

No. 703,982.

Patented July 8, 1902.

H. BONSOR.
GAS STOVE.

(Application filed Feb. 13, 1902.)

(No Model.)

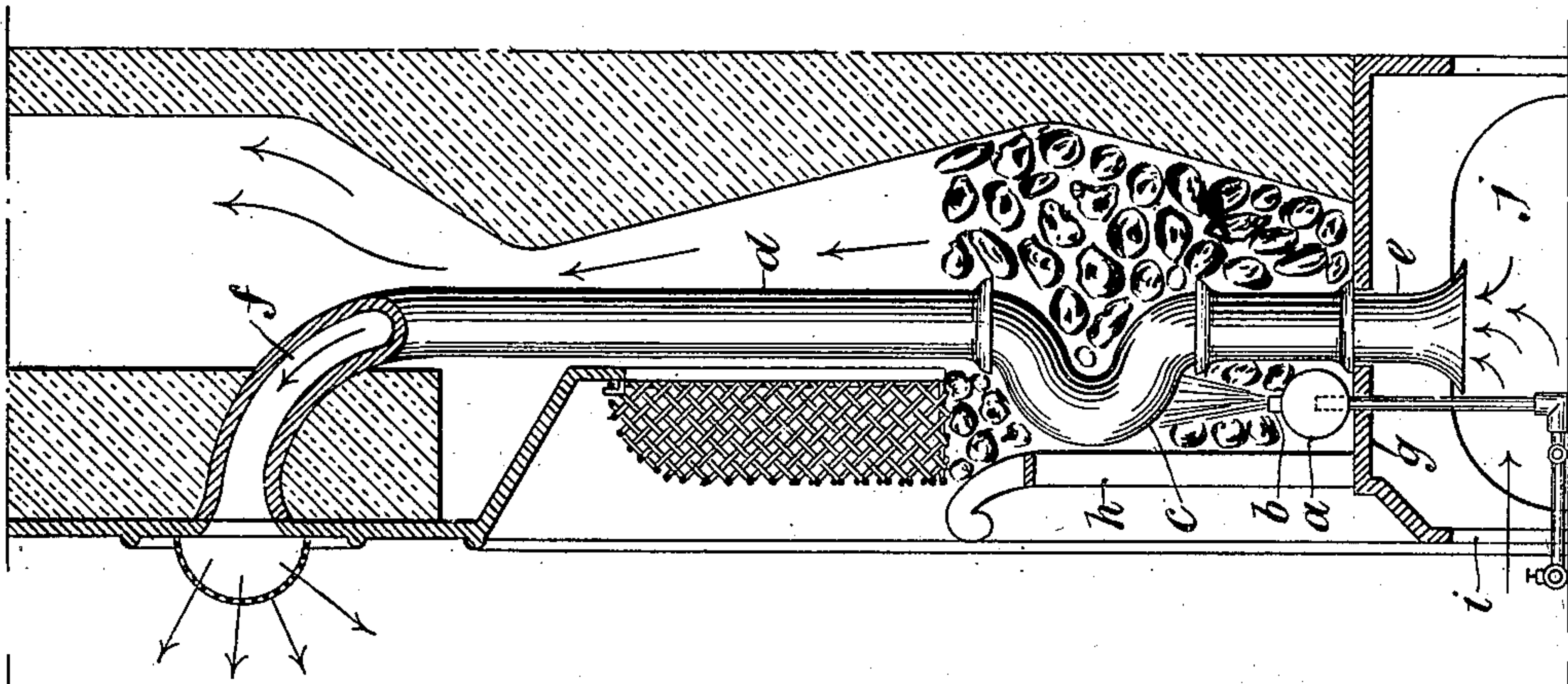


Fig. 2.

