(No Model.)

# C. HOLLAND.

## HYDROCARBBON FURNACE.

No. 275,382. Patented Apr. 10, 1883.

Fig 1

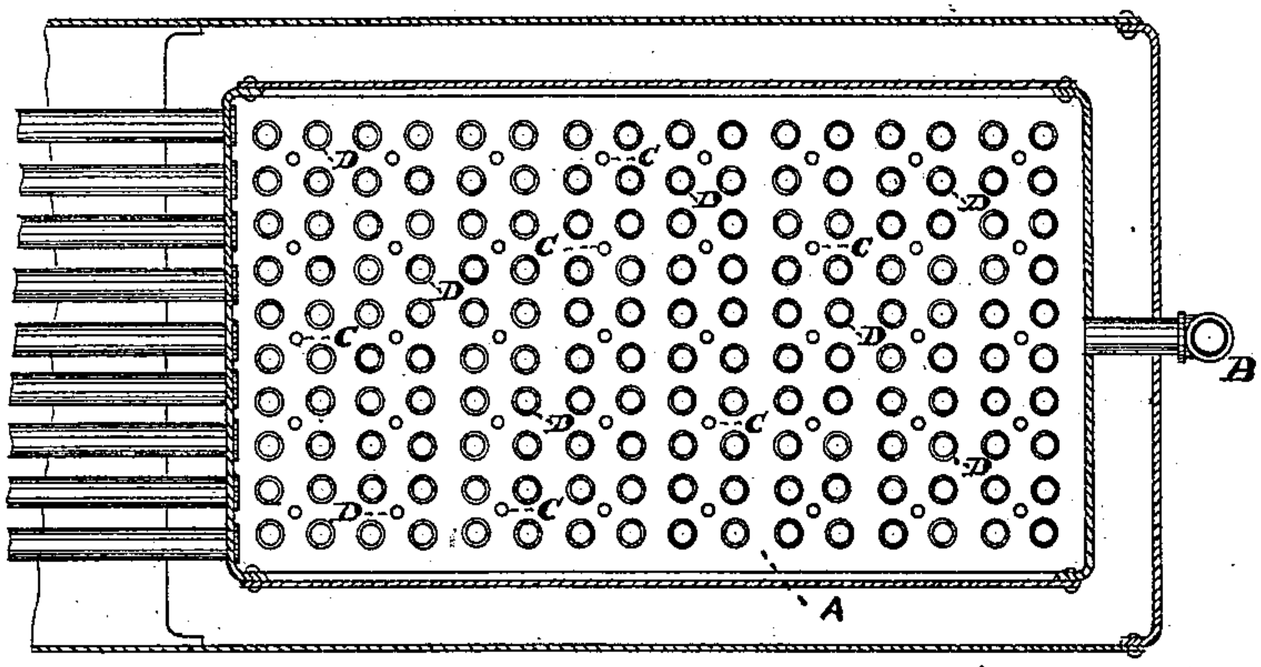



Fig 3

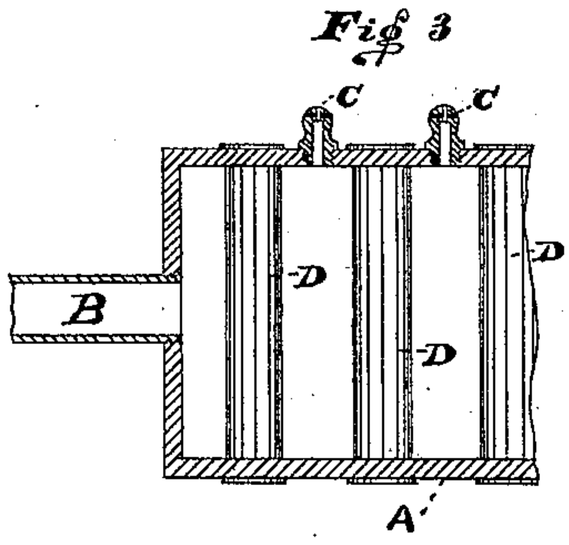



Fig 2

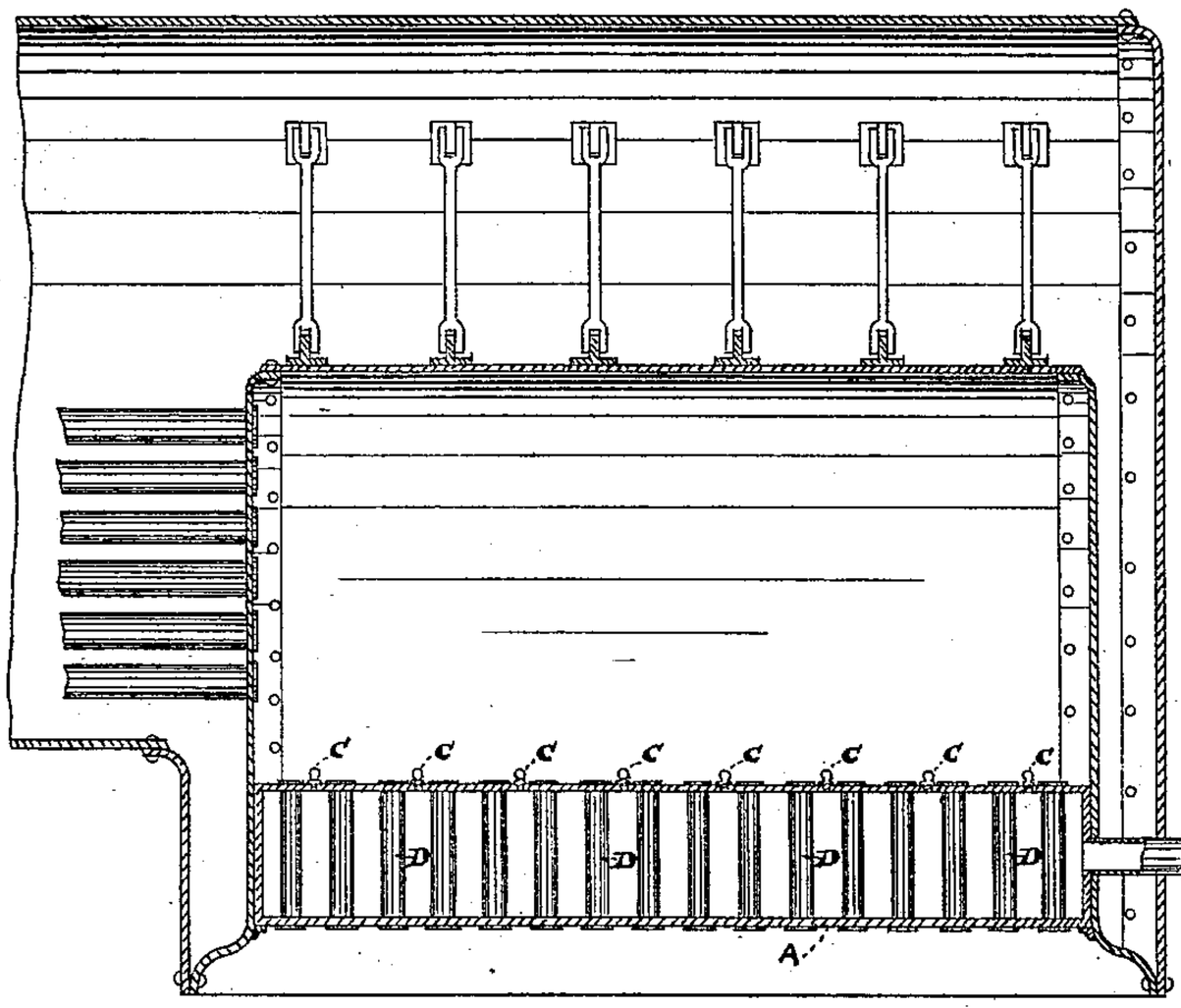
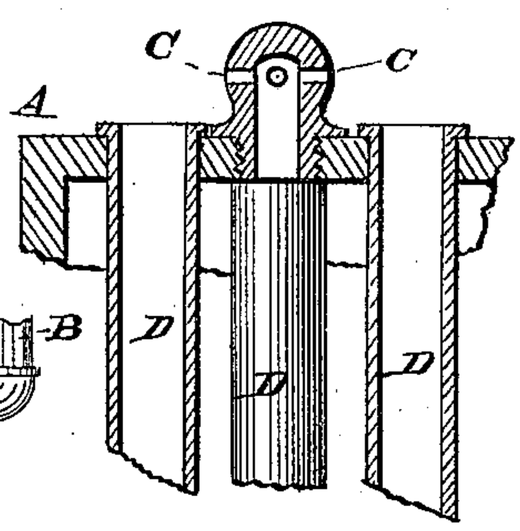



Fig. 4.




Witnesses
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# UNITED STATES PATENT OFFICE.

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## HYDROCARBON-FURNACE.

SPECIFICATION forming part of Letters Patent No. 275,382, dated April 10, 1883.

Application filed April 25, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES HOLLAND, of the city, county, and State of New York, have invented certain new and useful Improvements in Hydrocarbon-Furnaces; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable others skilled in the art to make and use the said invention.

My invention relates to that class of furnaces in which the products of distillation of hydrocarbon fluid and water or steam are burned with air; and it has for its object a more effective distribution of the fuel and air to the jets in all parts of the furnace.

The nature of my invention consists in a box into which the gaseous fuel is introduced, and from which it issues and burns through apertures on the upper surface, and is supplied with air by means of tubes extending through the box from the lower to the upper side, arranged in clusters around the several gas-jet apertures, so as to properly conduct and deliver an air-supply to the gas-jet.

I will now proceed to describe particularly the mode of making and using my invention, referring, in so doing, to the drawings annexed and the letters of reference marked thereon.

Figure 1 is a plan; Fig. 2, a vertical section; Fig. 3, an enlarged section of a portion of Fig. 2; and Fig. 4 shows a burner or jet-tube and the contiguous parts in section on an enlarged scale.

