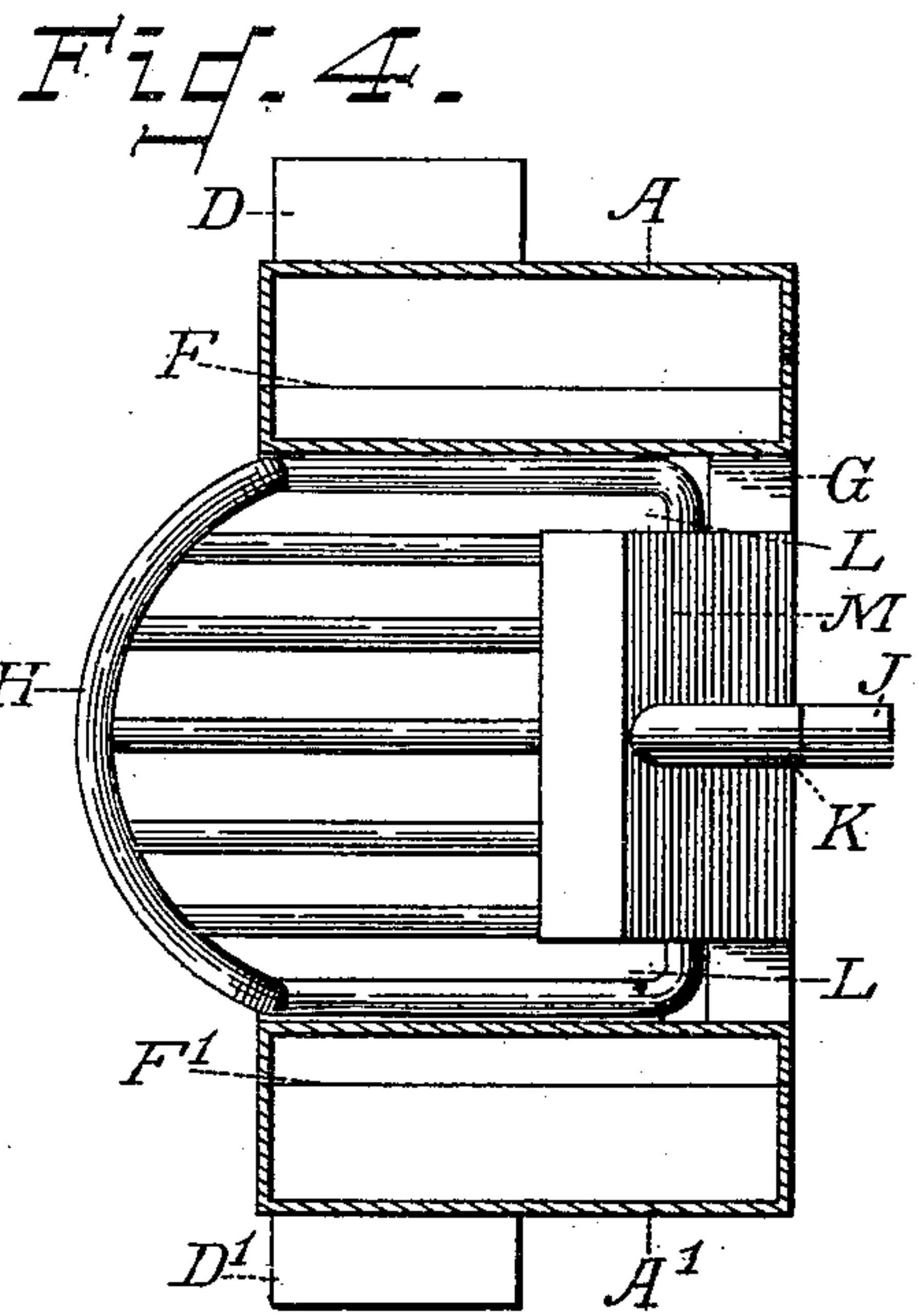
