

(No Model.)

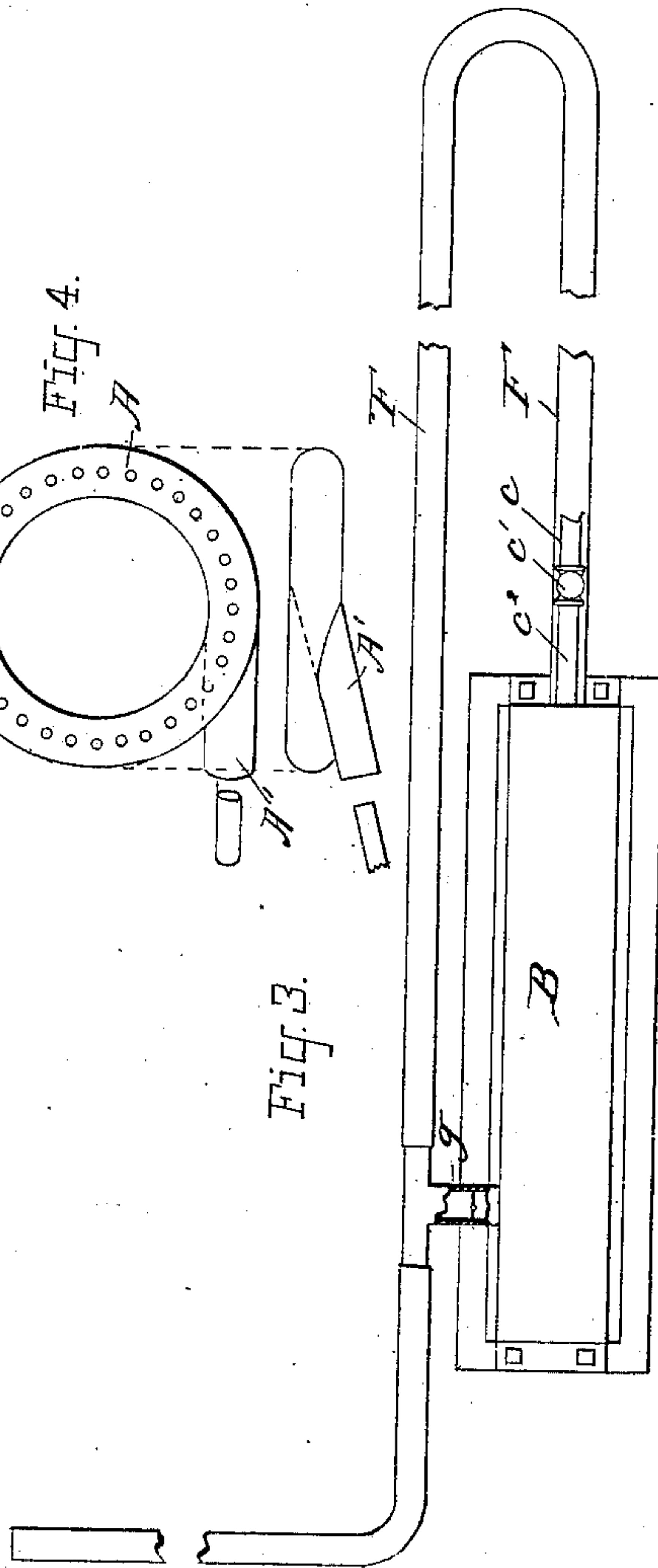
