

(Model.)

D. D. WASS.

REMOVING AIR AND GREASE FROM FEED WATER.

No. 245,896.

Patented Aug. 16, 1881.

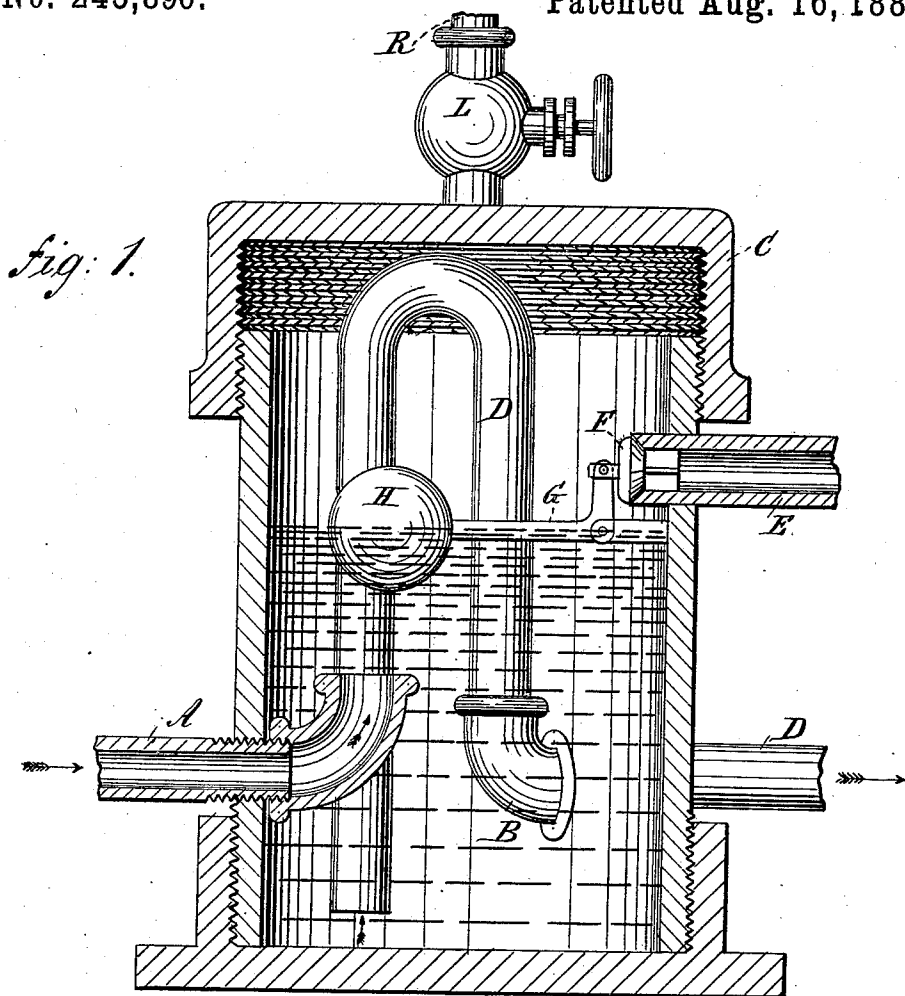
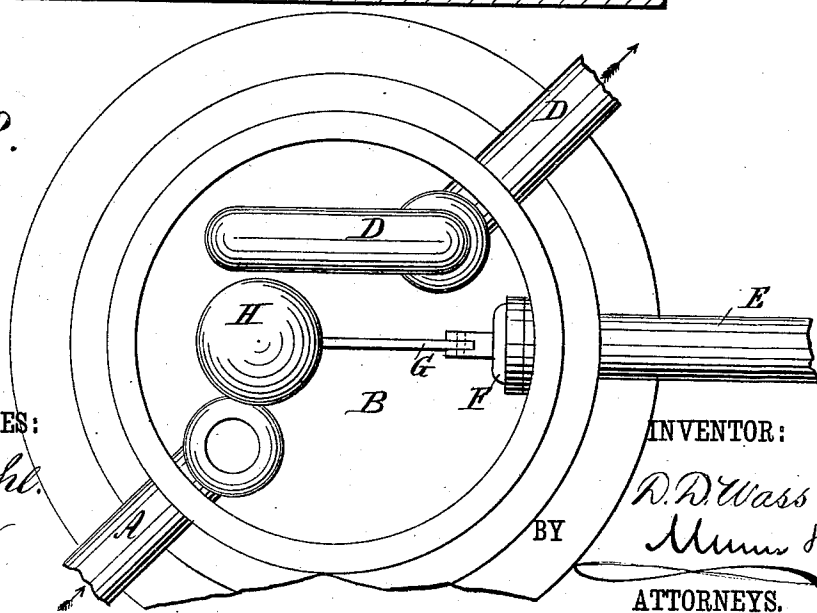


fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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REMOVING AIR AND GREASE FROM FEED-WATER.

SPECIFICATION forming part of Letters Patent No. 245,896, dated August 16, 1881.

Application filed February 12, 1881. (Model.)

To all whom it may concern:

Be it known that I, DYSON D. WASS, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Device for Removing Air and Grease from Feed-Water, of which the following is a specification.

The object of my invention is to free the feed-water for boilers from the grease and air which are carried from the cylinder of an engine into the feed-water tank by the exhaust-steam which is generally used to heat this feed-water.

The invention consists in a chamber into which the pipe from the feed-pump conducts the feed-water, this water being drawn from this chamber below the surface, so that the oil and grease which rise to the surface of the water cannot leave the chamber with the water. As the air forced into this closed chamber is compressed therein and forces the level of the water downward, a float-valve is provided, which opens an air-cock to allow the air to escape as soon as the water-level drops to a certain extent.

In the accompanying drawings, Figure 1 is a cross-sectional elevation of my improved device for removing grease and air from feed-water. Fig. 2 is a plan view of the same, showing the top removed.

Similar letters of reference indicate corresponding parts.

The feed-water from the feed-pump passes through the pipe A into the vessel B, provided with a lid, C, which closes the vessel air-tight. The pipe A enters into the vessel B near the bottom. Another pipe, D, also enters the vessel B near the bottom, rises to the top, is then bent, and extends downward to near the bottom of the vessel. Through this pipe D the water passes off into the boiler. A pipe, E, enters into the vessel B near the top of the same, and the inner end of this pipe forms a seat for a valve, F, pivoted to the short arm of a bell-crank lever, G, to the end of the long arm of which a float, H, is fastened. A pipe, R, provided with a valve, L, enters into the lid C, for the purpose of carrying off the grease.

The operation is as follows: The grease or oil that is drawn into the feed-water by the

exhaust-steam is very injurious to the boiler, and must be removed before this water is forced into the boiler. The grease, oil, and air contained in the feed-water will rise to the surface in the vessel B, as they are all lighter than the water, and very soon a layer of grease or oil will be formed on the surface of this water. As the water that leaves this vessel B is drawn far below the surface through the pipe D, none of the grease or oil can leave the vessel B with this water, and only pure water passes to the boiler; but the air that collects in the upper part of the vessel B will very soon become compressed, and will force out the water very rapidly, thereby lowering the level in the vessel B, and might depress this level sufficiently to permit the grease to pass through the pipe D. To prevent this sinking of the surface of the water I have provided the valve F and the float H, for as soon as the compressed air forces the level of the water downward the float H follows, and thereby opens the valve F, thus liberating the compressed air and causing the water to rise again, whereby the valve F is also closed, and remains so until there is another excess of pressure in the vessel B. The valve or cock L is opened, and thus allows the air to escape and the space to fill up with water, and the water will flow off through the pipe R as long as the cock L is open. As the grease is on the top of the water it will necessarily flow off.

I am aware that it is not new to hold the valve of a supply-pipe open or closed by a hinged float, or to have inlet or outlet pipes entered below the water-level; but

What I do claim as new and of my invention is—

The combination, with a vessel, B, having the air-tight cover C, of the valved pipe R on said cover, the inlet and outlet pipes A D, connecting with the vessel below the water-level, the pipe E, entering the vessel above the water-level, and the valve F, lever G, and float H, connected with said pipe E, all constructed and arranged substantially as shown and described.

DYSON DEARBON WASS.

Witnesses:

J. A. HOWELL,
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