May 12, 1936. J. TELLER 2,040,346

STOVE AND RANGE CONSTRUCTION

Filed Sept. 22, 1933 8 Sheets-Sheet 1

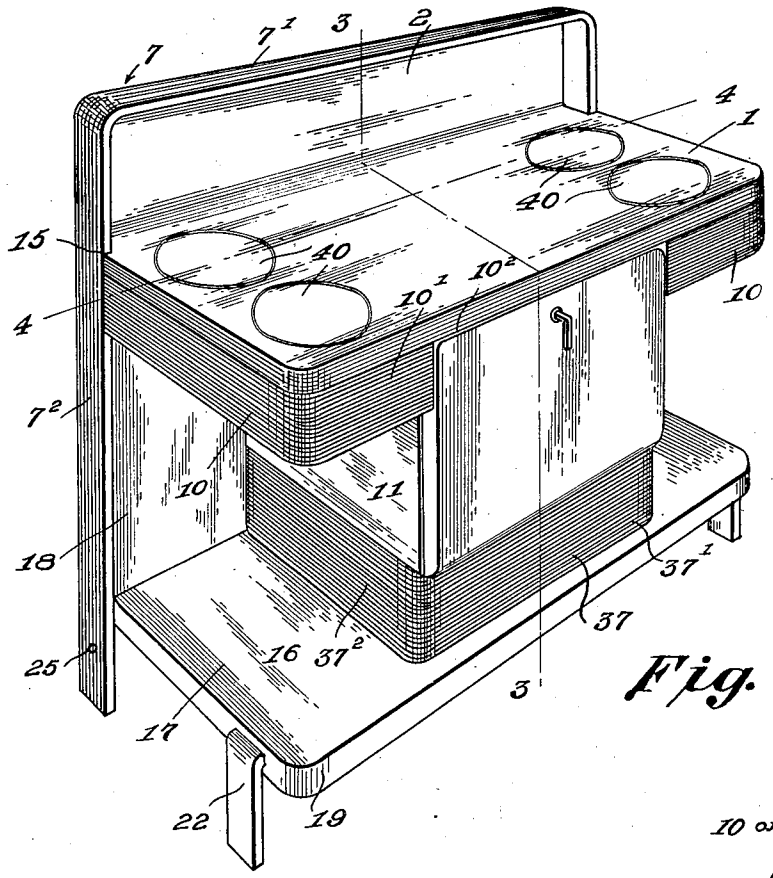

Fig. 1.

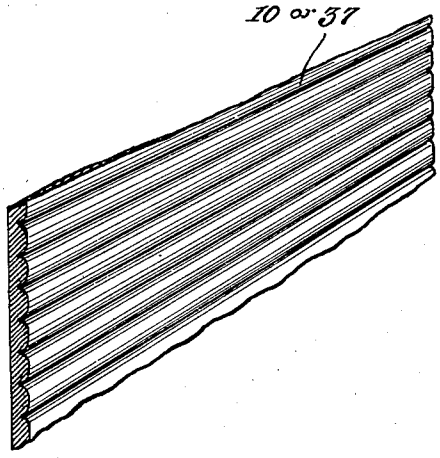

Fig. 1A.

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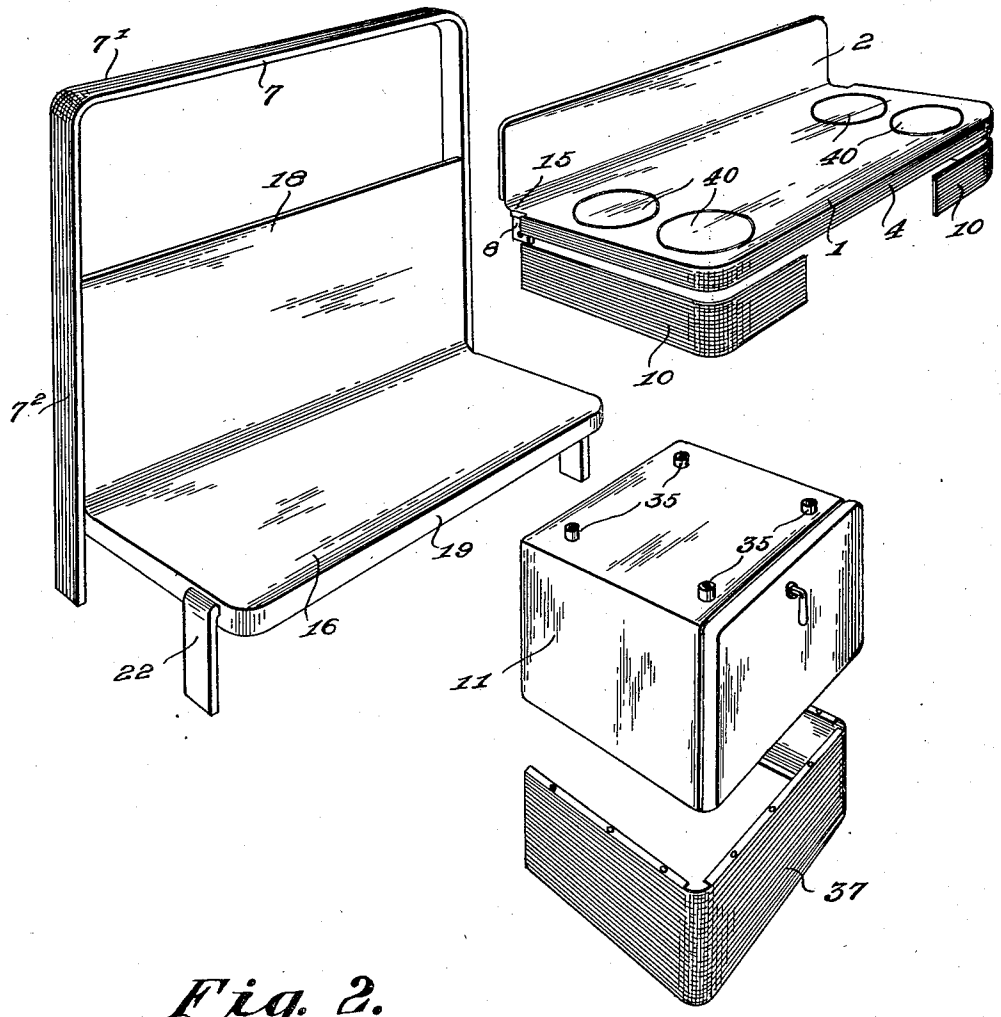