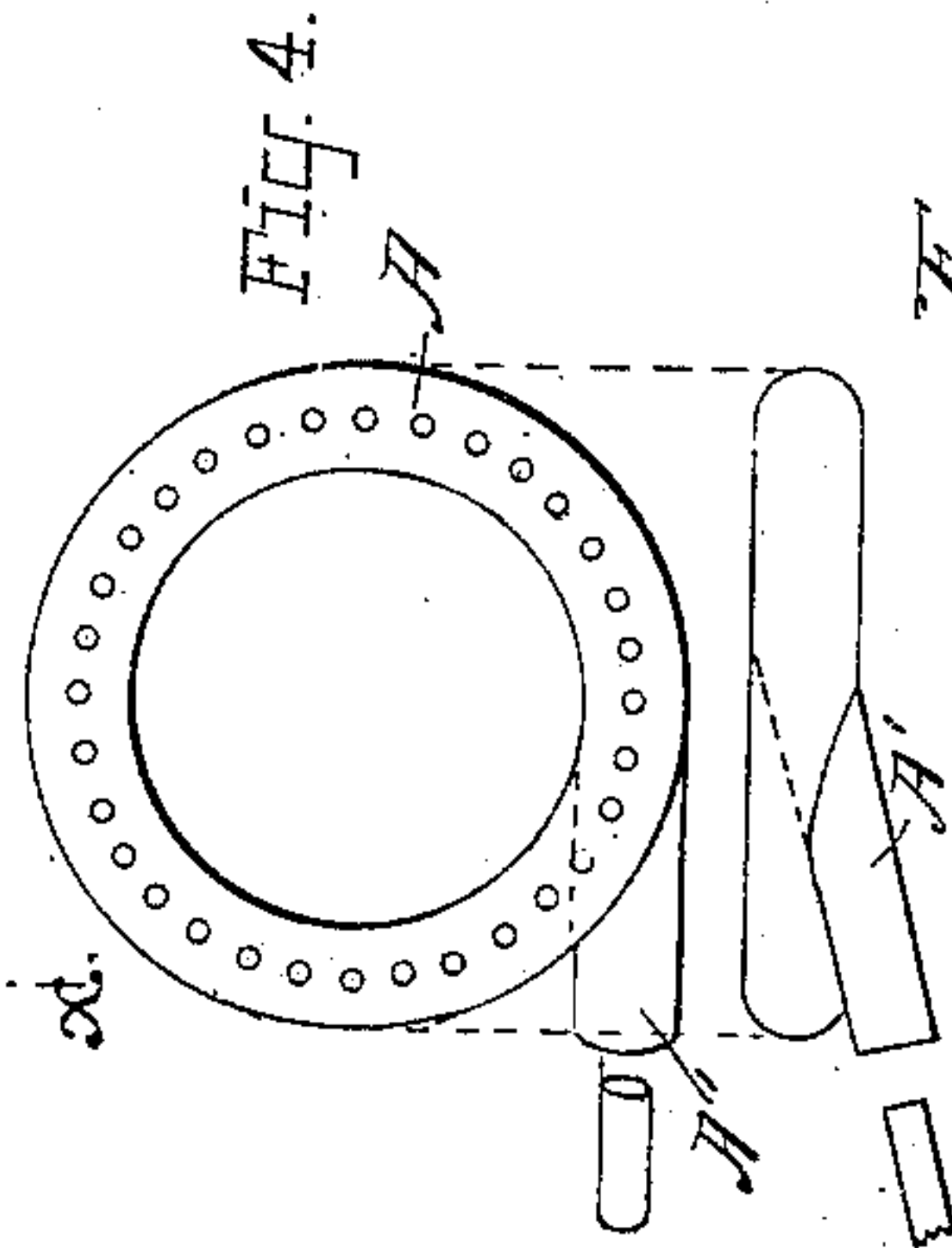
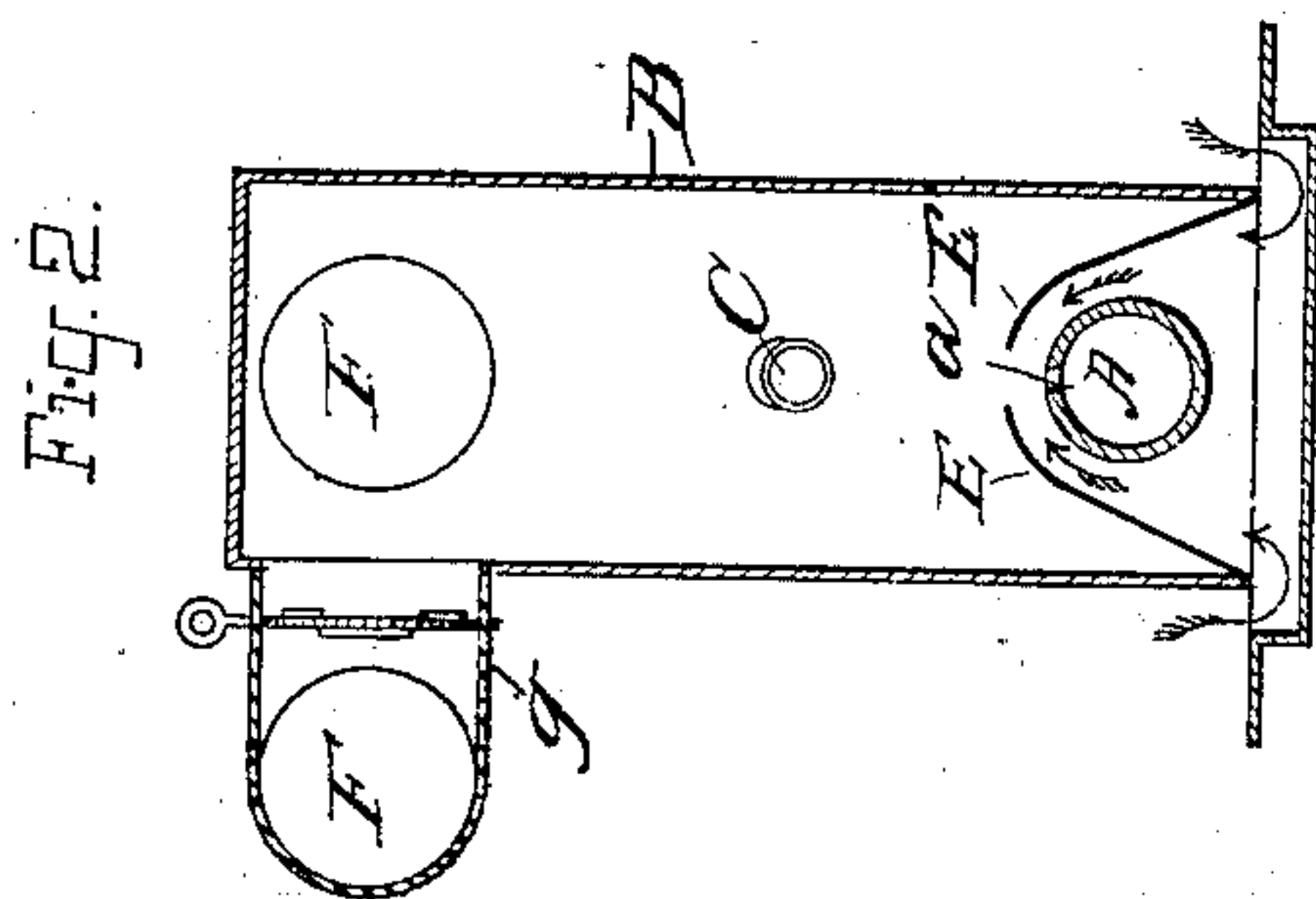
