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1,832,142

STOVE GRATE

Filed Oct. 30, 1929

2 Sheets-Sheet 1

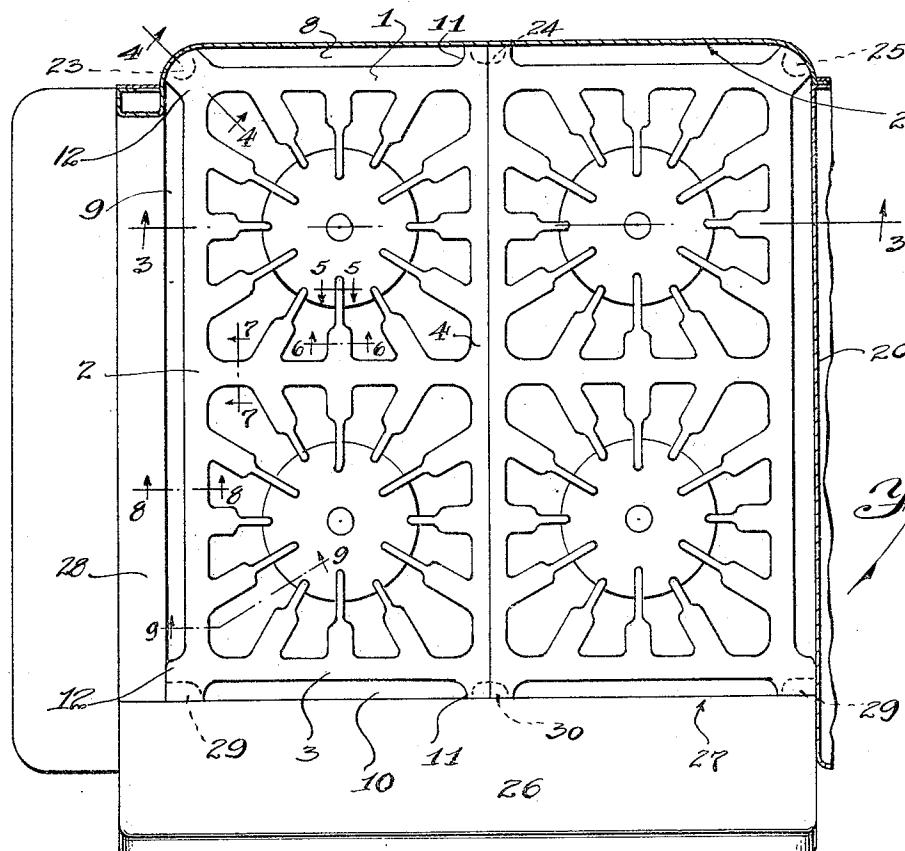
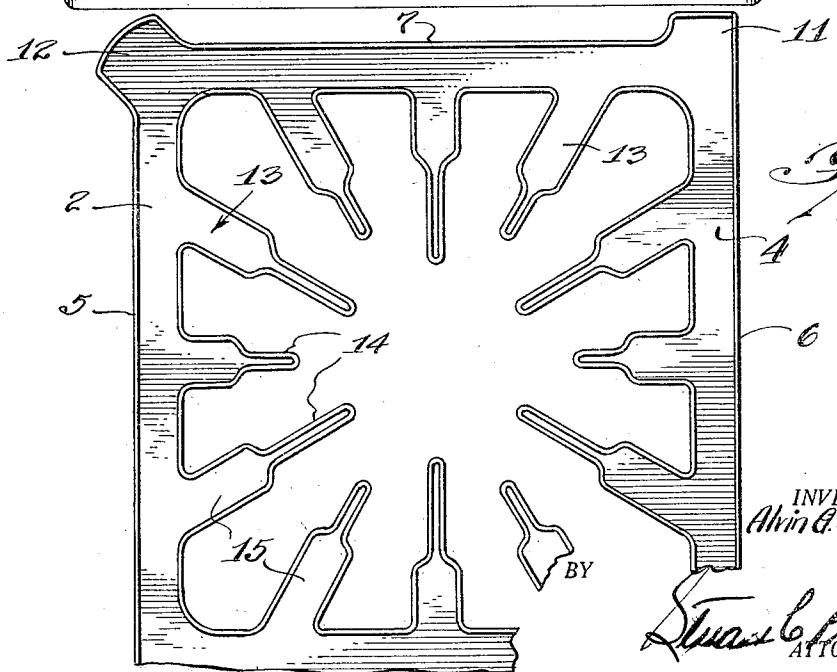


