May 14, 1929. A. H. TINNERMAN 1,713,308

STOVE CONSTRUCTION

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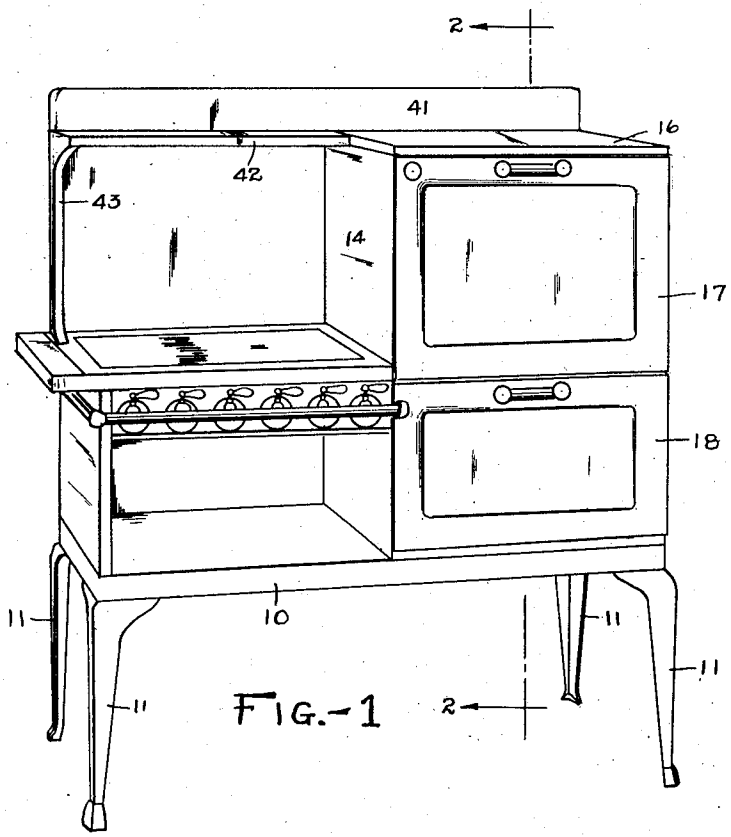



FIG.-1

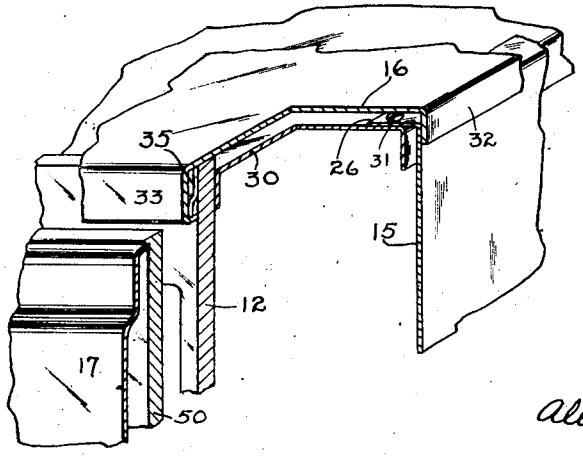



FIG.-4

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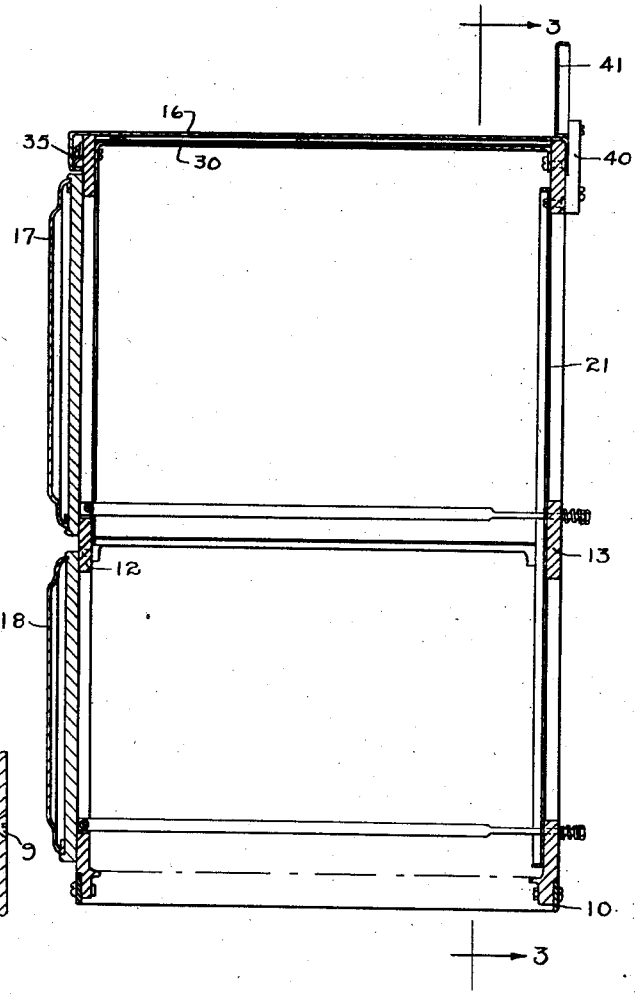
Attorneys