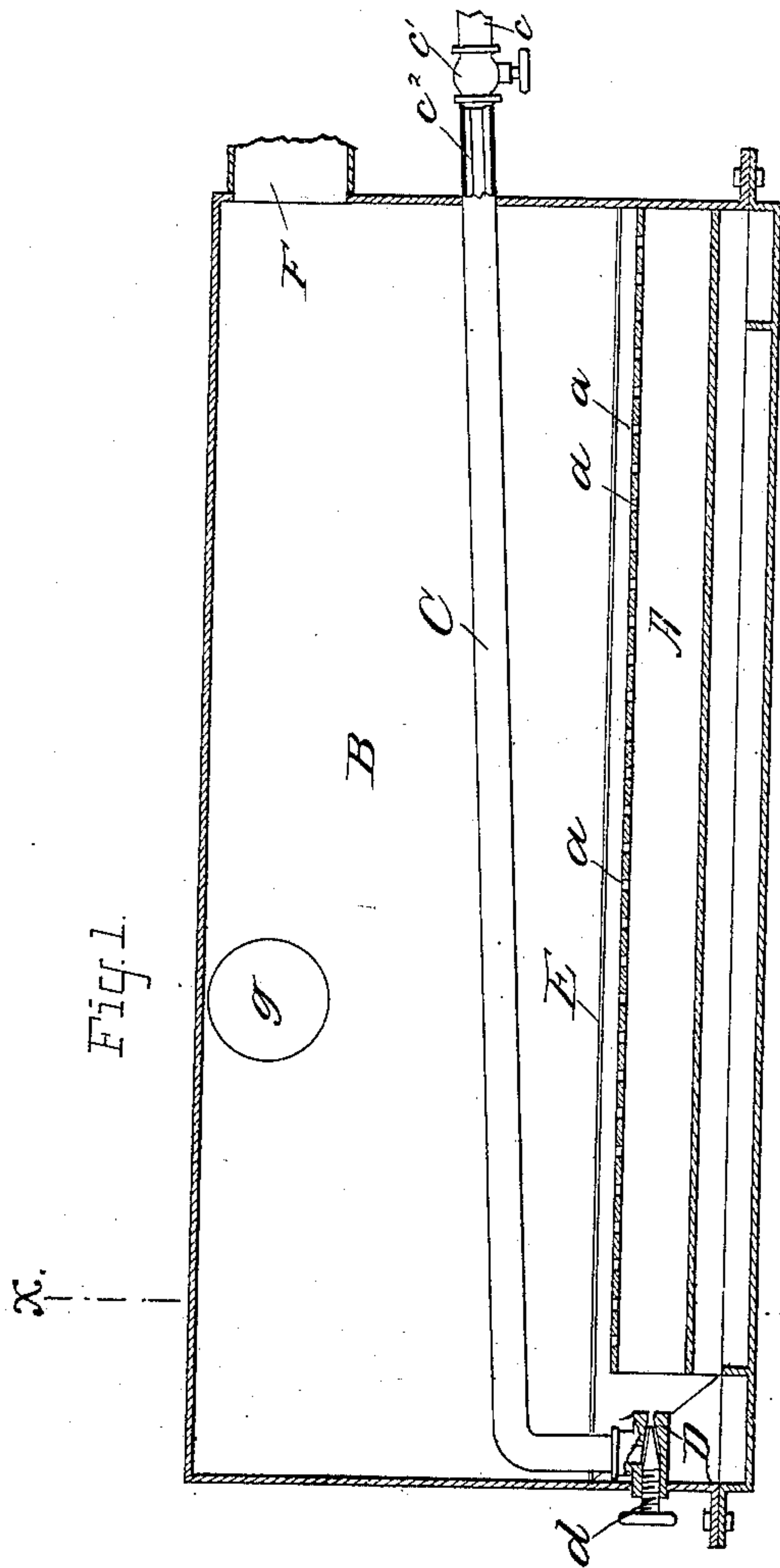
2 Sheets—Sheet 1.

