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 STEAM SEPARATOR.
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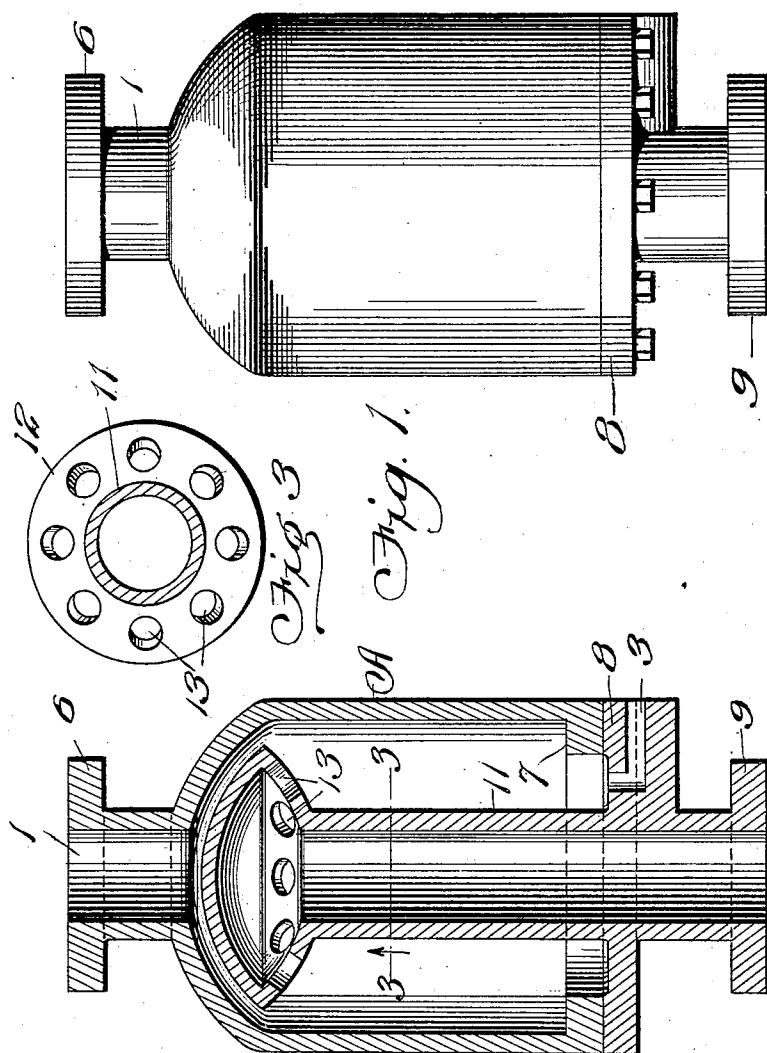


Fig. 1.

Fig. 2.

Fig. 3.

Witnessed
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JOHN T. LINDSTROM, OF ALLENTOWN, PENNSYLVANIA.

STEAM-SEPARATOR.

969,170.

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To all whom it may concern:

Be it known that I, JOHN T. LINDSTROM, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Separators, of which the following is a specification.

This invention relates to steam separators, and comprises particularly an improved separator designed for the purpose of separating steam from oil and water of condensation before the steam is passed to the engine or other device where it is to be used.

The device comprises a casing into which the steam flows, and within the casing is a tube which terminates in a knob-shaped or overhanging head located opposite to the inlet, with openings in the underside of the head through which the separated steam flows into the tube from which it passes to the engine.

Novelty is claimed with respect to the arrangement of the parts, and particularly with respect to the construction of the tube and head within the casing, as more fully explained hereinafter.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of the separator, Fig. 2 is a central vertical section. Fig. 3 is a section on the line 3—3 of Fig. 2.

Referring specifically to the drawings A indicates a bell-shaped or cylindrical casing at the top of which is the inlet 1 provided with a flange 6 for the attachment of the inlet pipe. At the bottom the wall of the casing has an internal flange 7 by which it is attached to the external flange 8 of the tubular base B, at the bottom of which is an external flange 9 for attachment of the outlet pipe. The tubular part of the base is extended upwardly as at 11 to project into the casing A, and said tube 11 terminates at the top in a knob shaped hollow head 12 the crown of which is located directly under the inlet 1. The lower projecting wall of this head has a series of holes 13 to permit flow of steam from the interior of the casing into the tube 11 and thence to the outlet.

At the bottom the base piece is bored as indicated at 3 to form an outlet for the oil and condensation which collects in the bottom of the separator.

In the use of the separator, the steam enters at the inlet 1 and comes in contact with the knob-shaped head, and the oil or water of condensation collects thereon and falls down to the bottom of the casing, escaping through the opening 3. The separated steam passes upwardly through the openings 13 into the head and thence out through the tube 11.

The device is simple in construction and effective in operation, and is characterized by the absence of valves and other moving parts. The irregular flow of the steam downwardly into the casing and thence upwardly through the openings 13 allows the oil and condensation to collect in the separator and prevents the same being carried over into the outlet pipe. The pipe 11 is shown integral with the base, but it may be made as a separate piece and fastened there to if desired.

The particular shape of the head of the outlet tube is attended with decided advantages, but this shape, as well as the construction of the other parts, may be varied in detail without departing from the scope of the invention.

The knob shape of the head of the tube causes the condensation to spray outward evenly on all sides against the casing, which avoids sending the condensation against only one side of the casing, which would cause unequal expansion. The velocity of the steam flowing into the casing causes the oil and condensation to spread over the crown of the smooth knob, distributing equally thereon, thereby equalizing the expansion and also retaining the heat in the steam passing down through the central tube, without decreasing the velocity or causing the temperature to fall while passing through the separator.

What I claim as new is:—

A steam separator comprising a casing having a steam inlet at the top and an escape opening at the bottom, and an outlet

tube projecting upwardly through the bottom of the casing, said tube having a hollow enlarged knob-shaped head at the top, the outer surface of said head being smooth
5 and convex on both upper and under sides the upper side being imperforate and the under side being provided with openings therein, and the interior of said head being

unobstructed, for the passage of fluid there-
through. 10

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

JOHN T. LINDSTROM.

Witnesses:

FREDERIC W. BALLIET,
JNO. W. SEPP.