Oct. 15, 1929. C. MOENCH 1,732,061

HOT AIR FURNACE

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Fig. 1.

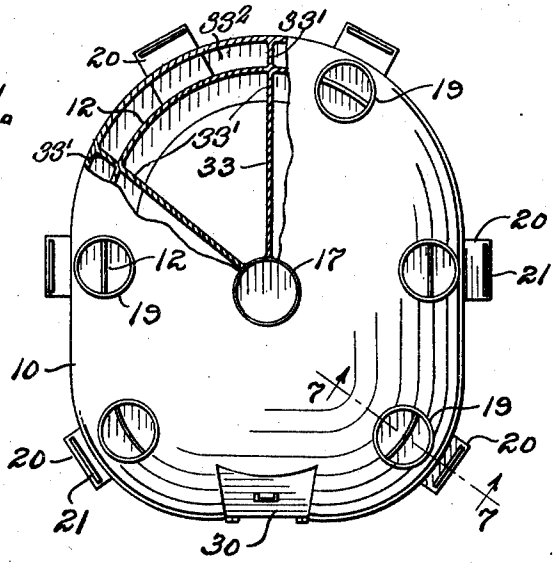
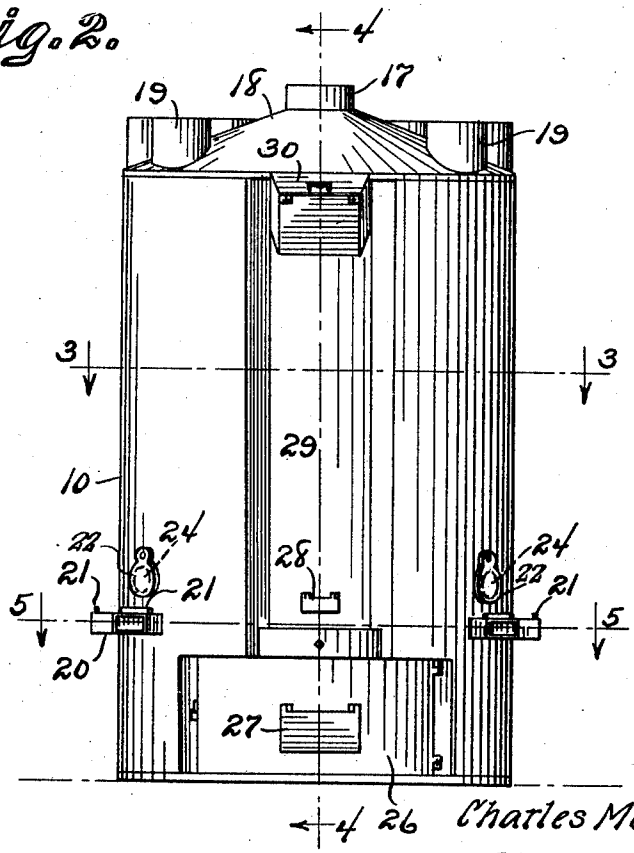


Fig. 2.



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Fig. 3.