A. B. VANDEMARK.

GAS OR OIL STOVE.

No. 333,797.

Patented Jan. 5, 1886.



ATTEST:
J. A. Muddle
Andrew J. Steyer

INVENTOR:
Archibald B. Vandemark

(No Model.)

2 Sheets—Sheet 2.

A. B. VANDEMARK.

GAS OR OIL STOVE.

No. 333,797.

Patented Jan. 5, 1886.

Fig. 5.

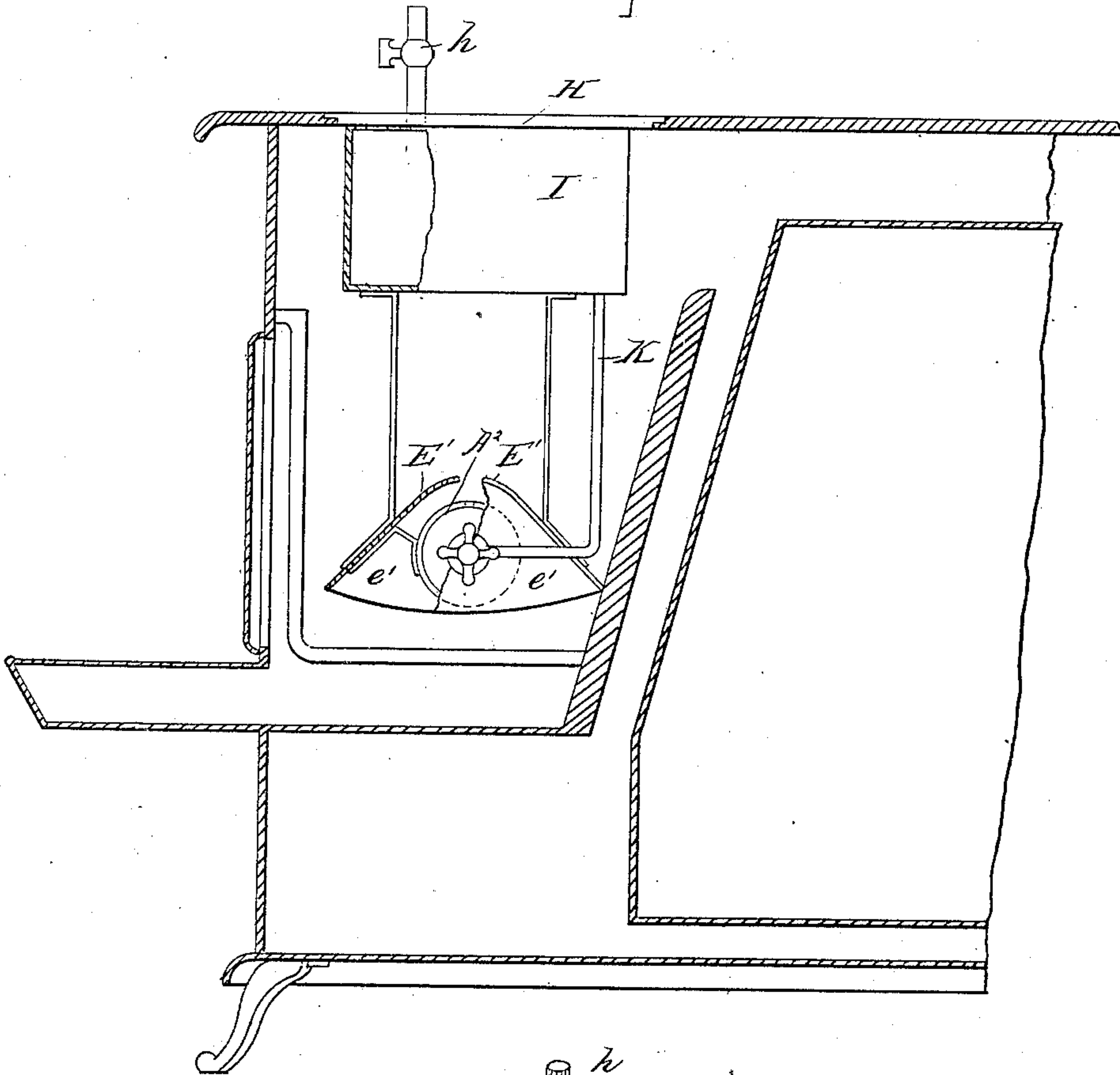
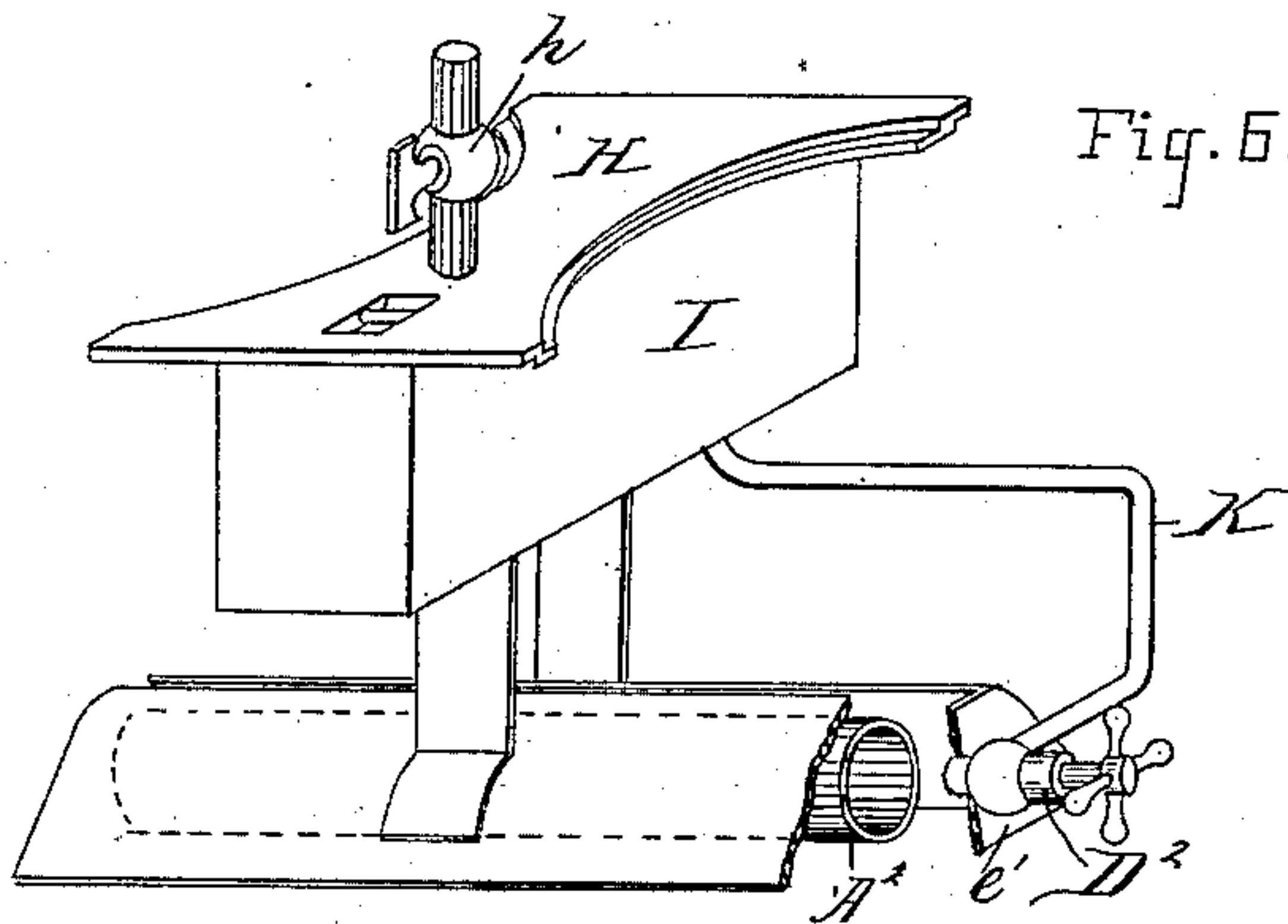


