

(No Model.)

S. DARLING.
FIRE POT FOR HOT AIR FURNACES.

No. 410,880.

Patented Sept. 10, 1889.

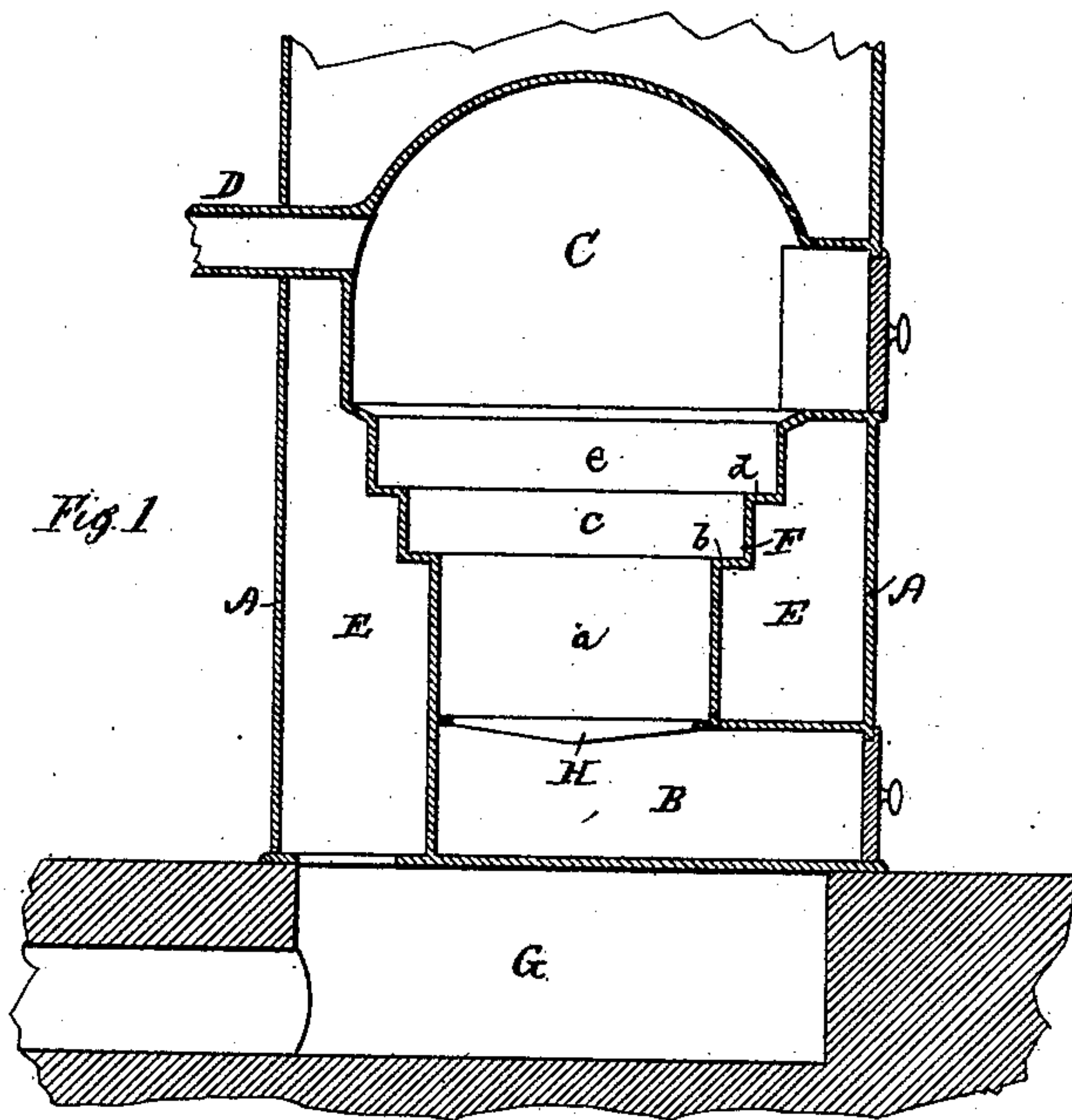


Fig. 1

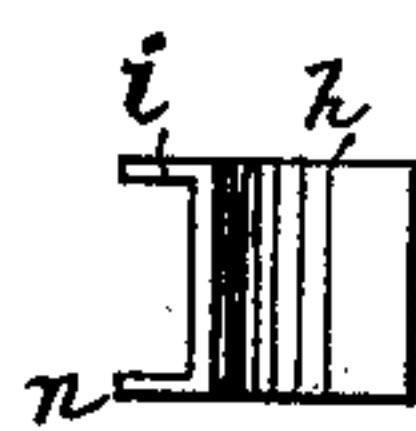


Fig. 6

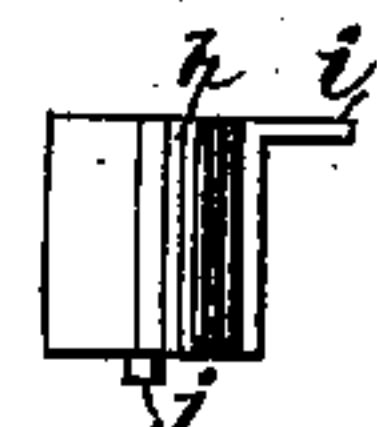


Fig. 5

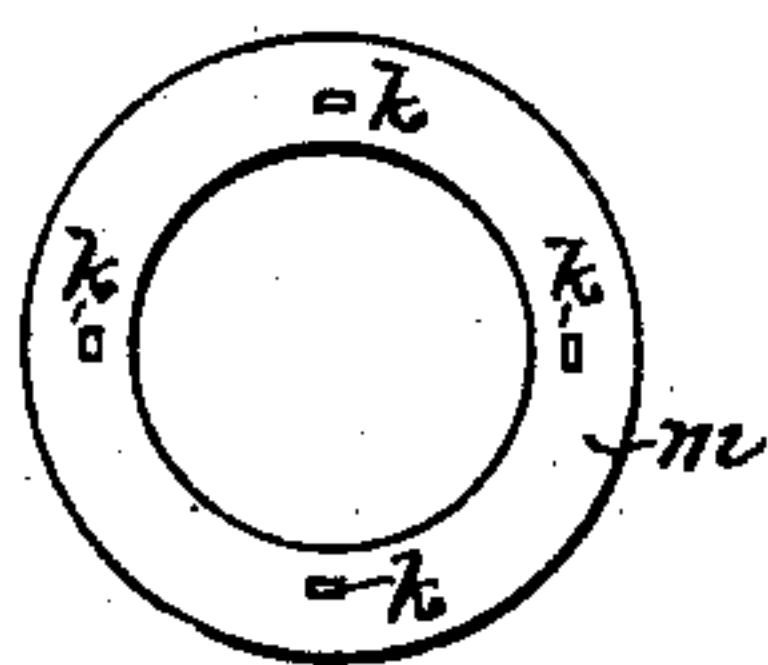


Fig. 4

