

(No Model.)

J. B. REDMOND.

APPARATUS FOR PURIFYING THE WATER FROM CONDENSERS.

No. 255,086.

Patented Mar. 14, 1882.

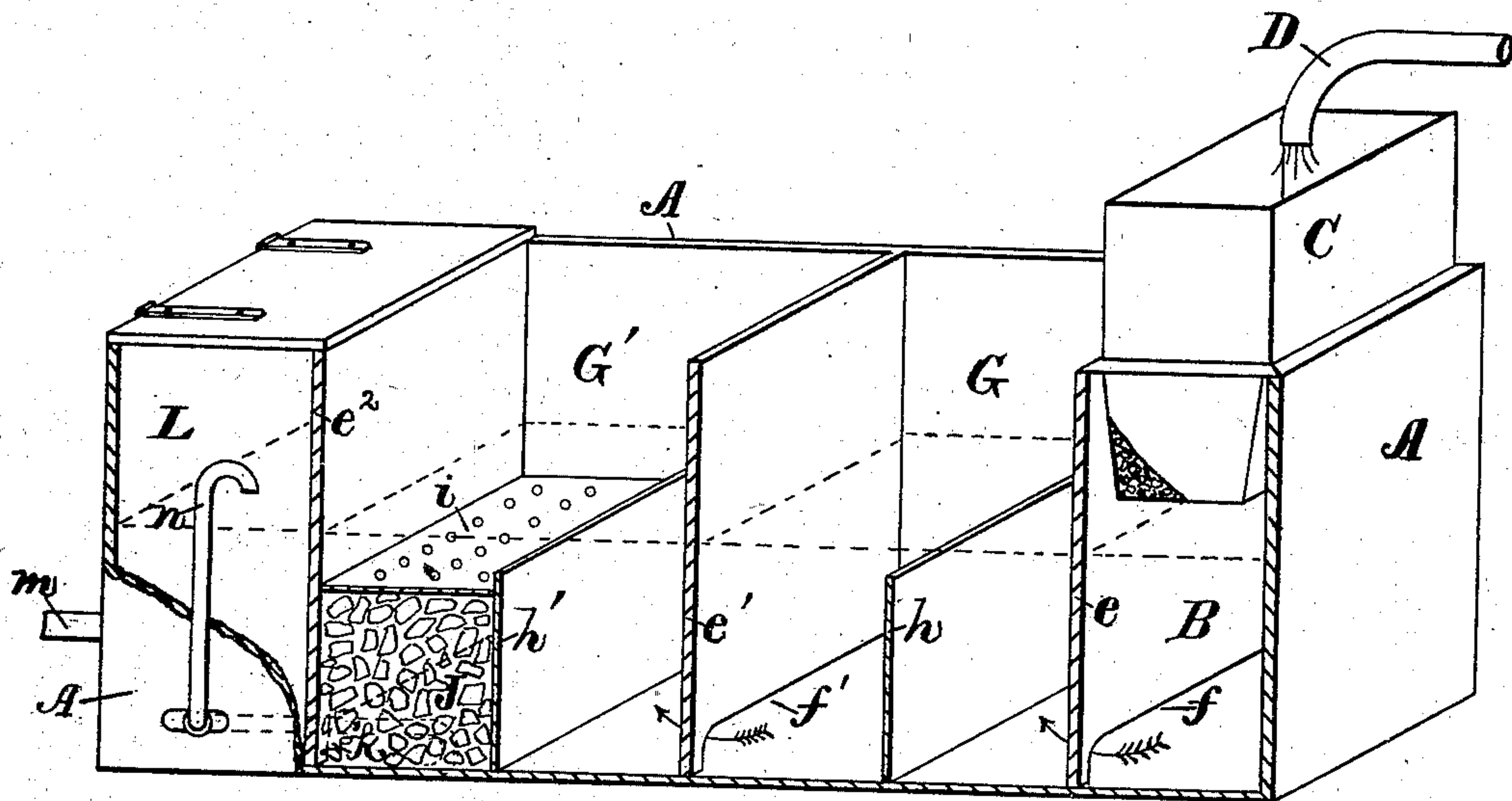


Fig. 1.