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STOVE CONSTRUCTION

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FIG.- 2



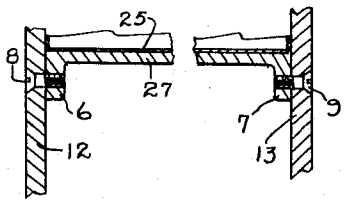




FIG.- 10

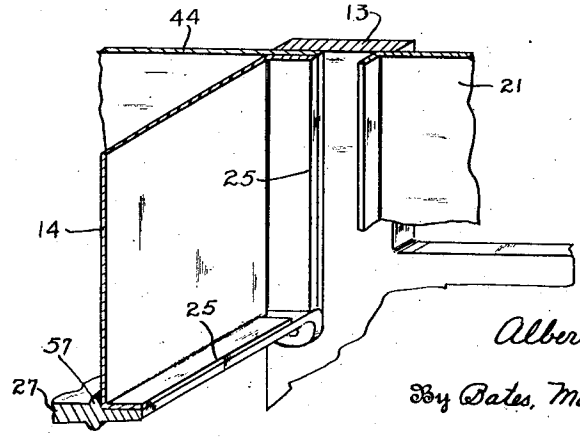



FIG.- 5

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STOVE CONSTRUCTION

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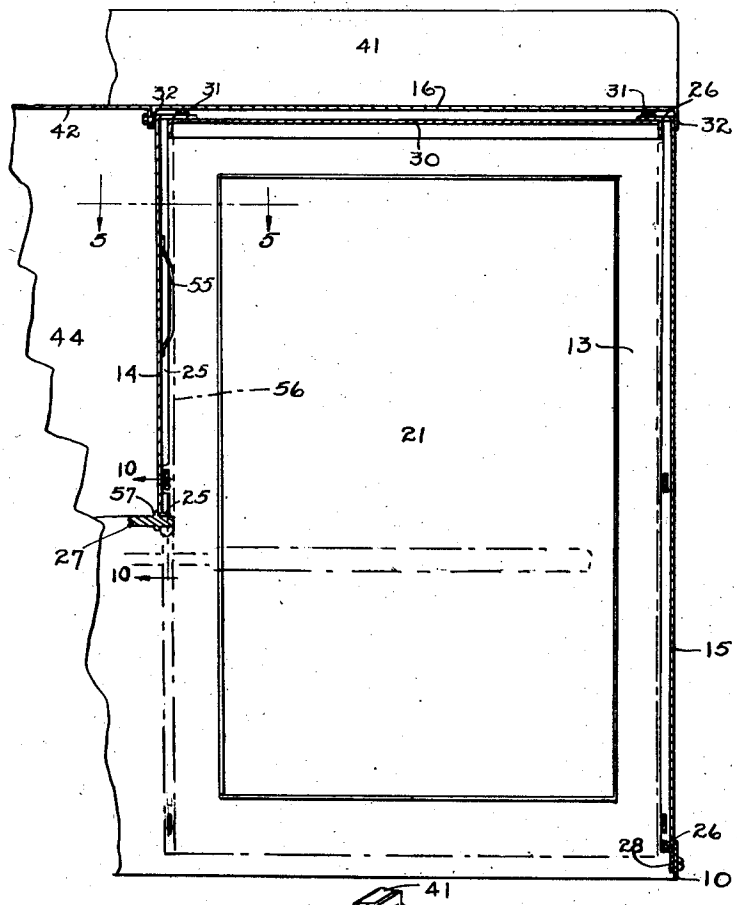