Fig. 6.



ATTEST:

Andrew J. Steiger
Wm. L. Green

INVENTOR:

Archibald B. Vandemark

UNITED STATES PATENT OFFICE.

ARCHIBALD B. VANDEMARK, OF NEW YORK, N. Y.

GAS OR OIL STOVE.

SPECIFICATION forming part of Letters Patent No. 333,797, dated January 5, 1886.

Application filed March 9, 1885. Serial No. 158,154. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD B. VANDEMARK, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Oil or Gas Stoves, of which the following is a specification.

My invention relates to an improvement in oil or gas stoves; and it relates more particularly to a device for supplying oxygen to the flame, thereby producing more complete combustion than has heretofore been possible.

It consists, as hereinafter set forth, in placing deflecting wings or surfaces in such a position relatively to the heat-producing flame of the stove that the air surrounding and beneath said flame will be deflected and projected into the flame and supply oxygen thereto.

My invention further consists in a novel construction and arrangement of the several parts of the heating devices to adapt them to be used to supply heat to various patterns of stoves now in use.

In the accompanying drawings, Figure 1 is a central vertical section taken longitudinally through a stove adapted to heat a car. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is a top view of the stove shown in Fig. 1, showing pipe-connections on a reduced scale. Fig. 4 is a modification in the burner. Fig. 5 is a section through a cooking-stove, showing my device fitted thereto; and Fig. 6 is a detached view of my improved device in perspective as adapted for a cooking-stove.

In Fig. 1 A is the burner, mounted longitudinally in the stove-case B, and is a piece of metallic tubing with a series of perforations, *a a*, along its upper side.

