No. 835,243. PATENTED NOV. 6, 1906.

R. D. JEFFREYS.

OIL SEPARATOR.

APPLICATION FILED SEPT. 22, 1905.

Fig. 1.

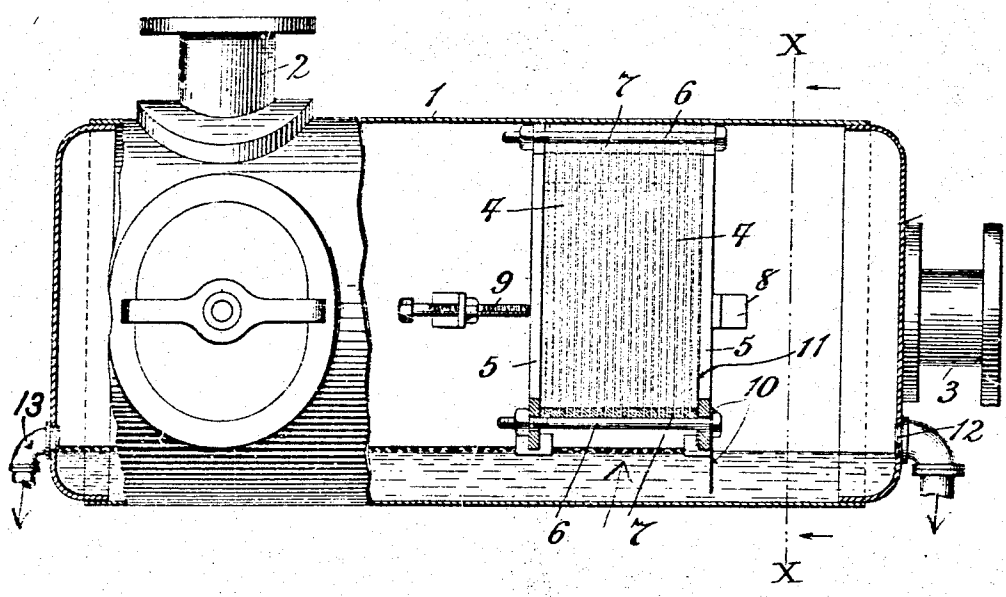
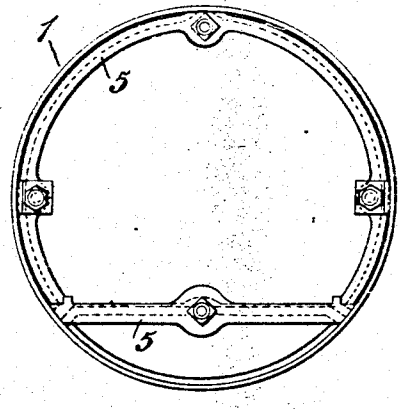


Fig. 2.



Witnesses
Edward L. Rowland.
Florence S. Pick.

Robert D. Jeffreys.
Inventor
By his Attorney A. MacKaye

THE MORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT D. JEFFREYS, OF NEWBURGH, NEW YORK.

OIL-SEPARATOR.

No. 835,243. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed September 22, 1905. Serial No. 279,617.

To all whom it may concern:

Be it known that I, ROBERT D. JEFFREYS, a citizen of the United States, residing in Newburgh, county of Orange, and State of New York, have invented a certain new and useful Improvement in Oil-Separators, of which the following is a specification.

The principal object of this invention is the provision of a reliable and effective form of oil-separator for steam-boilers which is easily accessible for repairs and easily constructed and wherein the oil-separating elements can be conveniently and cheaply inspected or replaced.

Another object of said invention is the provision of an oil-separator for steam so arranged that the condensed steam is caught and led off to the boiler without danger of mixture of oil therewith.

My invention is illustrated in a preferred form in the accompanying drawings, wherein—

Figure 1 shows my separator partly in side elevation and partly in median section, and Fig. 2 is an end elevation of the same with one head removed.

My separator comprises a casing 1 of any desired shape, such as the horizontal cylinder shown, to which steam from the engines is led by the pipe 2 and from which the steam is led by the pipe 3 for return to the boiler after separation of any oil which it may contain.

As the steam moves from the inlet 2 to the outlet 3 it passes through a series of perforated separator-plates, wire nettings, or other well-known oil-collecting elements, (shown in vertical section at 4 in Fig. 1.) These are omitted from Fig. 2 for greater clearness.

The collecting elements 4 are supported, as shown, by two end frames 5, so shaped as to be supported by the sides of the casing 1, as shown, for instance, in Fig. 2.

The plates 4 are squeezed between the end frames 5 by means of appropriate fastenings—as, for instance, by the bolts 6—and are properly spaced by the spacing-rings 7, extending around their edges. The whole group of plates, spacing-rings, and frames are preferably held in place against fixed abutments 8 within the casing 1 by means of screws 9, placed at proper intervals.

At the outer end of the group of collector-plates is fixed a curtain-plate 10, which is preferably made fast under the heads of the bolts 6, as shown, and extends to within a short distance of the bottom of the casing. Its preferred shape in elevation is shown in Fig. 2.

The water of condensation which gathers in the bottom of the casing and the level of which is indicated in Fig. 1 acts, in connection with the curtain-plate 10, to form a water seal whereby all of the steam is made to traverse the collecting-plates 4. On these plates any oil which the steam may carry is condensed, and this oil drips down from the plates 4 on the inlet side of the curtain-plate 10, finally floating upon the water below, as shown in Fig. 1. A confining-plate 11 is preferably fixed at the outlet end of the collecting group, which plate extends upward from the bolts 6. This plate prevents the dripping oil from finding its way to the surface of the water on the outlet side of the separator.

A water-opening 12 and an oil-opening 13 are provided at the opposite ends of the separator, and these openings are so placed that while pure water is exclusively drawn off at 12 only oil is carried away at the opening 13.

Various changes may be made in the construction of this apparatus without departing from the scope of this invention, and I am not to be understood as limiting myself to the details herein shown and described.

What I claim is—

1. As an article of manufacture, a removable grease-collecting element for insertion into the casing of a steam-separator comprising a group of parallel separating-plates, parallel spacing-rings between them, a curtain-plate 10 and bolts by which all of said parts are supported and clamped together, substantially as described.

2. A steam-separator comprising a casing having a steam inlet and outlet, abutments attached to said inner surface, a removable group of separator-plates, having a depending plate 10 at one end all arranged within said casing with one side against said abutments and securing-screws 9 coöperating with said abutments to hold said group in place, substantially as described.

3. A steam-separator comprising a casing

having a steam inlet and outlet, abutments attached to the interior of said casing, a removable grease-collecting element within said casing comprising a group of parallel separating-plates, parallel spacing-rings between them, a curtain-plate 10 a confining-plate 11 and bolts holding all of said plates together, and securing-screws 9 coöperating with said abutments to hold said groups in place, substantially as described.

ROBERT D. JEFFREYS.

Witnesses:
HAROLD S. MACKAYE,
FLORENCE S. PICK.