Fig. 2.

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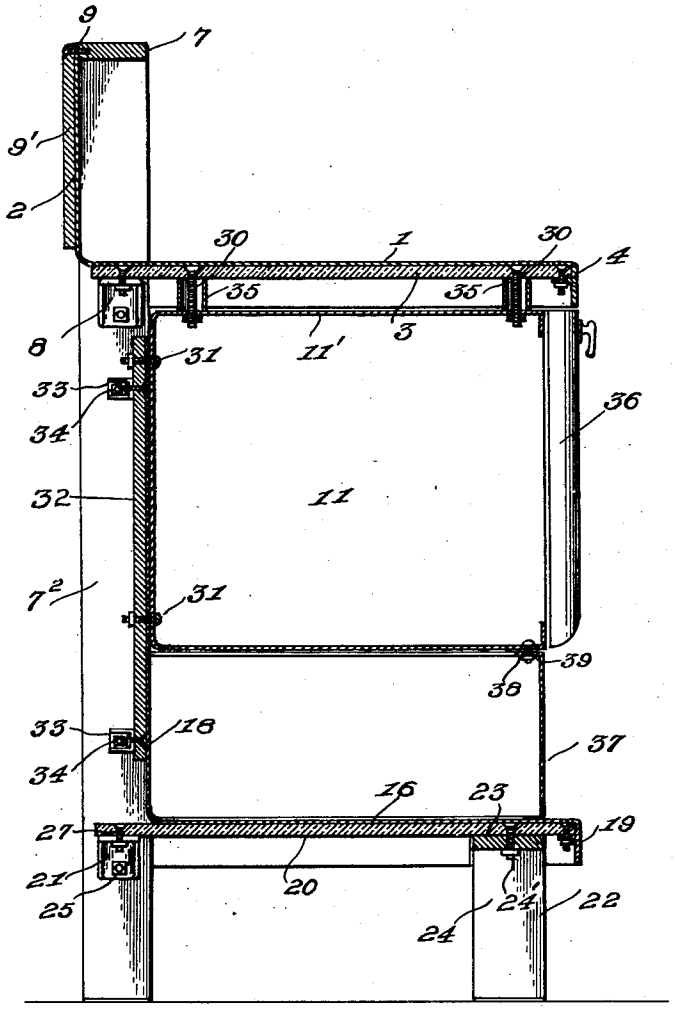

Fig. 3.

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STOVE AND RANGE CONSTRUCTION

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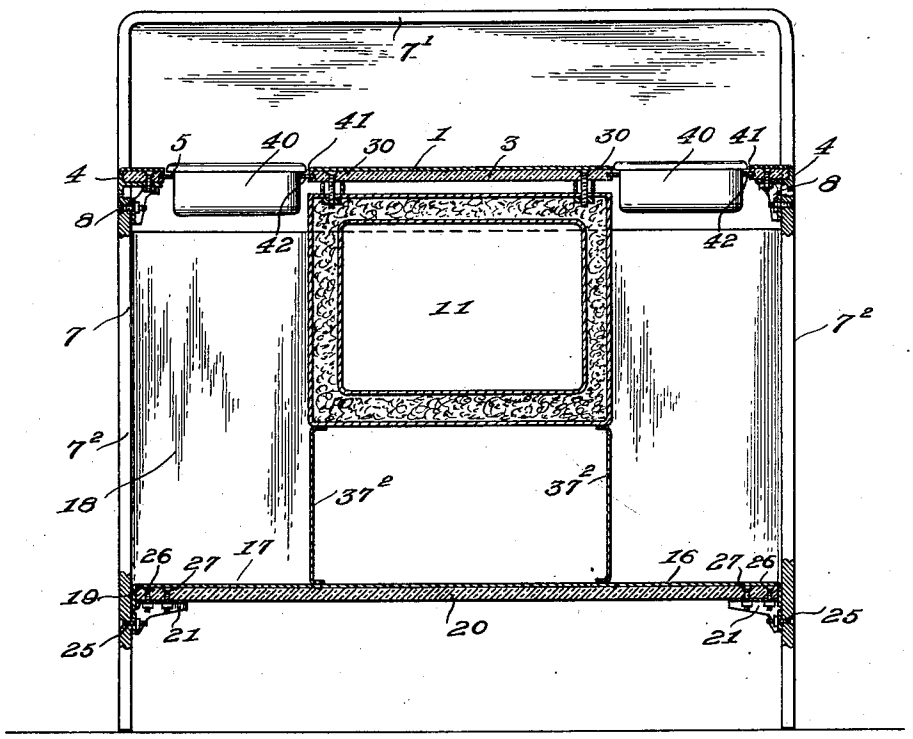

Fig. 4.