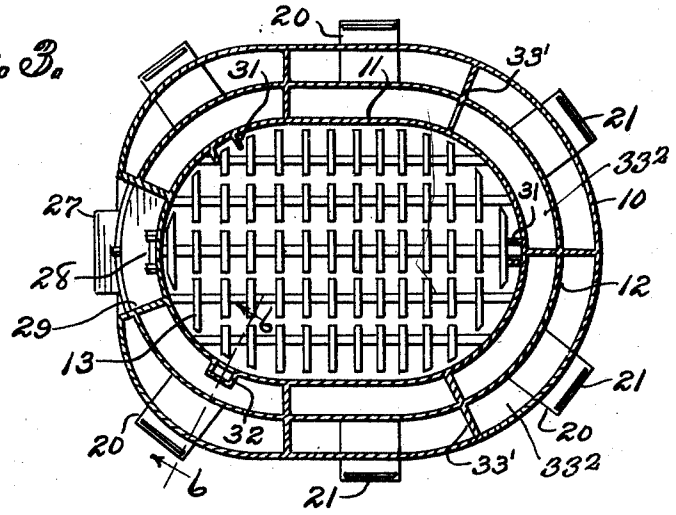
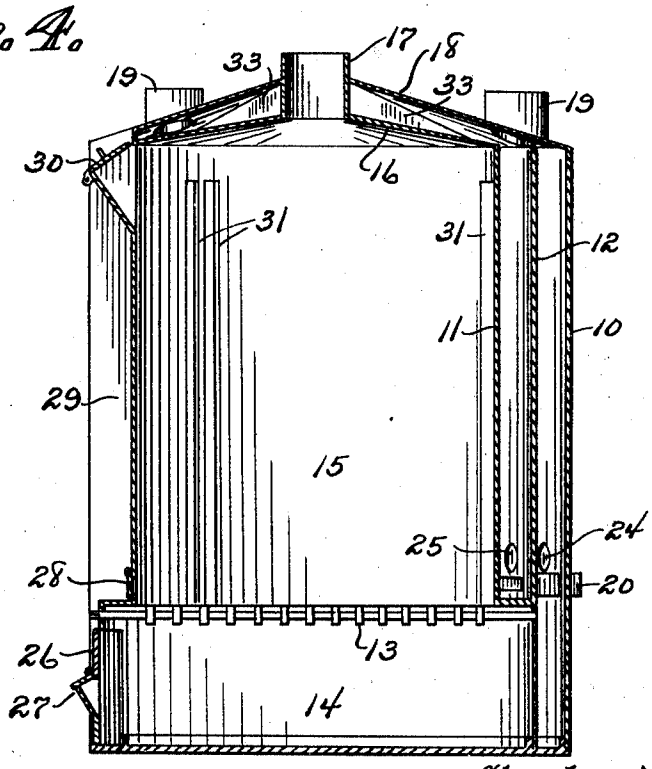


Fig. 4.



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Fig. 5.

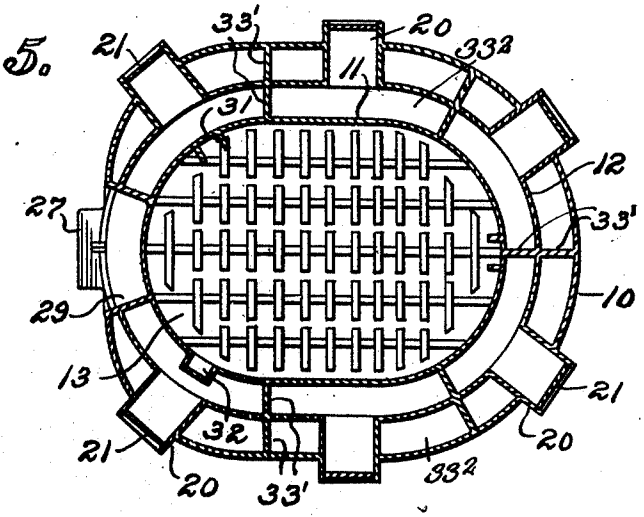


Fig. 6.

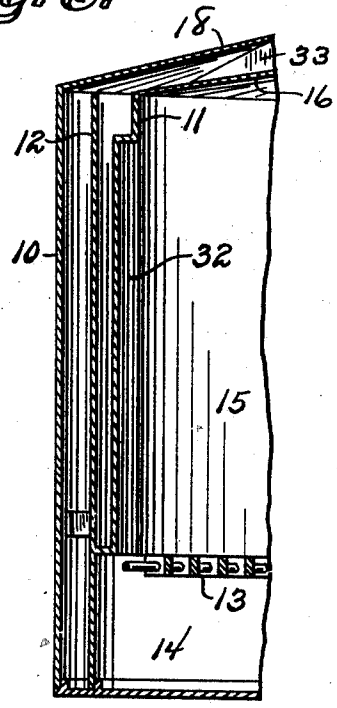
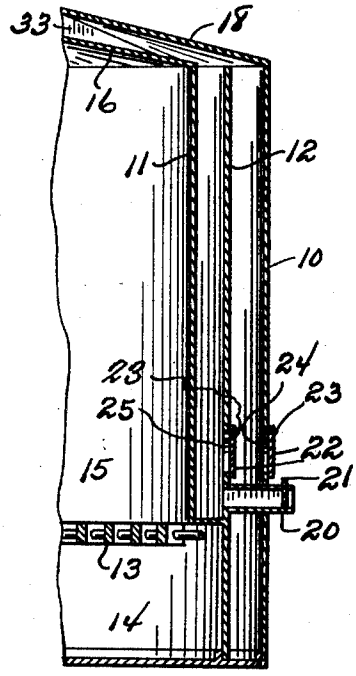


Fig. 7.



