

(No Model.)

M. C. HAWLEY.
HEATING STOVE.

No. 249,617.

Patented Nov. 15, 1881.

Fig. 1.

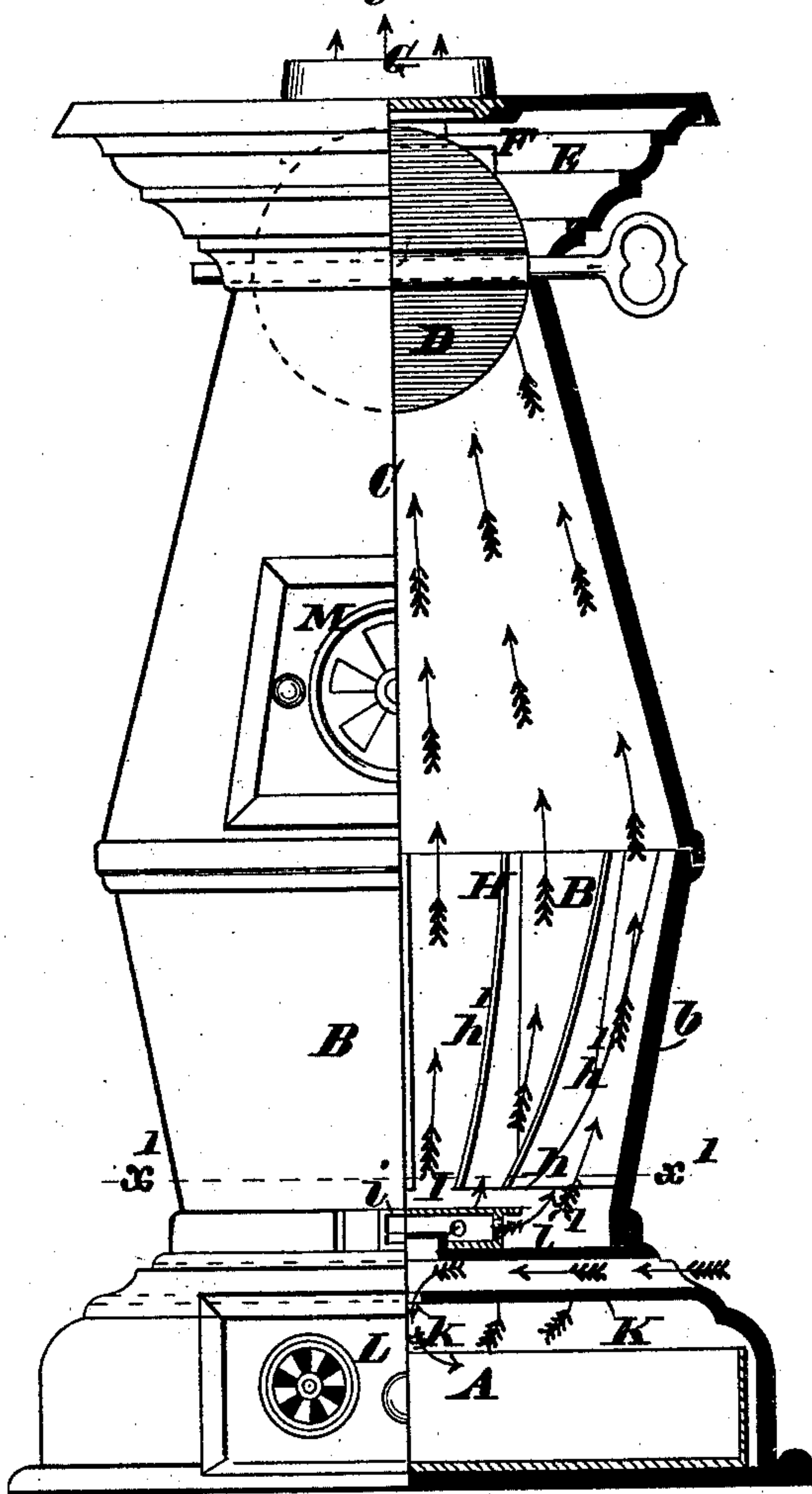


Fig. 2.

