W. F. HANSEN.

FURNACE CASING.

APPLICATION FILED MAR. 29, 1910.

971,269.

Patented Sept. 27, 1910.

Fig. 3.

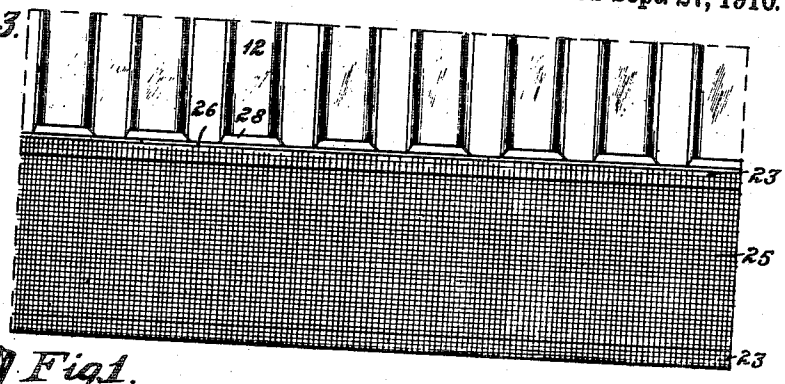


Fig. 2.

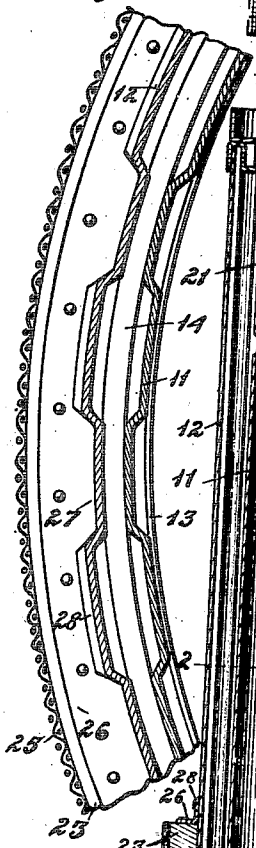
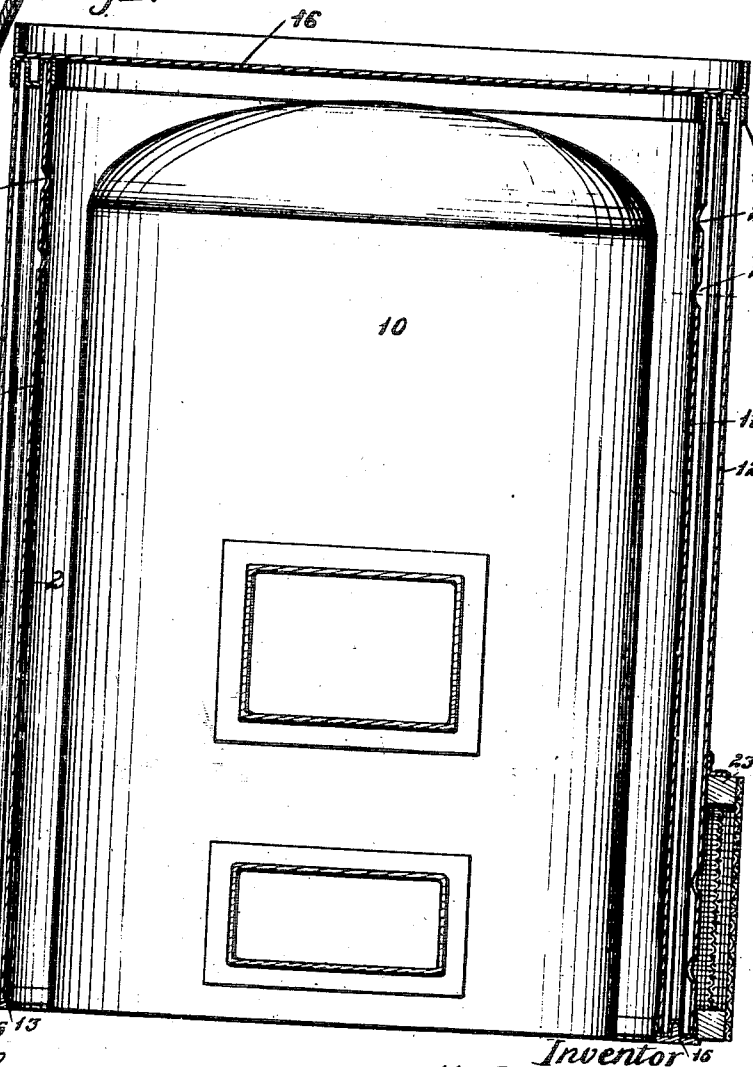


Fig. 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM F. HANSEN, OF DES MOINES, IOWA.

FURNACE-CASING.

971,269. Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed March 29, 1910. Serial No. 552,260.

To all whom it may concern:

Be it known that I, WILLIAM F. HANSEN, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Furnace-Casing, of which the following is a specification.

