April 27, 1926. 1,582,148

J. H. STOCKHOLDER

BOILER CLEANER

Filed June 30, 1921 2 Sheets-Sheet 1

Fig. 1.

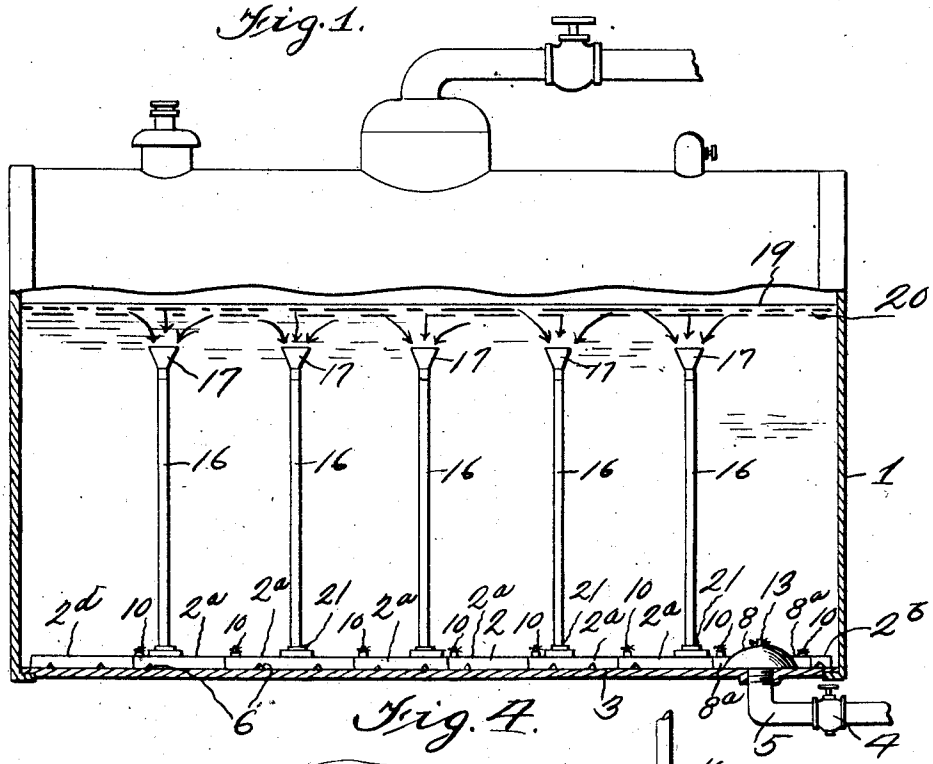


Fig. 4.

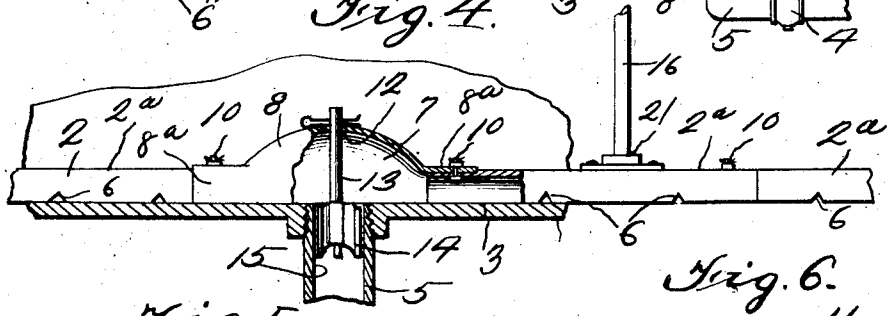


Fig. 5.

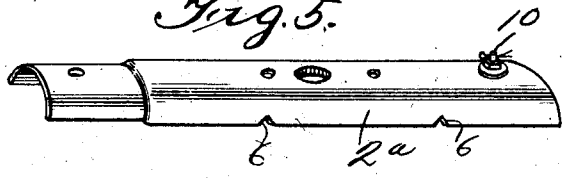


Fig. 6.