Fig. 1



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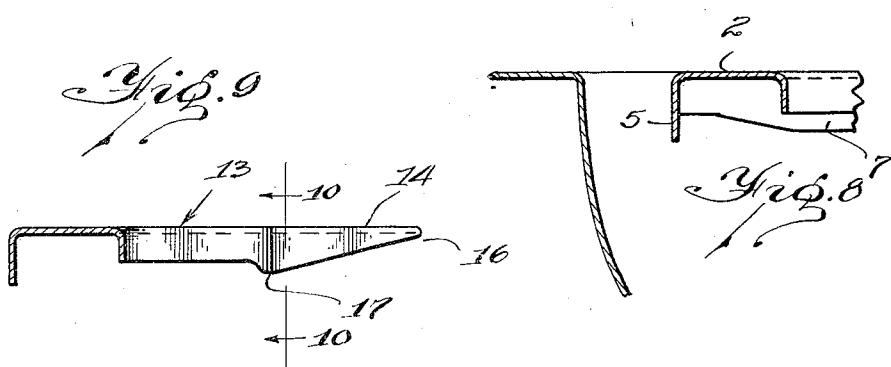
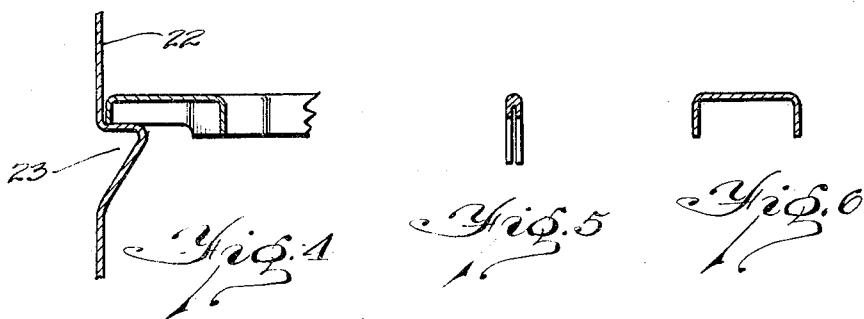
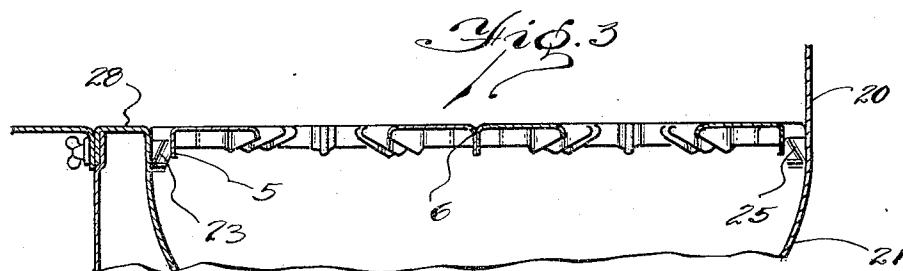
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2 Sheets-Sheet 2



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STOVE GRATE

Application filed October 30, 1929. Serial No. 403,619.

This invention relates to a stove grate and has to do particularly with a novel pressed metal stove grate and a novel manner of positioning and supporting the same with relation to the stove top.

Heretofore in designing gas and vapor ranges, it has usually been the practice to use a suitable rectangular stove top of cast iron and to provide suitable ledges or recessed portions for the reception of the grate members, also formed of cast iron. As a result of this structure, the stove grates and supporting structure have rested directly against the side of the oven and against the back splash member of the stove, and leaving only a small crevice between the supporting frame and the oven and back splash member, and also a small crevice all around the grate members and between the grate and the supporting frame. Obviously, in the operation of the stove, these crevices were soon filled with grease, dirt, etc., and in addition, such grate frame partially hid the portion of the oven and back splash member below the grate from view.

The object of the present invention is to provide a novel grate structure which is formed directly by stamping the same from sheet steel, the fabricating of the grates being accomplished in a novel manner whereby to present an efficient supporting surface and at the same time efficiently prevent the transmission of heat from the burner center outwardly to the other portions of the grate. Furthermore, by stamping the grate from sheet metal, I obtain not only a much better appearing grate structure, but one that can be made much cheaper and more efficiently than cast grates.