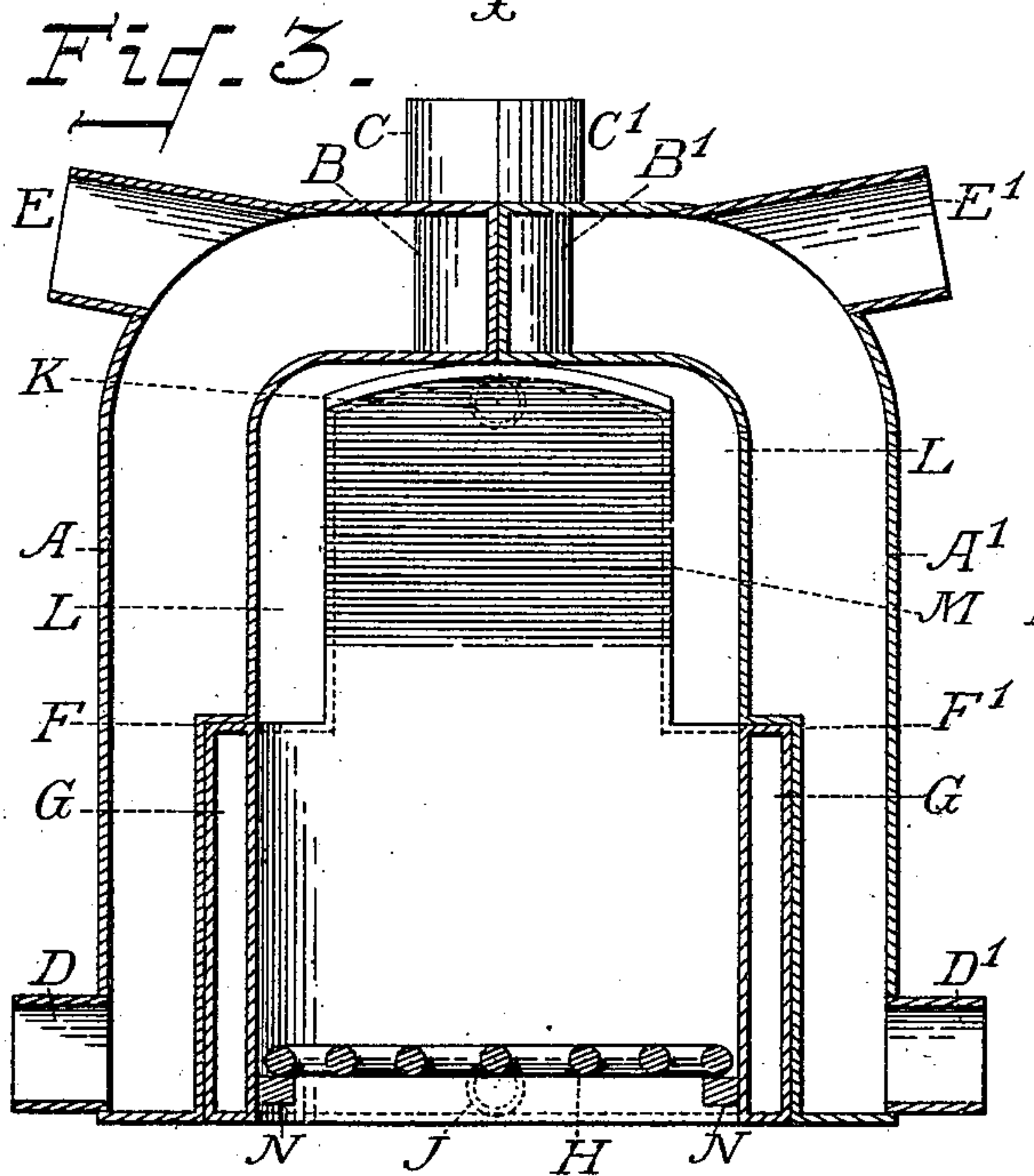
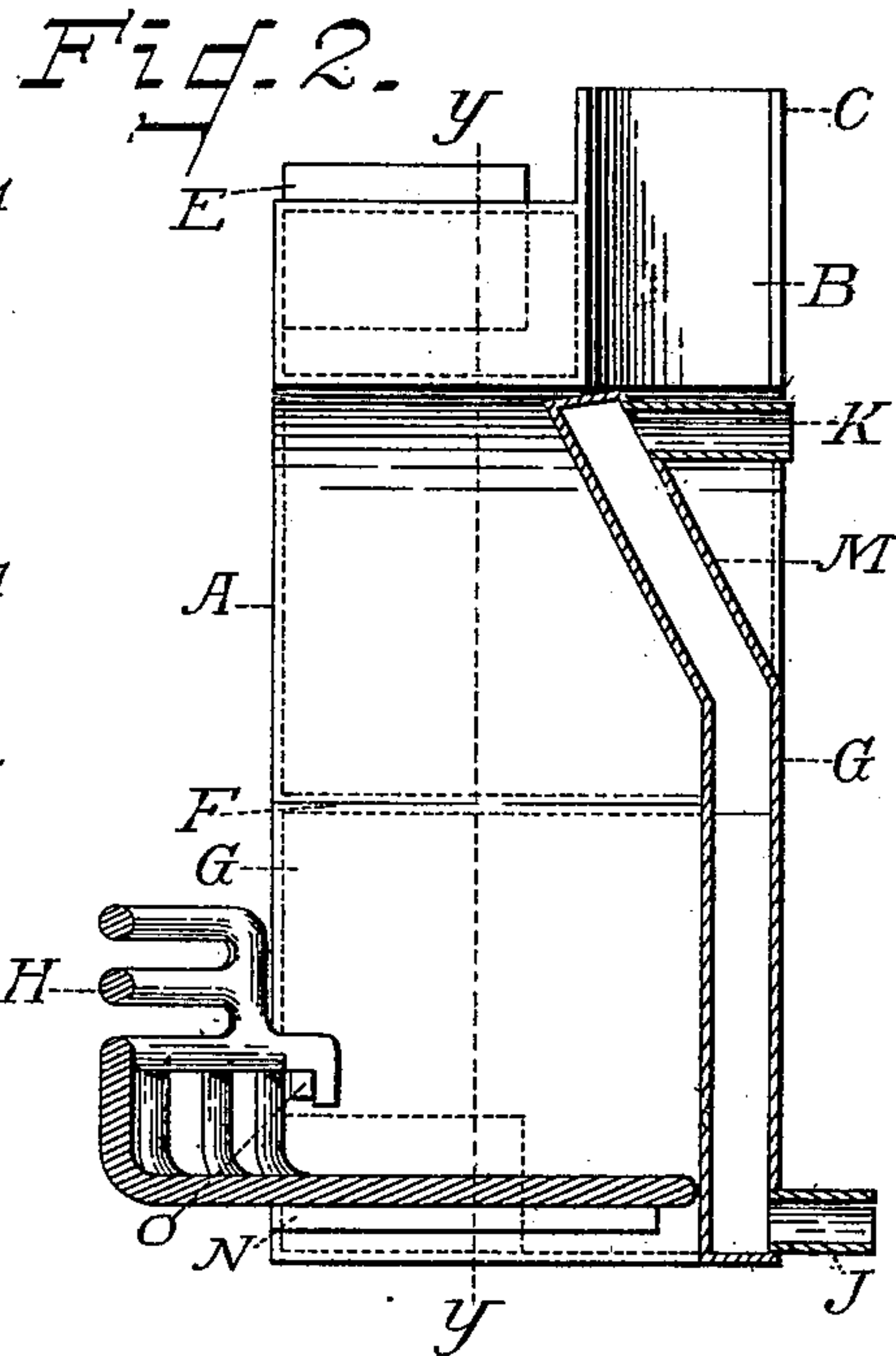