FIG.-3

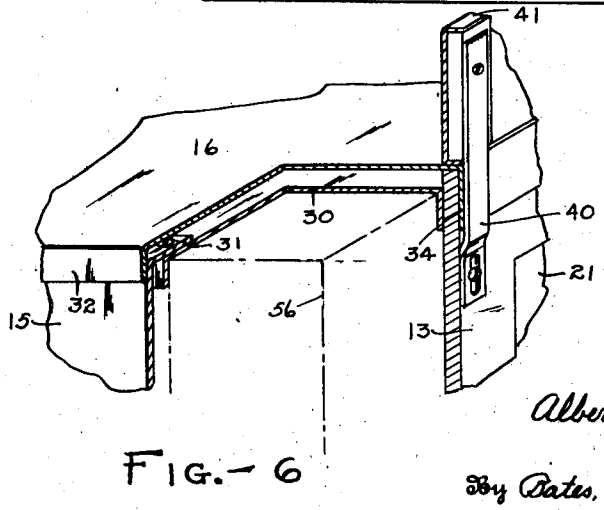



FIG.-6

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STOVE CONSTRUCTION

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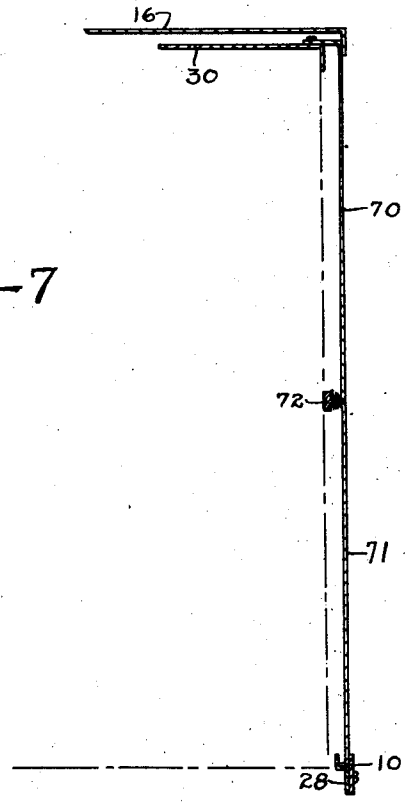



FIG.-7

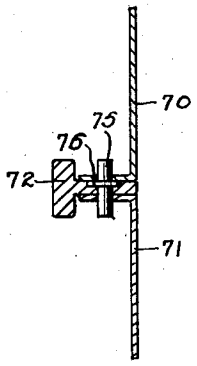



FIG.-8

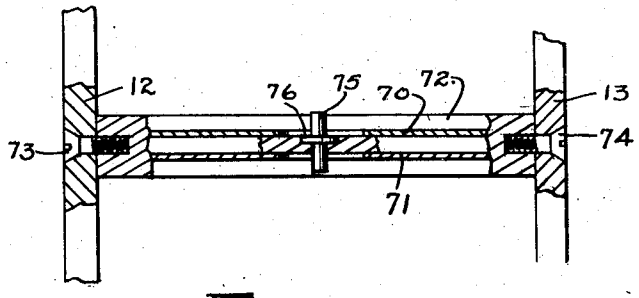



FIG.-9

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Patented May 14, 1929. 1,713,308

# UNITED STATES PATENT OFFICE.

ALBERT H. TINNERMAN, OF CLEVELAND, OHIO.

## STOVE CONSTRUCTION.

Application filed January 13, 1927. Serial No. 160,857.

This invention relates to improvements in stoves, particularly those wherein the principal exposed surfaces are enameled. One of the difficulties encountered in connection with the manufacture of enameled stoves is the fact that the enameled parts have been difficult to replace without dismantling the linings and burners. Moreover, one of the chief sources of trouble is the discoloration and cracking of the enamel on the front frame, particularly on that part between the upper and lower doors. Cracking of the enamel also results from rigidly connecting together two enameled panels or sections.

One of the objects of the present invention is to provide a construction which obviates the necessity for an enameled front frame. In this connection, I contemplate a construction by means of which the enameled parts, particularly the sides and top, can be readily removed without disturbing the front and rear frame connections, and also without disconnecting the linings, burners, or thermostat.

A further object of my invention is to make a door which has an enameled panel covering substantially the entire door area. This provides a door which does not require a nickeled portion enclosing the enameled panel.

The preferred means for carrying out my invention is illustrated in the drawings wherein Fig. 1 is a perspective view of a stove embodying my invention; Fig. 2 is a vertical transverse section through the stove on a plane indicated by the line 2—2 in Fig. 1; Fig. 3 is a section taken through the stove on a plane indicated by the line 3—3 of Fig. 2; Figs. 4, 5 and 6 are perspective views showing the construction adjacent the corners of the stove; Fig. 7 is a vertical sectional view through an oven structure showing a modified form of side construction; Fig. 8 is a section on an enlarged scale through the oven showing the connection between the side panels illustrated in Fig. 7; Fig. 9 is a vertical transverse section through the connecting strip between the panels shown in Fig. 7; and Fig. 10 is a vertical section on an enlarged scale taken through Fig. 3 in a plane indicated by the line 10—10.

