

(No Model.)

G. W. BILLINGS.

COAL OIL STOVE.

No. 254,529.

Patented Mar. 7, 1882.

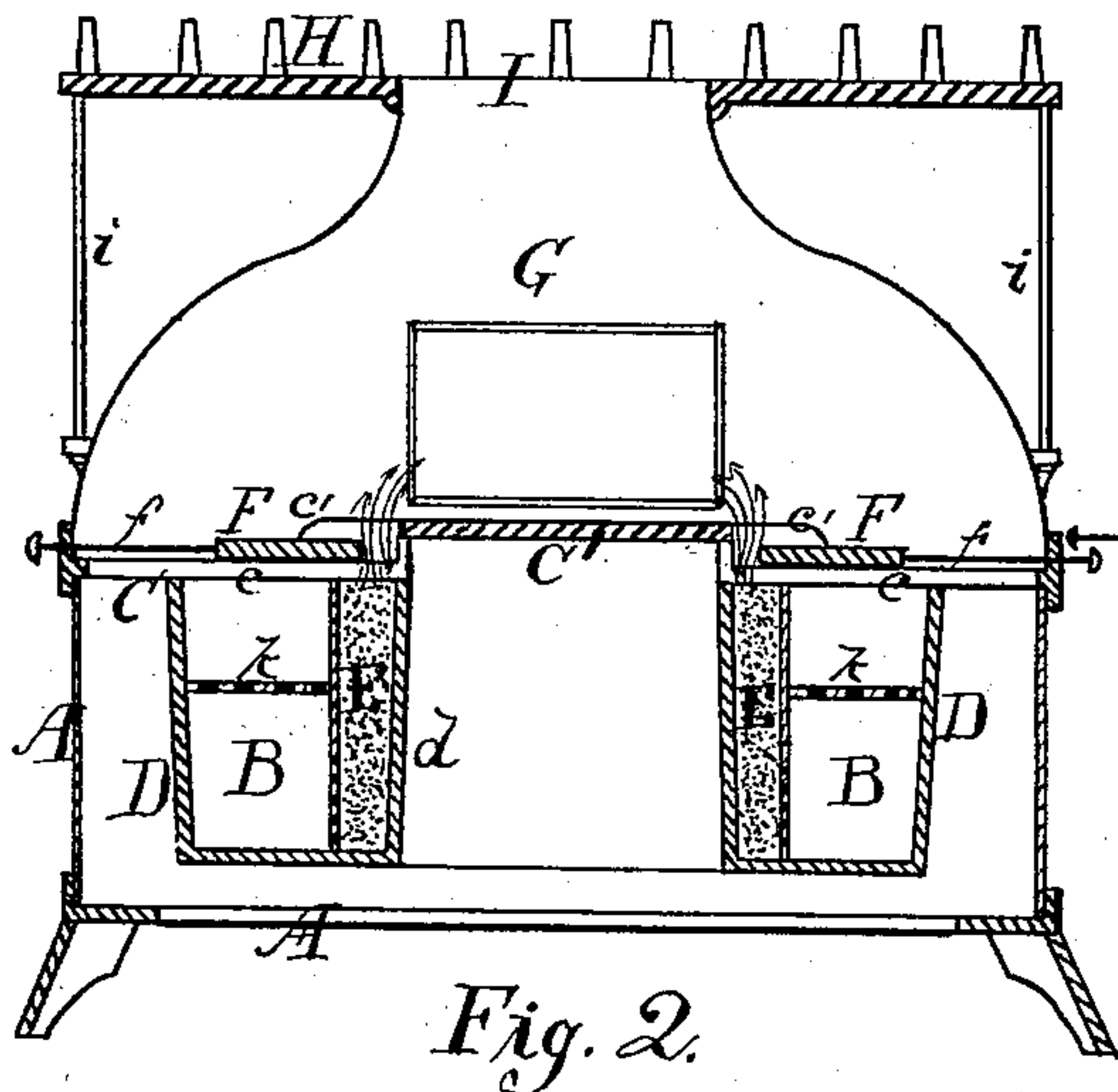


Fig. 2.

