May 24, 1932. J. MERRYWEATHER 1,859,743

FURNACE CONSTRUCTION

Filed Jan. 25, 1930 2 Sheets-Sheet 1

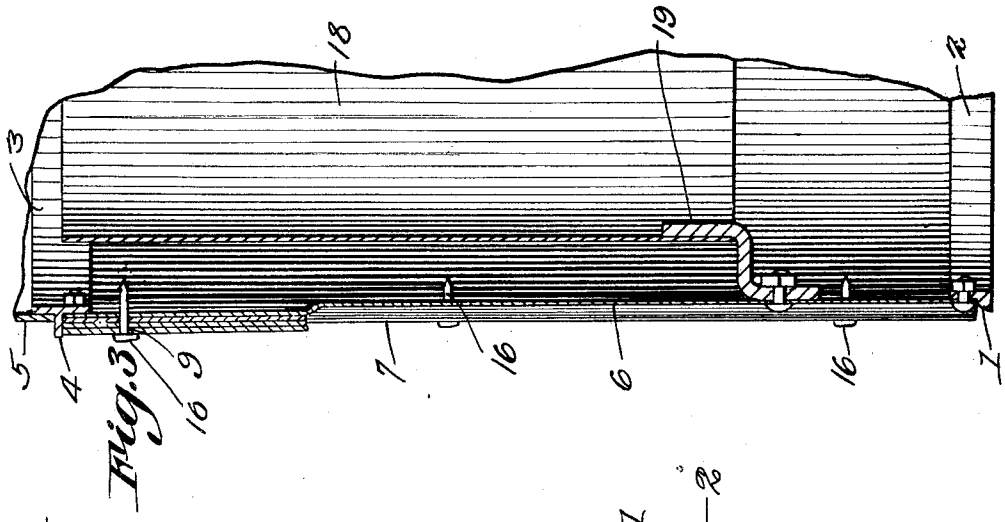


Fig. 3

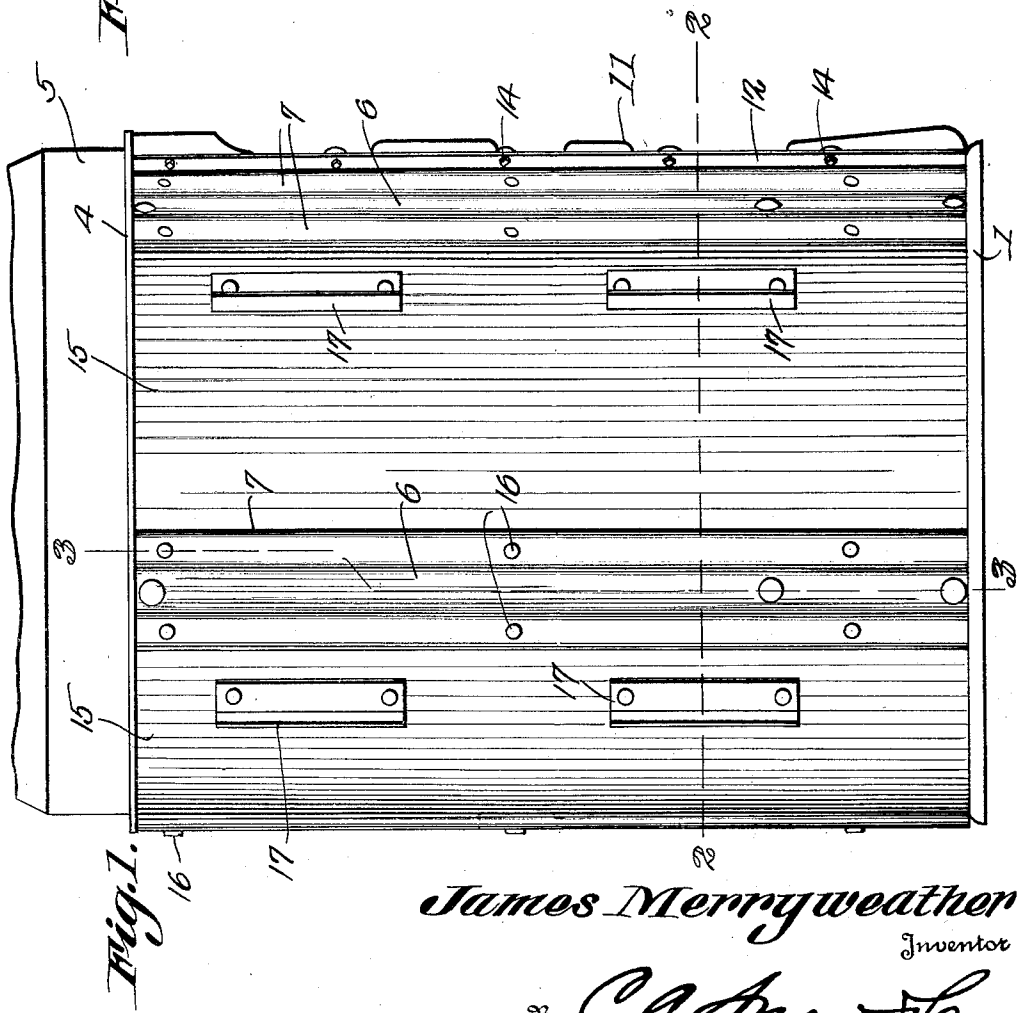


Fig. 1.

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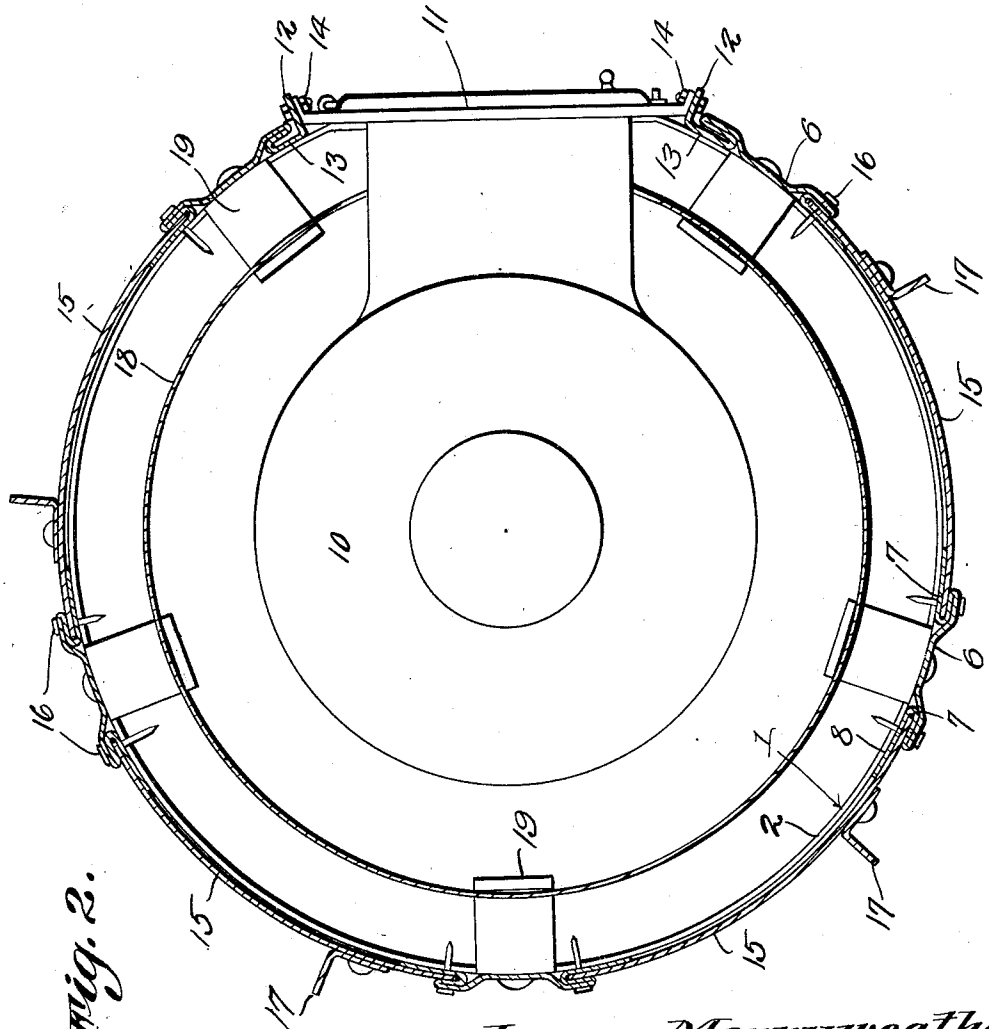


Fig. 2.

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1,859,743

UNITED STATES PATENT OFFICE

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FURNACE CONSTRUCTION

Application filed January 25, 1930. Serial No. 423,425.

This invention relates to a furnace construction and more particularly to the casing of a hot air furnace such as used for domestic heating purposes.

