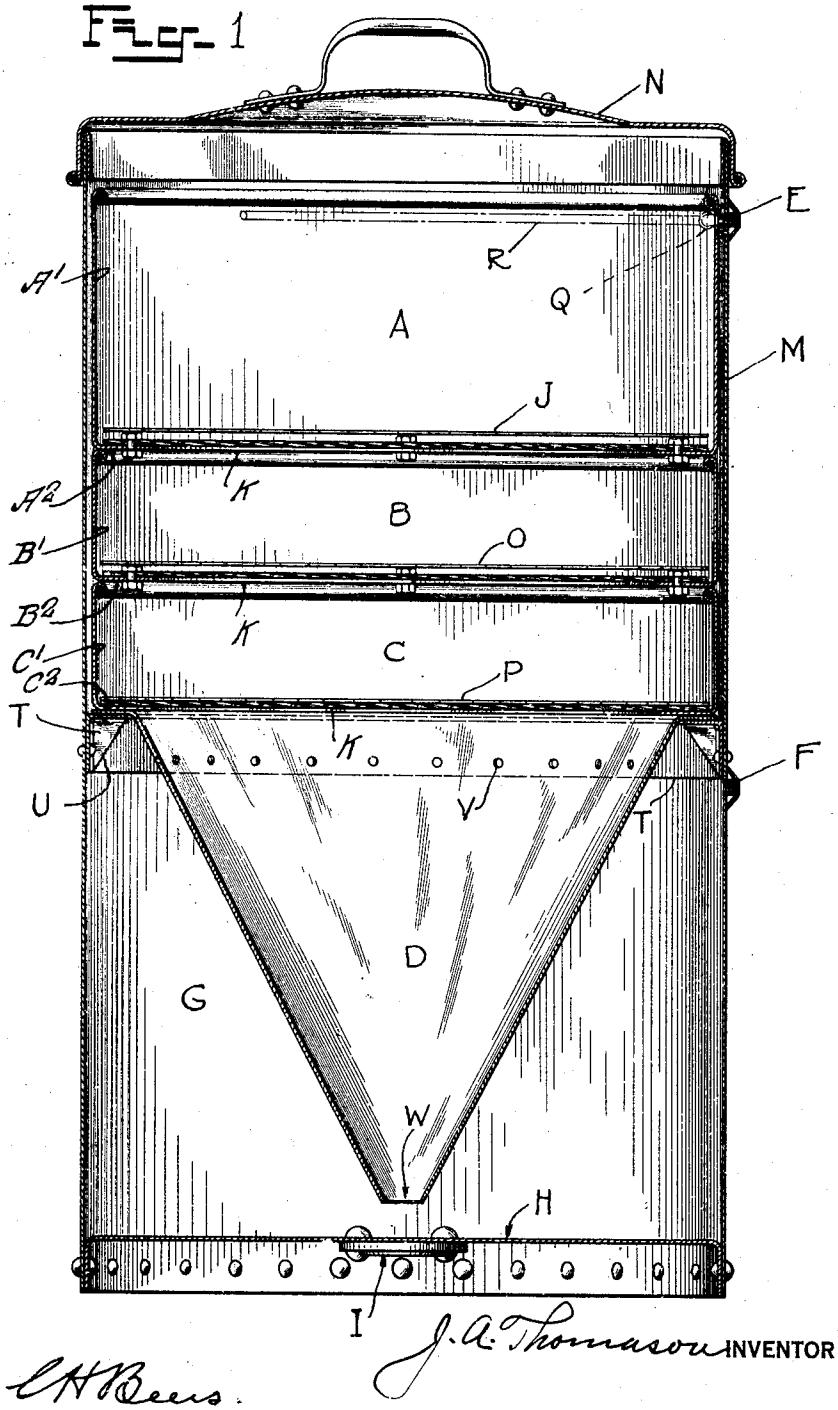
Dec. 18, 1928. 1,695,354

J. A. THOMASON

BOILER COMPOUND DISSOLVER

Filed June 7, 1927 2 Sheets-Sheet 1

Fig. 1



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Fig. 2

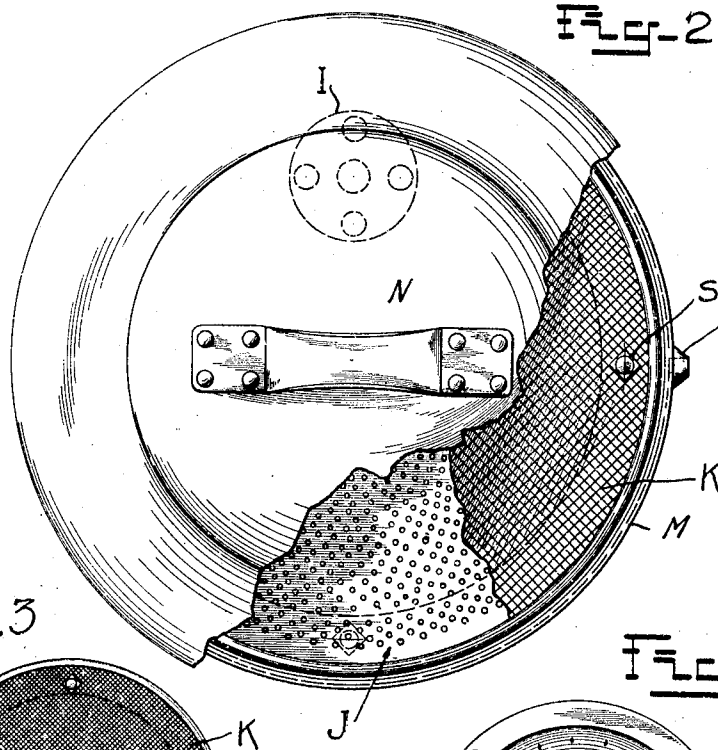


Fig. 3

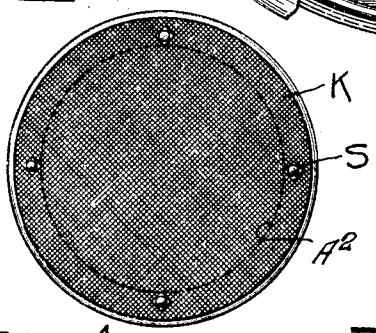


Fig. 5

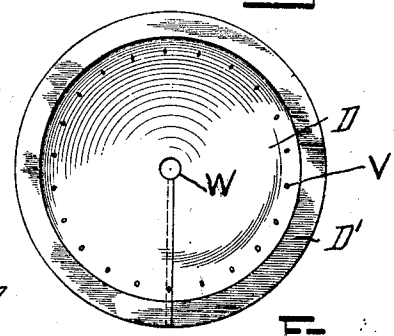


Fig. 4

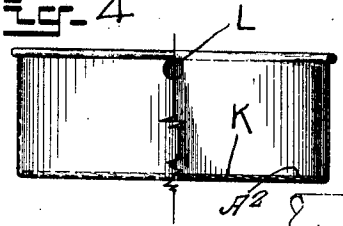


Fig. 7

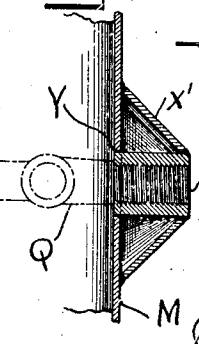


Fig. 6

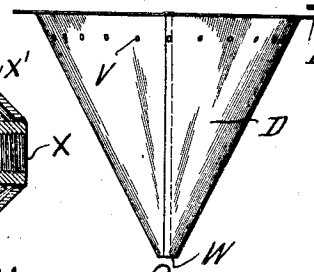
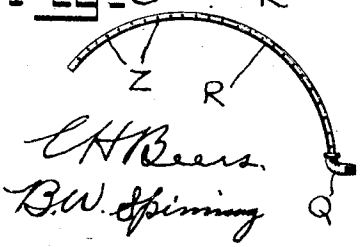


Fig. 8



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Patented Dec. 18, 1928. 1,695,354

UNITED STATES PATENT OFFICE.

JOHN A. THOMASON, OF ATLANTA, GEORGIA.

BOILER-COMPOUND DISSOLVER.

Application filed June 7, 1927. Serial No. 197,195.

This invention is in the nature of an improvement in means for dissolving soda ash and other boiler compounds for use in treating the water supply of boilers so as to prevent the injurious action of impure water on the boiler.

The invention consists of a container having a series of strainers of varying fineness arranged in the container and readily applied to and removed from the container for cleaning and other purposes, for thoroughly dissolving soda ash or other boiler compounds and to feed the dissolved compounds to a boiler through the boiler feed pump in a continuous manner, as I will proceed now more fully to explain and finally claim.

In the accompanying drawings which illustrate one specific construction of the dissolver according to this invention, in which like parts are similarly designated, Figure 1 is a vertical cross section of the dissolver. Fig. 2 is a top plan view with the cover and the first strainer element partly broken away. Fig. 3 is a plan view of one of the sections or compartments with the perforated disk omitted. Fig. 4 is a half section and side elevation of one of the compartments. Fig. 5 is a plan view, and Fig. 6 is an elevation of the heat-distributing element or funnel detached. Fig. 7 is an enlarged vertical section through the pipe connections for the water supply and the steam supply. Fig. 8 is a bottom plan view of the water spray pipe. Figs. 3, 4, 5, 6 and 8 are drawn on a reduced scale as compared with Figs. 1 and 2.

The dissolver comprises a container M made of suitable material and having a suitable cover N and a bottom H, the latter being provided with a flange connection I arranged therein off center, as shown in dotted lines, Fig. 2, and used for the outlet or discharge.