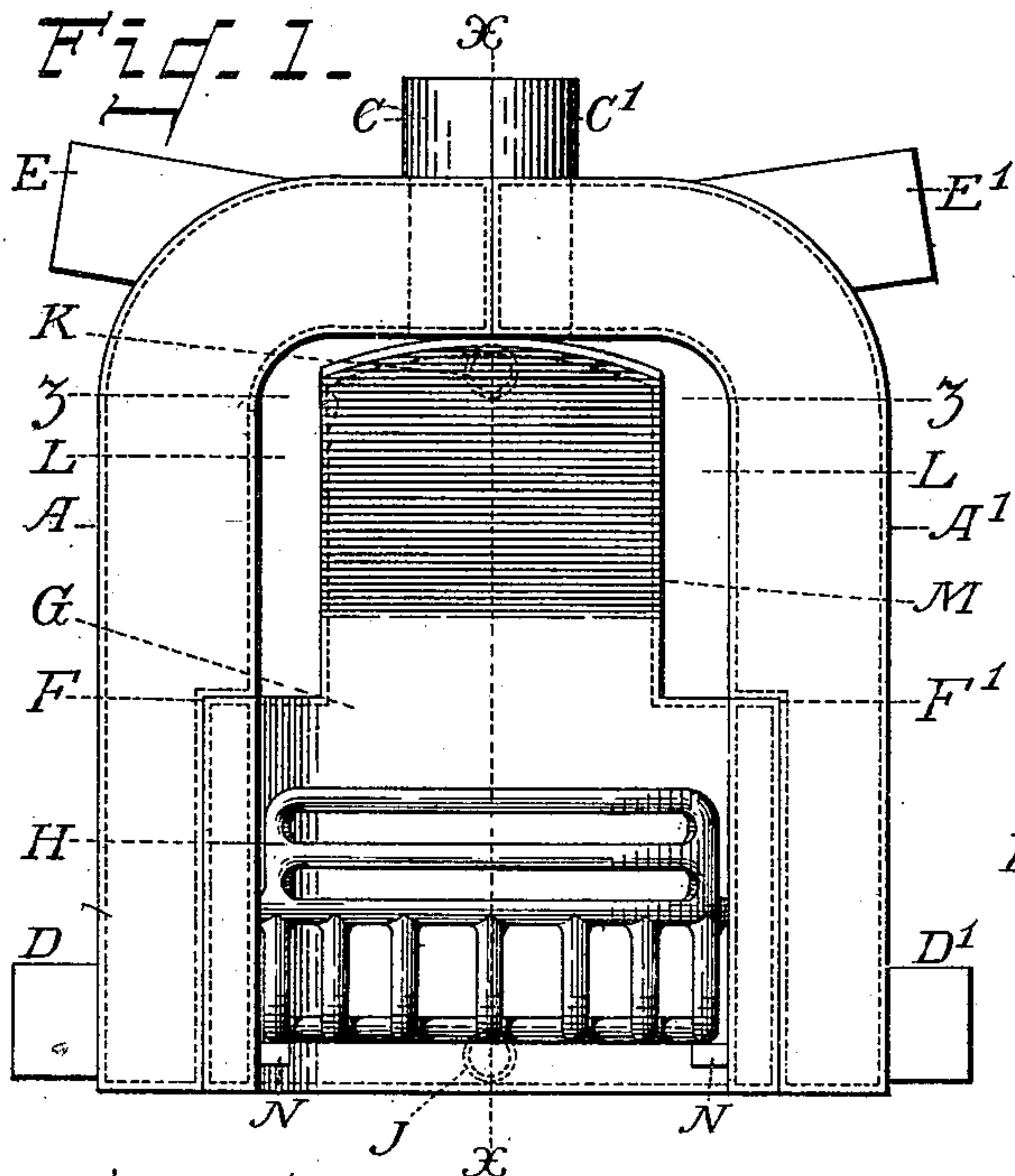