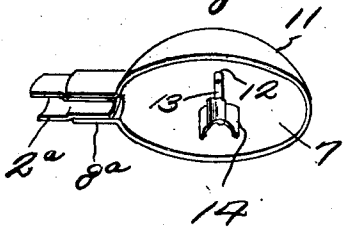
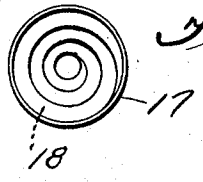


Fig. 7.



Inventor

J. H. Stockholder

By [signature]

Attorney

April 27, 1926. 1,582,148

J. H. STOCKHOLDER

BOILER CLEANER

Filed June 30, 1921 2 Sheets-Sheet 2

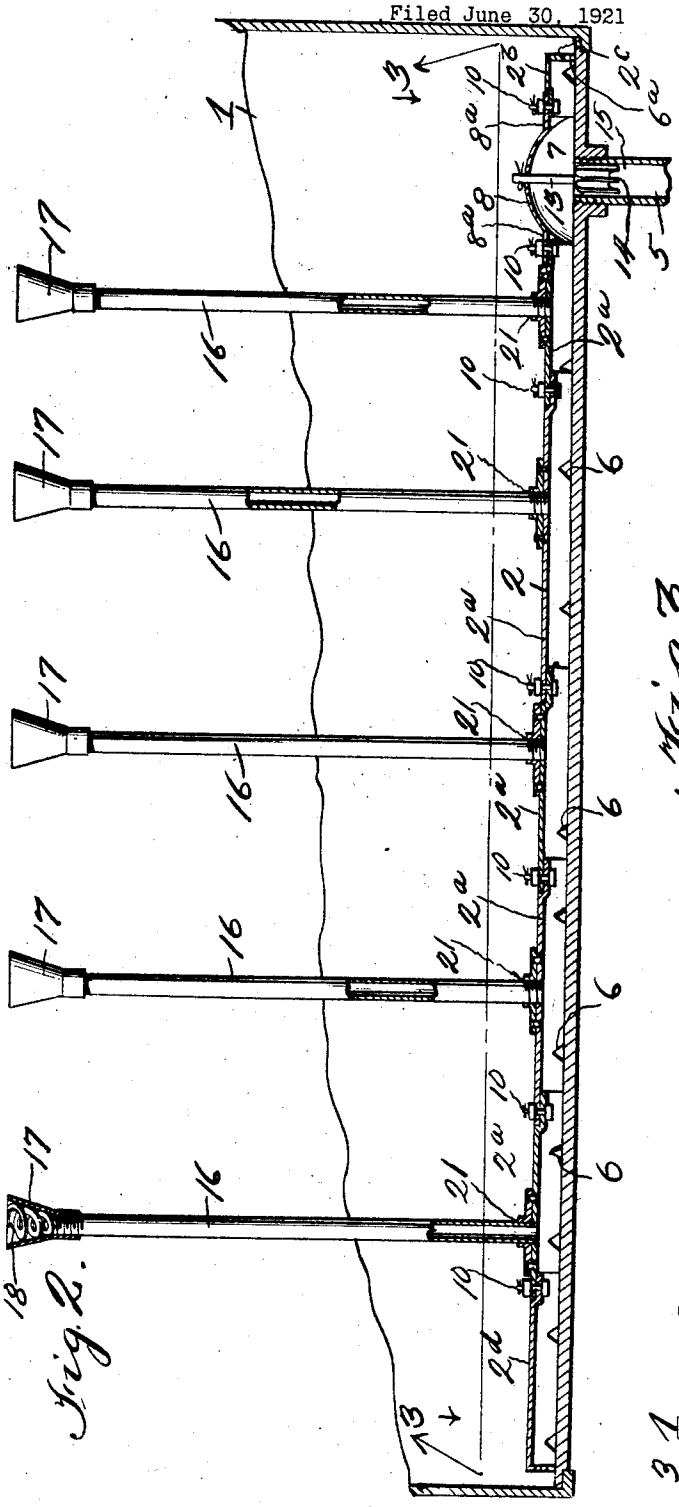


Fig. 2.

