No. 704,022. Patented July 8, 1902.

E. FRIESDORF.

STEAM AND OIL SEPARATOR.

(Application filed Nov. 18, 1901.)

(No Model.)

Fig. 1.

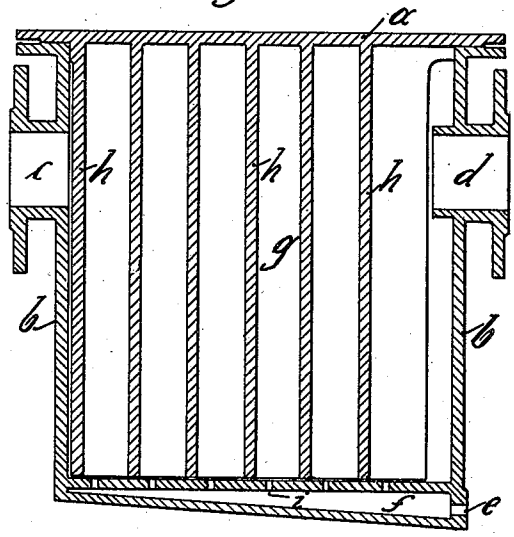
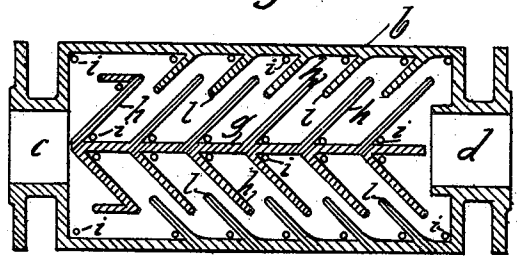


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDUARD FRIESDORF, OF BIETIGHEIM, GERMANY.

STEAM AND OIL SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 704,022, dated July 8, 1902.

Application filed November 18, 1901. Serial No. 82,770. (No model.)

To all whom it may concern:

Be it known that I, EDUARD FRIESDORF, engineer, residing at Bietigheim, in the Kingdom of Würtemberg and Empire of Germany, have invented certain new and useful Improvements in Steam and Oil Separators, (for which I have filed an application for patent in Germany, bearing date April 22, 1901,) of which the following is a specification.

In my improved apparatus the desired object is attained by the exhaust-steam coming from the engine and passing through the device, being subjected to a division or distribution of its volume, each half of this volume before being again united to the other half being compelled to traverse a zigzag path over vertically-arranged plates or ribs, which remove from the passing steam the molecules of oil, as well as the condensed water, and conduct the same to a lower collecting-space rectangularly located to the steam-inlet, from which this mixture of oil and water thus collected is conducted away by means of tubes to a special vessel and the oil and water after separated.

In the accompanying drawings, Figure 1 is a vertical section; Fig. 2, a plan of the apparatus comprising my invention.

The apparatus consists in general of a box or outer vessel *b* of rectangular section, open at the top and provided with a double bottom. Upon the upper half of its two vertical narrow sides horizontal nozzles are provided, one of which, the nozzle *c*, serving for the inlet and the nozzle *d* for the outlet or discharge of the steam. The broad sides of the box are provided on their interior surfaces with a number of vertical ribs *l*, arranged at certain distances from each other at an angle of about forty-five degrees toward their bearing edges or surfaces, the front edges or surfaces of the ribs being inclined in the direction of the steam-inlet. The box *b* is provided with a flat cover *a*, having on the inner side a longitudinal wall *g*, extending to the bottom of the said outer vessel *b*, and from this wall *g* vertical ribs *h* of equal length as the wall *g* extend. The ribs *h* are also located at an angle of forty-five degrees toward their bearing edge or surface, the front edges or surfaces being, however, inclined in the direction of the outlet *d'*. These latter ribs *h* are so located that they project into the intermediate spaces between the ribs *l* of the outer vessel. The upper bottom of the vessel *b* is provided with a row of perforations or openings corresponding to the number of ribs upon the outer vessel and the lid-ribs. An outlet *d* is also located in one of the narrow sides of the space between the two bottoms. The steam entering the apparatus through the nozzle *c* becomes, as will be apparent, distributed to both sides of the vertical longitudinal dividing-wall *g* and passes or flows in a zigzag direction to the outlet-nozzle *d*. Along this path the steam, as will also be clear, strikes against the various surfaces of the ribs *h* and *l*, as also against the dividing-wall *g*, as well as against the inner walls of the vessel *b*, whereby the oil and condensation-water carried with the steam is caused to be deposited and flowing down from these surfaces through the holes *i* into the space *f* between the two bottoms of the outer vessel pass together through the opening *e* into a special collecting vessel, as hereinbefore described.

What I claim, and desire to secure by Letters Patent of the United States, is—

In an apparatus for the separation of oil and condensation-water from exhaust-steam, the combination of a rectangular outer vessel open at the top and provided with a double bottom, vertical ribs arranged on the inner side of the two longitudinal walls of same, said ribs being inclined toward their bearing edges or surfaces, horizontal nozzles for the inlet and outlet of the steam, located on the two narrow sides of the outer vessel, a flat cover having on its inner side a central wall extending to the bottom of the said outer vessel when the parts are assembled, the said middle wall being provided with a number of vertical ribs inclined toward their bearing surfaces or edges, and projecting between said vertical ribs of the side walls, as and for the purpose set forth.

In witness whereof I have hereunto signed my name this 4th day of November, 1901, in the presence of two subscribing witnesses.

EDUARD FRIESDORF.

Witnesses:

A. BAUER,

ERNST ENTENMAN.