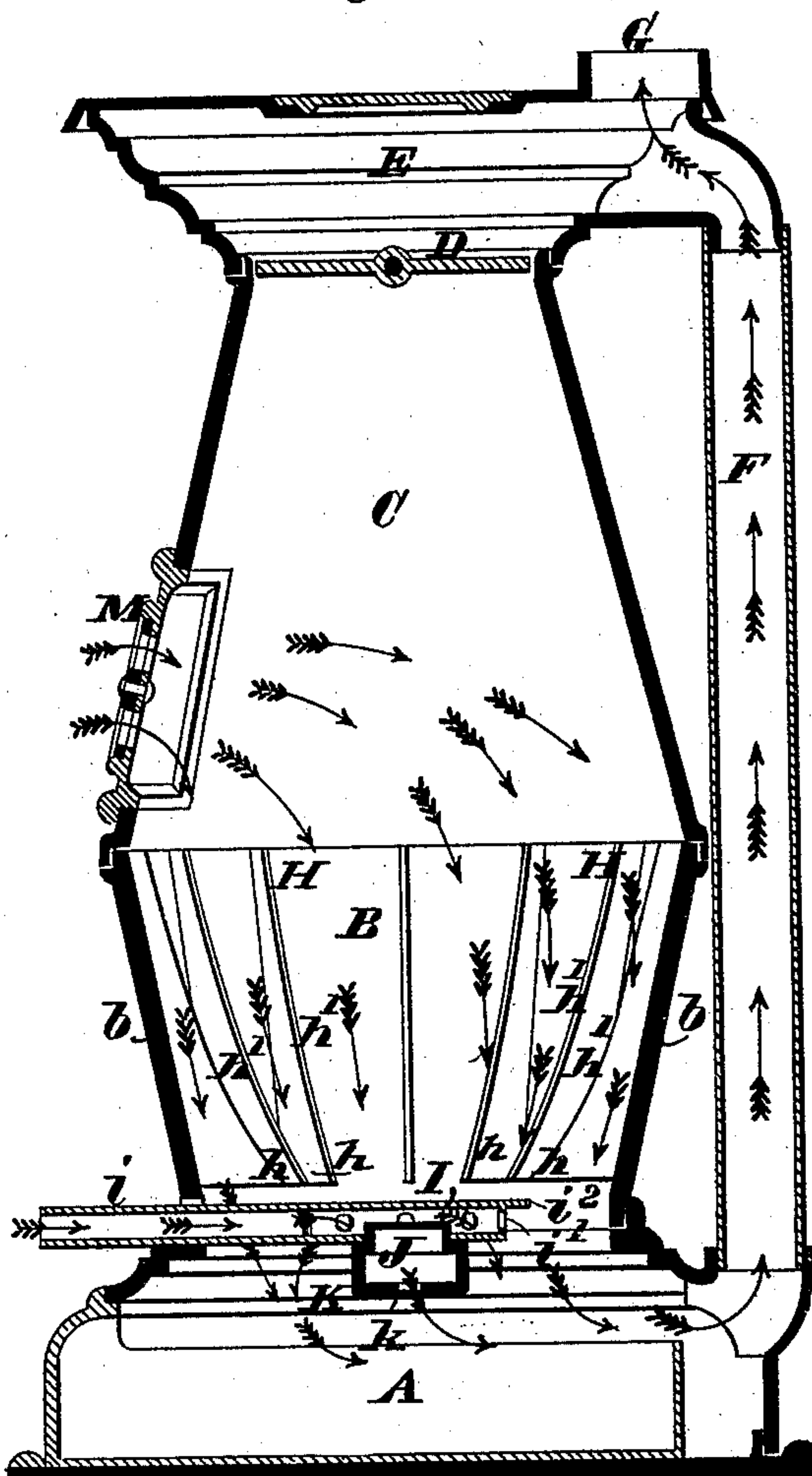
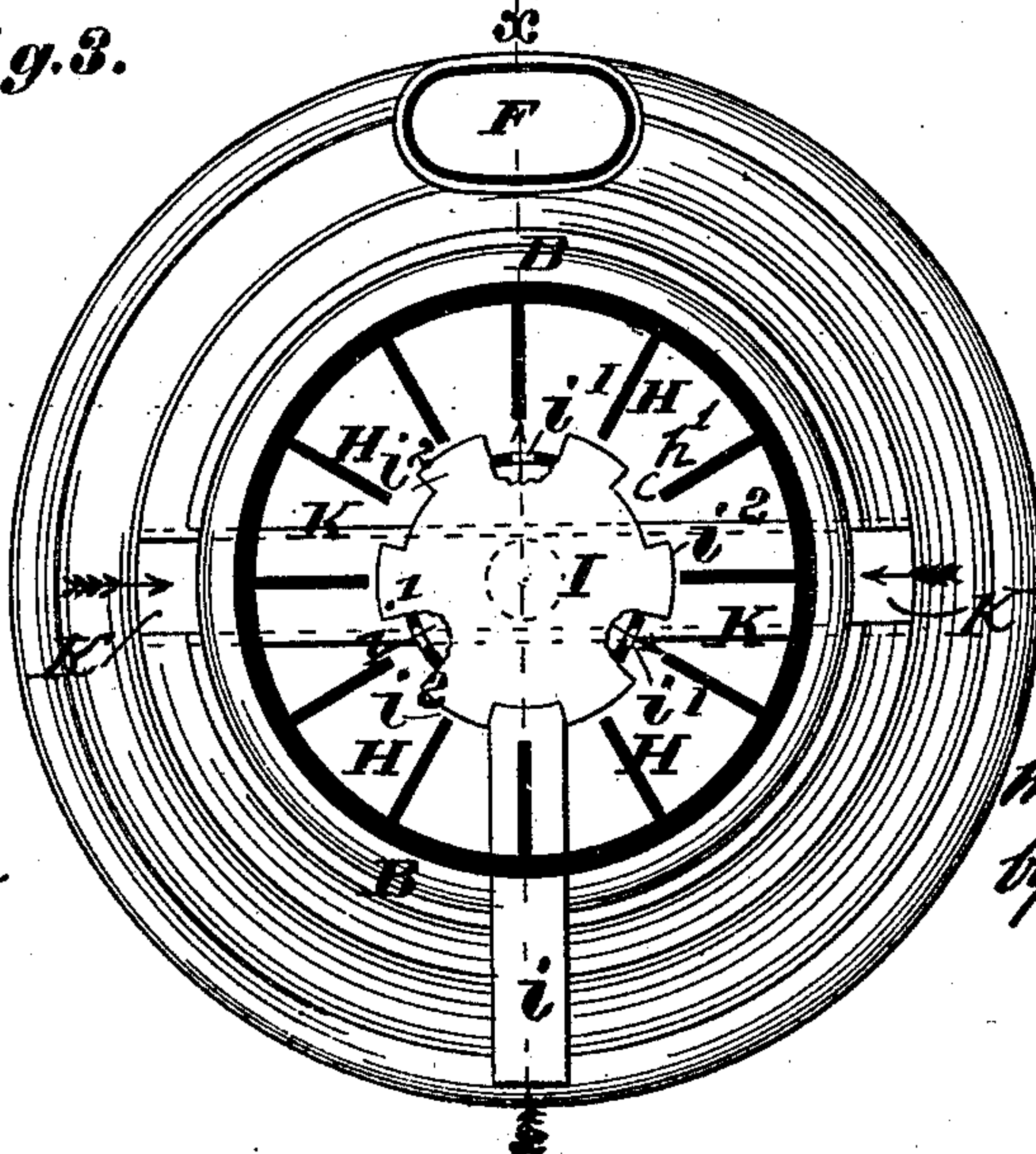