A further feature of the present invention resides in the manner of fabricating or shaping the outer edges of the grate structure, in combination with the manner of supporting the grates by the various parts of the stove. In this connection, I prefer to form the grates with small projections at the corners and center ends thereof and to support said grates by suitable lugs formed in the walls of the stove members. The result of this structure is in direct contrast to

the present standard method of supporting grates as a relatively large space is provided between the walls of the stove and the grates whereby it is possible to quickly clean all parts of the stove adjacent to the grate and thus provide a completely sanitary stove structure. With the walls of the oven and the walls of the back splash member enameled, it will be obvious with this grate structure that such enameled parts below the surface of the grate may be easily seen from the top and present a very sanitary appearance.

In the drawings,

Figure 1 is a plan view of a grate constructed in accordance with the present invention and also showing the manner of supporting the same in position.

Figure 2 is an enlarged fragmentary bottom plan view showing one-half of one of the grate members in Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1 and showing the formation of the grate bars and the manner of supporting the grates by lugs pressed out from panels of the stove.

Figure 4 is a fragmentary sectional view taken on line 4—4 of Figure 1.

Figure 5 is a sectional view taken on line 5—5 of Figure 1 and showing the construction of the inner end of one of the grate bars.

Figure 6 is a sectional view taken on line 6—6 of Figure 1 and showing the construction of the rear portion of one of the grate bars.

Figure 7 is a sectional view taken on line 7—7 of Figure 1 and illustrating the manner of reinforcing the center part of the grate member.

Figure 8 is a sectional view taken on line 8—8 of Figure 1.

Figure 9 is a sectional view taken on line 9—9 of Figure 1 and illustrating the general elevation of one of the grate legs or grate bars.

Figure 10 is a sectional view taken on line 10—10 of Figure 9.

The novel grate members of the present invention are formed in two halves as in the usual standard construction. Each half, however, is formed by single stamping from

sheet metal so as to form a complete stove grate in one stamping operation. It will be obvious, of course, that the grate may be subjected to a finishing or final forming operation, but is preferably formed in one single stamping operation.

In fabricating the grate structure from sheet metal, the frame of the grate is preferably cut out and fabricated as at 1, 2, 3 and 4, the side walls of such frame members being turned down as best shown in Figures 3 and 8. In fabricating these outer frame members, the outer edges of the frames, 2 and 4, are turned down as at 5 and 6, so as to reinforce the grate member lengthwise. The end frame members 1 and 3 also have their outer edges turned down a relatively great extent as best shown at 7 in Figure 8, but such edges are not turned down to the same extent as the edges of the frame members 2 and 4, because such frame members 1 and 3 are much shorter and thus require less reinforcement.

In fabricating the frame members 1, 2, 3 and 4, such frame members 1, 2 and 3 are preferably so fabricated as to leave the spaces 8, 9 and 10, which are formed in the stamping operation between the center end lugs 11 and the outer end lugs 12.

The grate bars or leg members 13 are preferably fabricated so as to extend radially inwardly in the usual manner. In forming these grate bars, they are cut out and then turned down so as to form the narrow portions 14 and the wider portions 15, the narrow portions 14 being positioned directly above the burners. As best shown in Figure 9 each narrow portion of each grate bar starts at a point 16 and gradually increases in depth to a point 17, at which point the grate bar widens materially and presents a much greater surface area. By this construction it will be obvious that the inner ends of each grate bar are materially strengthened and in addition the heat absorbed by the ends of the grate bars, being positioned over the flame, is quickly dissipated by the gradually enlarging surface area of each grate bar.

It will thus be obvious that the grates are very rigid and capable of supporting a relatively large weight and at the same time the grate bars are so constructed as to quickly dissipate the heat at the points of the grate bars and thus maintain the remaining portion of the grates in a relatively cool condition and materially assist in preserving the smooth enameled finish of the grates.

The oven wall or side splasher may be designated 20 and preferably extends downwardly past the level of the grate and preferably terminates in an inwardly extending curve as at 21. This curved portion 21 may terminate in a position above the drip pan, but the essential point to be considered here is that the side panel 20 extends down past the grate in a straight plane.

