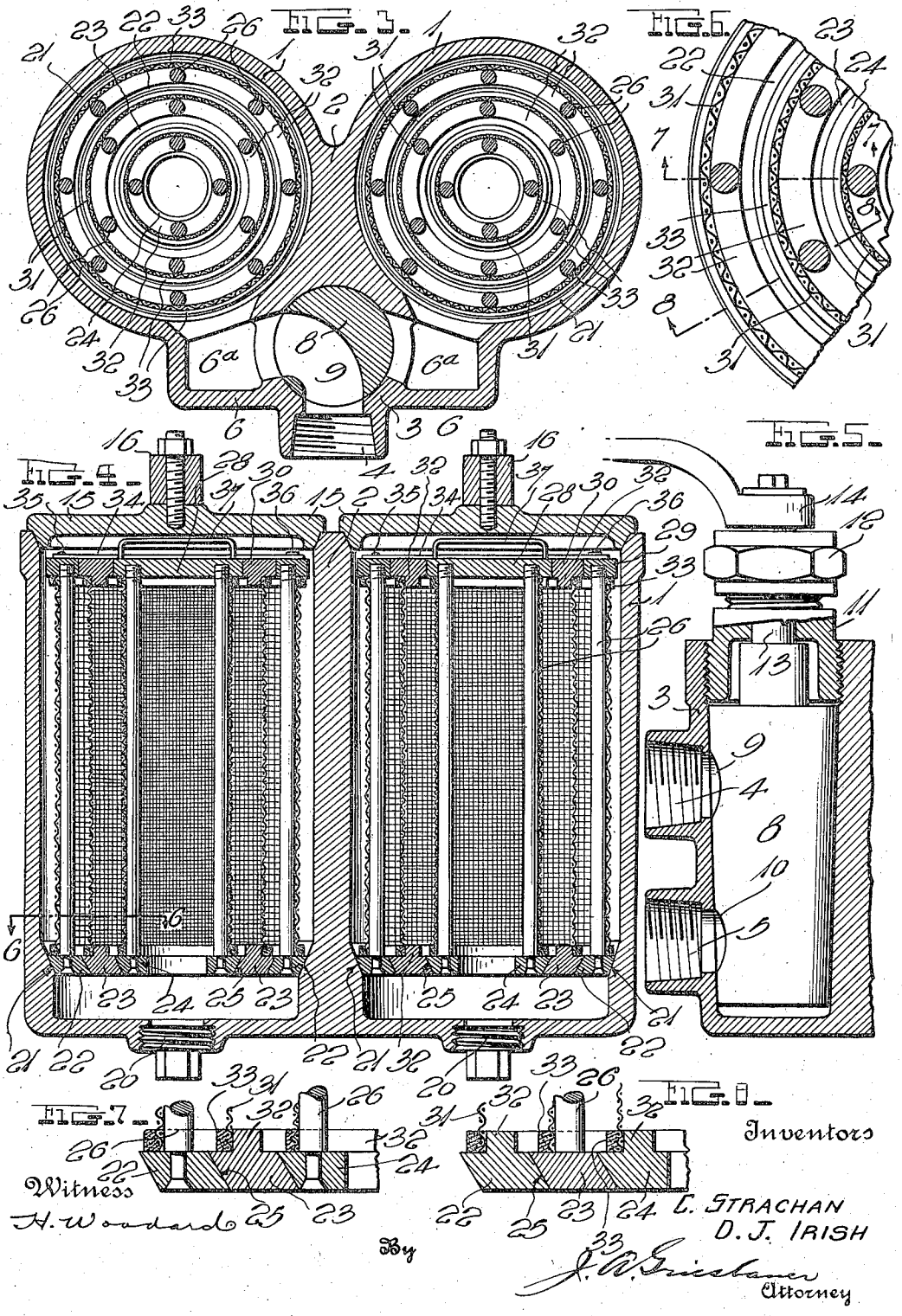
By J. B. Brickbauer
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Nov. 11, 1924. 1,515,080

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OIL STRAINER

Filed Dec. 20, 1922 2 Sheets-Sheet 2



Patented Nov. 11, 1924. 1,515,080

UNITED STATES PATENT OFFICE.