Fig. 3.



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UNITED STATES PATENT OFFICE.

MELVILLE C. HAWLEY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE BRIDGE AND BEACH MANUFACTURING COMPANY, OF SAME PLACE.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 249,617, dated November 15, 1881.

Application filed August 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE C. HAWLEY, of St. Louis, Missouri, have made a new and useful Improvement in Heating-Stoves, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation, half in section, of the improved stove; Fig. 2, a vertical section taken on the line *xx* of Fig. 3, and Fig. 3 a horizontal section taken on the line *x'x'* of Fig. 1.

The same letters denote the same parts.

I have heretofore, May 7, 1878, and jointly with another person, patented an improvement in heating-stoves. In the construction referred to the products of combustion are carried downward through the fire-chamber, past the grate into the ash-pit, and thence to the escape.

The present construction is an improvement upon the one above named, and it relates partly to the means used in directing the course of the products of combustion, partly to the shape of the corrugations or ribs upon the inner side of the shell of the fire-chamber, and partly to the construction of the grate or bottom of the fire-chamber and the parts immediately therewith connected.

The improvement may be carried out in connection with any of the ordinary direct-draft stoves. That shown in the drawings is of the usual cannon-stove type, having the ash-pit A, the fire-pot B, and the combustion-chamber C, all of the customary form, saving as modified by the present improvement.