**J. HARRINGTON.**  
**GRATE HEATER.**

(Application filed June 7, 1902.)

(No Model.)



*Witnesses:*

Helen M. Wendover

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*by Frank B. Baithorn,*  
*Attorney.*



# UNITED STATES PATENT OFFICE.

JEREMIAH HARRINGTON, OF AUBURN, NEW YORK.

## GRATE-HEATER.

SPECIFICATION forming part of Letters Patent No. 712,672, dated November 4, 1902.

Application filed June 7, 1902. Serial No. 110,644. (No model.)

*To all whom it may concern:*

Be it known that I, JEREMIAH HARRINGTON, a citizen of the United States, residing in the city of Auburn, county of Cayuga, State of New York, have invented a new and useful Improvement in Grate-Heaters, of which the following is a specification, reference being had to the accompanying drawings on one sheet, making part of this specification.

My invention relates to the ordinary grates, such as are usually set into chimney mantel-fronts and chimney-openings, in which fires are built for diffusing warmth in the rooms wherein they are located; and the object of my improvement is to afford means whereby the fire of such grates may be utilized for heating and connections for transmitting hot air or hot water and steam either to the same or different and adjacent apartments wherein there may be no immediate or convenient available means for raising the temperature of the same to a comfortable degree when so desired.

My improvement is illustrated in the accompanying sheet of drawings, in which—

Figure 1 is a front elevation of a fire-grate having my improvement arranged therewith. Fig. 2 is a vertical section of the same on the dotted line *xx* of Fig. 1. Fig. 3 is a vertical longitudinal section of the construction shown in Fig. 1, taken on the plane of the dotted line *yy* in Fig. 2. Fig. 4 is a horizontal cross-section of the same, taken on the dotted line *zz* of Fig. 1, the central part of said figure where the dotted line would cross, if continued, remaining unsectioned.

Similar letters of reference refer to similar parts in the several views.