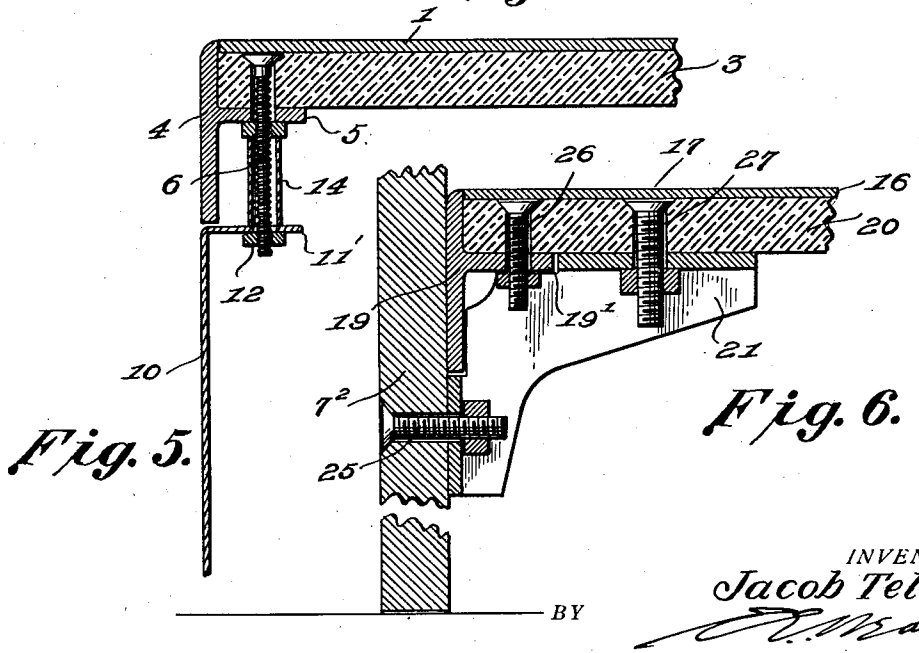

Fig. 5.

Fig. 6.

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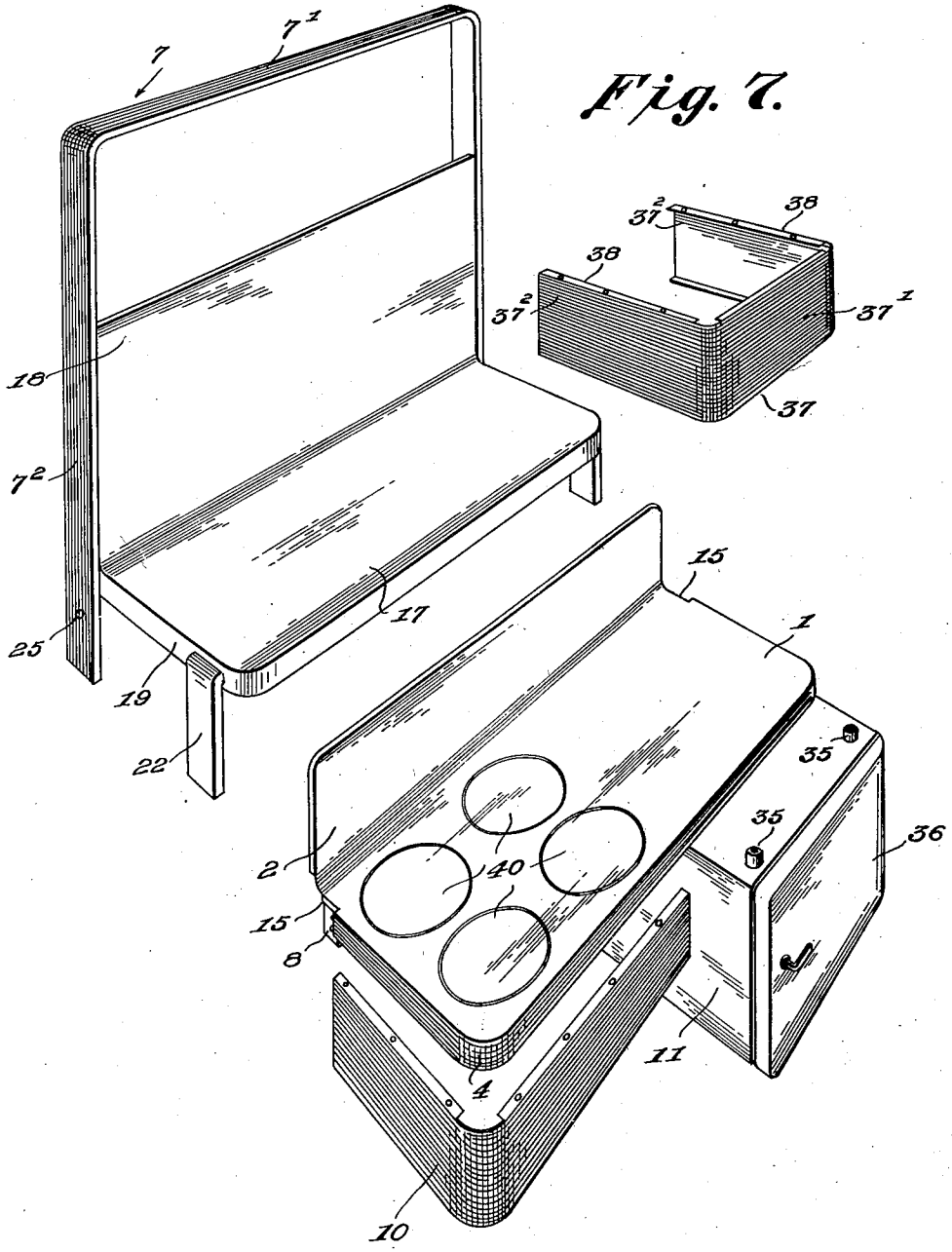
Fig. 7.



