2 Sheets—Sheet 1.

H. H. BOWMAN, S. H. FRANKLIN & C. L. COLBY.

HEATING-STOVE.

No. 190,814. Patented May 15, 1877.

Fig. 1.

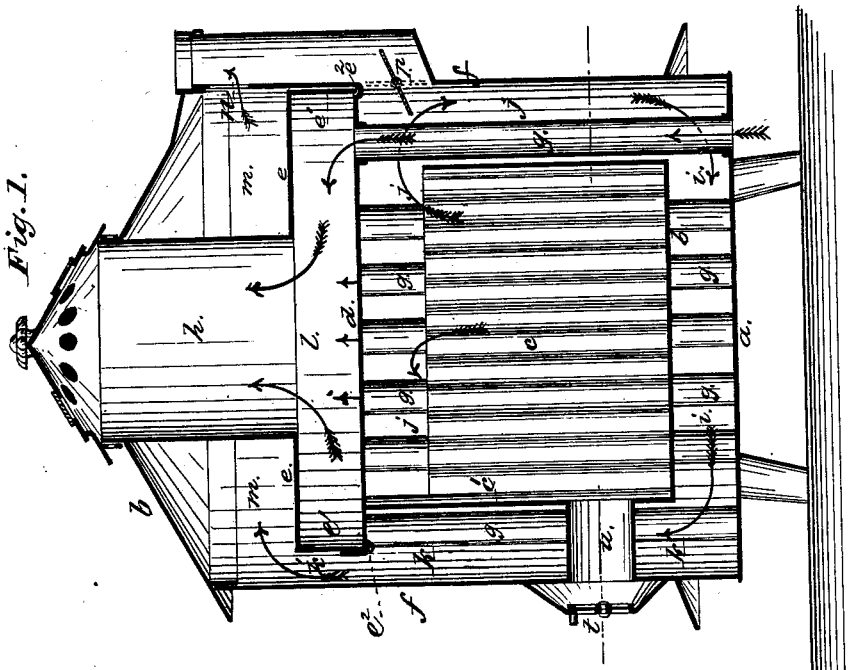
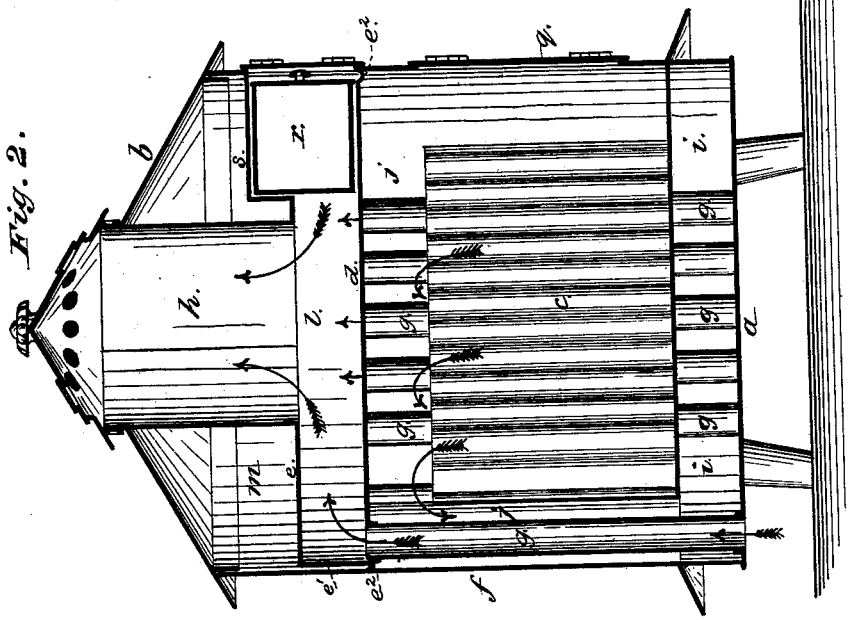


Fig. 2.



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2 Sheets—Sheet 2.

H. H. BOWMAN, S. H. FRANKLIN & C. L. COLBY.

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Fig. 3.