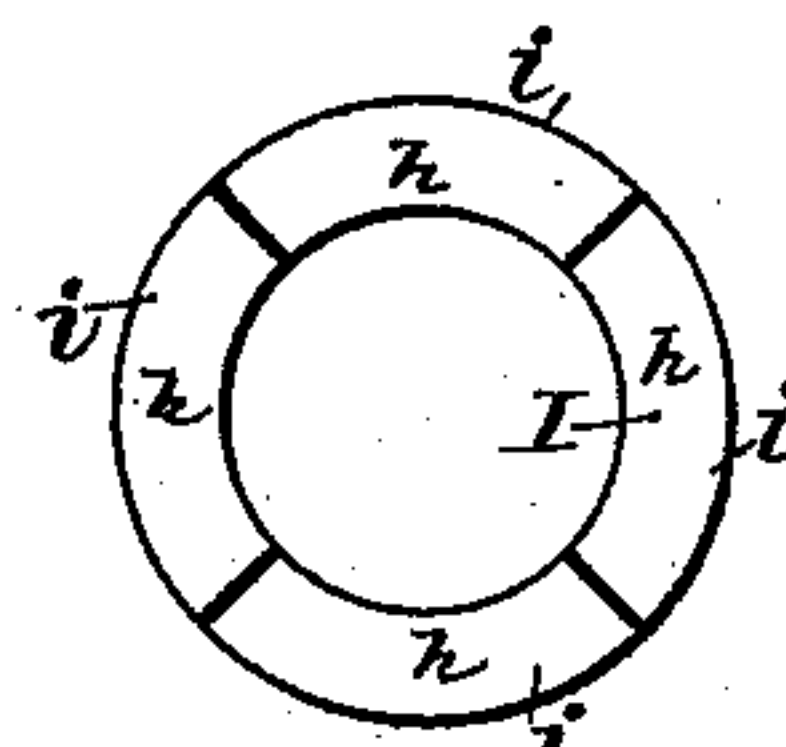


Fig. 3

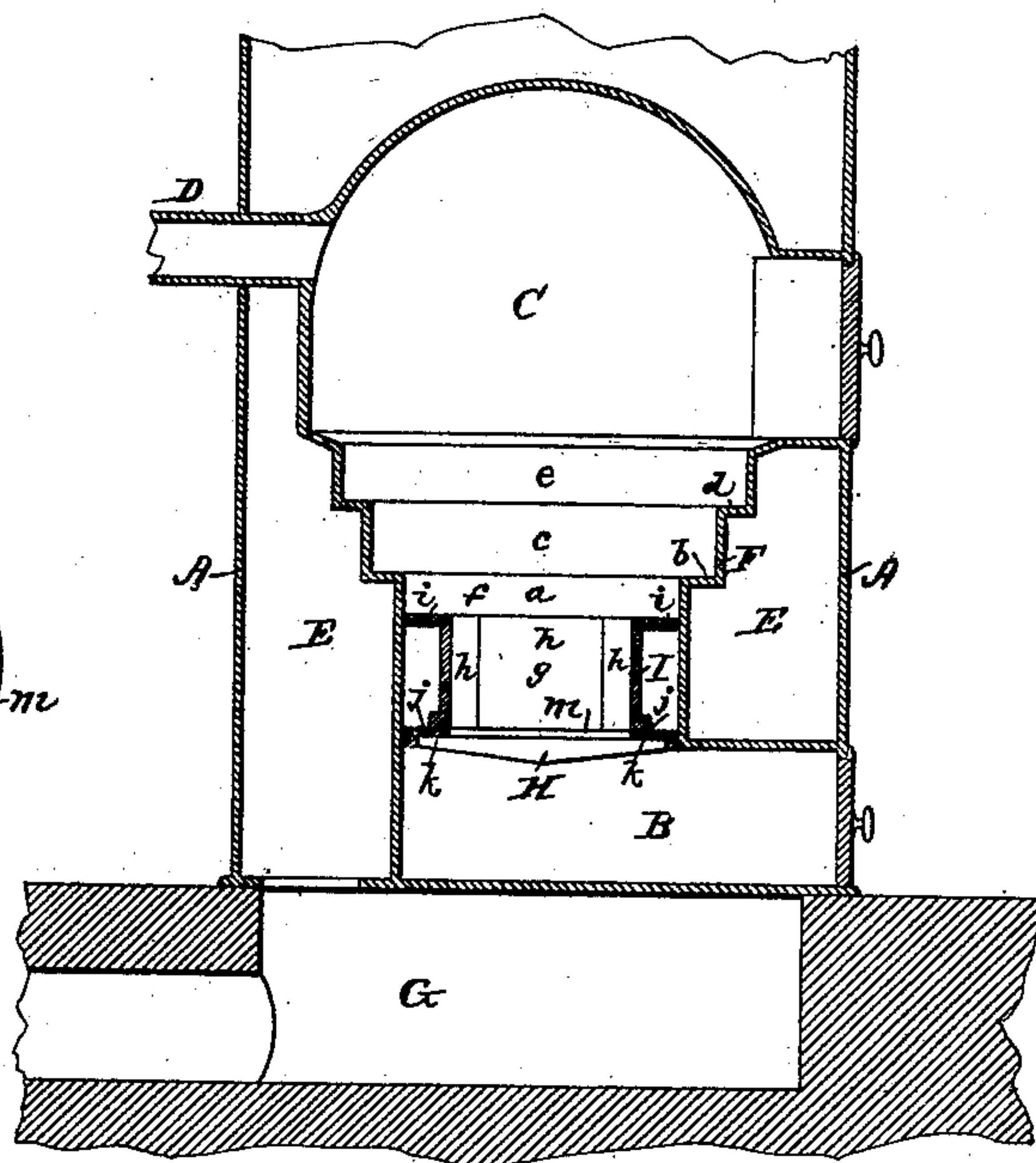


Fig. 2

Witnesses

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UNITED STATES PATENT OFFICE.

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FIRE-POT FOR HOT-AIR FURNACES.

SPECIFICATION forming part of Letters Patent No. 410,880, dated September 10, 1889.

Application filed May 18, 1889. Serial No. 311,297. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DARLING, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Fire-Pots for Hot-Air Furnaces, of which the following is a specification.