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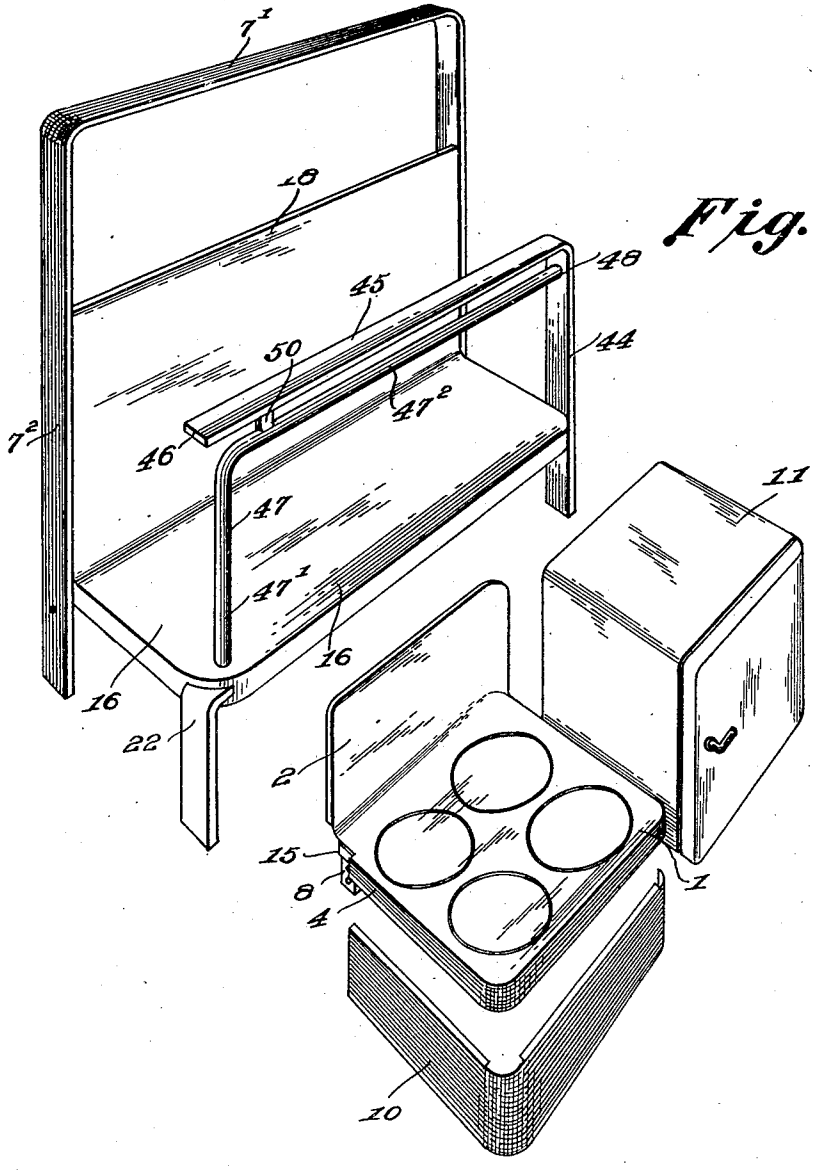

Fig. 8.

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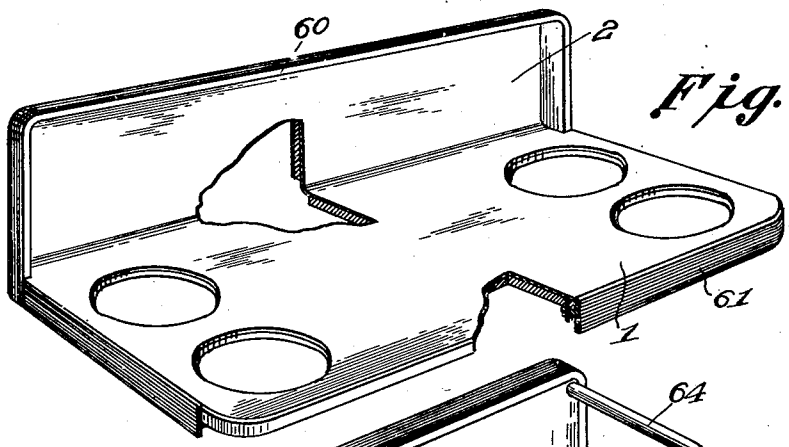

Fig. 9A.