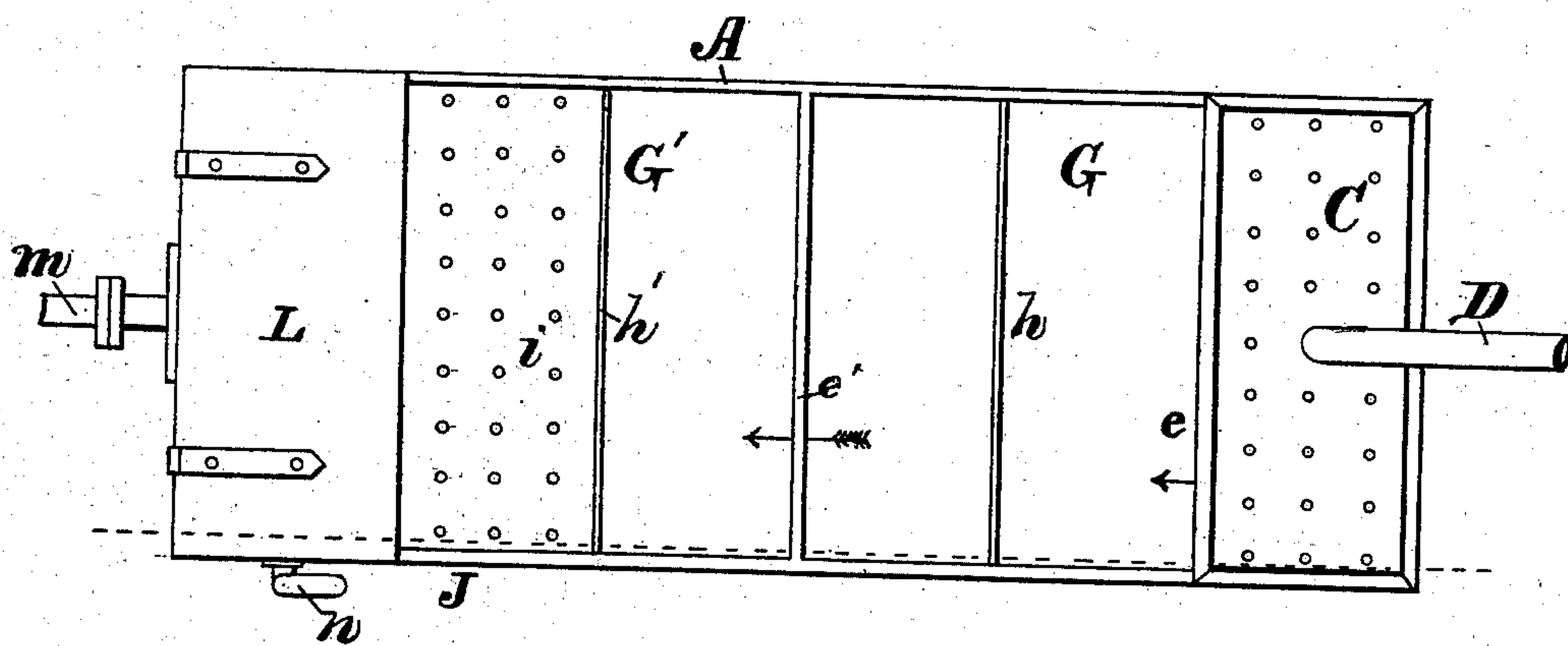


Fig. 2.

Witnesses:

W. L. Langley.

John E. Morris.

Inventor:

John B. Redmond

By his Atty

Chas B. Mann

UNITED STATES PATENT OFFICE.

JOHN B. REDMOND, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO EDWARD WILSON, OF SAME PLACE.

APPARATUS FOR PURIFYING THE WATER FROM CONDENSERS.

SPECIFICATION forming part of Letters Patent No. 255,086, dated March 14, 1882.

Application filed December 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. REDMOND, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Apparatus for Purifying the Water from Condensers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The object of my invention is to provide a water-purifier for steam-boilers, which shall be adapted to separate all grease or oil from the water, thereby preventing such matter from passing to and through the feed-pump and
15 thence to the boiler.

It is well known that the water from surface-condensers contains oil, and that where such water is employed as feed-water for the boiler the oil also enters the boiler, and by coating
20 the interior of the boiler frequently is the cause of the burning of the boiler.

