No. 835,244. PATENTED NOV. 6, 1906.

R. D. JEFFREYS.

STEAM SEPARATOR.

APPLICATION FILED OCT. 9, 1905.

Fig. 2.

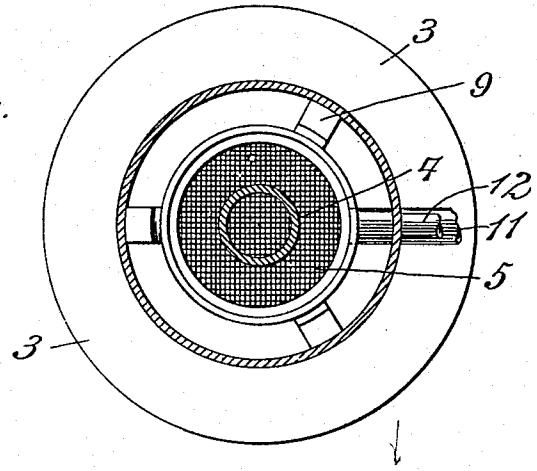
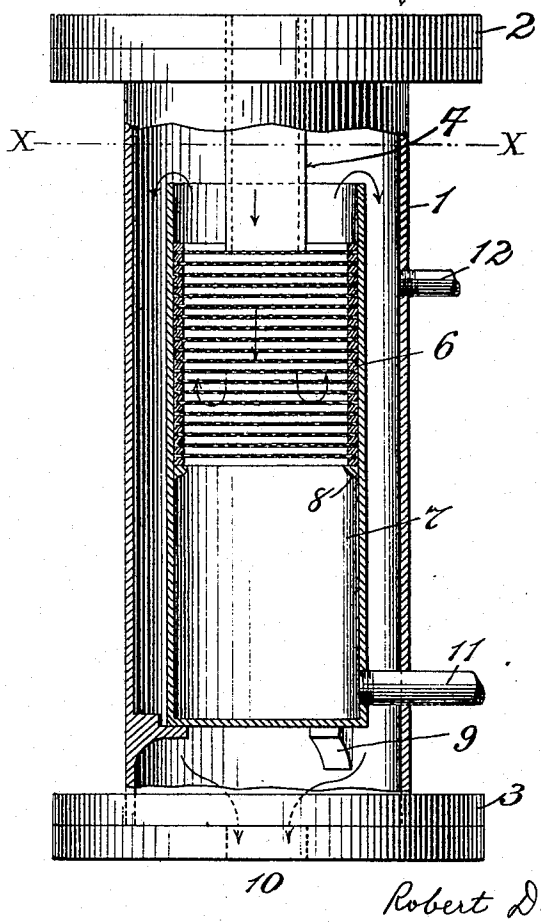


Fig. 1.



Witnesses
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STEAM-SEPARATOR.

No. 835,244. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed October 9, 1905. Serial No. 281,901.

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 Steam-Separators, of which the following is a specification.

This invention has relation to an improved means whereby the moisture suspended in steam as it comes from a boiler is removed, together with any accidental water of condensation, so as to prevent access of moisture in liquid form to the engine.

A principal object of this invention is the provision of a simple and easily-constructed device for the above-named end which shall admit of easy access to all the parts for cleaning and repairs.

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

Figure 1 is a vertical section of a separator made in accordance with the invention, and Fig. 2 is a section thereof taken on the line *x x* in Fig. 1.

The separator is contained in a main casing 1, which is preferably in tubular form, as shown, and the ends of which are closed by the flanges 2 and 3, through which the steam enters and leaves the device, respectively. The incoming steam enters by the vertical tube 4, and the end of this tube impinges upon a group of supporting-plates of any desired character—as, for instance, the wire-nettings shown at 5. These nettings are separated by appropriate spacing-rings 6, supported within a cup-shaped chamber 7 by means of lugs 8 on the sides of said chamber. Any appropriate support may be used in this connection, and the entire device may be given any desired position.

In the vertical form shown the chamber 7 is supported on appropriate supports, such as the brackets 9 on the inner faces of the outer casing 1, and space is thus provided between the bottom of the chamber 7 and the flange 3, which closes the end of the casing 1.

The steam entering by the pipe 4 is carried a certain distance through the group of separating-plates by its own momentum and then returns, as shown by the arrows in Fig. 1, making its exit upward through the separating-plates and around the edge of the pipe 4. Thence, as shown by the arrows at the top of the figure, the steam passes over the top of the chamber 7, down the outer walls of the casing 1, and finally through the exit shown at 10.

The advantage of this construction is that any moisture suspended in the steam is caught on the under surfaces of the separating-plates as the steam passes upward. The separation of the moisture on the plates takes place after the steam is cooled somewhat, and the device can be so proportioned with regard to the temperature and speed of the incoming steam that the steam does not tend to condense until after it begins to move upward. The moisture thus separated finds its way down by gravity to the bottom of the chamber 7, whence it may be drawn off by the proper trap communicating with the pipe 11.

In the vertical forms of the device the pipe shown at 12 may be used in connection with the pipe 11 for connecting a level-gage; but this forms no necessary part of the present invention.

What I claim is—

A steam-separator comprising an outer casing with a steam-exit at the bottom thereof, an inner chamber having a closed bottom, a group of transversely-placed separating-plates in said chamber and an inlet-pipe projecting into said inner chamber and terminating at the face of said group of plates, all arranged so that the incoming steam moves first into the group of plates and then returns outward to leave the chamber and gain the exit in the outer casing.

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Witnesses:
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