CHRISTOPHER STRACHAN, OF SOUTH ORANGE, NEW JERSEY, AND DAVID J. IRISH, OF ST. GEORGE, NEW YORK, ASSIGNORS TO MORSE DRY DOCK & REPAIR CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

OIL STRAINER.

Application filed December 20, 1922. Serial No. 608,121.

To all whom it may concern:

Be it known that we, CHRISTOPHER STRACHAN, a citizen of the United States, residing at So. Orange, county of Essex, and State of New Jersey, and DAVID J. IRISH, a citizen of the United States, residing at St. George, Staten Island, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Oil Strainers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in strainers and has reference more particularly to devices of this class designed primarily for use in connection with oil burning systems on steamships.

One object of the invention is to provide a duplex strainer in which two straining cylinders and a valve for bringing one or the other into play, are disposed in extremely compact relation, which is of paramount importance on account of the cramped quarters in which oil burning systems must usually be installed.

Another object is to provide an improved straining means including a plurality of concentric screens positioned in a cylinder, these screens being bodily removable as a single unit from the cylinder but being then capable of being easily disassembled. Thus, quick and easy cleaning of the straining means may be effected.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Figure 1 is a front elevation, partly in section showing a strainer constructed in accordance with the present invention.

Figure 2 is a top plan view with parts broken away.

Figure 3 is a horizontal sectional view as indicated by lines 3—3 of Fig. 1.

Figure 4 is a vertical sectional view as indicated by line 4—4 of Fig. 2.

Figure 5 is a vertical sectional view taken substantially on line 5—5 of Fig. 1.

Figure 6 is an enlarged detail horizontal section on line 6—6 of Fig. 4.

Figures 7 and 8 are detail vertical sectional views as indicated by lines 7—7 and 8—8 of Fig. 6.

In the drawings above briefly described, the numerals 1 designate a pair of cylinders disposed side by side in close relation with each other and having their side walls integrally connected with each other as indicated at 2. The front portions of these walls converge toward the joined portions 2 and a cylindrical valve casing 3 is located in the angle of convergence this casing being integrally connected with the two cylinders. The casing 3 is provided with an inlet 4 and an outlet 5 and opposite sides of said cylinder are formed with two bosses 6 in the same plane as the inlet 4, and with additional bosses 7 in the plane of the outlet 5. These bosses are integral with the casing 3 and the cylinders 1 and form rigid bracing means therefor as well as serving to contain inlet ports 6^a and outlet ports 7^a, all of these ports opening into the casing 3 and the cylinder 1, it being of course understood that each of these cylinders is only provided with one inlet and one outlet port.

A preferably tapered plug valve 8 is located in the casing 3 and is formed with a pair of L-shaped ports 9 and 10, the former being in the same plane with the ports 6^a while the port 10 co-operates with the ports 7^a. When the plug 8 is positioned as shown in Figs. 1 and 3, it will be seen that the oil entering through the inlet 4 will flow through the upper port 9 and through one of the ports 6^a into one of the cylinders 1. In this cylinder, the oil passes through straining means yet to be described and discharges through one of the ports 7^a and the port 10 to the oil outlet 5. While one straining cylinder is thus operating, the other is idle but is in readiness to operate whenever the position of the valve 8 is reversed. It will thus be seen that by throwing either one of the cylinders into play, the straining means of the other may be cleaned or repaired as occasion may require, without suspending operation of the device.

While any preferred means may be employed for holding the valve 8 in the casing 3, we prefer to thread a suitable bonnet 11 in the upper end of the cylinder, this bonnet having an appropriate stuffing box 12 through which the valve stem 13 passes, the upper end of this stem having an appropriate handle 14.

The upper ends of the cylinders 1 are pro-

vided with suitable removable closures 15 which may well be carried by yoke bars 16 pivoted at 17 to the cylinders at one end and held down at their other ends by appropriate pivoted bolts 18 engageable with the forked ends 19 of said yoke bars. The lower closed ends of the cylinders may well be provided with appropriate drain plugs 20.