The same letters of reference apply to the same parts in the several figures.

A represents a box or chamber provided with a suitable inlet-pipe, B, through which it receives the supply of gaseous fuel, either directly from the generating-retorts or after passing through intermediate apparatus.

C are apertures or jet openings or tubes formed in the upper side of the box A, preferably but not necessarily placed at equal distances from each other.

D are tubes located in clusters around the jet-apertures C, extending through the box A, so as to convey air from beneath the box A, and deliver the air to the jets of gaseous fuel issuing from the apertures C. By this arrangement a full and equal supply of fuel is delivered to each and every jet, and an equal supply of air provided for its combustion.

In operation the box is placed at either the lower part or at the side or end of the combustion-chamber, and connected by the inlet-pipe B to the gaseous-fuel supply, and on the lower side having access to the air. Upon igniting the jets issuing from the apertures C the combustion-chamber is filled with flame evenly distributed in all parts.

Having described my invention and the mode of making and using the same, what I claim as my invention is—

In an apparatus for burning hydrocarbon fuels in gaseous form with steam and air, the box or chamber A, having an inlet, B, for supplying gaseous fuel, a series of jet-tubes, C C, inserted in its upper surface and adapted to deliver jets of gas laterally or obliquely upward, and series of air-tubes D D, arranged in clusters around the several jet-tubes C C, and fitting gas-tight in both the upper and lower sides of the box A, substantially as and for the purpose set forth.

CHARLES HOLLAND.

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