(No Model.) 3 Sheets—Sheet 1.

A. P. BENNER.

HOT AIR HOUSE HEATING FURNACE.

No. 262,199. Patented Aug. 8, 1882.

Fig. 1.

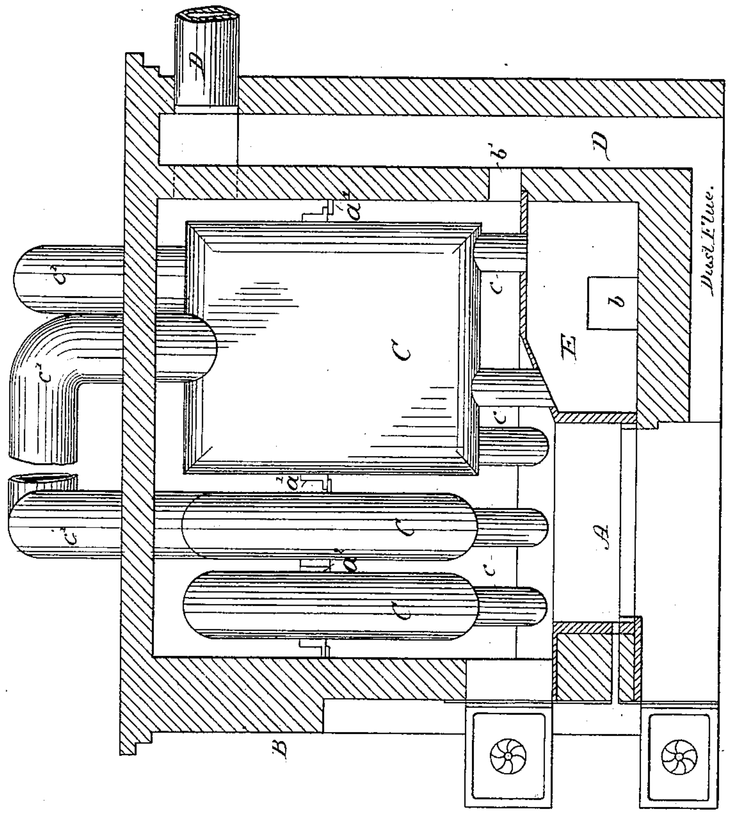
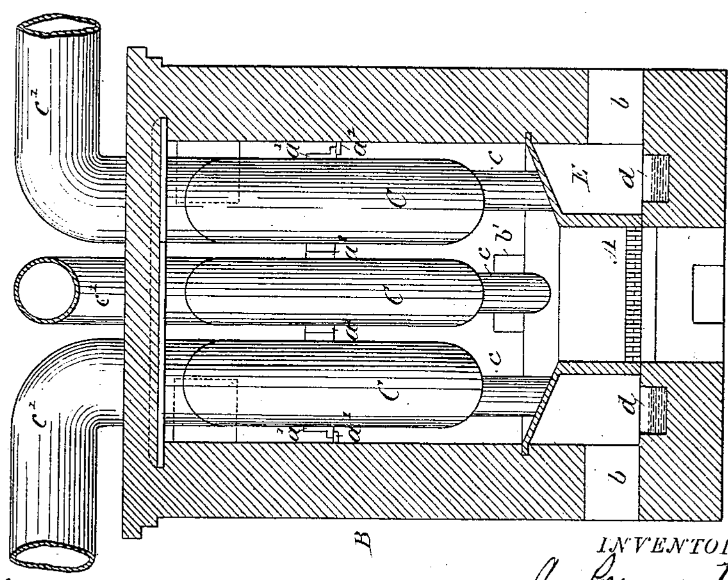


Fig. 2.