Within each of the cylinders 1, is a novel straining means but since the construction in both of these cylinders is the same, only one will be described. Near its closed lower end, the cylinder 1 is formed with an internal seat 21 around its wall, which seat is preferably beveled as shown, for the purpose of supporting the outermost of a plurality of concentric, nested rings 22, 23 and 24. The outer surface of the ring 22 is beveled for contact with the seat 21 while the contacting surfaces of the rings 22, 23 and 24 are similarly beveled as indicated at 25, whereby ring 22 supports ring 23 and the latter in turn supports the innermost ring 24. Circumferentially spaced tie rods 26 are shown rising from the concentric rings 22, 23 and 24, the upper ends of these rods being connected with inner, outer and intermediate concentric members 28, 29 and 30, the former being preferably a solid plate as shown. Screens 31 of annular form are disposed in concentric relation around the several series of tie rods 26, these screens preferably being of different mesh as shown. The innermost of the screens 31 is carried by the member 28 and the inner ring 24 and is the finest of the series; the outermost screen which is the coarsest mesh, is carried by the outer member 29 and the outer ring 22, while the intermediate screen has its ends connected with the member 30 and the intermediate ring 23. The several parts 22, 23, 24, 28, 29 and 30, are by preference formed with annular ribs 32 to which the screens are brazed soldered or otherwise secured, as indicated at 33.

The concentric members 28, 29 and 30 have their outer surfaces disposed in the same plane and they are held in this relation by a retaining bar 34 which extends across the outer sides of said members, said bar being shown as pivoted at 35 to the outer member 29 at one of its ends, while its opposite end is suitably shaped and hooked over a headed stud 36 also carried by the member 29. By the provision of this retaining bar, it will be seen that when the closure 15 is opened, the entire straining means may be removed from the cylinders 1, the central member 28 being provided with an appropriate bail 37 for this purpose. This bail also serves to prevent the straining means from rising in the cylinders as will be clear by reference to Fig. 4. After the entire nest of strainers and carrying rings therefore has been removed from the cylinders, the retaining bar 34 may be easily released and thus the several sections of the strainer may be disassembled, permitting quick and easy cleaning or substitution of new parts if required.

Particular attention is directed to the simple, inexpensive and compact relation of parts which possesses the advantages above pointed out. Also, the novel construction of the straining means which permits withdrawal as a unit from the cylinder, yet may be readily disassembled and cleaned when removed, is of importance, as will be appreciated by those familiar with the conditions under which strainers of this class must be used.

In general, excellent results may be obtained from the details disclosed and they may therefore be followed. It is to be understood however that within the scope of this invention as claimed, numerous minor changes may be made.

We claim:

1. A strainer comprising a cylinder having a removable closure at one end, an internal ring seat spaced from its other end, and inlet and outlet ports between the plane of said seat and the ends of the cylinder, a plurality of concentric nested rings, one of which is supported by said seat, said rings having coacting surfaces whereby any ring except said one ring is supported by an adjacent ring, a plurality of concentric screens in the cylinder connected at one end to said rings, and spacing and closing means for the other ends of the screens, the interior of the innermost screen being in communication with the aforesaid other end of the casing by means of the opening through the innermost of the rings.

2. A duplex strainer comprising a pair of straining cylinders disposed side by side in close relation and having their side walls integrally connected, said side walls converging to their line of juncture with each other, a valve casing in the angle of convergence between said walls and integrally joined to the latter, said valve casing having an inlet and an outlet, bosses extending from the opposite sides of said valve casing and joined integrally thereto and to said side walls of said cylinders, said bosses having inlet and outlet ports for the two cylinders opening into said valve casing, and a valve in said casing for placing its inlet and outlet in communication with the ports of either cylinder.

3. A strainer comprising a cylinder having a removable closure at one end, an internal seat spaced from its other end and inlet and outlet ports between said seat and the ends of the cylinder, a plurality of concentric nested rings, the outermost of which engages said seat, an equal plurality of concentric screens in the cylinder connected at one

end to said rings, and additional concentric nested members connected to the other ends of said screens.

4. A structure as specified in claim 3; said rings having coacting surfaces whereby any ring is supported by the immediately surrounding ring.

5. A structure as specified in claim 3; said rings having coacting surfaces whereby any ring is supported by the immediately surrounding ring, and a retaining bar extending across said additional concentric members and connected at its ends to the outermost thereof to retain said members, said screens and said rings assembled as a single unit.

In testimony whereof we hereunto affix our signatures.

CHRISTOPHER STRACHAN.
DAVID J. IRISH.