

(No Model.)

J. L. HAMILTON.  
HOT AIR HEATING APPARATUS.

No. 311,313.

Patented Jan. 27, 1885.

Fig. 1.

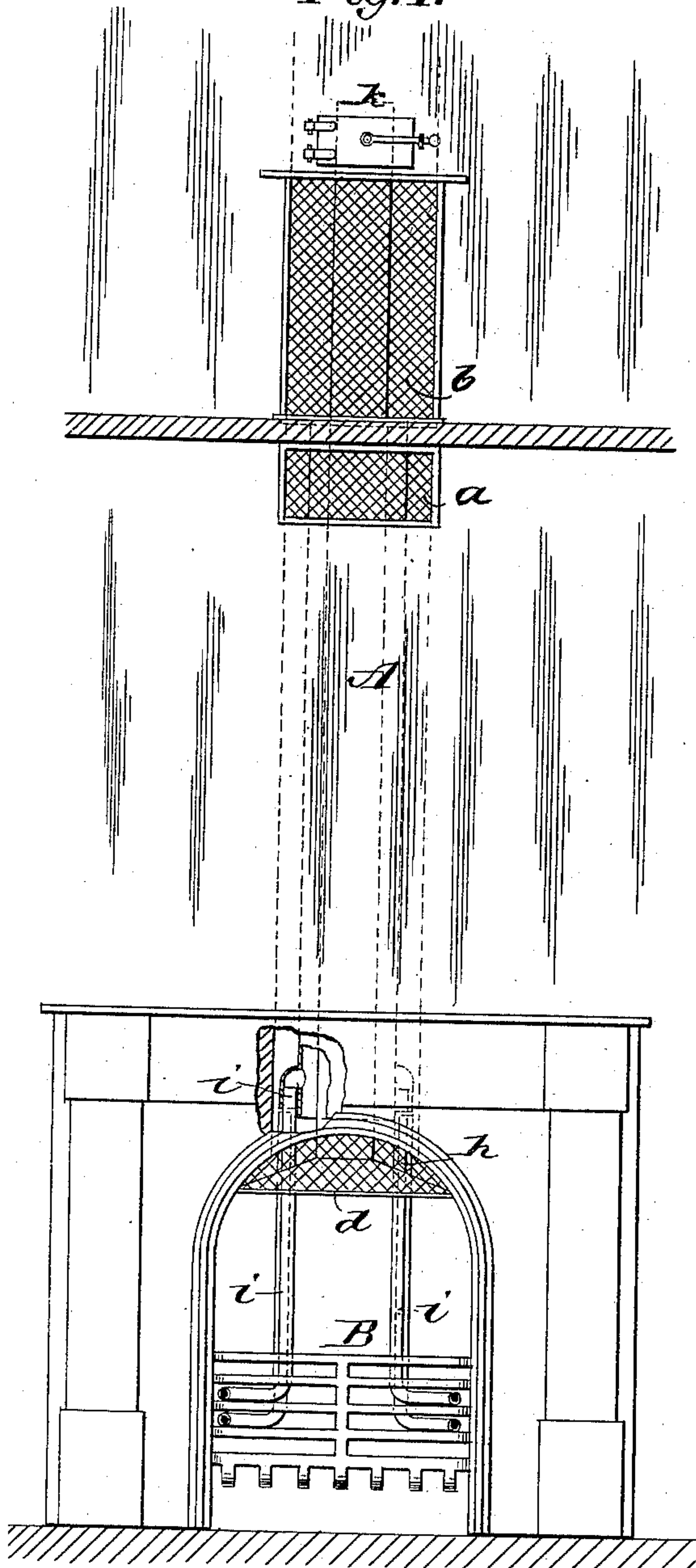
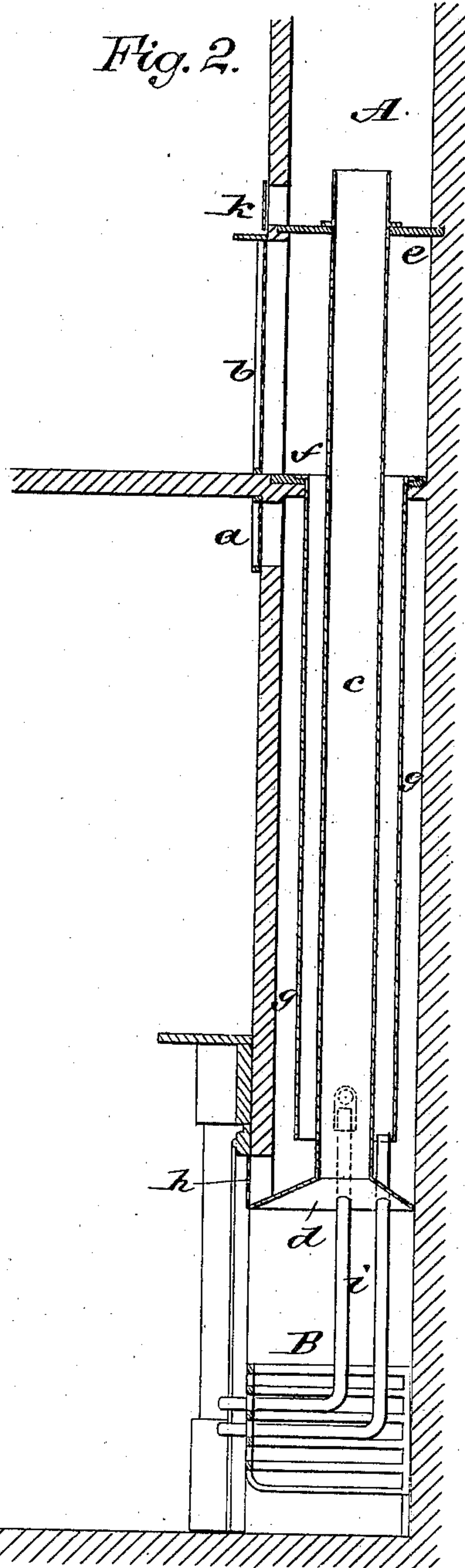