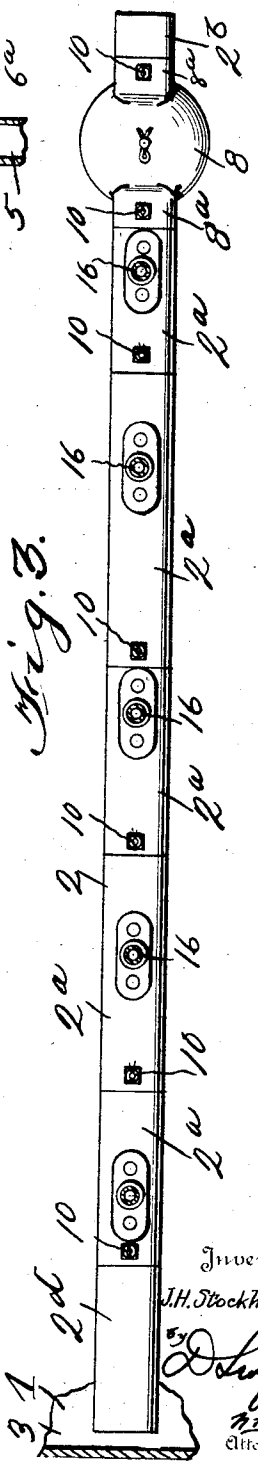


Fig. 3.

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Patented Apr. 27, 1926. 1,582,148

UNITED STATES PATENT OFFICE.

JOHN H. STOCKHOLDER, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO AUTOMATIC BOILER CLEANER COMPANY.

BOILER CLEANER.

Application filed June 30, 1921. Serial No. 481,520.

To all whom it may concern:

Be it known that I, JOHN H. STOCKHOLDER, a citizen of the United States, residing at New Orleans, in the parish of Orleans, State of Louisiana, have invented a new and useful Boiler Cleaner; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to boiler cleaners and has for its object to provide a device of this character comprising a segmentally shaped conduit formed from detachably connected sections, said sections being disposed on the bottom of a boiler and provided with notched edges whereby sediment in the bottom of the boiler will be forced into the conduit and discharged from the boiler.

A further object is to provide a boiler cleaner comprising a conduit disposed on the bottom of the boiler and movable thereon, thereby not only providing means for carrying off sediment in the boiler but also providing means whereby during the movement of the boiler, such for instance a marine boiler, the conduit will move and prevent solidification of the sediment therein and dislodge said sediment.

A further object is to provide a conduit with a hood adapted to be disposed over the blow-off opening, said hood being provided with a downwardly extending centrally disposed shaft terminating in a spider disposed in the blow off pipe, said shaft forming a pivotal point on which the conduit as a whole pivots.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—

Figure 1 is a side elevation of a conventional form of boiler, part being broken away to show the boiler cleaner disposed therein.

Figure 2 is a longitudinal sectional view through the lower portion of a boiler showing the boiler cleaner conduit in longitudinal section.

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 2.

Figure 4 is a view in side elevation and partly in section, showing the blow off hood located over a centrally disposed blow off pipe.

Figure 5 is a perspective view of one of the conduit sections.

Figure 6 is a perspective view of a modified form of blow off pipe hood used when the blow off pipe is located adjacent the end of the boiler.

Figure 7 is a top plan view of one of the skimming elements.

