SEXTON & BEARD.

Hot-Air Furnace.

No. 108,733. Patented Oct. 25, 1870.

FIG. 1.

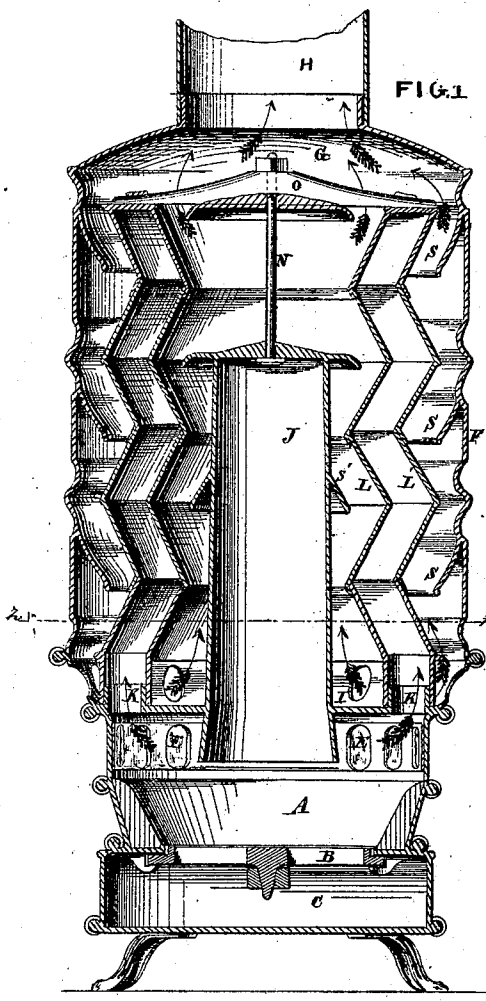
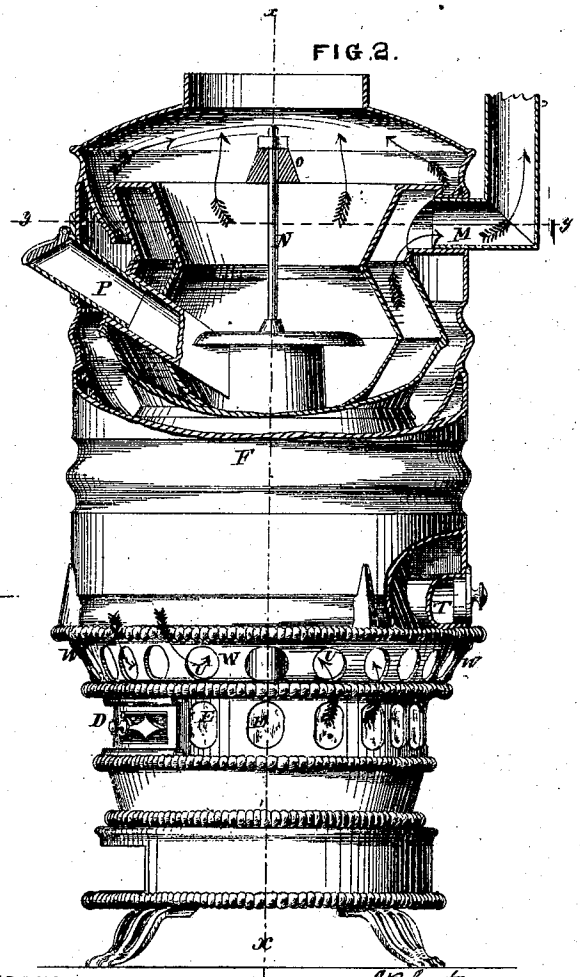


FIG. 2.



WITNESSES:
J. Scheitlin
Wm. L. Ewin.

FIG. 3.