WITNESSES

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

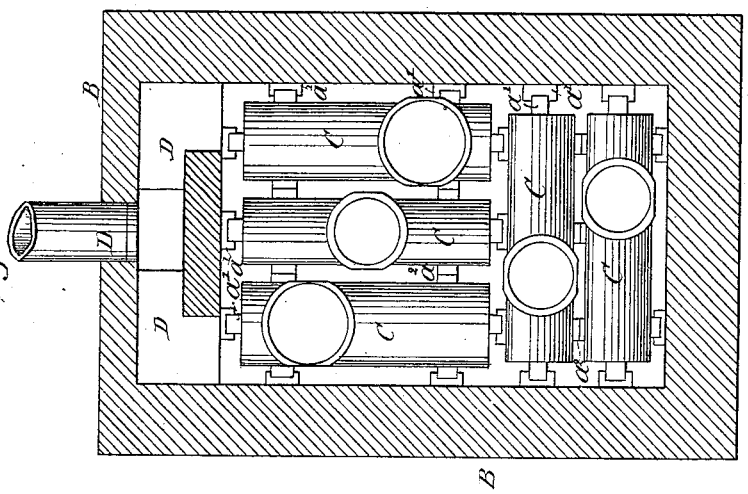
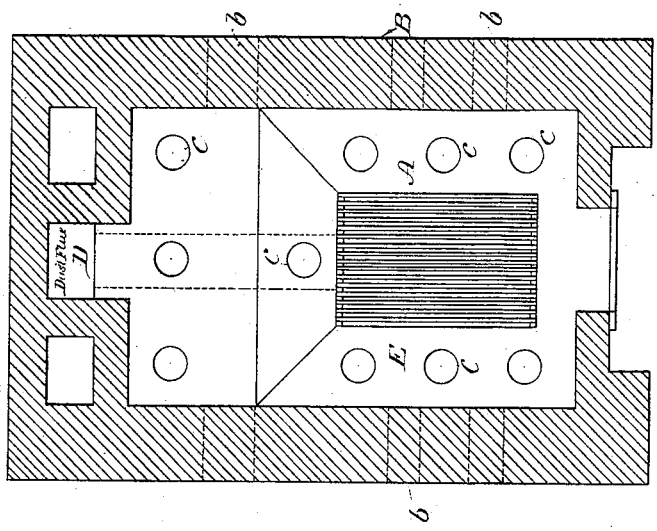


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

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Fig. 5.

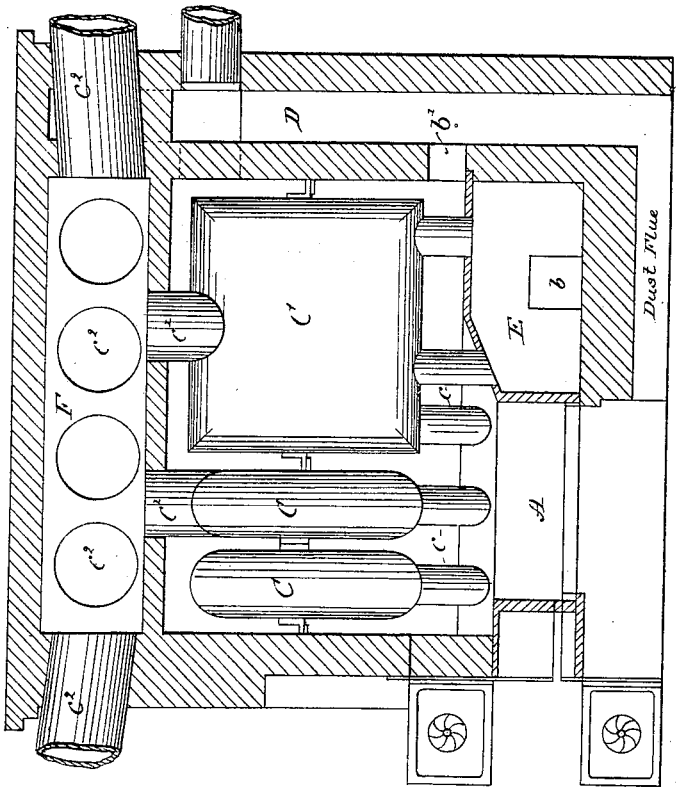
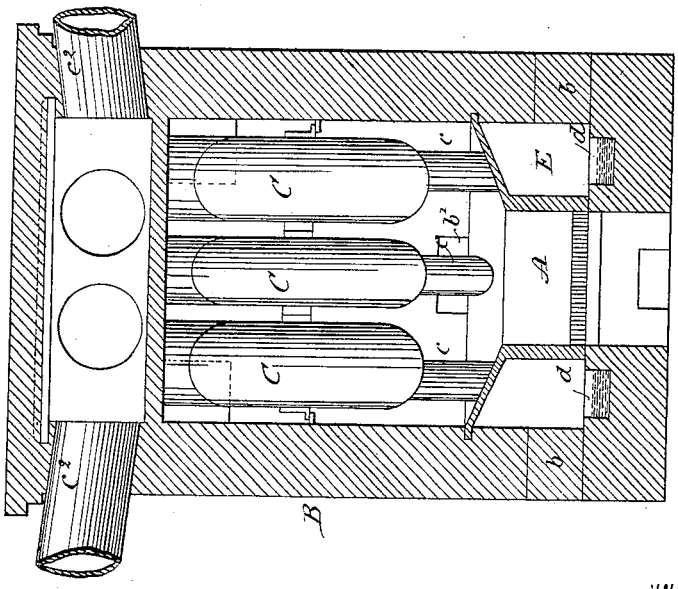


Fig. 6.