Referring to the drawings, the numeral 1 designates a conventional form of boiler, preferably of the type used on boats, however it is to be understood that the device may be applied to any type of boiler, whether marine or stationary. It has been found that sediment rapidly accumulates in marine boilers particularly of the type used on tug boats in the lower Mississippi River. In this particular locality it is necessary to lay up tug boats from time to time for removing mud therefrom, which entails considerable loss of time and money. To overcome this difficulty a boiler cleaning device comprising a conduit 2 disposed on the bottom 3 of the boiler, and through which conduit the mud in the bottom of the boiler is forced when the blow off valve 4 carried by the blow off pipe 5 is opened. The boiler conduit 2 is formed from a plurality of sections 2^a semi-circular in transverse cross section, said sections being provided with notches 6 in their edges, which notches when the conduit 2 as a whole is disposed on the bottom 3 of the boiler form apertures through which the sediment and mud in the bottom of the boiler will be forced by the pressure within the boiler and forced through said conduit to the chamber 7 of the blow off pipe hood 8, and thence through the blow off pipe 5 to any suitable point of discharge. The conduit sections 2^a overlap each other and are detachably connected together by means of bolts 10, said bolts allowing the sections to be easily and quickly assembled or disassembled as desired. The blow off pipe hood 8 is provided with extensions 8^a, to which extensions the adjacent conduit sections 2^a and 2^b may be attached, sections 2^b being substantially the same in construction as the sections 2^a with

the exception that they are provided with closed ends 2^c, which ends may be provided with notches 6^a through which mud and sediment may be forced by the pressure within the boiler. A conduit section 2^d similar in construction to the conduit section 2^b, is provided, which section may be utilized at the opposite end of the conduit from the end carrying the hood 8.

Referring to Figure 6 in which a modified form of blow off hood 11 is provided, it will be seen that said hood is substantially the same as the hood 8 shown in Figures 1 and 2 with the exception that one of the extensions 8^a is eliminated, thereby obviating the use of the conduit section 2^b. The hood 11 is particularly adapted for use in connection with boilers where the intake end of the blow off pipe 5 is located close to one of the end walls of the boiler, and in a position where the section 2^b could not be used. It will be seen that blow off pipe either of the hoods 8 and 11 will entirely house intake end of the blow off pipe 5 and that sediment forced through the conduit would enter said housing and pass into the blow off pipe.

Pivotally mounted in an aperture 12 in the hood 8 is a vertically disposed shaft 13, which shaft extends downwardly and terminates in a spider 14, disposed within the upper end 15 of the blow off pipe, said spider and shaft forming means whereby the hood 8 will be maintained in registration with the upper end 15 of the blow off pipe and also forming means whereby the conduit 2 may move in a horizontal plane incident to movement of the vessel thereby allowing said conduit to dislodge the sediment or mud at the bottom of the boiler, and at the same time prevent solidification of said mud or sediment in the bottom of the boiler for the reason that the conduit 2 is constantly moving incident to rocking or pitching of the vessel or to its natural roll from an even keel.

Extending upwardly from each conduit section 2^a is a vertically disposed pipe 16. The upper ends of the pipes 16 terminate in conically shaped skimming elements 17 having helically shaped passages 18 therein. The conically shaped skimming elements are disposed below the surface 19 of the water 20 within the boiler and form means whereby scum and foam which may form on top of the water will be conducted downwardly, thence through the conduit 2 and into the blow off pipe 5 when the blow off valve 4 is opened. It will be seen that the helically shaped passages 18 in the skimming elements 17 will set up a centripetal action in the water above the skimming elements, thereby increasing their skimming area. The lower ends of the vertically disposed pipes 16 are detachably connected to the conduit sections 2^a at 21, thereby allowing the parts to be easily disassembled for shipping and storage purposes.

From the above it will be seen that a sediment removing and water skimming device is provided for boilers, which device is simple in construction and so constructed that the same may be applied to boilers without varying the construction thereof.

The invention having been set forth what is claimed as new and useful is:—

The combination with a boiler, of a cleaning device therefor, said device comprising a horizontally disposed conduit disposed on the bottom of said boiler, said conduit being segmentally shaped in transverse cross section, the opposite edges of said conduit being notched, said conduit being formed from a plurality of sections, the adjacent ends of said sections overlapping and being secured together, said boiler bottom being provided with a blow off pipe, a hood forming one section of said conduit and entirely housing the blow off pipe, a vertically disposed pin extending through the hood, said pin having its lower end disposed within the blow off pipe and a plurality of ribs carried by the end of the pin within the blow off pipe.

In testimony whereof I have signed my name to this specification.

JOHN H. STOCKHOLDER.