C is a retort for generating the gas, and in this case is a pipe running longitudinally through the stove immediately over the burner A. This retort C is supplied with hydrocarbon oil through a supply-pipe, *c*, connected with a convenient reservoir and provided with a stop-valve, *c'*. The space *c''* between the valve *c'* and the wall of the stove B is preferably filled with some fibrous material, through which the oil may percolate, but which will prevent a too rapid accumulation of oil in the

hot portion of the retort. The gas formed in the retort C is fed into the burner A through a nozzle, D, at one end of the burner, and this nozzle is of such a form and size compared with the burner that a jet of gas forced into the burner therefrom will carry with it a supply of air. The quantity of gas delivered by the nozzle D is governed by a valve, *d*, projecting outward through the wall of the stove B. The gas is ignited where it issues from the perforations or orifices *a a* in the burner, and the heat generated by the row of flames thus produced heats the retorts C to generate the required gas.

In order to insure a complete combustion of the gases and to derive the maximum amount of heat from the fuel consumed, it is necessary that an extra amount of air should be supplied to the flames at *a a*, and this supply I obtain by placing deflecting-wings E E longitudinally along both sides of the burner A, so that they will converge to form a narrow opening over the perforations *a a* in the burner, through which the gas-flame may pass. The air around and beneath the burner will thereby be drawn up and projected into the flame for the purpose named. These deflecting wings or plates may be attached directly to the burner.

The stove illustrated in the drawings in Sheet 1, including Figs. 1, 2, and 3, is arranged for heating a street-car, and to distribute the heat from the stove through the car. The products of combustion from within the stove are led back and forth through the car by means of a pipe, F. The draft from the stove passing through the horizontal portion of the pipe F, before it reaches the vent or chimney through which it passes into the outer air, will obviously be difficult to start, and to overcome this difficulty I cause the return portion of the pipe, after making the circuit of the car, to pass close to the wall of the stove, and I put in a cross connecting-pipe, *g*, Fig. 2, provided with a valve or damper, so that the connection between the stove and the chimney or vent may be shortened while starting the fire.

When it is desired to apply my improved devices to a cylindrical stove, the burner may be made circular, as shown in Fig. 4, with a

tangential branch, A', projecting therefrom, through which may be injected the gas and air.

In Figs. 5 and 6, Sheet 2, I have shown a device for burning oil in a cooking stove or range, the same provided with the deflecting-wings for improving the combustion of fuel. In this case the parts of the heating devices are all attached to and are dependent from a movable part of the stove-lid, as follows: H is a part of the stove-lid, preferably the central bridge over the fire-box. A retort, I, in this case preferably made in the form of a rectangular box, is attached to the under side of the lid H, and is provided with a supply-pipe, which may be connected with a convenient reservoir, and which has fitted into it a stop-valve, h. From this retort are suspended the two deflecting-wings, a plate, E' E'. A burner, A², is suspended from and under these wings. The gas is led from the retort I and projected into the burner A² through a small pipe, K, and the supply is governed by a valve, D². I preferably secure the burner A² in place by supplying cross-plates e' to the wings and screwing the burner A² into threaded openings therein.

What I do claim is—

1. The combination of a suspended retort

and an oil-supply with a perforated tubular burner below said retort, and a valve-governed gas-feed pipe for injecting gas from said retort into the burner, substantially as set forth.

2. The combination of a suspended retort connected with a suitable oil-supply tank, a perforated tubular burner attached to and below said retort, and provided with air-deflecting wings and a valve-governed gas-feed pipe for injecting gas into the burner, all as and for the purpose set forth.

3. The combination, with a gas or oil stove, as herein shown and described, of a heat-distributing pipe making a circuit from the stove through the space or apartment to be heated and returning to a point near to the wall of the stove before reaching the vent or chimney, and connected with the stove by a cross pipe or connection provided with a valve or damper, substantially as and for the purpose set forth.

Signed at New York, in the county of New York and State of New York, this 6th day of March, A. D. 1885.

ARCHIBALD B. VANDEMARK.

Witnesses:

ANDREW W. STEIGER,
THOS. KILVERT.