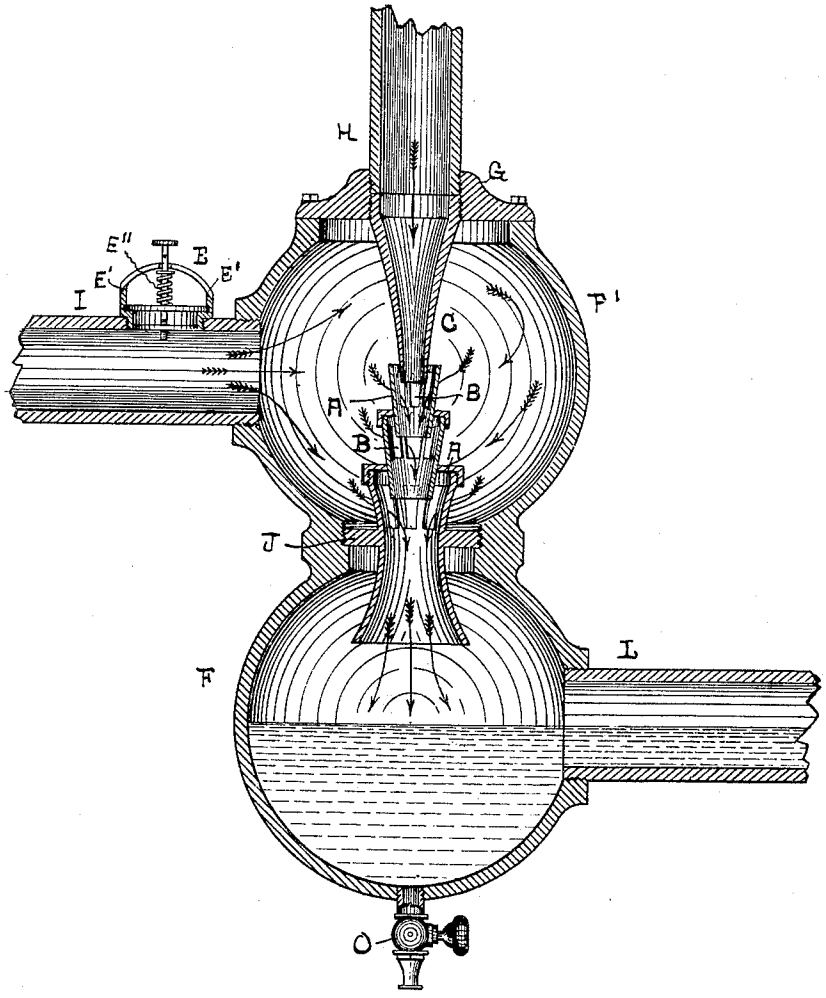
No. 689,891. Patented Dec. 31, 1901.

W. D. LABADIE.

SIPHON CONDENSING EJECTOR.

(Application filed Jan. 7, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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

SIPHON CONDENSING-EJECTOR.

SPECIFICATION forming part of Letters Patent No. 689,891, dated December 31, 1901.

Application filed January 7, 1901. Serial No. 42,437. (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 Siphon Condensing-Ejectors; 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 siphon condensing-ejectors; and its object is to assist the rapid condensation of exhaust-steam and to siphon the steam out of the cylinder by facilitating its rapid condensation.

My invention consists in a suitable shell or casting divided into two chambers, into the upper one of which the exhaust-steam is conducted and from the lower one of which the water is discharged, combined with a pipe having a contracted nozzle and through which cold water is forced and a series of cones provided with openings and into which the exhaust-steam is drawn by the force of the stream of water forced through the cones and by means of which the water or exhaust-steam is condensed, all of which will be more fully described hereinafter.

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

F represents a shell or casting which is divided into two separate and distinct chambers, one of which is placed directly over the other. The upper chamber F′ is provided with a removable cap G, through which a cold-water-injecting pipe H passes and to the lower end of which a nozzle C is connected. This nozzle extends vertically downward through the top of the upper chamber any desired distance and through which a stream of cold water is forced under any desired amount of pressure. Leading into this upper chamber F′ is the exhaust-steam pipe I, which is provided with a safety-valve E to guard against accidents should the ejector through any reason become clogged or inoperative. This safety-valve E is mounted in suitable guides E′, through which a valve-stem passes, and the valve is held in its seat by a spring E″; but should the chamber F or F′ become clogged the valve is forced from its seat and the steam is allowed to escape until the obstruction is removed, which may be effected by removing the cap G, which permits access to the interior to replace new cones and nozzles when necessary. The steam from the pipe I passes directly into the upper chamber, and there, coming in contact with the cold water and being drawn in through the openings B in the cones A, this exhaust-steam is instantly condensed. There may be any desired number of these cones, which increase in size downward, and the lower one of which is preferably provided with a collar J, which forms a support for itself and the other cones, as shown. The cold water and the condensed steam are forced downwardly through the cones into the lower chamber, and from this lower chamber the water is discharged through the pipe L. This lower chamber is also provided with a faucet O at its bottom, so that it can be completely emptied whenever so desired. The exhaust-steam coming in contact with the rapidly-flowing stream of cold water instantly assists to quickly condense the steam, and as the stream of cold water is always flowing the interval at which the piston is at a standstill enables the stream of cold water to form a partial vacuum in the chamber, and thus assist to quickly withdraw the exhaust-steam from the cylinder and prevent the resistance of the exhaust-steam, which usually forms a cushion by not escaping rapidly enough.

Having thus described my invention, I claim—

1. In a siphon condensing-ejector, a shell or frame divided into two chambers, the upper one of which is provided with a removable cap through which a water-inlet pipe extends, an exhaust-steam pipe connected to the upper chamber and provided with a safety-valve, and a discharge-pipe connected to the lower chamber, combined with a series of perforated cones removably mounted between the chambers, and through which the exhaust-steam is entrained.

2. In a siphon condensing-ejector, a shell or

frame divided into two chambers, the upper one of which is provided with an exhaust-steam-inlet pipe having a safety-valve thereon, and a removable cap to which a water-inlet pipe and its nozzle are attached, perforated ejecting-tubes removably mounted one upon the other between the chambers, a discharge-pipe connected to the lower chamber, and a faucet for drawing off the water and sediment, substantially as shown and described.

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

WILLIAM D. LABADIE.

Witnesses:
GEORGE OLTSCH,
HUGO OLTSCH.