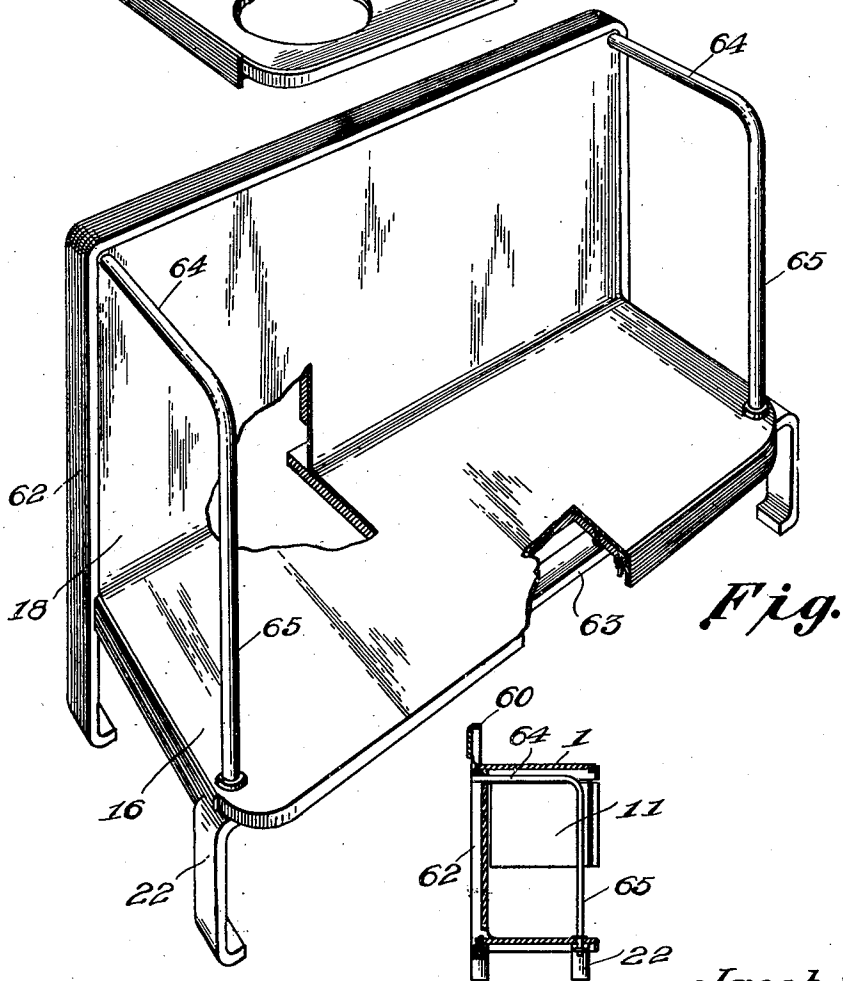

Fig. 9.

Fig. 9B.

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STOVE AND RANGE CONSTRUCTION

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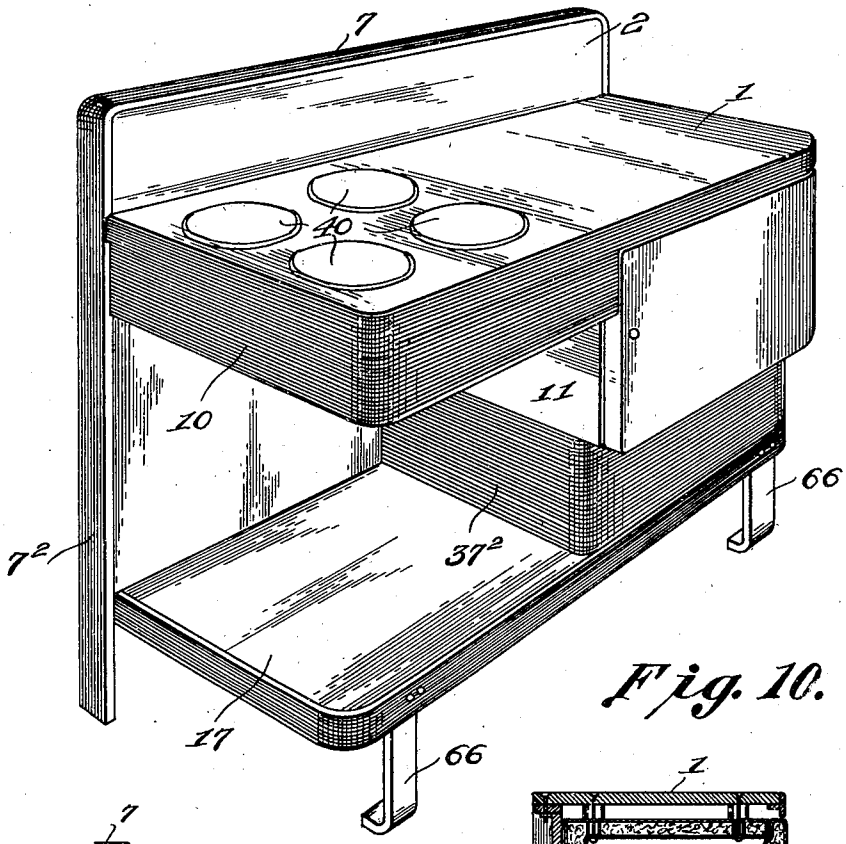

Fig. 10.

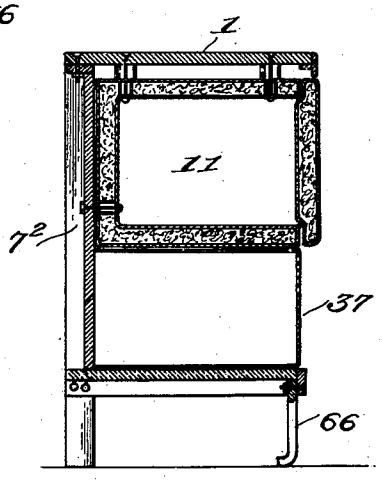

Fig. 10A.

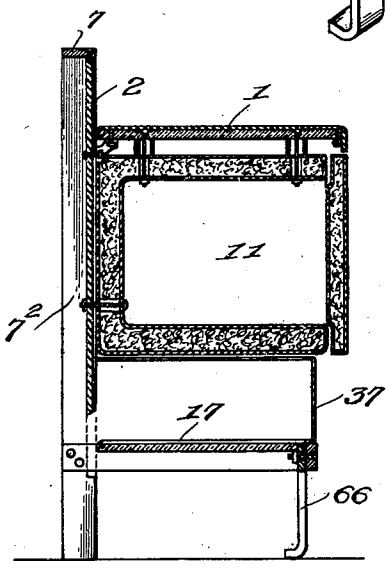

Fig. 10B.