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UNITED STATES PATENT OFFICE

CHARLES MOENCH, OF TERRE HAUTE, INDIANA

HOT-AIR FURNACE

Application filed July 25, 1928. Serial No. 295,157.

This invention relates to furnaces and more particularly to that type known as the hot air furnace.

An object of the invention comprehends draft regulating devices adapted to control the amount of heat to be emitted into individual rooms.

Another object of the invention contemplates auxiliary draft regulating devices adapted to emit a different degree of heat to the respective rooms.

An additional object of the invention embodies draft devices adapted to be carried upon the inside of the fire pot thereby obviating the necessity of cutting away the sides of the fire pot.

A cardinal advantage attained by the improved furnace resides in the provision of heat collecting compartments having connection with the heat conducting pipes.

More specifically stated the furnace is in addition provided with a heat collecting dome from which heated air is drawn by the desired heat conducting pipes.

With the above and other objects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a top plan view of my invention.

Figure 2 is a front elevation thereof.

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 2.

Figure 4 is a vertical sectional view taken on line 4—4 of Figure 2.

Figure 5 is a transverse sectional view taken on line 5—5 of Figure 2.

Figure 6 is a sectional view taken on line 6—6 of Figure 3.

Figure 7 is a similar view taken on line 7—7 of Figure 1.

Referring to the drawings in detail, wherein like characters of reference denote corresponding parts, the reference character 10 indicates a casing forming the usual wall of a furnace of the character described. A shell 11, wholly arranged within the casing 10, is disposed in spaced relation to the inner side walls thereof in the manner as best illustrated in Figure 5 of the drawings. A partition wall 12 interposed between the casing 10 and shell 11 defines spaces therebetween, the purpose of which will be presently apparent.

A grate 13 separates the ash pit 14 from the fire pot 15 within the shell 11. A dome shaped member 16, having connection with the upper periphery of the shell 11, is in communication with a flue pipe 17 adapted to carry off the gases and smoke from the fire bed within the fire pot. A heat collecting dome 18 correspondingly associated with the upper periphery of the casing 10 is centrally apertured to receive the upper projecting end of the flue pipe 17.

Heat conducting or conveying pipes 19 having connection with the heat collecting dome 18 are adapted for connection with registers, not shown, disposed within the walls and flooring of a building structure. The size and number of pipes may vary according to the amount of heat commensurate with the number of rooms or floor space to be heated.

As best illustrated in Figures 1 and 4 of the drawings, the partition 12 has the upper end thereof disposed in spaced relation to the underside of the heat collecting dome 18 and diametrically of the bores of the heat conducting or conveying pipes 19. Passageways 20, carried by the partition 12 and having communication with the innermost of the spaces defined thereby, are projected through the casing 10. Closures 21 are carried within the outermost ends of the passageways 20 to regulate the amount of air to be drawn within the innermost of the spaces defined by the partition 12 when said closures are lifted. The ingress of air from the outside of the furnace through the passageway 20 to the innermost space will force the heated air upwardly within the adjacent heat conducting or conveying pipe.

By the same token, it may also be desirous to permit air to enter into the outer space defined by the partition 12 to drive and force the heated air therein upwardly within and through the aforementioned pipes. For this purpose, I have provided plate members 22,

swingably mounted, as indicated at 23, to open and close openings 24 and 25 in the outer casing 10 and partition 12.

The ash pit 14 is provided with a clean out door 26 having a check draft 27. A door 28, included within a recess portion 29 in the front of the casing 10, is adapted to permit the insertion of a poker or like instrument to stoke or otherwise break up or loosen clinkers.

A fuel inlet door 30 is provided at the top or upper end of the recess portion 29 and which is obliquely disposed whereby the fuel will be deposited upon the central portions of the grates.

