

(No Model.)

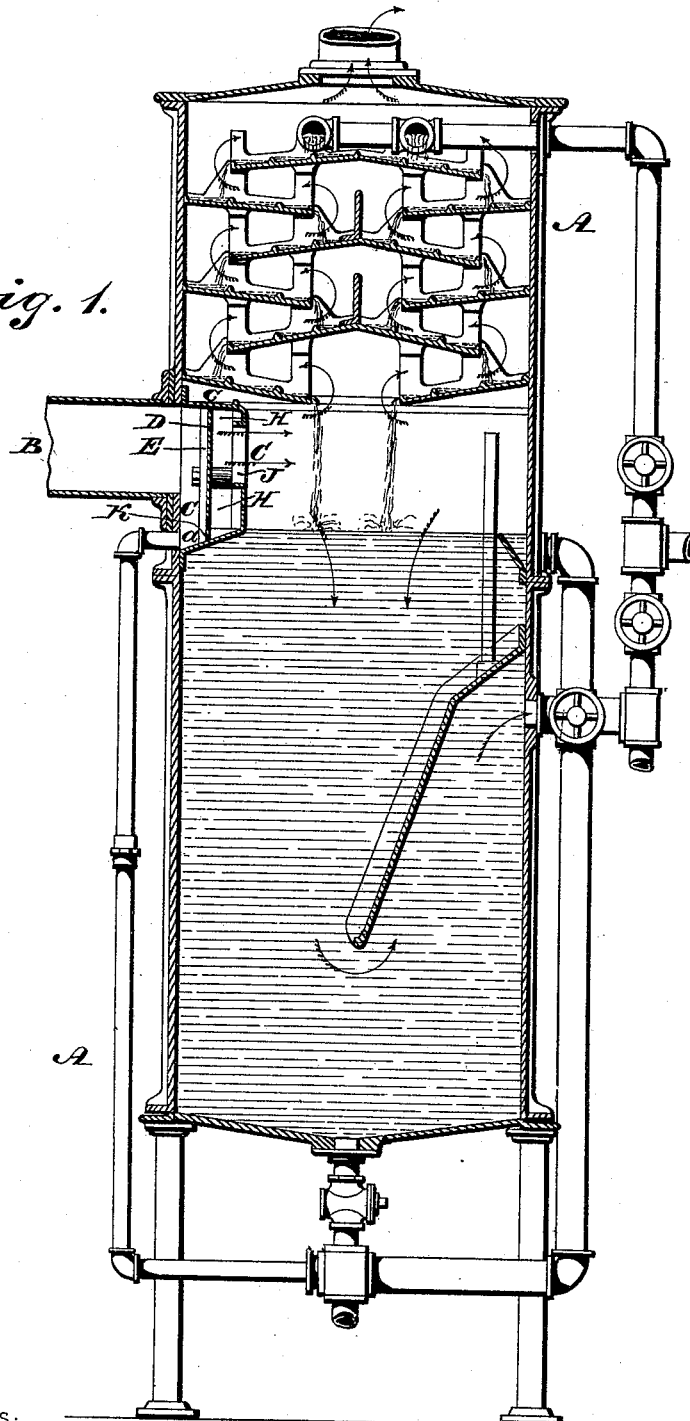
2 Sheets—Sheet 1.

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SEPARATOR.

No. 420,718.

Patented Feb. 4, 1890.

fig. 1.



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2 Sheets—Sheet 2.

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fig. 2.

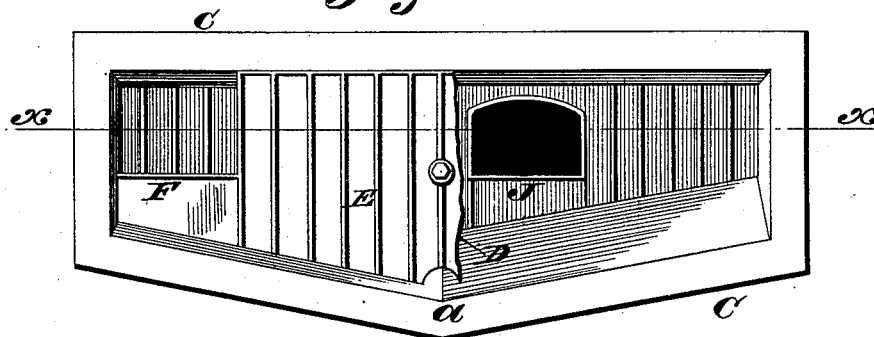


fig. 3.