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UNITED STATES PATENT OFFICE

2,040,346

STOVE AND RANGE CONSTRUCTION

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Application September 22, 1933, Serial No. 690,607

6 Claims. (Cl. 126—39)

This invention relates to stove and range construction, and the principal object thereof is to provide a method of producing a novel gas or electric stove or range of simple and durable design and assembly and one which serves the purpose of cooking, baking and broiling only, eliminating any attempt to provide storage space of any kind.

Another object of this invention is to provide a method of assembling a stove or range, using the simplest possible means of combining preformed metallic strips, tubes or other structural shapes and flat, rigid, or rigidly reinforced sheets of metal, bent to form combination horizontal and vertical surfaces, it being understood that various compositions of material may readily be employed.

A still further object of the invention is to provide a method of assembling bent strips, tubes or structural shapes, in combination with bent rigid or rigidly reinforced sheets of metal or other suitable material to form cantilever members.

A still further object of the invention is to provide a method of producing a stove or a range at a low price, due to the use of fewer parts, while at the same time permitting of higher quality for the said parts, through the use of more expensive materials from which said parts are formed.

A still further object of this invention is to provide a method of stove or range assembly which permits of a wider interchangeability and fabrication of parts from the standpoint of the adaptability of parts to different sizes and positions of the oven, and different positions for the heating elements for the top. The structural frame work not being of box formation, is not a definite frame for each variable portion or unit. In the case of the table top type, the oven being hung on the upper horizontal rigid sheet of metal or other material and bolted to the rear vertical portion of the lower rigid sheet, there is left room for increase in size downwardly and to one side. This space is covered by a metallic apron or screen in each case, it being a simple matter to change the length or height of either side or bottom apron. From such a construction, the adaptability of the said assembly to various models of ranges will be seen.

A still further object of this invention is to provide a means of using new extruded aluminum or duralumin structural shapes and mouldings, extruded aluminum sheets in combination with fireproof rigid or reinforced sheets, said extruded sheets and mouldings to be applied to enhance the appearance of the stove as well as to provide surfaces which will not be susceptible to scratching by other metallic articles through rubbing contact inasmuch as said surface can be rubbed down with steel wool to eliminate any scratches.

A still further object of this invention is the decorative effect which is obtained by the use of extruded metallic sheets or mouldings, on account of the grooves accentuating the lines of the design.

A still further object of this invention is the elimination of parts requiring expensive die stamping methods of production.

A still further object of this invention is to create by the present construction, a motive in design which cannot be duplicated in die-stamped parts.

A still further object of this invention is to provide a method of interlacing or fabricating the supporting parts with the supported parts, thereby producing structural unity, hitherto impractical in the use of enamel coated parts and sheets.

With these and other objects in view, this invention consists in a construction, and in the method of producing said construction, arrangement and formation of stove parts, which will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings which illustrate the method involved, and forming a part of this specification.

In the accompanying drawings:

Fig. 1 is a front perspective view of one embodiment of a stove which involves the here involved method, and showing one assembly of the stove, which in this form is of the table top type;

Fig. 1A is a detail view of a section of one of the elements of the stove structure;

Fig. 2 is an exploded view of the stove shown in Fig. 1 and illustrating in disassembled relation, the several elements thereof.

Fig. 3 is a vertical sectional view of the stove on approximately the line 3—3 of Fig. 1;

Fig. 4 is a vertical sectional view on substantially the line 4—4 of Fig. 1;

Figs. 5 and 6 are detail sectional views of the construction of the parts for joining the elements of the top and bottom horizontal shelves and plates with the side supporting members;

Fig. 7 is an exploded view of another form of stove or range embodying the method herein involved, the oven in this form being disposed at one side of the stove instead of the center as in Fig. 1.

Fig. 8 is an exploded view of a still further form of this invention, the stove herein shown being of the console type, but embodying the method forming the basis of the present invention.

Fig. 9 is a top perspective view of a further embodiment of the invention;

Fig. 9A is a top perspective view of the cooking and working top removed from the structure shown in Fig. 9, said cooking and working top being adapted in use, to rest thereon;

Fig. 9B is a vertical sectional view through the assembled stove combining the parts shown in Figs. 9 and 9A;

Fig. 10 is a perspective view of another embodiment of the invention;

Fig. 10A is a vertical sectional view through the stove shown in Fig. 10 with the splash back omitted; and

Fig. 10B is a vertical section taken through Fig. 10.

Preliminary to the specific description of the drawings, an additional brief outline of the basic features of the invention follows:

The elimination of the usual box formation which is a derivation of the method of bolting flat sheets together, and the substitution of interrelated bent strips, tubes, or other structural shapes in combination with rigidly reinforced bent metallic sheets, or bent sheets of rigid composite material, results in an interlaced or fabricated assembly which is of greater strength with the added advantage of reduced weight.

The bending of the strips to conform to the contour of the plan of the working surface, the bending of the strips, tubes or structural shapes for the supporting members to conform with the general vertical contour of the stove, the bending of the rigid sheets to serve as a shelf or working surface, plus a back vertical wall or back splasher respectively, results in a clean, simple and doubly rigid assembly in comparison to the amount of material used therein.

The doubling of the function of the parts reduces the number thereof, thereby eliminating the necessity of bolting the various parts together, thus reducing the expense of the assembly to a material extent. In addition, the effect of having a small number of parts increases the cleanliness of the stove, by reducing the number of crevices between the parts thereof.

The use of interlaced or fabricated supporting and rigid supporting members results in the cantilever effect as illustrated in the drawings. It also allows the front supporting member to be set back from the front vertical plane of the stove thereby eliminating an obstruction to the user's feet, as well as cleaning the floor beneath.