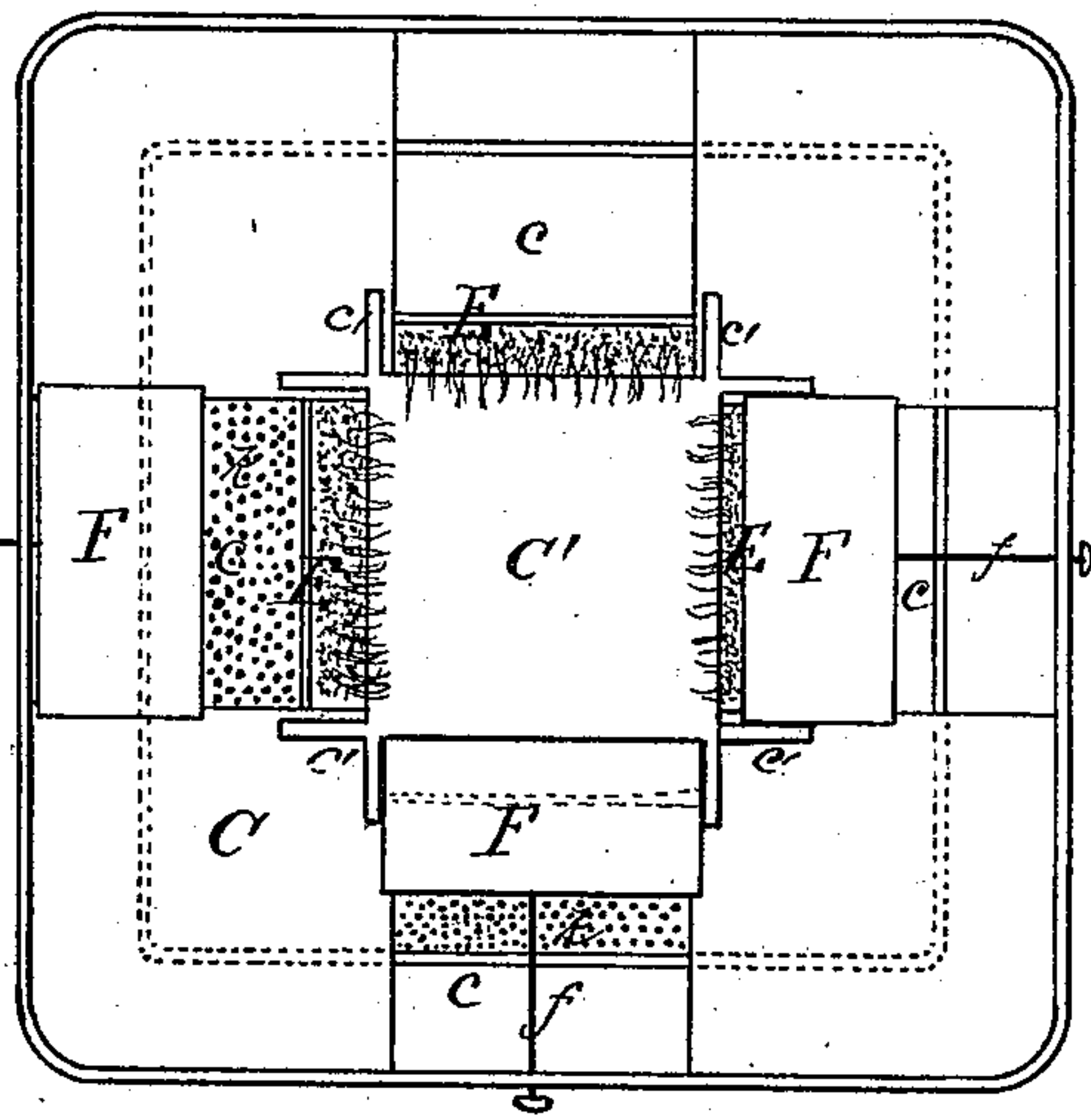


Fig. 3.