Inventions of this class are designed to separate the oil or grease from the water, and the present invention is so constructed as to effectively serve this purpose and at all times to
25 afford ready access to the accumulation of separated oil or grease in order to remove the same.

In the drawings hereto annexed, Figure 1 is a perspective sectional view of the apparatus. Fig. 2 is a plan view of the apparatus.

The letter A on the drawings designates the casing of the apparatus. It may be made of wood or very thin iron, and its longest dimension is in a horizontal direction. At one end
35 is a compartment, B, into the top of which fits a detachable strainer-box, C, having a flange by which it is supported. The sides of the strainer-box project above the case. The bottom of this strainer-box is perforated to allow
40 the water to pass, and in practice some suitable packing material is employed—such as shavings—which is placed in the box upon the perforated bottom, and the water from the condenser-pipe or exhaust D has to filter through
45 the packing material, the latter serving mainly to break the force of the falling water.

Below the wall e, which forms one side of the first compartment, is an opening, f, which

leads to the adjoining compartment, G. Across 50 the center of the bottom of this latter compartment is a dam, h, about one half or less than one-half the height of the side walls of the case A. The water first enters compartment G through the opening f, then rises therein 55 until it overflows the dam h, and thence passes from this compartment through the opening f' below the wall e' on the opposite side. In like manner the water passes through compartment G', which is also provided with a dam, h', 60 the same as before described. On the opposite side of the dam h' is a perforated diaphragm or horizontal partition, i, which forms the top side of a filtering-chamber, J, which is filled with some suitable filtering material, 65 preferably charcoal in small lumps. It will be seen the dam h' is higher than or extends above the surface of the horizontal perforated side of the filter-box. An opening, k, below the wall e² allows the water to pass from the filter- 70 box to the receiver L, from whence the water, which upon its arrival here has been deprived of all grease, is pumped to the boiler.

The receiver for the purified water has an exit-pipe, m, which leads to the feed-pump, and 75 an adjustable draw-off or overflow pipe. This overflow consists of a goose-neck pipe, n, one end of which is secured to and upon the outer side of the casing, and should either pass through the wall of the casing or connect with 80 a suitable opening entering through the wall into the receiver-chamber L. The connection of the end of the goose-neck pipe to the side of the casing is such that it may have the position shown in full lines in Fig. 1—that is, perfectly upright—or may be turned down to the 85 position indicated by broken lines, or may have any intermediate position. This overflow, by this arrangement of pivoting one end, is capable of any desired adjustment, and it will be 90 seen that by it the level or height of the water-line above the dams within the several compartments is regulated, and also by turning it entirely down it serves as a draw-off to empty the case.

The operation of the apparatus is as follows: The water containing the grease enters the compartment G. As the water must rise to flow

over the dam h , and as by the position of the goose-neck pipe the height or level of the water is maintained above the dam and can leave the compartment only through the opening at the bottom, and as the grease will naturally float upon the surface of the water, it will be seen the effect is to permit the water to pass from the compartment, after first allowing the grease to rise and float on the surface, and the grease is thereby retained in the compartment and accumulates on the surface of the water, while the water passes out below.

The accumulation of grease may be kept from interfering with the operation of the apparatus by simply turning the pivoted goose-neck pipe a little, so as to raise the water-level in the case a little higher above the dams. As the perforated top i of the filter-box is below the edge of the dam h' and below the water-level, the floating grease on the water-surface, if any grease should find access to this last compartment, will not pass the perforations.

The horizontal position of the case, with the several compartments on the same level or plane, and with each compartment open or having a removable top, renders it easy to remove the accumulations of grease from the surface of the water at any time and without for a moment interfering with the operation of the apparatus.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an apparatus for separating grease from the water discharged from steam-engine condensers, a horizontal case divided by walls into compartments having the same level or plane, all the compartments connected by openings through the walls, and the said case provided at one end with a pivoted draw-off or overflow pipe, n , as shown and described.

2. An apparatus for separating grease from the water discharged from steam-engine condensers, having at one end a detachable strainer-box, C , at the opposite end and on the same level or plane a purified-water-receiving chamber, L , provided with a pivoted draw-off or overflow pipe, n , and between the said ends one or more compartments provided with a dam across the center of its bottom and openings for the passage of the water into and out of the compartment, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. REDMOND.

Witnesses:

HENRY CASHMYER,
EDWD. WILSON.