As is well known to those skilled in the art, it is generally a difficult matter to make repairs to a furnace after the casing has been set up. This is due to the fact that the casing is generally formed of metal strips or sheets extending horizontally around the furnace and these cannot be removed without erecting some kind of rigging for supporting the top of the casing or by taking apart the entire casing. Obviously this has added greatly to the cost of making repairs.

It is an object of the invention to provide a casing of novel construction one or more parts of which can be removed to afford ready access to the furnace enclosed thereby.

Another object is to provide a casing which includes separately removable panels having simple and efficient means for fastening them in place.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings,

Figure 1 is an elevation of a portion of a hot air furnace having the present improvements.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Referring to the figures by characters of reference, 1 designates the base ring of the furnace casing, it being provided with an upstanding flange 2 and being adapted to rest upon a supporting surface as ordinarily. A top ring 3 is located above the base ring and has an outwardly extended annular flange 4 adapted to support the top section or dome 5 of the casing from which the usual hot air pipes are extended.

Interposed between the base ring 1 and the flange 4 of the top ring 3 are spaced supporting casing bars 6. Each of these bars is formed of steel or any other metal and is bolted or otherwise fastened at its ends to the respective rings 1 and 3. Each of these casing bars has its two sides formed to provide a longitudinal channel 7 and laterally extending flange 8 constituting an extension of the inner wall of the channel. Small openings 9 are extended transversely through the walls of each of the channels 7 and can be located at any points desired.

The furnace housed within the casing can be of any preferred construction and has been indicated generally at 10. In the form shown the front portion 11 of the furnace is extended from the bottom ring 1 to the top ring 3 and two of the casing bars 6 are disposed at the sides thereof. These particular casing bars may be formed with longitudinal extensions 12 on those flanges 13 nearest the front portion 11. These extensions can be bolted or riveted to the sides of the front portion as shown at 14 in Figure 2.

Interposed between the casing bars 6 are sheet metal panels 15 the vertical edges of which are adapted to be seated removably in the channels 7 of the casing bars. Each panel extends from the bottom ring 1 to the top ring 3 and is adapted to flex so as to lie substantially parallel with the rings. After the panel has been positioned with its edges against the flanges 8 of casing bars 6, the middle portion thereof can be pressed inwardly against the rings so that the edges of the panel will be forced into the channels

7. With the panel thus held tightly against the rings, nails or casing screws 16 can be driven through the openings 9 and the panel 15 as shown in Figure 3, thereby locking the panel to the casing bars 6 and holding it against displacement and outward bulging.

With panels in position between the several bars 6 a complete casing will be produced and air will be free to circulate therethrough in the usual way.

Should it be desired to obtain access to the furnace for the purpose of making repairs, etc., it would merely be necessary to remove one or more of the panels 15, it being understood that when these panels are removed the top or dome 5 of the casing and the hot air pipes connected thereto will be supported properly by the casing bars 6.

Before a panel can be removed it is necessary first to withdraw the nails or screws 16 which engage it. The vertical edges of the panel can be then pulled out of the channels 7. This withdrawal can be facilitated by providing the panel with one or more grips 17 extending outwardly therefrom.

Not only is it possible to reach the furnace for the purpose of making repairs, etc., without taking down the entire casing, but it is also possible to remove the entire furnace without taking down the casing. For example, in a structure such as illustrated in Figure 2, the lower right hand casing bar 6, the one to the left thereof, and the two lower panels could be removed without causing the casing to collapse and the furnace, after being detached from the casing, could be slid through the resultant opening.

Some hot air furnaces are provided with concentric inner shields or jackets for use as baffles. Where one of these is employed as shown for example at 18, brackets 19 can be attached to and extended inwardly from the casing bars 6 and can be used as supports for the shield or baffle.

Obviously the construction of the casing can be modified to suit the furnace with which it is used. For example, should the front portion of the furnace extend only a part of the height of the casing, the space between said front portion and the top ring could be closed by means of a small panel similar to the panels 15 and held in place in the same manner as heretofore explained. This modification is so obvious that a detailed illustration thereof is not deemed necessary.

What is claimed is:

A casing for heating furnaces including parallel sheet metal bars each having longitudinal side folds providing a longitudinal channel and a longitudinal guide flange forming an extension of one wall of the channel, rings connecting the ends of the bars, flexible metal panels bearing inwardly against the rings and flanges and projecting into channels in the bars at the sides of the panels, perforating means extending through both walls of each channel and through the panel in the channel, for holding the panel against outward flexing relative to the rings, and means for flexing the panels outwardly to release them from the channels when freed from the holding means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JAMES MERRYWEATHER.