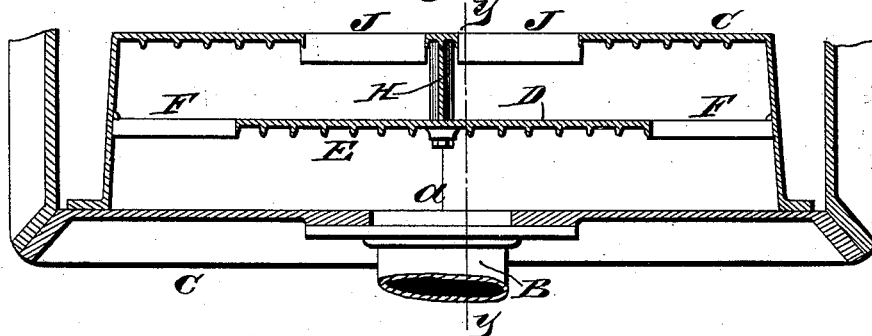
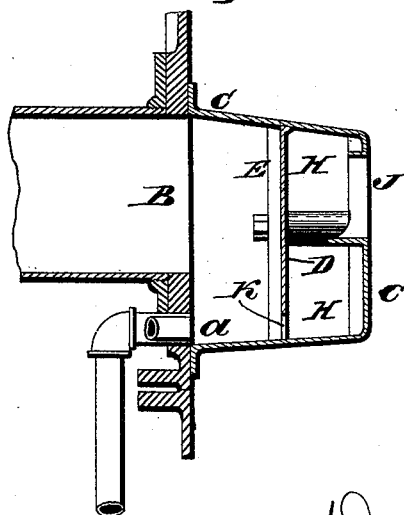


fig. 4.



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UNITED STATES PATENT OFFICE.

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SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 420,718, dated February 4, 1890.

Application filed August 14, 1889. Serial No. 320,731. (No model.)

To all whom it may concern:

Be it known that I, DAVID COCHRANE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Separators, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to feed-water heaters and purifiers; and it consists of a separator to cover the steam-inlet opening of a feed-water heater, provided with partition-walls and projections against which the steam impacts and deposits the oil and other impurities carried thereby.

Figure 1 represents a longitudinal vertical section of a feed-water heater and purifier embodying my invention. Fig. 2 represents a front elevation, partially broken away, of my improved separator. Fig. 3 represents a sectional view on line *x x* of Fig. 2. Fig. 4 represents a sectional view on line *y y* of Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the heater and purifier of preferred size and shape to suit desired purposes. An inlet B for the steam enters one side of the heater, and over the opening thereof is an interiorly-arranged separator C, consisting of an oblong casing, the bottom of which dips both ways to a point *a*. Said separator is open on the side that covers the steam-inlet to the heater and closed on the opposite side, except where the openings are provided for the escape of the steam into the heater. Extending longitudinally through the interior of the separator, from one end wall to the other, is a baffle-plate D, having a ribbed surface E and end openings F. The rear side of the separator is also formed with a ribbed surface, directly opposite the openings F in baffle-plate D. The rear compartment formed by the baffle-plate and back wall of the separator is centrally divided by a partition-plate H, and on each side thereof, in the said back wall, openings J are located and provide for the ingress of the steam to the heater. At the lower central part of the baffle-plate, adjacent to the partition-plate H, an opening K is formed to allow the oil to flow to the lowest

point *a* and be carried off by suitable pipes or other conveyers.

The action of the separator is as follows: The exhaust-steam enters at the inlet B and travels in a straight line until it comes in contact with the baffle-plate D, and being elastic it turns to the right and left, strikes the end walls of the separator, is deflected through openings F and impacts against the ribs of the back wall, and, continuing through the rear chamber formed by said back wall and the baffle-plate, strikes the partition-plate H and is again deflected through openings J into the heater. During this course of the steam the heavier water-oil and other impurities are caught upon the ribbed surfaces of the baffle-plate and back plate, and upon the partition-plate H, as well as against the end walls, and run down to the bottom and are carried off, as hereinbefore set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a separator for use with a feed-water heater and purifier, a central ribbed baffle-plate, a rear ribbed wall, and a partition-plate, said parts having openings for the passage of the steam from one part to another, substantially as described.

2. A separator for a feed-water heater, consisting of a casing with inclined bottom, a steam-inlet pipe, a longitudinal baffle-plate extending from end to end of the casing and within the same, the said plate having openings at or near its ends, a central partition in the rear of the baffle-plate, the rear wall of the casing having openings on each side of the central partition, substantially as described.

3. A separator feed-water heater consisting of an oblong casing having a doubly-inclined bottom, a baffle-plate with end openings F and bottom opening K, the central partition-plate H between the baffle-plate and back plate of casing, said back plate having the openings J on each side of said central partition, said parts being combined substantially as described.

DAVID COCHRANE.

Witnesses;

JOHN A. WIEDERSHEIM,
CHAS. S. HYER.