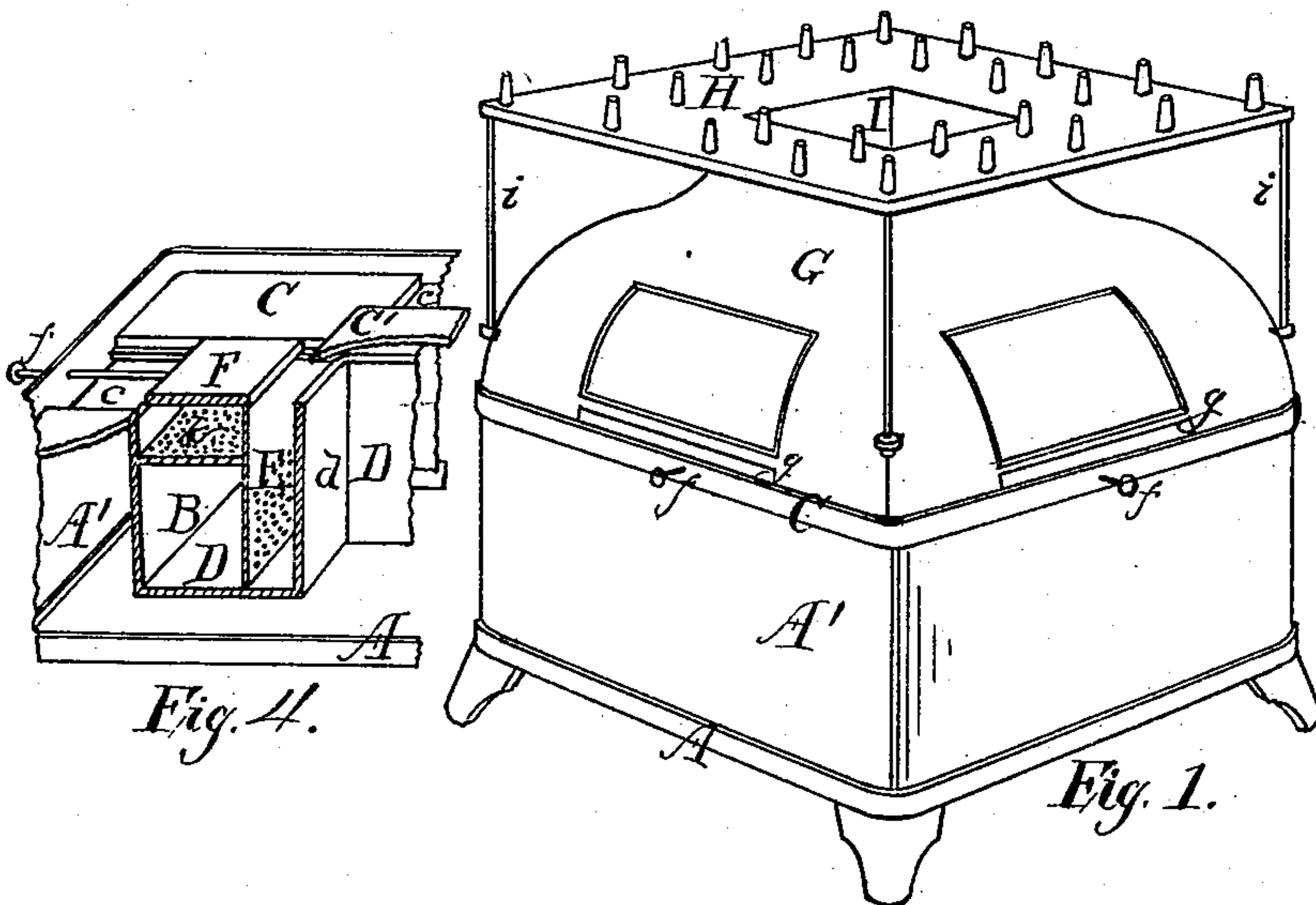


Fig. 1.

Fig. 4.

