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P. A. BANCEL

LOW LEVEL MULTIJET CONDENSER

Filed March 21, 1923

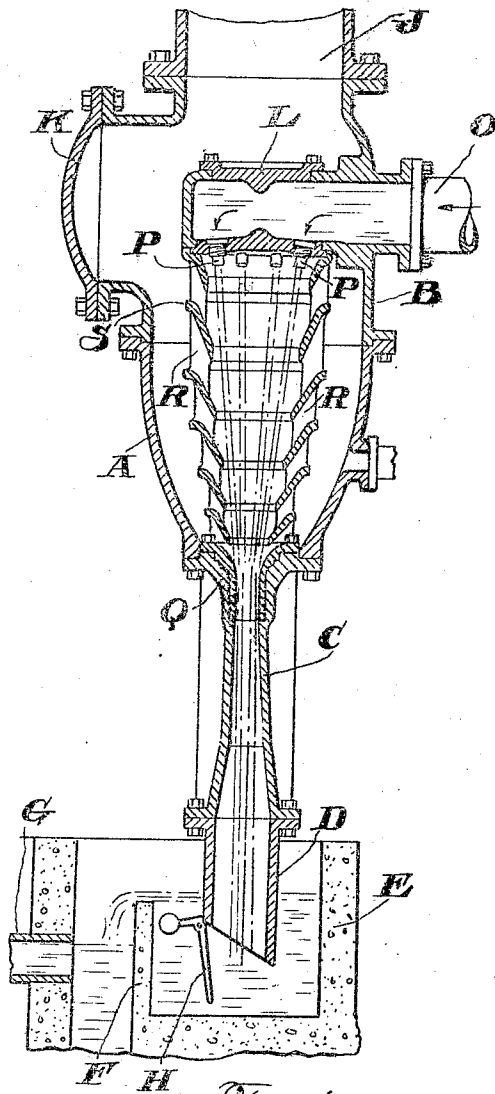


Fig. 1

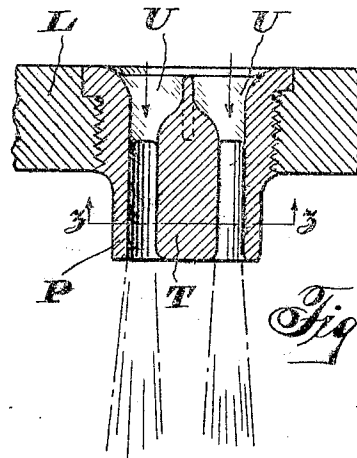


Fig. 2

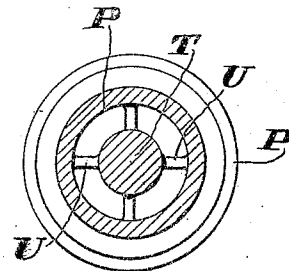


Fig. 3

Inventor

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By his Attorney

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UNITED STATES PATENT OFFICE.

PAUL A. BANCEL, OF NUTLEY, NEW JERSEY, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LOW-LEVEL MULTIJET CONDENSER.

Application filed March 21, 1923. Serial No. 825,680.

To all whom it may concern:

Be it known that I, PAUL A. BANCEL, a citizen of the United States, a resident of Nutley, county of Essex, and State of New Jersey, have invented a certain Low-Level Multijet Condenser, of which the following is a specification accompanied by drawings.

This invention relates to a low level multi-jet condenser, but more particularly to a condenser having an improved form of nozzle.

The objects of the invention are to increase the surface area of the jets or streams of water emitted by the nozzles, thus economizing in the use of water and also increasing the efficiency of the condenser.

Further objects of the invention will hereinafter appear and the invention is shown in one of its preferred forms in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional elevation of the condenser,

Figure 2 is an enlarged detail longitudinal sectional view of one of the nozzles, and

Figure 3 is a transverse sectional view on the line 3—3 of Figure 2, looking in the direction of the arrows.

Referring to the drawings, the condenser comprises a casing having the lower section or body A, the upper section or inlet head B, the diffuser C and tail pipe D which is partially submerged within the tank or sump E. Water flows over the weir F from the tank to the outlet G. The tail piece D is preferably provided with the counter-weighted flap valve H. Steam is admitted to the condenser casing through the steam inlet J and the inlet head is preferably provided with the man hole cover K.

A water head L in the upper part of the casing to which water is admitted through the water inlet O, is provided with a series of nozzles P, emitting convergent streams or jets of water directed towards the throat Q of the diffuser at the outlet of the casing.

A combining tube R may if desired be provided in the usual manner surrounding the convergent streams of water and the steam passes through the combining tube between the vanes or guides S to commingle with the water.

The nozzles P are of such construction that each nozzle forms a hollow stream of water as indicated diagrammatically and in detail, in Figures 2 and 3. Obviously different forms of nozzles may be used for producing hollow streams of water and I have illustrated one suitable form of nozzle in Figures 2 and 3. Each nozzle preferably comprises the nozzle proper indicated by the letter P and a central core piece or guide vane T suitably connected to the nozzle, as by means of the webs U, so that the water from the water head passes down between the webs U of the nozzle around the central guide vane or core piece T, thus forming a hollow jet.

The multiplicity of convergent hollow jets or streams of water increase the surface area of the jets, for the purpose of condensing the steam and increase the efficiency of the condenser with greater economy in the use of water.

I claim:

A low level multi-jet condenser, comprising a casing having a diffuser at its lower end and a contracted throat at the entrance of said diffuser, a water head in the upper portion of the casing and a ring of removable nozzles on said head for directing converging streams of water to the said throat of the diffuser, each nozzle containing a central guide vane and webs connecting said guide vanes to the walls of the nozzles for forming hollow streams of water from the nozzles.

In testimony whereof I have signed this specification.

PAUL A. BANCEL.