It is evident that any or all of the supporting members can be made of either flat bars, tubes, structural shapes having T, L or U form, or any other cross sectional form, which may be bent to conform to the supporting shape, and which will serve the purpose of, as in the case of the rear member, as the means for connecting the top rigid working and cooking surface member with the lower shelf and back wall, as shown in certain of the drawings.

Referring specifically to the accompanying drawings, by numerals of reference, and particularly to Figures 1 through 6 there is illustrated a stove or range which may be constructed for use with either gas or electricity, and in which 1 indicates generally a working and cooking top, having formed as a rear upwardly bent continuation thereof, a back splasher 2, said top being formed of a suitable metal sheet, preferably thin, and reinforced by a rigid composition board 3, which may possess heat insulating properties.

The horizontal portion of the top 1 is preferably supported by a rectangular metal frame 4 having rounded corners, and an inwardly extending horizontal flange 5, upon which the reinforcing sheet 3 of the top rests, as shown in Fig. 5. At requisite intervals the top is secured in position on the flange of the frame by stove bolts 6 as shown.

The rear supporting member of the structure comprises an inverted U-shaped metallic frame 7 of suitable metal, which before assemblage with the remaining range parts, has been preformed or bent from a strip to suit the individual form and requirements of the type of range with which it is associated. This frame includes the upper horizontal member 7′ and vertical member 7^2 which latter serves also as the rear legs.

As shown in Fig. 3, the metal top sheet 1, reinforced by the board 3, at its rear, extends between the vertical side members 7^2, being connected thereto through brackets 8. The upwardly bent splash-back extension 2 may be connected at its upper edge with the rear edge of the horizontal member 7′ as shown at 9, Fig. 3, being reinforced if desired by an asbestos or composition board 9′.

Supported by the rectangular frame 4, in the manner shown in Fig. 1, are a pair of preformed metallic strips 10 which are bent initially as required into the contour of the corners of the top frame, each of said strips extending along one side of said frame and partially across the front thereof as at 10′, and providing an intermediate space 10^2 for the accommodation of a suspended oven 11, more particularly to be hereinafter described. These bent strips 10, which constitute aprons, are suitably decorated during their manufacture in strip form, as by rolling or drawing said decorations usually consisting of facial scorings or markings, giving for instance, a ribbed or other appearance, pleasing to the eye.

These apron strips are connected with the frame 4, as shown in Fig. 5, through the medium of the said bolts 6, the lower ends of which pass through openings in the upper inwardly extending flange 11′. The nut 12, on each of the bolt ends beneath the flange supports the aprons in proper relation to the associated parts through spacing sleeves 14, and it will be observed that the outer faces of the aprons 10 and frame 4 are flush, or in other words, in the same vertical plane. The rear corners of the top plate 1 and the reinforcing plate 3 are cut away as shown at 15 in Figs. 1 and 2, so that they have an interlocking relation with the vertical members of the rear frame.

A lower shelf member 16 is also provided, and is formed from a plain sheet of metal of initially rectangular shape. Said sheet is then bent to provide a horizontal portion 17 and a vertical portion 18, the latter serving as the rear wall of the lower portion of the stove when assembled as shown in Fig. 1. The horizontal portion 17 is bounded by a lower rectangular frame 19, similar to the upper frame 4, but in the case of the lower frame, the rear ends of the side members thereof terminating in close proximity to the rear ends of the vertical side elements of the rear inverted U-shaped frame, but preferably not connected directly therewith.

The horizontal portion 17 is reinforced also by a composition sheet 20, the rear edge of which extends between the lower portions of the rear

vertical member 7^2, to which it is secured by bolted brackets 21.

These brackets 21 (Figs. 4 and 6), each of which is secured to one of the vertical members 7^2 by a stove bolt 25, supports the rear portion of the lower shelf member 16 through the medium of the frame 19, the inwardly extending flange 19' of which serves to support the reinforcing sheets 20 and its metallic facing sheet 16, stove bolts 26 and 27 serving as fastening means to secure the said several elements in a rigid unitary position.

In proximity to its forward edge, the horizontal portion of the lower shelf 16 is supported along with the reinforcing sheet and frame 19 through the medium of an inverted U-shaped frame 22, formed in the manner similar to the frame 7, and which includes a horizontal portion 23 and vertical portions 24, the latter constituting the front legs of the stove. This frame is also formed from a preformed strip of metal and cut from the stock and bent into the proper form to suit the stove with which it is to be associated. The reinforcing sheet 20, at its forward end is suitably secured as by bolts 24' to the horizontal portion of the frame 22.

The oven 11 is preferably supported from the cooking top member 1, through the medium of a plurality of suspension bolts 30, suitably arranged near the four upper corners of the oven, in the manner shown in Figs. 3 and 4, the rear wall of the oven being secured to the vertical portion 18 of the lower shelf member by suitable bolts or fastenings 31, said bolts passing through the rear reinforcing member 32 for the said vertical portion 18, and said reinforcing member 32 in turn being secured to the intermediate portion of the vertical member 7^2 of the rear inverted U-shaped frame by brackets and bolts 33 and 34 respectively.

The upper wall of the oven is spaced from the cooking top by spacing sleeves 35 through which pass the suspension bolts 30. The oven 11 is provided with a swinging door 36, while an apron 37, bent into rectangular shape from a preformed and predecorated strip of metal, and including a front wall 37' and side walls 37^2 serves as the means for closing the space between the bottom wall of the oven and the upper face of the lower shelf 16.

A convenient means of securing the apron 37 in position is by providing the upper edges thereof with flanges 38, having suitably spaced perforations through which the apron may be secured to and supported by the oven bottom by bolts 39.