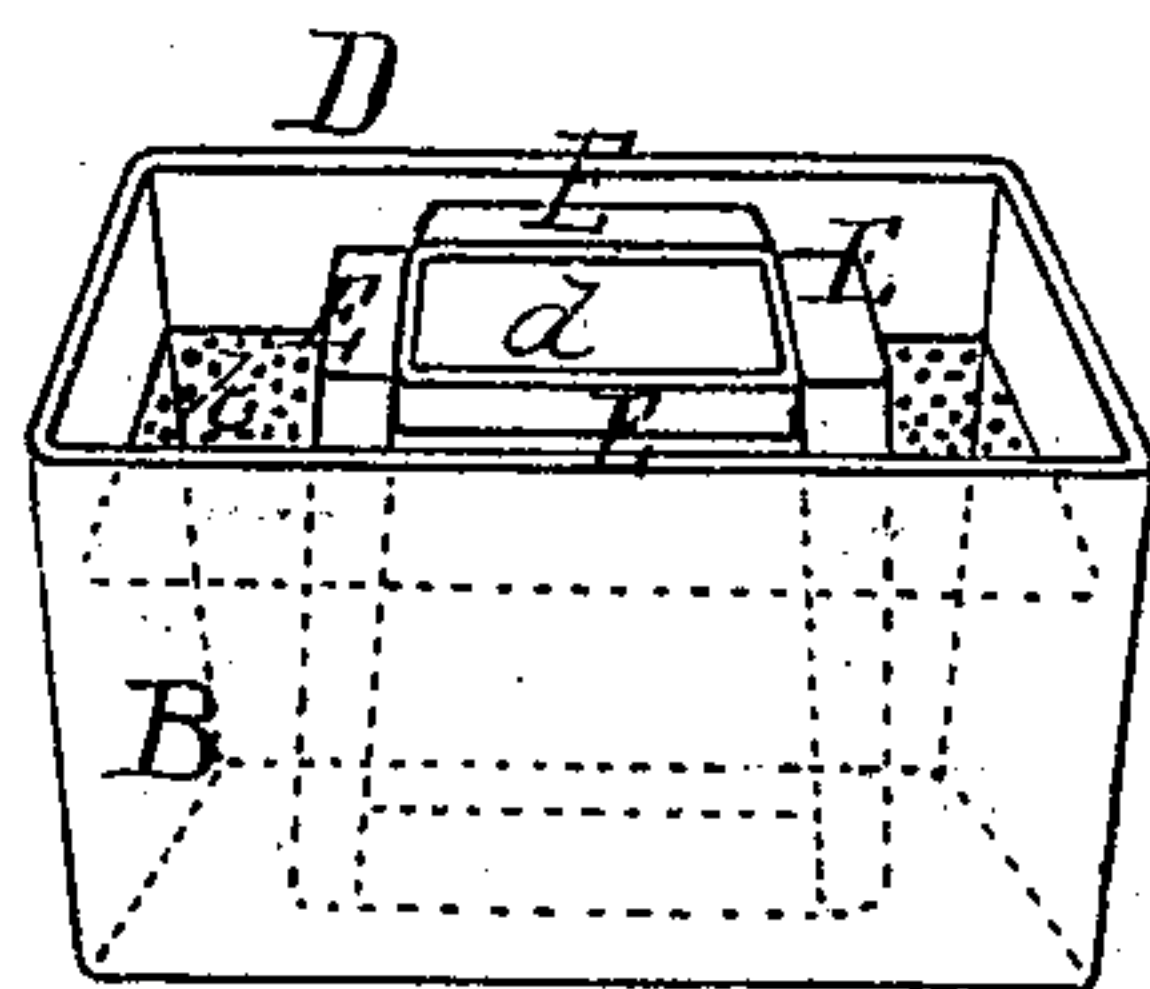


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE W. BILLINGS, OF CLEVELAND, OHIO.

COAL-OIL STOVE.

SPECIFICATION forming part of Letters Patent No. 254,529, dated March 7, 1882.

Application filed January 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BILLINGS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful
5 Improvement in Coal-Oil Stoves, of which the following is a specification.

The nature and objects of this invention will fully appear from the subjoined description when considered in connection with the ac-
10 companying drawings, in which—

Figure 1 is a perspective view. Fig. 2 is a vertical section. Fig. 3 is a plan view of middle plate, showing burner-openings and the slides for closing same. Fig. 4 is a broken sectional view of part of the lower portion, to
15 show internal construction. Fig. 5 is a detached view of the oil-reservoir.

A is the lower or base frame, provided with feet at the four corners.

20 A' represents the side walls of the lower portion of the stove, which incloses the oil-reservoir B, leaving space around and under the same.

