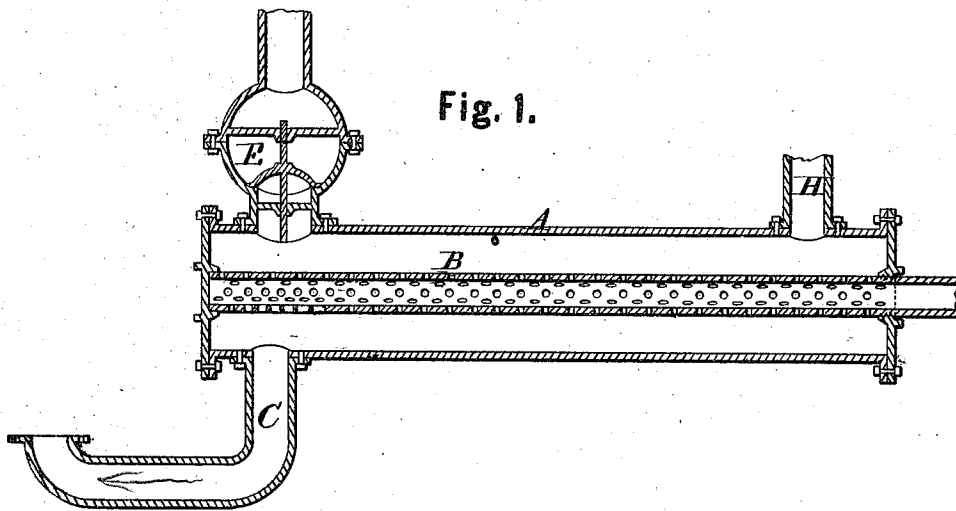


G. W. HALL.

Improvement in Jet-Condensers for Steam-Engines.

No. 126,696.

Patented May 14, 1872.



WITNESSES.

Nillette Anderson
E. Anderson

INVENTOR.

Gordon W. Hall,
Chipman & Osmer & Co
Attys

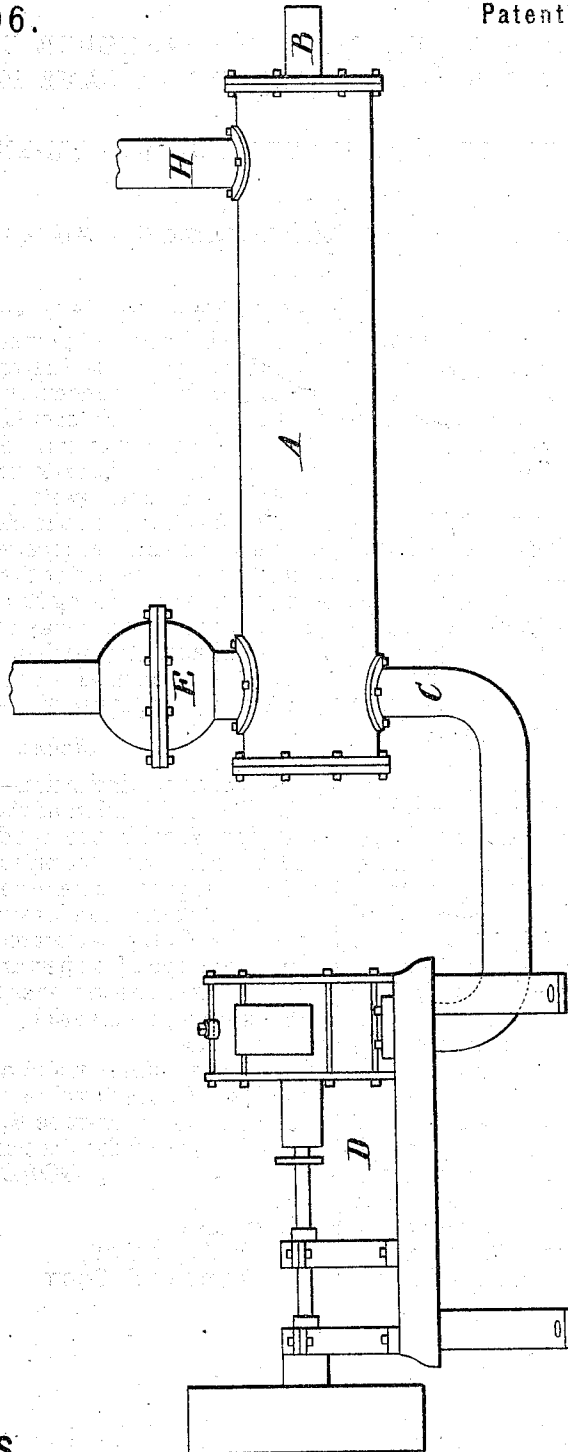
G. W. HALL.

Improvement in Jet-Condensers for Steam-Engines.

No. 126,696.

Patented May 14, 1872.

Fig. 2.



WITNESSES.

Geo E. Upham,
Phil C. Masi

INVENTOR.

Gordon W. Hall,
Chipman & Foster
Attys.

UNITED STATES PATENT OFFICE.

GORDON W. HALL, OF HAVANA, NEW YORK, ASSIGNOR OF ONE-HALF INTEREST TO ALBERT O. WHITTEMORE, OF SAME PLACE.

IMPROVEMENT IN JET-CONDENSERS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 126,696, dated May 14, 1872.

To all whom it may concern:

Be it known that I, GORDON W. HALL, of the village of Havana, in the county of Schuyl-er and State of New York, have invented an Improvement in Condensers for Steam-Engines, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to the combination of a spray or jet condenser with a rotary or other suitable pump in such a manner that said pump shall remove the air as well as the condensed steam, and the water used for condensing, from the condenser, thus dispensing with the air-pump ordinarily used, and at the same time forming a continuous and nearly perfect vacuum.

Description of the Accompanying Drawing.

Figure 1 is a section of a condenser embodying my invention. Fig. 2 is a side elevation of the same, together with pump.

A is the body of the condenser, constructed of cast-iron or other suitable material, and of sufficient size and length to allow ample space for the condensation of the steam coming from the exhaust-pipe of the steam-engine. B is the cold-water injection-pipe, which is pierced with a large number of fine apertures through it, inside of the condenser. This injection-pipe extends the entire length of the condenser, and the perforation or apertures through the same are somewhat larger and more numerous upon its under side, immediately over the opening into the pipe C, thus forming jets by means of which the water in the bottom of the condenser is kept in continual agitation,

and the air in the condenser is taken down in small bubbles with the water and drawn off by the pump. C is the exhaust water-pipe leading from the condenser to the pump. D is the pump, which should be placed lower than the condenser that the water (having little or no atmospheric pressure) may flow freely to the pump by its own gravity. E is a valve leading from the chamber of the condenser to an exhaust-pipe, which valve is kept closed by the pressure of the atmosphere when the pump is exhausting the water and air from the condenser, and opens to allow the escape of the exhaust-steam when the pump is not at work. H is the pipe connecting the exhaust-ports of the engine with the condenser.

Claims.

I claim as my invention—

1. The combination of the perforated injection-pipe B with the condenser-chamber A and the exhaust water-pipe C, substantially as and for the purpose hereinbefore set forth.

2. In a steam-condenser, having the exhaust-pipe C, the perforated injection-pipe B, having enlarged jet apertures through its under side and directly over the mouth of said exhaust-tube, substantially as and for the purpose specified.

3. The combination and arrangement of the condenser A, check-valve E, exhaust-pipe C, perforated injection-tube B, and pump D, substantially as and for the purpose specified.

GORDON W. HALL.

Witnesses:

S. A. BAILEY,
ELBERT P. COOK.