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UNITED STATES PATENT OFFICE.

A. PENROSE BENNER, OF PHILADELPHIA, PENNSYLVANIA.

HOT-AIR HOUSE-HEATING FURNACE.

SPECIFICATION forming part of Letters Patent No. 262,199, dated August 8, 1882.

Application filed April 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, A. PENROSE BENNER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hot-Air House-Heating Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in the means whereby air may be separately heated by one furnace for each room of a building and conveyed thereto by a separate pipe leading from the furnace, as hereinafter particularly set forth.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of the apparatus constituting my invention. Fig. 2 is a vertical transverse section of the same through the fire-box. Fig. 3 is a sectional plan on a line immediately under the roof. Fig. 4 is a sectional plan at the top of fire-box. Fig. 5 is a vertical longitudinal section of an apparatus by which the heated air is collected in a general hot-air space for distribution to different apartments of the building. Fig. 6 is a vertical transverse section, showing the same construction.

Similar letters of reference indicate similar parts in the respective views.

Referring to Figs. 1, 2, 3, and 4, A is the fire-box, of any suitable construction, and inclosed within brick-work B, of the usual character. The furnace is provided with the necessary ash-pit, doors, dust and smoke flues, and other appurtenances ordinarily found in furnaces for this purpose.

C C, &c., are the heaters, which, if made of wrought-iron, should be of best quality, and not thinner than No. 14 gage, and closely riveted at the joints to prevent leakage of coal-gas into the heaters. The heaters are suitably suspended within the brick-work by supports a' a', riveted to the heaters and built in the brick-work, respectively. The heaters are separated by suitable blocks, a^2, interposed between them. The heaters are arranged within the brick-work in any convenient manner, whereby to make the best disposition of the space and to admit of a free circulation of heat and products of combustion from the furnace around and among them. The smoke, &c., pass from the furnace at the upper portion into the flue D, except when fire is started, when a damper at the flue b' may be opened into the dust-flue to increase the draft.

Arranged in any suitable manner around the fire-box is the common cold-air receptacle E, which, as here shown, forms a part of the fire-box. Fresh air is admitted to the receptacle E through flues b. The base of each heater communicates, by a neck, c, with the receptacle E. A vapor-pan, d, may be placed at each side of the fire-box, as shown, for moistening the air, made of terra-cotta, with glazed interior. The upper portion of each heater is connected with a tight hot-air-distributing flue, c', which leads to the apartment to be heated.

The operation of the apparatus is apparent, the fresh air entering the receptacle E through the flues b and passing through the separate heaters, which are exposed to the heating effect of the fire, and thence escaping through the separate distributing-pipes c' into the several separate apartments. Thus each room is independently heated, and an apartment upon a higher floor cannot rob one upon a lower floor of any portion of the heat intended for it.

The construction shown in Figs. 5 and 6, so far as concerns the means for collecting and distributing the fresh air to the system of heaters, is the same as that above described, and shown in the first four figures. Instead, however, of carrying heated air by separate pipes to individual rooms, each heater of the system, at its upper part, connects with a general hot-air space situated under the roof of the brick-work, and represented by F. This space or reservoir of hot air is tapped, as may be desired, with pipes conducted to the several apartments to be heated. These pipes are marked c^2.

The details of the invention as to the construction of the heaters, the cold-air receptacle, fire-box, &c., and the construction, arrangement, and mode of connection of the various metal flues and pipes may be left greatly to the option of the mechanic, such details not, generally considered, entering into my invention.

I claim—

The combination, in a hot-air heating-furnace, of a fire-box, a cold-air receptacle sur-

rounding the fire-box and inclosed by brick-work, a series of separate heaters, each communicating at its base with the cold-air receptacle, and all being confined by and suitably arranged within the brick-work, whereby the products of combustion may circulate among or around the heaters, and an independent hot-air-distributing pipe attached to the upper part of each heater, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

A. PENROSE BENNER.

Witnesses:

EDWIN BENNER,

HENRY R. LEWIS.