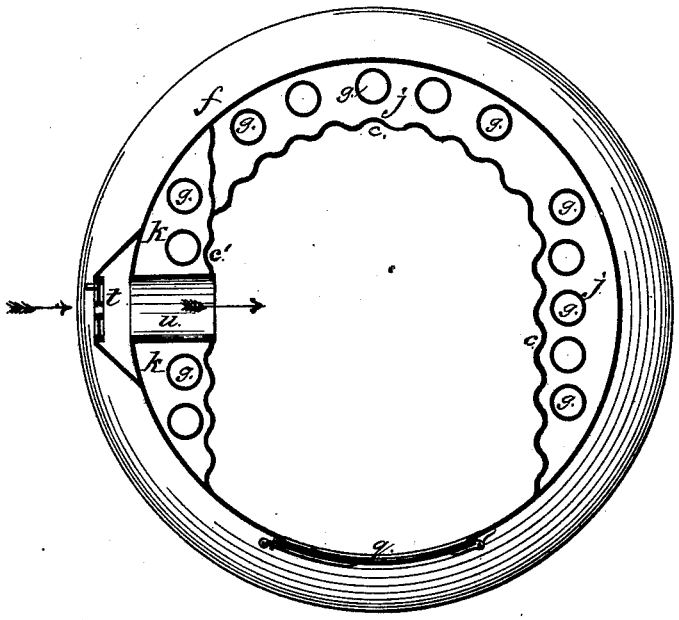


Fig. 4.

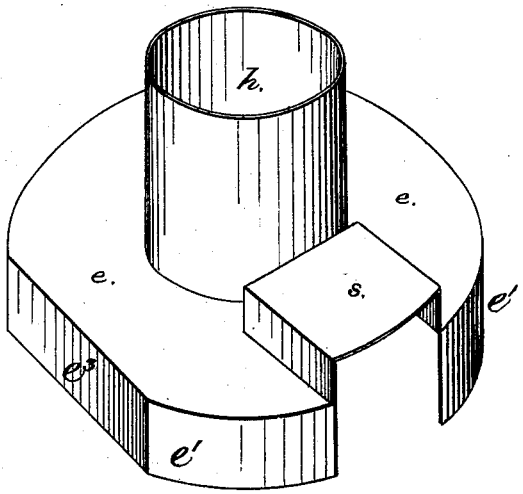
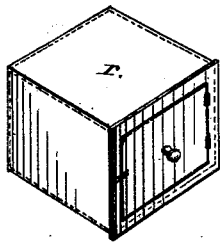


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY H. BOWMAN, SIMEON H. FRANKLIN, AND CLARENCE L. COLBY, OF OSAGE, IOWA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **190,814**, dated May 15, 1877; application filed March 31, 1877.

To all whom it may concern:

Be it known that we, HENRY H. BOWMAN, SIMEON H. FRANKLIN, and CLARENCE L. COLBY, of Osage, in the county of Mitchell and State of Iowa, have invented certain new and useful Improvements in Heating-Stoves, which we denominate the "Parlor-Furnace," which improvements are fully set forth in the following specification and accompanying drawings.

Our improved stove is a wood-burning base-heater, and is specially designed for increased heating capacity and durability. As a tubular base-heater it has an indirect draft for the products of combustion, which gives the best results.

Air-conductors pass through the fire-box; but they are not exposed to the direct heat, being protected by a lining which forms the fire-box, a diving-flue therefrom on two sides, and an ascending flue on another side, by which construction the air-conductors may be made of sheet-iron.

A cast-iron fire-box top is supported upon the air-conductors, and a hot-air chamber is formed by a rimmed plate, which is fitted to rest within a groove in the upper surface of the fire-box top, to form a close joint and simplify the construction.

A flattened side of said rimmed plate forms a flue coincident with the ascending flue formed by one side of the fire-box, and opens into a closed top chamber, from which the smoke and gases escape into the smoke-pipe at a point opposite the aforesaid front flue. The air-conductors extend from the bottom plate, and open into the rim-formed chamber, from which latter air heated therein passes out into the room or other place by a large delivery-pipe passing through the top plate. A closed portable oven is combined with the hot-air chamber, being fitted in one side thereof like a drawer, for cooking purposes, heating flat-irons, &c., and thereby confine the fumes and protect the food while being cooked from dust which might enter the hot-air chamber through the tubes. The hot-air chamber, being formed by the top of the fire-box and the rimmed plate which forms the bottom of the top heating-chamber, gives every advantage for the utilization of said hot-air chamber for one or more tight ovens adapted to be inserted in said chamber through openings in the outer case.

This is an important improvement, as the large air-chamber is well adapted to receive an oven, because it is heated above and below.

The cast-iron fire-box or lining is corrugated, to give a better heating effect to the flue behind, through which the air-conductors pass, and to render it less liable to be cracked under intense heat. The ascending flue formed by one side of the fire-box and the hot-air chamber communicates with the diving-flues back of the fire-box lining by a base-flue, thus forming an indirect-draft base-heater, while a damper back of the air-conductors and above the corrugated lining gives a direct draft into the smoke-pipe at the back of the stove.

A draft-register opens into the fire-box by a pipe passing through the ascending flue, giving the advantage of heating the air entering the combustion-chamber.

Referring to the drawings, Figure 1 is a vertical section taken through the smoke-pipe; Fig. 2, a similar section at right angles to Fig. 1; Fig. 3, a horizontal section taken through the fire-box and air-register; Fig. 4, the rimmed plate forming the hot-air chamber and its outlet, and Fig. 5 the tight oven.