The cooking units 40, which may be of the electrical, gas or oil type, and which need be only conventionally illustrated here, are received within openings 41 provided in the cooking and working top 1, and are here shown as supported from metallic strips or flanges 42 carried by the top reinforcing sheet 3.

In Figure 7 which embodies another design of the basic principle involved in this invention, the oven 11 is disposed at one end of the stove instead of at the center thereof, while the apron 10 extends along one end of the top and along the front for approximately one-half the length thereof.

In Figure 8, the construction differs essentially in the fact that the forward supporting leg 22 is connected at its right hand end with a vertical supporting leg 44, which latter continues upwardly and is bent into a horizontal supporting bar 45, which in turn is supported at its free end 46 by a preformed metal tube 47, the supporting vertical leg 47' of which is suitably secured to the lower shelf member 16, while the horizontal arm 47^2 lies beneath and parallel with the bar 45, being connected at its end at 48 with the leg 44, the members 47^2 and 45 being held in spaced relation by a strut 5'.

In this form, known as the console type range, the oven 11 is supported upon the bar 45 at the right of Fig. 8, while the cooking top 1, at its front, is supported upon the bar 45 alongside the oven, the apron serving in the capacity of that in Fig. 1, etc. It will be seen that the basic features in this form are similar to those in Figures 1 through 7.

In the form of the invention shown in Figs. 9, 9A, and 9B, the structure, while in the main embodying the principles covered in the preceding figures, differs in the following respects: The working and cooking top is separable from the lower structure, and embodies an arched rear frame 60 and a horizontal frame 61 similar in form to frame 4 in Fig. 3, these frames carrying the sheet metal reinforced sheet 1 and splash back or fence 2.

The lower structure comprises the vertical arched metallic frame 62 at the rear, and a front arched frame 63 similar to the frame 22 in Fig. 1. These frames support the shelf member 16 similar to that shown in said Fig. 1, said shelf member being bent upwardly to form the member 18, also as in Fig. 1. In the present form, the working and cooking top, and with it the oven 11, is supported at its rear by the upper horizontal portion of the arched frame 62, while at its forward portion it is supported by and rests upon the horizontal sections 64 of tubular vertical supports 65, the lower ends of which are suitably secured to the front frame member 22, as shown in Fig. 9B.

In the modification shown in Figs. 10, 10A, and 10B, the principal distinction over the form shown in the other views lies in the construction and arrangement of the front legs 66, which in the present instance, are secured at their upper ends to the inner side of the front portion of the lower rectangular frame 19, as shown in Figs. 10A and 10B. The stove shown in Fig. 10A differs from that of Figs. 10 and 10B in that the splash back or rear fence is omitted. Otherwise these designs are the same. Details of construction are similar to that of Figs. 1, 2, and 3.

Having described the invention, what is claimed to be new and is desired to protect by Letters Patent is:

1. In a stove assembly comprising a vertical rear frame of inverted U-shaped construction, a sheet metal L-shaped member attached to the lower section of the frame forming a horizontal shelf and a vertical rear wall extending between the legs of said frame, a cooking top extending forward from said frame in vertical spaced relation to the shelf portion of said L-shaped member, and an oven structure removably supported on said shelf and connected to said cooking top, said oven cooking top, L-shaped member and frame being interconnected to form a rigid unit.

2. In a stove assembly comprising a vertical rear frame of inverted U-shaped construction, an angular sheet metal member attached to the lower section of the frame forming a horizontal shelf and a vertical rear wall portion of the assembled stove, a second angular sheet metal member attached to the upper section of the

frame forming a working top and back splasher, and an oven structure mounted on the vertical wall portion of the first mentioned angular member to extend over the horizontal shelf portion thereof and beneath the working top of the second angular member, said members, frame and oven being interconnected to form a rigid unit.

3. In a stove assembly comprising a vertical rear frame of inverted U-shaped construction, a unitary sheet metal member attached to the lower portions of the frame and providing therewith a horizontal shelf and vertical rear wall, a second unitary member attached to the upper section of the frame and providing therewith a vertical back splasher and horizontal working top, and a removable oven structure interposed between and supported by said top and shelf portion of said unitary members.

4. In a stove assembly comprising a vertical rear frame of inverted U-shaped construction, a sheet metal L-shaped member attached to the lower section of the frame forming a horizontal shelf and vertical rear wall, a second sheet metal L-shaped member secured to the upper section of the frame forming a horizontal working top and vertical back splasher, and a removable oven structure attached to the working top of said second L-shaped member and to the vertical rear wall of said first mentioned L-shaped member.

5. In a stove assembly comprising a vertical rear frame characterized by a pair of interconnected spaced vertical legs, an L-shaped member attached to the lower section of the frame forming a horizontal shelf and vertical rear wall, means forwardly of the frame for supporting the shelf, a second L-shaped member attached to the upper section of the frame forming a horizontal working top and vertical back splasher, an apron resting on the shelf, and an oven secured to said apron, to the bottom of the working top and to said rear wall.

6. In a stove assembly comprising a vertical supporting frame of inverted U-shaped construction, a sheet metal unit having a vertical web portion secured to the spaced legs of said frame to provide a back section and a horizontal portion extending outwardly therefrom to provide a shelf adjacent the base of said frame, a second sheet metal unit secured to the upper portions of said frame to provide a back splash plate and a horizontally extending cooking top overlying the shelf portion of said first mentioned unit, and an oven structure removably supported in the space between said cooking top and shelf portions of said units and extending to a point adjacent the forward edges thereof, said units, frame and oven being interconnected to form a rigid structure.

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