D represents a damper constructed to close, when desired, and, as hereinafter explained, the exit leading from the combustion-chamber C to the direct draft. As shown, the damper is arranged directly over the chamber C, and the direct draft is from the chamber C upward into a chamber or drum, E, directly above the chamber C. The particular mode of arranging and conducting the direct draft from the combustion-chamber and stove, however, is immaterial to my present purpose, it only being essential, in this part of the stove, to provide

for cutting off the direct draft and for directing the products of combustion downward through the fire-pot, when desired.

F represents a flue leading from the ash-pit A, and at its upper end connecting with the escape at a point above or beyond the damper D. The especial manner of connecting the flue F with the escape need not be specified, saving that it must connect therewith at a point or points above or beyond the damper D, and it may connect either with the final escape G or with the stove at a point or points between the location of the damper D and the escape G. As the construction of that portion of the stove which is above or beyond the exit from the combustion-chamber varies in different stoves, the mode of uniting the upper end of the flue F therewith may correspondingly vary.

H H H represent the ribs upon the inner side of the fire-pot shell *b*. In place of being of uniform depth throughout their length, as in the original construction, they are made deeper at their lower ends, *h h*. In producing this increased depth the inner edges, *h'*, of the ribs are preferably curved, as shown. The aim and effect of constructing the ribs as described is to enlarge the annular space at the bottom of the fire-pot and provide a freer opening for the escape of the products of combustion when the latter are being directed downward through the fire-pot. This is desirable in view of the fact that the ashes collect more at and near the bottom of the fire-pot.

I represents the bottom of the fire-pot or the grate. It is made hollow, as before, and a hollow arm, *i*, serves both for a handle to the grate and as a flue through which air from without the stove can pass into the chamber within the grate, and thence through openings, such as *i'*, outward into the space without the grate. The latter turns on a pivot, J, that is upon a cross-tube, K. This tube extends across the ash-pit to and through the sides thereof, providing thereby flues through which air can circulate. The tube has an opening or openings, such as at *k*, through which the air passes from the tube into the ash-pit or stove. The tube, however, is not connected with the interior of the grate, as it

is undesirable to admit heated air therein, the only air admitted into the chamber within the grate being the cool air-current entering directly through the hollow handle *i*. In this manner both the grate and the grate-support are kept from burning out, and at the same time air is supplied to the burning products of combustion and to the fire, in addition to that which enters through the register L or M. The grate I has projections *i*², which help to support the fuel above, but in such manner, by reason of the spaces between the projections, as to increase the opening through which the products of combustion are directed when the indirect draft is in use.

The operation of the improvement is as follows: In starting the fire, and until it is well going, the damper D is opened, as in Fig. 1, and the direct draft is used, the course of the products of combustion being as indicated by the arrows in that figure. The air in this case enters through the lower register, L. The damper D is then closed, as well as the register L, and the register M opened. The course of the products of combustion is then, as indicated by the arrows in Fig. 2, downward through the fire-pot into the ash-pit, thence into the flue F, and thence to the chamber E above the damper D, and thence to the escape G. In this case the air enters through the register M.

But a single flue, F, is shown. If desired, two or more flues can be used, and while the flue F, as shown, leads from the ash-pit proper, it might at its lower end connect with the interior of the stove at any point below the grate.

I claim—

1. The fire-pot B, having the ribs H H, said ribs being widest at their lower ends, in combination with the grate I, having the projections *i*², as and for the purpose described. 40

2. The combination of the fire-pot B, the ash-pit A, the flue F, and the hollow grate I, having the hollow arm *i*, the openings *i*¹, and the projections *i*², as and for the purpose described. 45

3. The combination of the ribbed fire-pot B and the grate I, having the projections *i*², substantially as described.

4. The combination, in a stove, of the ash-pit A and the tube K, said tube not being connected with the interior of the grate I, but having the aperture *k*, as and for the purpose described. 50

5. The combination of the ash-pit A, fire-pot B, combustion-chamber C, damper D, chamber E, escape G, and flue F, said damper being arranged at the extreme top of the combustion-chamber C and below the chamber E, substantially as described. 55

6. The combination, in a stove, of the ash-pit A, the fire-pot B, the hollow grate I, having the hollow arm *i*, the openings *i*¹, and the notches *i*², the combustion-chamber C, the damper D, and flue F, said flue leading from the ash-pit, or from the stove below the grate, and at its upper end connecting with the stove or escape at a point or points above or beyond the damper D, for the purpose described. 65

MELVILLE C. HAWLEY.

Witnesses:

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CHARLES PICKLES.