The straining sections or compartments are substantially alike and employed in any desired number, three being shown and designated respectively A, B and C nested upon one another, the section A resting upon the section B and the latter resting upon section C, and the latter supported in the container on a flanged ledge or rim T soldered and riveted horizontally to the inside of the container M, and preferably reinforced by angle plates or braces U, over the conical heat-distributing funnel D. This funnel has an upper rim flange D′ and an open discharge end W in the bottom to permit the passage of the dissolved compound into the bottom of the container and thence through the discharge opening I to the boiler. The upper end of the funnel is provided with perforations V to permit the steam to rise evenly through each of the superposed sections or compartments in the container. By the use of the flange D′ the funnel may be self-supporting in the container on the ledge or rim T.

The sections or compartments A, B and C are of substantially the same construction, excepting as hereinafter noted, and consist of pans A′ B′ C′, respectively of such diameter as to fit inside the container with a clearance. These pans may be of the same, or different depths. In the drawings the pan A′ is of a larger depth and the pans B′ and C′ of the same but smaller depth.

Perforated galvanized tin disks J, O, P, respectively, are laid in the rimmed or flanged bottoms A^2, B^2 and C^2 of the several pans over the wire-mesh pieces K. The perforations in the disks are of increasingly smaller diameter in the several disks so as to insure the thorough dissolution of the compound to be dissolved and to retain any undissolved matter therein. In each pan beneath its disk is the piece of wire-mesh K, which is soldered to said rims and also bolted thereto by bolts S.

Near its top the container is provided at one side with a pipe sleeve connection E, to which the water supply is applied, as from a feed water supply, not shown but of any ordinary or approved construction, and this sleeve has applied to it, as by an elbow Q, a spray pipe R, having bottom perforations Z, Fig. 8. The spray pipe R preferably is curved so as to extend inwardly concentrically with the pan A′, through hole L, therein, Fig. 4.

The container also has a steam supply inlet F, located just below the flange D′ of the funnel. A preferred mounting for this inlet and for the inlet E is shown in Fig. 7, and consists of a pipe sleeve X brazed or otherwise secured to the container, as at Y, and reinforced by a surrounding convex sheet metal or other collar X′ which is soldered or otherwise securely fastened to the container and sleeve. To this inlet F is applied a steam pipe, not shown, which may derive its supply from any available source, not shown. This inlet F opens into the chamber G of the container, surrounding the funnel D, the

steam passing upwardly therefrom through the perforations V and mingling with the water supplied to the sections or compartments A, B and C and their contained compound to be dissolved and aiding such dissolving action. The steam will rise evenly through each of the sections or compartments.

The soda ash or other compound is introduced through the cover into the upper section or compartment and any dust falls thence successively to the lower sections or compartments, after which the water and steam are admitted, and the process of dissolving the soda ash or compound goes on.

One advantage of this invention over the present method of feeding boiler compounds is that the compound is strained and thoroughly dissolved before entering the boiler; whereas, heretofore, boiler compounds have been fed by such methods as to cause an injurious collection of undissolved compound in the drums and tubes of the boiler.

Another advantage of this invention is that it is a time saver, due to the fact that the compound is handled but once in its original form, and that is when filling the dissolver.

From the foregoing description, it will be seen that there has been provided an efficient soda ash and boiler compound dissolver, made up of separate sections, which may be removed and inserted without loss of time, in order that they may be cleaned, also that either or all parts may be replaced in case of injury or corrosion should the occasion arise.

It will be understood that various modifications may be made in the precise detail of construction of the compound dissolver hereinbefore described, and suitable valves, not shown, will be used for controlling the water and steam supply.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet for the dissolved compound, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet.

2. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet for the dissolved compound, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet, the strainer or filter plates having increasingly finer openings in a downward direction.

3. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet for the dissolved compound, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet said strainer or filter plates each comprising a perforated disk and a subjacent piece of wire-mesh.

4. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet for the dissolved compound, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet, and a ledge or rim secured inside the container and upon which the sections or compartments are supported.

5. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and a discharge outlet, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet, said sections or compartments fitting the container with a clearance.

6. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and a discharge outlet, said container having arranged therein one above the other a plurality of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet, and a truncated conical funnel supported within the container at its larger end adjacent to the steam inlet.

7. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound and provided with strainer or filter plates and arranged below the water inlet and above the steam inlet, and a funnel open at its top and perforated transversely below its top and supported at its upper end in the container above the steam inlet.

8. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet at its lower end, a series of sections or compartments to receive the compound to

be dissolved and arranged one above the other within the container and having foraminous bottoms, said sections or compartments adapted to receive the water supply, an interior ledge in the container arranged above the steam inlet, and a perforated funnel suspended on said ledge and adapted to distribute the incoming steam through the sections or compartments and to discharge the liquid from the container through said outlet, the sections and funnel being separate and removable.

9. A boiler compound dissolver, comprising a container having a water inlet at its upper end, a steam inlet at a lower point, and an outlet, said container having arranged therein one above the other a series of separate and removable sections or compartments to receive the compound, the bottom of each section or compartment provided with wire-mesh secured thereto, and a superposed perforated disk.

J. A. THOMASON.