In our base-heating wood-stove, the base *a*, the top *b*, the lining *c*, and top plate *d* of the fire-box, and the rimmed plate *e*, forming the hot-air chamber, are of cast-iron, while the outer casing *f*, the air-conductors *g*, and the large delivery-pipe *h* from the hot-air chamber are of sheet-iron.

The base and its flange are of one piece, the bottom being sunk three or four inches below said rim to form a base-flue, *i*, beneath the fire-box bottom. The air-conductors *g* extend from the bottom plate to the top plate *d* of the fire-box, these two plates being fitted with collars, over which the said air-conductors are secured. The corrugated lining *c* forms the fire-box, which, only at one side, *c'*, thereof, extends to its top. The other portion, not extending so high, leaves the fire-box opening into diving-flues *j*, which communicate with the base-flue *i*, while the ascending flue *k* rises

from the base-flue and opens into the top chamber. The hot-air chamber *l* is formed above the fire-box top, and the air-conductors *g*, being open at the bottom, also open into said hot-air chamber. The air-conductors are arranged within the diving-flues, and are protected by the fire-box lining from being burned out.

The hot-air chamber *l* is formed by a rimmed plate, *e*, the lower edge of the rim e^1 of which is set in a groove, e^2, formed in the upper side of the top of the fire-box, so as to make a close joint. The side of this rimmed plate is flattened at e^3, Fig. 4, to form a flue, *k'*, Fig. 1, coincident with the ascending flue, and by which the latter opens into the top chamber *m*, which is formed by the rimmed plate *e* and the top *b* of the stove, and has its outlet in the smoke-pipe. (See Fig. 1.)

The outlet to the hot-air chamber is formed by a large pipe, *h*, rising from the plate *e*, and, passing through the top chamber, opens at the top of the stove beneath an open cover or urn. The back damper being closed, the products of combustion from the fire-box descend the diving-flue, between the back pipes and the lining *c*, and passing through the base-flue, and up the front flue formed by the lining *c'*, the hot-air chamber, and the outer casing, into the top chamber *m*, and crosses over around the hot-air-delivering pipe *h*, and escapes through the smoke-pipe at *n*.

A direct draft, however, may be had by opening the damper *p*, arranged in the smoke-pipe behind the air-conductors, and just above the fire-box lining, Fig. 1.

The fire-box is provided with a door, *q*, and just above this the hot-air chamber is fitted with a tight removable oven, *r*, inserted in said chamber through an opening in the outer case, so that it may be used like a drawer and protect the food from dust. This oven has a front tightly-fitting door.

By this means the open hot-air chamber may be utilized to receive a closed oven, which retains the fumes and excludes the dust.

Where the oven and doors are arranged there are no air-conductors, and the rimmed plate has an elevation, *s*, to receive the oven.

A draft-register, *t*, opens into the fire-box by a tube, *u*, passing through the ascending flue, and the air is thereby heated before it passes into the fire. The front door is of cast-iron, and the register and direct-draft attachments are riveted in place. The large outlet-pipe and the hot-air chamber produce a very strong circulation, and the air, highly heated, issues from the top with considerable force, and may be conveyed to other rooms by a pipe or pipes, if desired.

The urn or cap is provided with a register, by which the heat into the room from the hot-air chamber may be regulated.

We claim—

1. The fire-pot lining *c*, having one side, *c'*, extending from the bottom to the top of the fire-chamber, to form, with the outer case, the ascending flue *k*, and an open-top diving-flue, *j*, over the other portion of said fire-box lining, as and for the purpose herein set forth.

2. The rimmed plate *e*, forming the hot-air chamber *l*, flattened on one side to form a continuation of the indirect ascending flue *k*, in combination with the combustion and top chambers, substantially as herein set forth.

3. The fire-box side *c'*, closed, and the sides *c* open at top, the flues *k* and *j*, the air-tubes *g*, hot-air chamber *l*, base-chamber *i*, and the casing *f*, all constructed and combined for use as herein set forth.

4. The hot-air chamber *l*, formed by the rimmed plate *e*, with one side flattened, in combination with the grooved seat e^2 in the top plate of the fire-box, substantially as herein set forth.

5. The combination, with the direct and indirect flues *j* and *k*, of the valve *p* and the top chamber *m*, having the opening *n* into the smoke-pipe, in the manner and for the purpose herein set forth.

6. The removable closed oven *r*, the hot-air chamber *l*, the combustion-chamber, and the stove-case, combined for use substantially as herein set forth.

7. The rimmed plate *e* e^1, forming the hot-air chamber *l*, having the raised portion *s*, in combination with the closed oven *r*, adapted thereto like a drawer, substantially as herein set forth.

In testimony whereof we have hereunto set our hands this 20th day of March, A. D. 1877.

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