Referring to Fig. 1, *A A'* are right and left twin air-magazines placed on either side of the grate-opening in close proximity to the fire-grate *H* and arched at their top ends, whence they are extended horizontally until their closed ends meet each other near a central point over the fire-grate *H*. At this point a smoke-flue is formed by the junction of the half-flues *B B'* in the upper ends of the air-magazines *A A'*, which extend into the flange *C C'*, to which desired connections can be made and carried into the chimney. The said air-magazines are chambered throughout, excepting at the ends which meet centrally

above the grate *H*, as already mentioned, and the bottom ends which rest on the hearth. The air-magazines *A A'* are provided as near to the bottom ends as practicable and in convenient position on their outer sides with the inlet-flues *D D'*, respectively, through which cold air may be admitted to the said air-magazines from any desired point. As near to the top plane of each as is practicable is also provided at either outer side of the same the outlet-flues *E E'*, respectively, to which conducting-flues may be connected for conveying the heated air to any desired point.

An offset *F F'* is provided on the inner side of each of the air-magazines *A A'*, the purpose of which will be presently explained.

A water-magazine *G* is provided and adjusted between the air-magazines *A A'* at their rearward sides and behind the fire-grate *H*. It is provided at its bottom point as low down as practicable with the cold-water-inlet connection *J* and at its top point with the outlet connection *K*. About midway of its height it is turned at right angles on either side and extended forwardly into the offsets *F F'* on the inner sides of the air-magazines *A A'*, as is plainly shown in Figs. 1 and 2. The bottom end of the said water-magazine rests on the hearth, and by this arrangement of the several magazines it will be observed that stability is assured for the whole when set in operative position. The upper part of the said water-magazine *G* is narrowed away from the point where the main body of the same is turned at right angles into the offsets of the air-magazines in order to provide the smoke and gas passages *L L*, as seen in Figs. 1, 3, and 4. This narrowed-away part of the water-magazine *G* or the upper part of the same is forwardly deflected, as shown at *M* in Fig. 2, so it may offer no obstruction to the smoke and gas flue *B* and also to serve as a deflector of the smoke and gases from the grate-fire, diverting them into the passages *L L*, from whence they are drawn into the smoke-flue. The water-magazine is also chambered throughout and is essentially of the general form and shape shown in Figs. 2 and 4. It is also provided upon the inner faces of the sides that enter the offsets of the air-magazines, as referred to, with grate-supports *N O*, upon which the fire-grate



H rests and from which it can be readily removed for purposes of cleaning when so desired.

Having thus described the various parts entering into my improvement and the relations they bear each to the other, it will readily be seen that with proper conducting-flues arranged between the outlets E E' of the air-magazines A A' and registers arranged there-  
 10 with in adjoining apartments after the usual method I am enabled to create a supply of heated air for warming the same when the fire is burning in the fire-grate. I am also enabled from the same grate-fire to convey steam or hot  
 15 water to an adjacent room or rooms from the water-magazine G, proper connections having been made with the water-supply to the inlet connection J and connections from the outlet connection K to a radiator in another room  
 20 for raising the temperature of the same. By this improvement I secure the advantage of either hot air or hot water and steam, as desired, for the purpose of warming rooms other than the one in which is burning the grate-  
 25 fire and at the will of the operator.

Having thus described my improvement and its mode of operation, what I claim as new, and desire to secure by Letters Patent of the United States, is—

30 1. In a grate-heater the air-magazine A, having a smoke-flue B, the flange C, the cold-air inlet D, the hot-air outlet E, and the offset F, and the air-magazine A', having a smoke-flue B', the flange C', the cold-air inlet D', the

hot-air outlet E', and the offset F', combined 35 with the water-magazine G, at the rear of said air-magazines provided with the inlet J, and having the top portion narrowed away and deflected inwardly and provided with an outlet K, and the bottom sides forwardly ex- 40 tended into the said offsets F, F', and having grate-supports N, O, substantially in the manner and for the purpose herein specified and shown.

2. In a grate-heater the air-magazine A, 45 having a smoke-flue B, the flange C, the cold-air inlet D, the hot-air outlet E, and the offset F; the air-magazine A', having a smoke-flue B', the flange C', the cold-air inlet D', the hot-air outlet E', and the offset F', and the water- 50 magazine G, at the rear of said air-magazines provided with the inlet J, and having the top portion narrowed away and deflected inwardly and provided with an outlet K, and the smoke-passages L, L, at either side, and 55 the bottom sides forwardly extended into the said offsets F, F', and having grate-supports N, O, with the fire-grate H, substantially in the manner and for the purpose herein shown and described. 60

In testimony whereof I have hereunto set my hand, at Auburn, New York, this 2d day of June, A. D. 1902.

JEREMIAH HARRINGTON.

In presence of—

NYDIA SCHEECH,  
 VIDA L. THAYER.