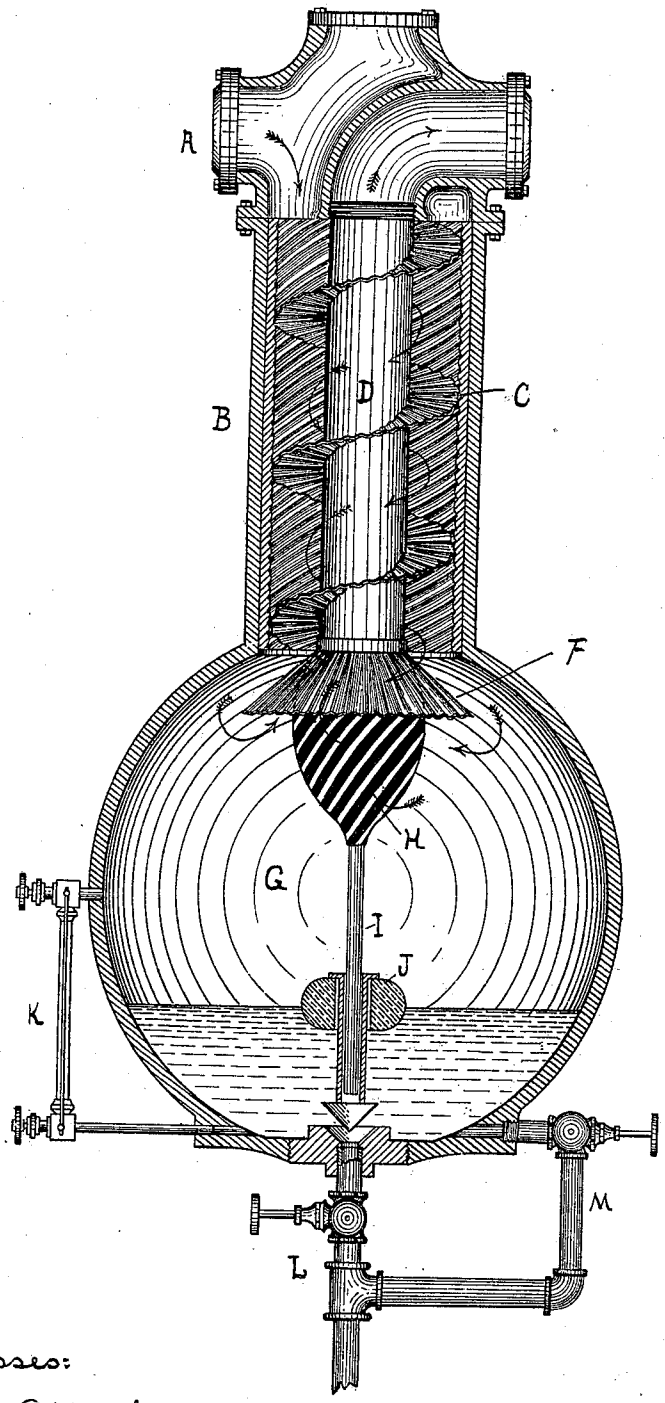
No. 684,829. Patented Oct. 22, 1901.

W. D. LABADIE.

SEPARATOR.

(Application filed Jan. 7, 1901.)

(No Model.)



Witnesses:
George Oltsch
Hugo Oltsch

William D. Labadie
Inventor

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM D. LABADIE, OF SOUTH BEND, INDIANA, ASSIGNOR OF ONE-HALF TO JOSEPH G. DUCK, OF MILWAUKEE, WISCONSIN.

SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 684,829, dated October 22, 1901.

Application filed January 7, 1901. Serial No. 42,486. (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 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 an improvement in separators; and its object is to separate the moisture, water, and oil from the dry steam before the steam enters the engine-cylinder.

My invention consists in a steam-pipe having a corrugated inner wall and a corrugated spiral placed in said pipe, combined with a corrugated hood, a spiral dome, and an automatic float-valve, as will be more fully described hereinafter.

The accompanying drawing represents a vertical section of a device which embodies my invention.

A represents the inlet for the steam, which descends vertically through the pipe B, the inner face of which is corrugated, so as to present a larger surface, and inside of which pipe B is placed a corrugated spiral C, which rises from the bottom of the pipe B to its top, and which spiral extends around the discharge-pipe D for the dry steam. This spiral causes the inwardly-flowing steam to pass around and around outside of the pipe D and around and around inside of the pipe B instead of descending directly through the pipe B, as it otherwise would do. Upon the lower end of the pipe D is formed a corrugated hood F, which directs the downward flow of steam, moisture, and oil outwardly away from the lower open end of the discharge-pipe D. Suspended from the lower end of the pipe D and from the inside of the hood F, which extends down into the top of the chamber G, is the spreader H, from which extends a guiding-rod I, and upon the lower end of this rod is placed the float-valve J, as shown. The spreader H consists of a hollow inverted-cone-shaped device having spiral openings, through which the dry steam escapes as it enters the discharge-pipe D. It serves to spread and retard the steam in its flow to the discharge-pipe. As soon as the water of condensation reaches a certain level the float and valve rise and the water is discharged through the pipe L until the valve is again allowed to seat itself. The steam which has passed downwardly in a spiral direction through the pipe B, having been freed of both moisture and oil, passes up through the pipe D around the spreader H to the cylinder of the engine or other place where it is to be used, freed, as far as possible, from the water of condensation and oil. Also connected to the chamber G is an ordinary gage K, showing the amount of water in the chamber, and the pipe M, provided with suitable valves through which the water of condensation can be drawn off whenever desired.

Having thus described my invention, I claim—

1. In a separator, an inlet-pipe having a corrugated inner surface, an escape-pipe within the inlet-pipe, a deflecting-hood carried by said escape-pipe, and means for spreading the separated steam as it discharges from the chamber.

2. In a separator, a pipe having a corrugated inner surface, a pipe for the escape of the steam placed inside of the corrugated pipe, and a corrugated spiral extending around the escape-pipe, the parts being combined and arranged to operate, substantially as set forth.

3. In a separator, a pipe for the inlet of the steam, a pipe for the discharge of the steam placed inside of the inlet-pipe, and a corrugated spiral extending around the escape-pipe, combined with a hood attached to the lower end of the escape-pipe, a guiding-rod, a spreader attached to said rod, a float-valve placed upon said rod, and a chamber into which the water of condensation is discharged, substantially as specified.

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

WILLIAM D. LABADIE.

Witnesses:

GEORGE OLTSCH,

HUGO OLTSCH.