(No Model.)

W. WEBSTER.

CONDENSER FOR EXHAUST STEAM.

No. 524,153. Patented Aug. 7, 1894.

Fig. 1.

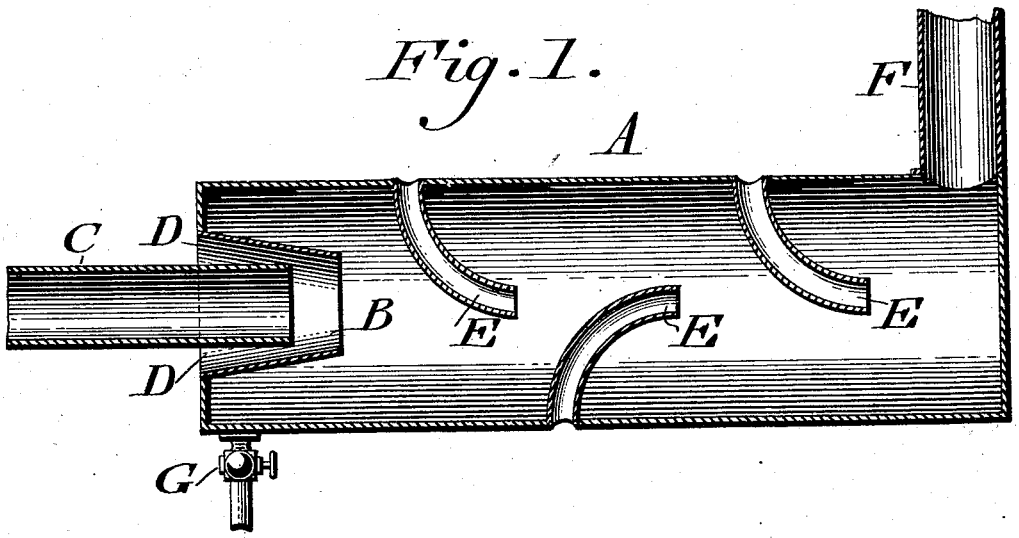
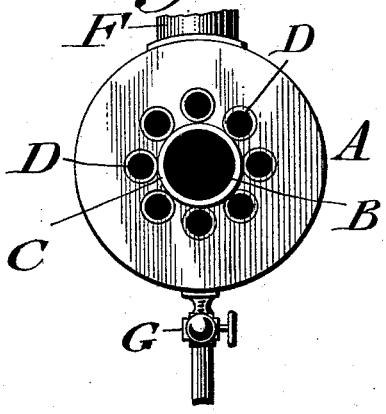


Fig. 2.



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CONDENSER FOR EXHAUST-STEAM.

SPECIFICATION forming part of Letters Patent No. 524,153, dated August 7, 1894.

Application filed November 10, 1892. Serial No. 451,519. (No model.)

To all whom it may concern:

Be it known that I, WARREN WEBSTER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Condensers for Exhaust-Steam, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a condenser for exhaust steam, formed of a head or casing having a steam inlet in one end and an air inlet adjacent thereto, an outlet being provided at the other end of the casing, the latter also having at various points intermediate of its ends, auxiliary air induction pipes which extend into the same, and are preferably curved and have their opening in the direction of the course of the inflowing steam, whereby the size of the air inlet or inlets adjacent the steam inlet can be greatly reduced if desired, the requisite supply of air being furnished by the auxiliary pipes at different points along said head or casing, so that the inflowing steam meets with jets of cold air at various points in its passage through the condenser, the influx of said steam inducing a flow of air in proportion to its velocity, thereby increasing or diminishing the volume of air entering, as may be required, all as will be hereinafter set forth.

Figure 1 represents a longitudinal section of a condenser embodying my invention. Fig. 2 represents an end view thereof.

Similar letters of reference indicate corresponding parts in the two figures.

Referring to the drawings:—A designates a cylinder or other shaped vessel, having at one end thereof the nozzle B, which enters the same. C designates a steam conveying pipe which projects into said nozzle B, and D designates a number of air inlets or openings in the end of the cylinder around the nozzle B.

Within the cylinder in front of the nozzle B are air-supplying pipes E, which communicate with the atmosphere and the interior of said cylinder, and project forwardly or in the direction of the course of steam admitted into the cylinder, said pipes being located at various points along the length of the casing so that the inflowing steam is continuously meeting jets of cold air at different points in its passage through the condenser, whereby the condensation of said steam is rapidly effected.

F designates a pipe which is connected with the cylinder for conveying hot air and vapor from the same, and G designates a cock or valve for draining the cylinder of water of condensation.

The operation is as follows:—Steam is admitted into the cylinder through the pipe C, thus causing an induction of air into the nozzle B, which latter then injects the air into the cylinder, where it reaches the steam and causes condensation thereof. The water of condensation falls to the bottom of the cylinder from whence it may be removed through the cock or valve G. Should the current of air admitted into the cylinder through the inlets D be found insufficient for the purpose intended, an additional volume of the same is directed into the cylinder through the pipes E, thus effecting a more thorough or perfect condensation of the steam therein, the inflowing steam acting as an injector to draw jets of air through said pipes E, as is evident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A condenser consisting of a casing having an injecting nozzle, a steam supply pipe leading thereinto, an air inlet adjacent to said steam pipe, and auxiliary air induction pipes which extend into said casing at different points throughout its length and are curved so as to have their outlets in the direction of the course of the inflowing steam, whereby said steam is acted upon by jets of cold air at different points in its passage through the condenser, the above parts being combined substantially as described.

2. A condenser consisting of a casing having an injecting nozzle, a steam supply pipe leading thereinto, an air inlet adjacent to

said steam pipe, and auxiliary air induction pipes which extend into said casing at different points throughout its length, and have their outlets in the direction of the course of the inflowing steam, whereby said steam is acted upon by jets of cold air at different points in its passage through the condenser, the above parts being combined substantially as described.

WARREN WEBSTER.

Witnesses:
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