The object of my invention is to provide a sheet metal furnace casing of simple, durable and inexpensive construction so arranged that it may be readily, quickly and easily applied to any ordinary furnace and also so arranged that it will serve as an air intake for the furnace and will heat the air to a certain extent before being admitted into the air chamber between the furnace and casing and also so arranged that it will prevent radiation of heat from the furnace and utilize all the heat that will ordinarily be radiated in supplying the hot air pipes of the furnace.

A further object is to provide improved means for screening the air that enters the furnace to prevent the entrance of dust.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which:

Figure 1 shows the furnace body portion with an improved casing embodying my invention applied thereto and shown in vertical section. Fig. 2 shows a horizontal, sectional view on the line 2—2 of Fig. 1 upon an enlarged scale, and Fig. 3 shows a side elevation of a part of a furnace casing embodying my invention to illustrate the screen and the corrugations of the outer furnace wall.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate a furnace body portion of ordinary construction.

The improved casing which constitutes my invention comprises an inner and an outer sheet metal wall, the inner wall being indicated by the numeral 11 and the outer one by the numeral 12. Each wall is provided with angular corrugations extended vertically throughout its entire length for the purpose of strengthening and reinforcing same. The two walls are held spaced apart and are connected with each other by means of a sheet metal strip at the bottom having its side edges inclined upwardly at 13 and an upwardly projecting rib 14 at its center. The two furnace walls are placed in said strip between the edge portions 13 and the rib 14 so that said strip performs the double function of holding the walls spaced apart and also of connecting them with each other. I also preferably provide a metal T-bar 15 to rest upon the floor with one side projecting up into the rib 14 to strengthen and reinforce it and form a solid foundation for the furnace wall. At the top of the furnace walls is another strip similar to the one at the bottom upon which rests the sheet metal covering 16 of ordinary construction. The outer wall 12 is provided near its lower portion with a series of draft openings 20 and the inner wall is provided near its upper end with a series of draft openings 21 arranged to discharge into the space between the furnace and the furnace casing so that the air admitted through said openings may be heated by the furnace and may be passed to the hot air pipes 22.

To provide for preventing the entrance of dust through the openings 20 I apply two wooden strips 23 to the outer wall of the furnace above and below the openings 20 and between said strips is a dust screen 24 which may be made of any ordinary woven fabric that will serve to exclude dust. In order to protect the screen 24 I provide a wire netting 25 secured to the wooden strips 23. The lower wooden strip preferably rests upon the floor so that dust will not enter the corrugations of the outer wall. In order to prevent dust from entering the corrugations at the top of the upper strip 23, I provide a flexible strip of material 26 having one edge corrugated to conform to the outer wall. The projecting portions 27 of the strip 26 enter the grooves of the outer wall and the parts between the projecting portions, indicated by the numeral 28, preferably extend upwardly along the ribs of the outer wall. By this arrangement it is obvious that a dust tight joint may readily and easily be made between the strips 23 and the outer wall and that the wire netting will prevent mice from obtaining access to the screen 24.

In practical use, it is obvious that the sheet metal furnace walls may be corrugated longitudinally in any ordinary way and then when they are connected with the sheet metal strips at the top and bottom they

will be firmly connected and also held spaced apart at the proper distance. Obviously the wall as constructed is of inexpensive construction and is strong and durable.

By having the openings in the outer wall only at the bottom and the inner wall openings at the top, I provide for preventing the radiation of heat from the furnace on account of the fact that there is a constantly moving current of cold air passing upwardly between the walls which is heated during this upward movement, which heat is carried by the current of air into the interior of the furnace to be passed out through the hot air pipes. Furthermore the arrangement of the screens is of extremely simple and inexpensive construction and can be easily applied after the furnace wall is placed in position.

I claim as my invention:

1. An improved furnace casing, comprising an inner and an outer wall both being corrugated vertically from end to end, the outer wall being provided with air passages near its bottom and the inner wall being provided with air passages near its upper end, a sheet metal strip at the top and bottom of the casing, each strip having its edges extended to position for overlapping the ends of the walls and also having a central rib extending between the walls to thereby hold the walls spaced apart and to connect them with each other, a metal T-bar having its rib projecting upwardly into the rib in the lower spacing strip, a sheet metal covering, and a screen device to prevent dust from entering the air passages in the outer wall.

2. An improved furnace casing, comprising an inner and an outer corrugated metal wall, the outer wall being provided with air passages near its bottom and the inner wall being provided with air passages near its upper end, two wooden strips extending around the casing, one above and one below the air passages therein, a screen to cover said air passages and connected with the wooden strips, a wire netting connected with the outer edges of said wooden strips, and a dust proof strip on top of the upper wooden strip extending around the furnace wall and designed to fit into the corrugations thereof, the parts of said dust proof strip that extend into the grooves of the outer wall being shaped to fit tightly into said grooves and the parts of said strip that engage the ribs of the outer wall being inclined upwardly, substantially as and for the purposes stated.

Des Moines, Iowa, March 10, 1910.

WILLIAM F. HANSEN.

Witnesses:
MARY WALLACE,
W. A. LOFTUS.