Arranged in the fire pot in spaced pairs are upstanding strips 31 which form draft passageways and these strips are secured to the shell 11 as best shown in Figures 4 and 5 of the drawings. A draft passageway 32 is also provided and this passageway 32 is relatively narrow and formed from three vertical walls having a closed top disposed adjacent the upper edge of the shell 11, and an open bottom arranged in communication with the ash pit. The passageway 32 is formed with the shell 11 and extends outwardly from the outer wall thereof with an open front for communication with the fire pot. The strips 31 forming passageways extend from the grate and terminate in spaced relation with respect to the upper edge of the shell 11.

The draft passageways 31 and passageway 32 are disposed in substantially diagonal relation with respect to each other and any number of either type may be employed. It will be obvious that the draft chambers promote combustion regardless of the height of the ash formation in the fire pot, as a direct draft from the ash pit through the chambers will be provided at all times for the fuel.

Partitions or walls 33, radially disposed within the heat collecting chamber, are adapted for connection at the upper and lower ends thereof with the heat collecting dome 18 and dome shaped member 16 respectively. Said walls 33 are adapted to subdivide the heat collecting chamber into compartments for the respective heat conveying or conducting pipes 19. The partitions $33'$, carried by and having connection with the adjacent portions of the shell 11, partition 12 and casing 10, define compartments or passageways 33^2 in communication with the compartments formed between the dome shaped member 16, heat collecting dome 18 and walls 33 whereby each of the heat conveying or conducting pipes 19 will convey an equal amount of heat to all of the rooms to be heated.

Although the present type of furnace is primarily adapted for use in the burning of coke, it is obviously understood that other fuels may be effectively burned therein.

The invention is susceptible of various changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention, what is claimed is:

1. A hot air furnace comprising a casing, a shell carried within the casing and disposed in spaced relation thereto, partitions disposed between the casing and shell to provide a multiplicity of compartments therebetween, a dome member carried upon the upper portion of the shell being adapted for connection with a flue pipe, a heat collecting dome carried upon the upper portion of the casing, and pipe members having connection with the heat collecting dome to conduct the heat therefrom.

2. A hot air furnace comprising a casing having a heat collecting dome, a shell mounted within the casing provided with a dome-shaped member having connection with a centrally disposed flue pipe extended through the heat collecting dome, conducting pipes having connection with the heat collecting dome, partition members disposed between the adjacent innerside walls of the casing and shell to provide a multiplicity of compartments therebetween, and means for admitting air within the compartments to discharge the heat therefrom within the heat conducting pipes.

3. A hot air furnace comprising a casing having a heat collecting dome, a shell mounted within the casing provided with a dome-shaped member having connection with a centrally disposed flue pipe extended through the heat collecting dome, conducting pipes having connection with the heat collecting dome, partition members disposed between the adjacent innerside walls of the casing and shell to provide a multiplicity of compartments therebetween, and draft regulating devices having connection with the casing and partition members to permit ingress of air to force the heated air within the compartments upwardly through the dome and heat conducting pipes.

4. A hot air furnace comprising a casing having a heat collecting dome, a shell mounted within the casing provided with a dome-shaped member having connection with a centrally disposed flue pipe extended through the heat collecting dome, conducting pipes having connection with the heat collecting dome, partition members disposed between the adjacent innerside walls of the casing and shell to provide a multiplicity of compartments therebetween, draft regulating devices having connection with the casing and partition members to permit ingress of air to force the heated air within the compartments upwardly through the heat conducting pipes, and means carried by the shell forming

draft passageways in communication with the furnace ash pit and fire pot.

5. A hot air furnace comprising a casing having a heat collecting dome, a shell mounted within the casing provided with a dome-shaped member having connection with a centrally disposed flue pipe extended through the heat collecting dome, conducting pipes having connection with the heat collecting dome, partition members disposed between the adjacent innerside walls of the casing and shell to provide a multiplicity of compartments therebetween, draft regulating devices having connection with the casing and partition members to permit ingress of air to force the heated air within the compartments upwardly through the heat conducting pipes, means carried upon opposite sides of the shell forming draft passageways between the furnace ash pit and fire pot, and wall members subdividing the heat collecting chamber into separate compartments having communication with the heat conducting pipes.

In testimony whereof I affix my signature.

CHARLES MOENCH.