

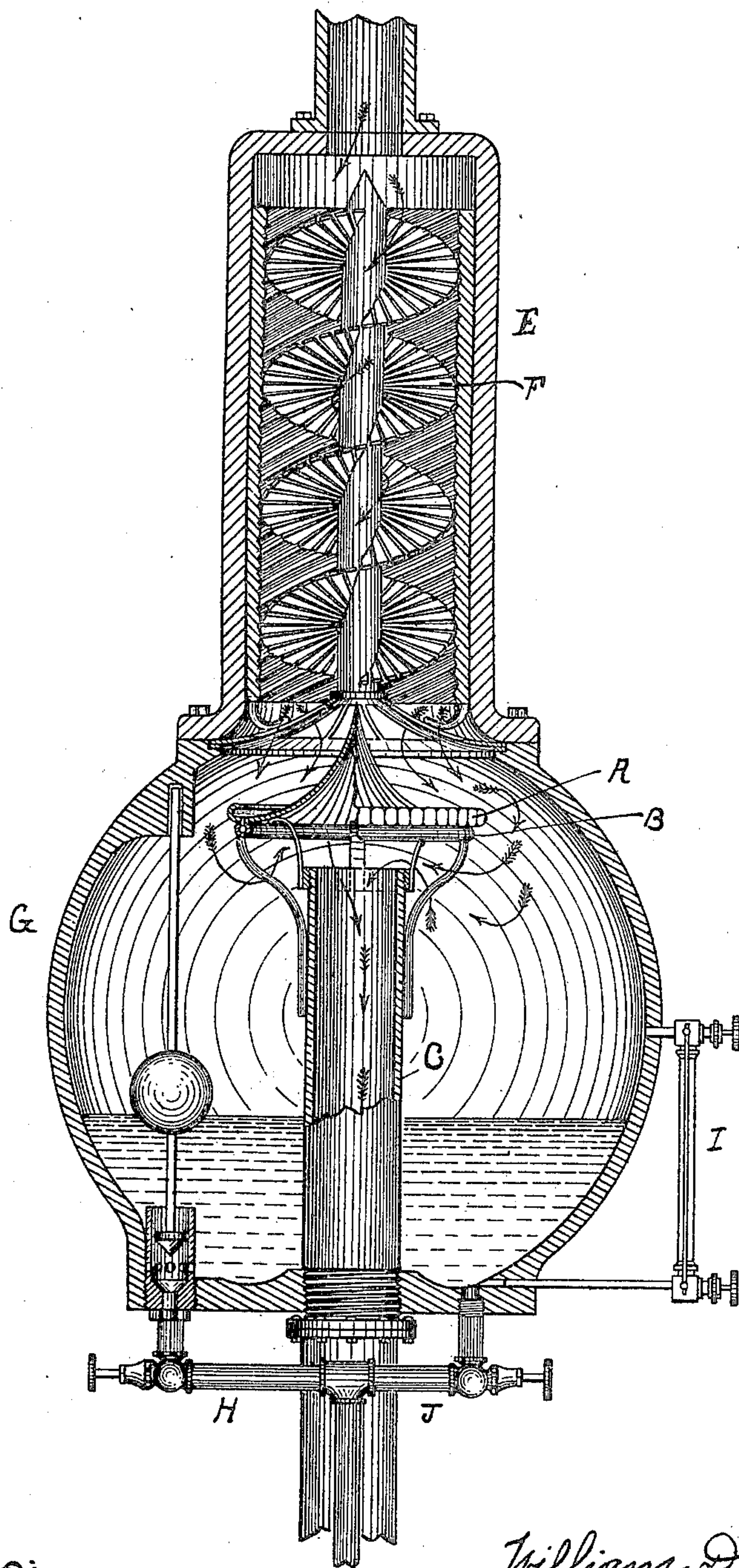
No. 680,717.

Patented Aug. 20, 1901.

W. D. LABADIE.
VERTICAL STEAM SEPARATOR.

(Application filed Jan. 7, 1901.)

(No Model.)



Witnesses:
George Oltsch.
Hugo Oltsch.

William D. Labadie
Inventor.

UNITED STATES PATENT OFFICE.

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TO JOSEPH G. DUCK, OF MILWAUKEE, WISCONSIN.

VERTICAL STEAM-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 680,717, dated August 20, 1901.

Application filed January 7, 1901. Serial No. 42,435. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. LABADIE, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Vertical Steam-Separators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a steam-separator; and its object is to separate the water of condensation from the dry steam, and which separator may be also used for condensing exhaust-steam.

My invention consists in a vertical supply-pipe having a corrugated inner surface, a double spiral placed inside of said pipe, and a corrugated hood placed below the lower end of the inlet-pipe, combined with a downward discharge-pipe and an automatically-operating float-valve, all of which will be more fully described hereinafter.

The accompanying drawing represents a vertical section of a steam-separator which embodies my invention.

E represents the steam-supply pipe, which preferably has a corrugated inner surface, and inside of which pipe is placed a double spiral lattice F. The corrugated inner surface causes the steam to pass over a large amount of surface on the inner side of the supply-pipe E and thus deposit its moisture and water of condensation before reaching the lower end of the pipe E, which is connected to the chamber G, as shown. The lattice allows the steam to pass downwardly through the pipe in which it is placed.

At the bottom of the inlet-pipe E and the top of the chamber G is placed a corrugated hood A, which is provided with a series of perforations near its outer edge, and which hood extends outwardly over and beyond the upper edge of the vertical discharge-pipe C, as shown. Connected with the openings through the hood A are the supporting-pipes B, which catch the water of condensation deposited upon the hood and carry it downward in the chamber G to such an extent that the

live steam is not apt to come in contact with it again, and thus again take it up. The upper end of the pipe C approaches within any desired distance of the under side of the hood A, and through this pipe C the live steam passes to the cylinder of the engine or other place where it is to be used.

In the chamber G is placed a suitable float-valve, by means of which the water of condensation is automatically discharged through the pipe H whenever the water reaches a regulated level. The chamber is also provided with a gage I and a pipe J, through which the chamber can be emptied at any time desired.

This invention is intended to be attached to a vertical steam-supply pipe and will separate both water and oil from the steam.

Having thus described my invention, I claim—

1. A chamber for receiving the water of condensation, a steam-supply pipe connected thereto, a latticed spiral placed inside of the supply-pipe and a hood provided with perforations near its outer edge, combined with pipes connected with said perforations, a vertical discharge-pipe and a float-valve, substantially as shown and described.

2. In a separator, a vertical supply-pipe provided with a corrugated inner surface, a double spiral placed inside of said spiral pipe and a corrugated perforated cone placed at the lower end of the supply-pipe, combined with pipes connected to the cone, and which pipes conduct the water of condensation downwardly, a vertical discharge-pipe over the top of which the cone is placed, and a float-valve, substantially as specified.

3. In a steam-separator, a chamber for receiving the water of condensation, a steam-supply pipe connected thereto and having a corrugated inner surface, a spiral within the supply-pipe, a cone to catch the water of condensation, discharge-pipes connected to the cone, and a vertically-operated float-valve, substantially as described.

4. In a steam-separator, a chamber for receiving the water of condensation, a steam-supply pipe connected to the upper end of the chamber and having a corrugated inner

surface and a double spiral located therein,
a vertical discharge-pipe connected with the
lower end of said chamber, and extending up-
ward into the same, and supporting a cone
5 for deflecting steam, and pipes connected
with the cone for discharging the water of con-
densation.

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

WILLIAM D. LABADIE.

Witnesses:

GEORGE OLTSCH,
HUGO OLTSCH.