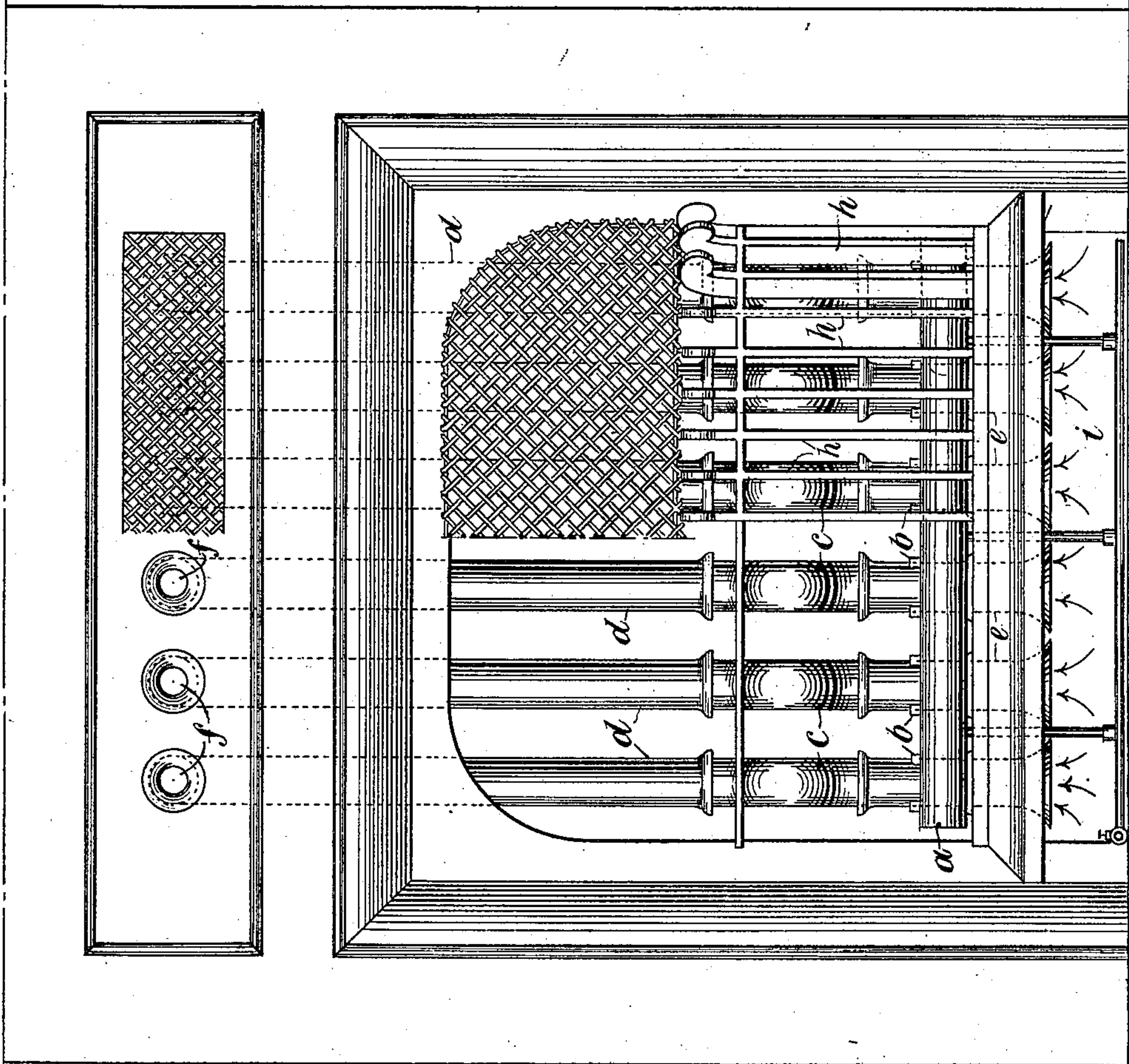


Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

HEWSON BONSOR, OF BIRMINGHAM, ENGLAND.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 703,982, dated July 8, 1902.

Application filed February 13, 1902. Serial No. 93,990. (No model.)

To all whom it may concern:

Be it known that I, HEWSON BONSOR, of No. 15 Augusta road, Moseley, in the city of Birmingham, England, have invented a certain
5 new and useful Improvement in Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use
10 the same.

The invention relates to an improved construction of gas-stove by means of which the heating of the room is effected partly by radiation from heated surfaces of refractory
15 material and partly by the discharge into the room of streams of pure air which have been warmed by flowing through pipes which are inserted in the fire, the surfaces of these pipes providing in themselves a portion of the ra-
20 diating-surface.

In the accompanying drawings, Figure 1 represents a front view of the stove. In the left half the fire-bars are removed to show the construction of the parts behind. Fig. 2
25 is a side sectional elevation.

In the views, *a* is a tube, which is supplied with a mixture of gas and atmospheric air which issues and burns at a number of burners *b b*. The flame impinges beneath a bend *c*,
30 which is provided in a number of air-pipes *d d*, made of a refractory material, the lower open end *e* of which is below the fireplace, and the upper end *f*, also open, is above the fire.

The grate of an ordinary fireplace is replaced by a dead-plate *g*, so as to preclude the entrance of air into the fire, except that
35 which flows through the pipes *d d*.

The space between the fire-bars *h h* and the fire-bricks which form the back of the stove, with the exception of that occupied by the air-pipes *d d*, is filled with loose refractory material, such as fire-clay and asbestos cobbles or frayed ropes of asbestos fiber, which may be wound helically around the air-pipes
40 in a loose manner. The effect of this arrangement will be that the surface of the air-pipes and the interposed loose refractory material

will be heated to brightness and radiate heat into the room. At the same time the air within the pipes *d d* being heated will cause a
50 convention draft through the pipes, and warm air, which has not been vitiated by taking part in combustion, will be discharged into the room through the openings *f f*.

The products of combustion pass to the
55 chimney through the throat *h* of the stove.

When circumstances permit, the most perfect result would be obtained by closing the opening *i* from the room to the space *j* below the fire by a plate and connecting the space *j*
60 by a pipe to the atmosphere outside the house. By so doing a supply of warm pure air to the room would be insured and the flow of cold air into the room under the doors and through chinks would be considerably less-
65 ened, if not avoided.

A wire screen is shown covering the air-discharge holes *f f* and the upper portion of the fire to prevent mischievous insertion of paper, matches, or other material.
70

The air-pipes *d d* are shown made in parts to facilitate insertion and renewal.

Such a construction of air-pipe as shown would be most satisfactory; but I do not confine myself to the use of this form in detail,
75 but claim to include the use of any other form of pipe which is easy to make and durable, including a straight pipe.

I claim—

The combination with an open grate having a bottom dead-plate and a chimney, of a plurality of vertical open-ended tubes passing upward through said dead-plate and grate and curving outwardly through the wall of the chimney, said tubes having deflected portions or bends, and burners located directly
80 beneath said deflected portions, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

HEWSON BONSOR.

Witnesses:

JAMES COOPER,

ROBERT HARGREAVES.