Fig. 2.



WITNESSES:

*Wm. Beyer*  
*C. Sedgwick*

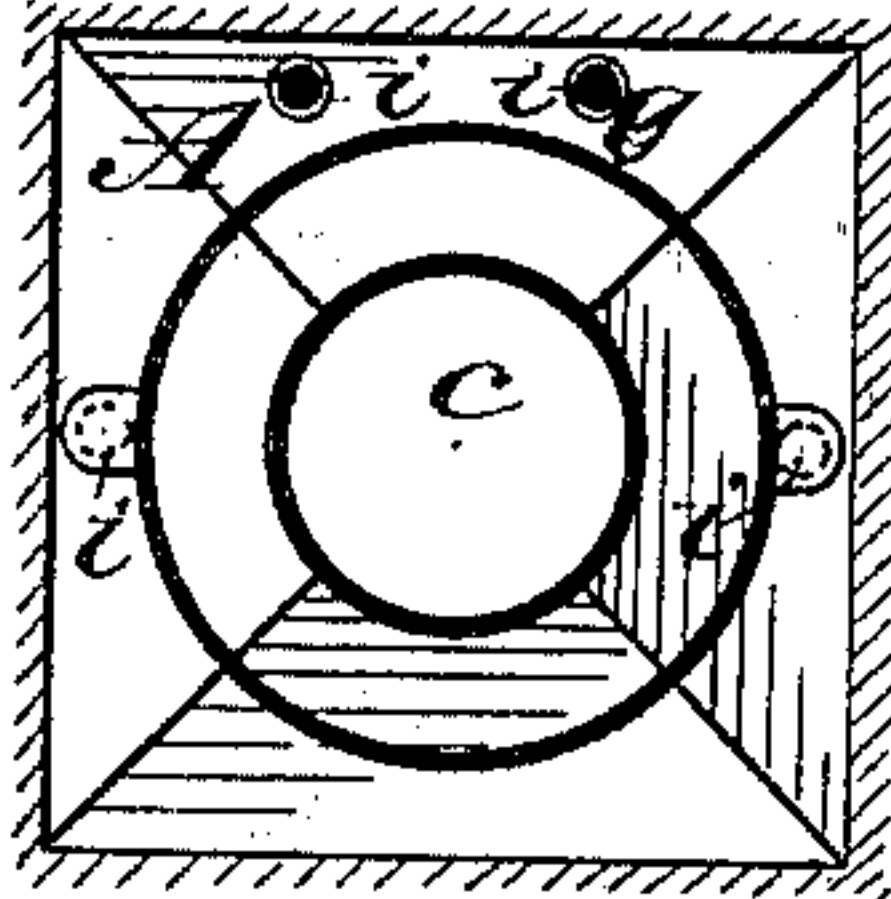


Fig. 3.