Hot-air furnaces as ordinarily constructed are not adapted for economical use at both extremes of the climatic changes of temperature requiring the rooms of a house to be heated, and to secure greater economy in this direction it has been a prevailing custom to provide two separate hot-air furnaces, using one of them in the fall and spring months and in mild winter weather, and both furnaces together in severe cold weather, but this method of heating the rooms of a house is very inconvenient and the first cost is expensive; and it is the object of my invention to so improve an ordinary hot-air furnace that it will practically supply the place of the two furnaces as heretofore employed and properly heat the rooms of a dwelling-house and other buildings with convenience, comfort, and economy in weather of all degrees of temperature in which artificial heat is required.

My invention consists in providing the furnace with a fire-pot the sides of which are offset to form one or more chambers of greater dimensions in its upward extension from a grate made of the proper size to support the combustion of coal, both in the lower chamber of the fire-pot and in the combined lower and upper chamber or chambers, the lower chamber of the fire-pot being adapted for use in the fall and spring weather, when a constant but moderate fire is required, the lower chamber, combined with the offset upper chamber or chambers, being also adapted to the cold or coldest weather of winter; and my invention also consists in providing a hot-air-furnace fire-pot with a removable fire-pot of less area than that of the grate, whereby the fire-pot will be adapted for occasional convenient and economical use during the warmer months, when in case of dampness in the house or in storms of low temperature but a slight amount of heat is required.

Figure 1 represents a vertical section of the lower portion of a hot-air furnace provided

with an offset fire-pot embodying my improvement. Fig. 2 represents a vertical section of the lower portion of a hot-air furnace provided with an offset fire-pot and having a removable fire-pot in its lower chamber. Figs. 3, 4, 5, and 6 are detail views illustrating approved constructions of the removable fire-pot.

In the accompanying drawings, A represents the outer case of a hot-air furnace; B, the ash-pit; C, the combustion-chamber; D, the smoke-pipe; E, an air-heating passage surrounding the fire-pot, the cold air to be heated passing into the furnace through the cold-air pit G.

The fire-pot F, Fig. 1, is provided with a lower chamber *a*, included between the offset *b* and the grate H, the said chamber and grate being of sufficient dimensions to provide for holding all the coal required for heating a house in the fall and spring and in the mild winter weather, whereas the addition of coal to fill the chamber *c* between the offsets *b* and *d*, or a still further addition of coal to fill both the chamber *c* and the chamber *e* between the offset *d* and the rim of the fire-pot, will suffice for the cold and coldest weather, the grate area remaining the same as before, so that the air to support combustion will in each case pass into the chamber of the fire-pot through the grate H; and in order to operate the furnace with economy and convenience during the very mild heating weather of the fall and spring months and in the cold damp days of summer I provide a sectionally-formed fire-pot I, Fig. 2, of less height than the depth of the chamber *a*, so as to form within the original chamber *a* a central contracted chamber *g* of less area than that of the grate, and an upper offset chamber *f* of the same area as that of the original chamber *a*. The fire-pot I is formed of the removable segments *h h h h*, which are preferably made with a flange *i* and a tenon *j*, which is adapted to enter the perforation *k* in the flat ring *m*, the said ring being either made to rest upon the upper surface of the grate H or supported at a slight distance above the same, so that the air to support combustion will pass through the said chamber *g*, in which the coal is to be placed, and whenever the capacity of the chamber *g*, with

the chamber *f* above the flange *i*, is insufficient to heat the rooms properly, then by removing the fire-pot I the fire-pot F can be employed, as before described, and I am thus
5 enabled at all times to adjust the area of the body of coal in the fire-pot to all the requirements of climatic changes of temperature at all seasons of the year with the proper economical combustion of fuel.

10 Instead of employing the flat ring *m*, each of the segments *h* may be provided with a lower flange *n*, which corresponds to the flange *i*, as shown in Fig. 6.

I claim as my invention—

15 1. A hot-air-furnace fire-pot having a chamber at its lower part provided with a grate and one or more enlarged offset chambers in its upper part, the lower chamber above the grate being adapted for holding and burning
20 the coal required for heating the rooms in mild weather, and the lower chamber, together with the upper offset chamber or chambers

and the same grate, being adapted for the cold and coldest weather, substantially as described.

25 2. A hot-air-furnace fire-pot provided with a grate and having within its chamber a smaller removable fire-pot wall which forms an offset central chamber of less depth than the original chamber and of less area than the grate, 30 substantially as described.

3. A hot-air-furnace fire-pot provided with a grate and one or more enlarged offset chambers in its upper part, and having within its lower chamber an additional offset chamber formed 35 by a removable surrounding wall which forms a central chamber of less depth than the said lower chamber and of less area than the grate, substantially as described.

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Witnesses:

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