The stove illustrated has a base 10 which is supported upon legs 11. Surmounting the base is an oven, which is bounded by front frame 12, back frame 13, sides 14 and 15, and a top 16. The front and back frames are preferably cast members such as aluminum. The front frame has openings which may be closed by doors 17 and 18 respectively, while the back frame also has openings which may be closed by a sheet metal member 21. The rear openings in the frame member are made principally to lighten the weight of the casting. By making these frames of cast metal, particularly of aluminum, I obtain members which are more or less flexible at the mid-portion when anchored together at the top and bottom. Moreover I have found that an aluminum frame will not discolor when subjected to heat of the usual oven temperature, and that it will take a sufficiently high degree of polish to preserve a pleasing appearance.

The side 14 preferably has inwardly turned flanges extending around the marginal edges thereof, while the side 15 has inwardly turned flanges 26 extending around the marginal edges thereof. The bottom flange on the side 14 is arranged to rest upon the grate frame 27, while the bottom flange on the side 15 is arranged to rest upon a Z bar 28 which, as shown in Fig. 3 is fastened to the base 10.

Within the oven I provide a false top 30 which is attached to the front and back frames, and which provides an air space between the oven proper and the enameled top 16. The upper flanges on the side members extend over the false top as illustrated in Fig. 3 and, if desired, may be attached thereto in any suitable way. I have shown securing members 31, which are arranged to engage threaded openings in the false top. The top 16 has downwardly extending flanges 32 which are arranged to engage respectively the outer surfaces of the sides 14 and 15. The top moreover has a flange 33 which extends downwardly and inwardly adjacent the front of the stove, and has a downwardly extending flange 34 adjacent the rear of the stove. A spring 35 carried by the front frame member is shown as positioned between the flange 33 and the frame member and as functioning to permit slight relative movement between the top and front frame while the stove is being assembled. This avoids the necessity for an accurate interfitting relationship of the cooperating parts, and at the same time provides a slight overhang at the front of the stove which adds to the appearance thereof.

The top 16 may be held in place by means of bars 40 which function to hold the cresting 41 in place. These bars may be attached to the rear frame member as shown in Fig. 6. With this arrangement upon removal of the cresting, the top may be lifted from the stove, and then the sides may be withdrawn in an expeditious manner.

In the preferred form the top is attached to a shelf 42 and is removable therewith as a unit from the stove. The outer end of the shelf is attached to a standard 43. A splash plate 44 illustrated in Fig. 5 has a portion thereof projecting into the space between the rear frame and the vertical flange on the side 14 wherefore such plate may be readily removed, if desired, after the top shelf has been withdrawn. In this way any enameled part which is subject to discoloration from heat or breakage from transit may be easily replaced without disturbing the burner or thermostat connections and without necessitating the breaking of any connections for the stove lining.

The grate frame as indicated in Fig. 10 is removably connected to the front and rear frames 12 and 13 by securing members 8 and 9 respectively. In the preferred form the grate frame has lugs 6 and 7 which are threaded to receive the respective members 8 and 9. In this way the grate frame may also be removed without disturbing any lining or burner connections and in addition the connection permits adjustment between the front and rear frames and the grate so as to obtain the proper degree of tension upon the side panel.

By means of the construction which I have set forth, the enamel is not apt to be cracked by mechanical strains, since the enameled sections are not directly attached together.

The top portion of each side member is illustrated as being attached to the false top while the bottom of the side 15 is adjustably held in position upon the Z bar. The bottom of the side 14 however, as illustrated is free to move inwardly to a slight extent, but to restrict such movement I may mount a spring 55 upon one of the lining members, indicated diagrammatically at 56, and so place the spring that it normally tends to urge the lower end of the side 14 against a shoulder 57 upon the grate frame.

A modified form of side panel construction is shown in Figs. 7, 8, and 9, wherein two panels 70 and 71 form the outer side oven wall. A connecting strip, preferably a cast member 72, extends transversely of the oven and is adapted to be attached to the front rear frame members by securing means 73 and 74 respectively. A convenient means for attaching the panels to the connected strip is to provide an inturned flange on each panel, adjacent the strip, and to use one or more pins 75 which extend through the flanges and the strip. Each pin may have an intermediate flange 76 which rests within a corresponding recess in the connecting strip, thus obviating the necessity for any threaded panel securing members, access to which could be had only with difficulty.