INVENTOR:

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# UNITED STATES PATENT OFFICE.

JOHN L. HAMILTON, OF ST. JOSEPH, MISSOURI.

## HOT-AIR HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 311,313, dated January 27, 1885.

Application filed May 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. HAMILTON, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and  
5 Improved Hot-Air Heating Apparatus, of which the following is a full, clear, and exact description.

The object of my invention is to utilize ordinary open grates for heating rooms above  
10 those in which the grates are placed; and to that end my invention consists in an arrangement of flues and heating-tubes, as hereinafter described and claimed.

Reference is to be had to the accompanying  
15 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation representing rooms provided with heating apparatus.  
20 Fig. 2 is a vertical section through the flue and fire-place, and Fig. 3 is a cross-section of the flue.

A is the flue or chimney from a fire-place containing a grate, B, of ordinary character.  
25 The flue has an upper opening, *a*, into the lower room, near the ceiling, and an opening, *b*, into the upper room, near the floor, both openings *a b* being covered by a grating or netting.

Within the chimney or flue A is fitted a  
30 circular pipe, *c*, having a hood, *d*, on its lower end, which covers the space over the grate, so that the pipe *c* shall serve as the smoke-flue. This pipe is held at its upper end by a plate, *e*, which is fitted tightly in the main flue above  
35 the opening *b* into the upper room.

Around the flue pipe *c*, suspended from a ring-plate, *f*, at the bottom of opening *b*, is a lower pipe, *g*, which terminates a short distance above the hood *d*. The pipe *g* divides  
40 the space outside the smoke-flue into two flues, the outside one connecting with the exit *a* into the lower room, and the inner one communicating by opening *b* with the upper room. The hood *d* is to be set far enough  
45 down, as shown, to leave an opening, *h*, for the entrance of hot-air to the flues, and to obtain a good supply of highly-heated air.

Tubes *i i* are fitted in the fire-place with their lower ends opening near the floor of the  
50 room, and extending at their upper ends into the air-flues. These tubes will remove the coolest air from the lower part of the room and deliver it highly heated. It is evident that the air rising in the inner flue will be-

come more highly heated by its contact with  
the smoke-flue, and thus much heat that would  
otherwise be wasted will be utilized. 55

This apparatus allows the heating of upper rooms by grate-fires in rooms below, with the advantages of an open fire-place for ventila-  
60 tion in the lower part of the house.

Suitable doors and dampers are to be provided for regulating the heat, and a door at  
65 *k* allows soot to be removed from above the plate *e*.

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

1. In hot-air heating apparatus, the combination, with the hood disposed within the fire-place above the fire-grate, and connected  
70 to the smoke-flue, of the subdivided hot-air flue, arranged between said smoke-flue and the inner surface of the chimney-flue, and the plate connected to said smoke-flue, and disposed above an opening communicating with the in-  
75 ner chamber of the subdivided flue and with an upper room, substantially as and for the purpose set forth.

2. In hot-air heating apparatus, the combination, with the hood disposed within the  
80 fire-place above the fire-grate, and connected to the smoke-flue, of the subdivided hot-air flue, arranged between the smoke-flue and the inner surface of the chimney-flue, the outer chamber of said subdivided flue communicat-  
85 ing with the lower room, and the inner chamber of said subdivided flue communicating with the upper room, substantially as and for the purpose set forth.

3. In a hot-air heating apparatus, the hood  
90 disposed with the fire-place above the fire-grate, and having its front edge connected to a perforated plate, in turn connected to the upper front edge of the fire-place, in combination with the smoke-flue and the subdivided  
95 hot-air flue, with each of its subdividing cylinders disposed at its lower end, a short distance above said hood, and with its inner chamber communicating with the upper room, and its outer chamber communicating with  
100 the lower room, and the cold-air tubes leading from the grate into the subdivided hot-air flues, substantially as and for the purpose set forth.

JOHN L. HAMILTON.

Witnesses:

CARL TUELLING,  
SAMUEL N. COX.