C is a middle or central plate or diaphragm, supported upon the said walls A, and has four square openings, *c c*, located in the central part of the four sides. The central part of said plate C has a square plate, C', located between the said four openings *c c* and slightly
30 raised above the level of the main plate C, supported at its four corners by projections *c'*.

D is a square pot, having a square central flue, *d*, and is suspended underneath and to the middle plate, C, with the said central flue directly underneath the said central raised plate, C'. The space in the pot D surrounding the central flue, *d*, is divided into four separate chambers, E, by means of four loose angle-plates, held in place against the sides of
40 the walls of the flue *d* by an open diaphragm, *k*. The walls of the pot and its flue are made slightly slanting, so that the said diaphragm *k* fits a short distance from the top, where it is supported. The lower part of the walls of
45 the chambers E are perforated, to make a communication between said chambers and the outer space in the pot D, for a purpose hereinafter shown.

The four openings *c c* in the central plate, C,
50 are provided with sliding lids or covers F, slid-

ing in rabbets in the sides of the said openings. They are provided with rods *f*, which pass out through holes in the flanges of the middle plate, C, by means of which they are operated. These slides F are for covering the
55 chambers E and for regulating the flames therefrom. The chambers E are filled with ashes or similar substance, which I employ instead of cotton wicks, while the outer chamber of said pot D contains kerosene-oil, which con-
60 nects with and saturates the ashes through the perforations.

The top portion of the stove consists of a dome-shaped chamber, G, surmounted with a plate, H, having a central opening, I, over the
65 flames, and is provided with studs or projections *h*, upon which to set cooking-vessels and allow the heat to circulate thereunder. The sides of the dome are provided with mica win-
70 dows to enable the flames to be seen. The top plate is supported at the four corners by rods *i i*. The dome is also attached to the plate C at one side by hinges, which enables the dome to be turned over, when desired, for supplying
75 the pot with oil or other purposes. Slot-openings *j j* are made below the mica windows for the admission of air above the central plate or diaphragm, C.

The object of constructing the stove in square form is to enable flames to be controlled and
80 regulated in a much more convenient and perfect manner. By this arrangement the slides or valves F, being straight-sided, can be adjusted over the flames more or less, as may be
85 required, for regulating the volume of flame, and also enables the shutting off entirely of one or more of the flames or burners. By covering the central flue, *d*, with the central plate,
90 C', the draft of air, striking the under side of said plate, is diverted in horizontal lines, and meets the flames horizontally through the open-
95 ings at the edges of said plate in opposition to the currents of air from the side openings, *g*, in the dome, thereby producing a perfect combustion.

The operation of this stove is as follows: The pot D being supplied with oil, as afore-
said, the plate or diaphragm *k* is placed over the oil, which protects it and prevents any-
100 thing from falling into it. The ashes become

saturated with the oil through the aforesaid perforations, and the oil is burned on the top surface of the ashes.

To light the stove, the top G is thrown back
5 and the slides F withdrawn from over the ash-chamber; then with a lighted match or torch the oil may be set on fire at the surface of the ashes. The dome G is then turned down again. The draft of air through the central flue, *d*,
10 supplies the flame with a sufficient amount of oxygen, causing the oil to burn with a pale blue light without smoking. Air is also admitted through the slots *g*, which counteracts against the draft from the central flue and di-
15 rects the flames upward toward the central opening in the top plate, H.

With the use of ashes instead of the ordinary wicking there is no charring, because
20 there is nothing consumed but the vapors of the oil, and by the peculiar arrangement of feeding the flames with air there is no carboni-

zation, but a complete consumption of the elements of the oil.

Having described my invention, I claim as follows:

1. The square pot D, having square central
flue, *d*, and provided with the perforated ash-
chambers E, and the diaphragm *k*, comprising
the oil-fount of an oil-stove, substantially as
described. 25

2. The combination, with the pot D, com-
prising the oil-fount above described, of the
plate C, having the openings *c c* over the ash-
chambers E, and also having the raised cen-
tral plate, C', over the flue *d*, and provided with
the sliding plates F for regulating the flames,
substantially as described. 30

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Witnesses:

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