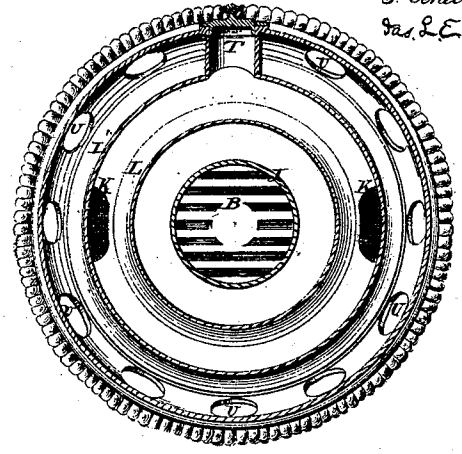
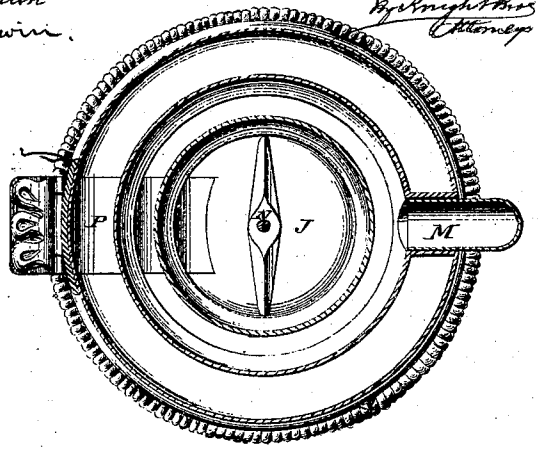


FIG. 4.



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SAMUEL B. SEXTON AND GEORGE W. BEARD, OF BALTIMORE. MARYLAND.

Letters Patent No. 108,733, dated October 25, 1870.

IMPROVEMENT IN HOT-AIR FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

We, SAMUEL B. SEXTON and GEORGE W. BEARD, of the city of Baltimore, in the State of Maryland, have invented an Improved Hot-air Furnace, of which the following is a specification.

Nature and Objects of the Invention.

The apparatus has a central vertical fuel-magazine; the fire-pot discharges its heated gases into a radiating chamber with corrugated sides; from the radiator the gases pass to the chimney.

The radiator forms a chamber around the magazine, the intervening space being occupied by a current of air, which is heated thereby, and is then mingled in the dome with a body of air heated between the radiator and the outside casing.

From the dome the heated air passes by pipes to the apartments to be heated.

The magazine is supplied by a spout which passes through both air-spaces and the radiator.

Deflectors in the air-spaces prevent a too rapid escape of the air.

Provision is made for removing accumulation of ashes from the lower part of the radiator.

Description of the Accompanying Drawing.

Figure 1 is a vertical central section of the furnace on the line *x x*, fig. 2.

Figure 2 is a part elevation and part section, the latter-mentioned portion being on a line at right angles to the section, fig. 1.

Figure 3 is a horizontal section on the line *z z*, fig. 1.

Figure 4 is a horizontal section on the line *y y*, fig. 2.

General Description.

A is the circular fire-pot;
B, the grate; and
C, the ash-pit of the stove.
D is the door of the fire-chamber, and
E E, mica windows, for viewing the fire.
F is the external casing, and
G, the dome.
H is the pipe by which heated air is carried off to an apartment to be warmed.

I, the crown-plate of the fire-chamber; has three openings, one in center where it is penetrated by the lower end of the fuel-magazine J, and two openings K K, which allow the heated gases to escape to the radiator, which is bounded by the corrugated plates L L′, which give a zigzag course to the gases which traverse therein.

M is the flue-pipe, by which the said gases are eventually discharged into the chimney.

The magazine J is partly supported by the crown-plate I, through which it protrudes, and partly by a suspension rod, N, which depends from the crown-bar O, which rests upon the top of the radiator.

The magazine is charged through the spout P, which has a cover, *p*.

As the coal burns away in the fire-pot, other coal from the magazine becomes ignited and the fire is maintained.

On the top of the crown-plate I are two short tubes K K, on which are short pipes on the bottom of the radiator.

The corrugated form of the bounding plates L L′, gives a large extent of radiating surface, and has the practical effect of an extension of the length of the chamber beyond its actual vertical height.

On the outside of the magazine J, and upon the inside of the outer casing F, are flanges or plates S, which act as deflectors to detain the heated current by practically lengthening its course and forming eddies.

T is an opening, by which ashes accumulating in the bottom of the radiator may be removed.

V V are openings in the flaring side plate W of the stove, by which the spaces on each side of the radiator are supplied with air.

The fire itself is supplied with air through the ash-pit and grate.

When the furnace is only intended to heat a room or rooms above, the outer casing may come down to the floor, so as to use all the heat radiated by the lower part of the furnace.

Claim.

What we claim as new is—

The combined arrangement of the central magazine, the annular radiator, the casing F, and the deflecting flanges S S, substantially as shown and described, for the purposes set forth.

SAMUEL B. SEXTON.
GEORGE W. BEARD.

Witnesses:
OTTO BERNER,
HENRY PET SMITH.