The back wall or back splash member may be generally designated 22 and like the side panel 20 also extends straight down past the level of the grate so as to present a clean smooth surface at the level of the grate. This back splash member 22 is provided with pressed out lugs 23, 24 and 25, which are adapted to register with and support the projecting members 11 and 12 of the grates. The front part of the stove may be designated 26 and this front part preferably extends downwardly at the point 27 at right angles to the top surface thereof, whereby such a front member 26 may be suitably connected to the oven wall 20 and the side panel 28. This downward extending portion 27 of the front 75 member 26 is also provided with suitable pressed out portions 29 and 30, whereby to support the projecting members 11 and 12 at the front end of the grate.

It will thus be obvious that the grate members are directly supported by the lugs on the back splash member and on the front member, with the result that they may be very easily removed to permit cleaning of the 90 splash members and the walls of the warming chamber. Furthermore, by reason of the spaces 8, 9 and 10, formed at the ends and side of the grate, it will permit the ready cleaning of the walls 20, 22 and 28, while the 95 grates are in place. These relatively large open spaces extending entirely around all sides of the grate insure complete sanitation of this portion of the stove and will also prevent accumulation of all dirt and grease.

While I have made particular reference to the use of a stamped sheet metal grate as one of the features of the present invention, it will be understood that the main feature of the invention resides in the formation of the edges of the grate elements so as to provide a space which extends completely around the grate or at least around the two sides of the back of the grate elements. It will be obvious 105 that this latter and main feature of the invention may be carried out by using a cast grate instead of a pressed metal grate.

What I claim is:

1. Burner box structure for cooking stoves 115 comprising a grate formed from stamped out sheet metal, two ends and one side of each grate member being recessed whereby to form projecting members at each corner of the grate, the walls of the burner box being 120 spaced from said recessed portions to thus present an open space at the ends and one side of each grate when placed in position.

2. In a cooking stove a back splash member extending with a smooth surface straight 125 down past the normal grate level, a front member, a grate member having projecting portions formed at the ends thereof, and lugs positioned on said back splash member and on said front member for registering 130

with the projecting portions of the grate member and supporting same.

3. In a cooking stove, panels formed of sheet metal and extending downwardly in a straight smooth plane past the normal grate level, a pair of grates formed with extending lugs at the corners thereof, whereby to present openings or recessed portions between the lug members, and pressed out lugs formed in one or more of said panel portions for co-operating with said lugs on the grate members for supporting said grates.

4. In a cooking stove, a plurality of panels forming splash members and a warming chamber, a front member, one or more grates having spaced narrow projecting members co-operating with narrow lugs on the stove whereby to form open spaces extending completely around the grate or grates and leave said panels with a straight flat surface except for said lugs.

5. A grate structure for cooking stoves comprising extensions formed on the grate member and cooperating with lugs forming a part of the stove whereby to be supported only by the lugs and forming an open vertical space between said extensions and lugs.

6. A grate structure for cooking stoves of the type adapted to be supported by the oven wall and back splash member, the sides of the grate adjacent the oven wall and back splash member being recessed whereby to form projecting members at corners of the grate and thus present a vertical open space at the sides of the grate adjacent the oven wall and back splash member.

7. A cooking stove having panels extending downwardly in a smooth plane past the normal grate level, a pair of grates formed with extending lugs at certain corners thereof whereby to present openings or recessed portions between the lug members, and supporting lugs on said panels for cooperating with said lugs on the grate members for supporting said grates and leave vertical open spaces between.

8. In a cooking stove, a plurality of panels forming splash members and a warming chamber, and one or more grates having projecting members cooperating with correspondingly spaced lugs on the stove whereby to form open spaces extending around the sides and back of the grate or grates.

9. Burner box structure for cooking stoves, comprising a grate having inwardly formed sides and projecting corners, panels extending downwardly in a smooth surface from a point adjacent the top of the grates to form the walls of the burner box, and means carried by said panels cooperating with the corner projections of the grate for supporting the same whereby to present vertically extending spaces between the corner projections and the grate.

65 10. In a cooking stove of the type having

removable grates supported by panel members, a back splash member and a side splash member extending straight down past the normal grate level, said members having a smooth surface at the grate level with the exception of small lugs carried thereby for supporting the grate structure.

In testimony whereof I have affixed my signature.

ALVIN G. SHERMAN. 75

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