By means of my invention I have been able to make a stove wherein any enameled section may be readily removed without disturbing the lining, burner or thermostat connections. This is advantageous since it permits replacement of any discolored or cracked panels in an expeditious manner. A further advantage of my invention is the fact that I have eliminated the necessity for an enameled front, which is apt to be discolored either by any material which may overflow in the oven, or by the excessive heat to which the oven front is subjected. My stove construction practically eliminates the exposed area of an oven front yet provides an even bearing surface against which the doors may engage to insure tight closing of the same. A further advantageous feature of my stove construction is the fact that the cooperating enameled panels are not bolted or otherwise connected together, wherefore any strains in one panel are not directly transmitted to another. This tends to minimize the panel loss caused by mechanical strains placed thereon at the point of attachment, or by excessive variations in temperature.

I claim:

1. In stove construction, the combination with front and rear frames, of means connecting the frames adjacent the top and bottom thereof and enameled side members disposed between the frames and having flanges extending along each vertical edge thereof, said frames being flexible and functioning to hold the sides in position by spring tension upon said flanges.

2. In stove construction, the combination with a front and rear frame, of a false top connecting them, side members extending between the frames and engaging the false top, and a second top spaced above the false top and engaging each of said sides, and spring tension means for holding the second top in engagement with one of the frames.

3. In stove construction, the combination with a front and rear frame, of sides having vertically extending flanges disposed adjacent the inner surfaces of each frame, a false top engaging the sides and connected to the frames, and an outer top extending over the sides and also over one of the frames, the sides being connected to the false top independently of the outer top.

4. In stove construction, the combination with a pair of frames, of a pair of side members disposed between the frames and adapted

to be held in position by spring tension on the frames, means disposed in substantially the same horizontal plane with the top of the sides for connecting the frames, and a top extending over the sides and also over one of the frames.

5. In stove construction, the combination with a pair of frames, means connecting them, a side member having vertically extending flanges engaging the inner sides of the frames and the top having flanges extending downwardly over one of the frames and said side member, said side member and top being removable from the frame without disturbing said means.

6. In stove construction, the combination with a front and rear frame, of a false top connecting the frames, side members, each having inwardly extending flanges adjacent the marginal edges thereof, some of said flanges engaging the frame and another flange engaging the false top and another top spaced above the false top and having downwardly extending flanges enclosing part of sides and the front frame.

7. In stove construction, the combination with a pair of frames, of sides extending between the frames, at least one of the sides having inwardly projecting flanges extending along the edge adjacent the rear frame and a splash plate projecting into the space between said flange and the rear frame, said splash plate being removable independently of said side.

8. In stove construction, the combination with a front and rear frame, of side members disposed between the frames, a false top connecting the side members, another top disposed above the false top and engaging the sides, a shelf attached to the top and a splash plate mounted beneath the shelf and having a portion thereof extending into the space between the rear frame and one of said sides.

9. In stove construction, the combination with a front and rear frame, of side members disposed between the frame and a top having flanges extending downwardly over the sides and also over the front frame, there being a spring connection between the front frame and the associated flange.

10. In stove construction, the combination with a front and rear frame, of side members having inwardly turned flanges engaging the inner side of said frame, the top having downwardly projecting flanges extending around the marginal edges thereof, some of said flanges engaging the side members and other of said flanges engaging the frames, there being a yieldable connection between the front frame and the associated flange.

11. An oven structure having a front and a rear frame a side wall extending between the frames, and embodying a plurality of enameled panels each having an inturned horizontal flange adjacent the meeting edges, and a transversely extending connecting member extending between the frames, and having a portion thereof extending between the flanges and being exposed to view, and means connecting the member with said panels.

12. An oven structure having a front and a rear frame a plurality of side panels extending between the frame, and forming one oven wall, each panel having an inturned flange adjacent the meeting edges thereof, and a connecting strip extending between the frames and having a tongue projecting between the flanges and means extending through the tongue and flanges for locking the panels together.

13. In a stove, the combination with front and rear frames, of a grate frame associated therewith and disposed therebetween, a side panel extending between the front and rear frames and above the grate frame, means connecting all of said frames, said means being adjustable to bind the panel between the front and rear frames.

14. In a stove, the combination with a front and rear frame, of a plurality of superimposed side panels disposed therebetween, a member extending between the frames and being disposed between the panels, means connecting the frames to said member, said means functioning to clamp the panels between the frames.

15. In stove construction, the combination with a front and rear frame of enameled side panels extending therebetween, a false top connecting the side panels, an enameled top disposed over the false top and having a portion thereof extending downwardly over the side panels, said side panels being attached to the false top independently of the enameled top, and means acting independently of the false top for holding the enameled top in engagement with the frame.

In testimony whereof, I hereunto affix my signature.

ALBERT H. TINNERMAN.