July 9, 1963 D. H. FREUND ET AL 3,096,753

FRAMELESS RANGE

Filed May 8, 1961 3 Sheets-Sheet 1

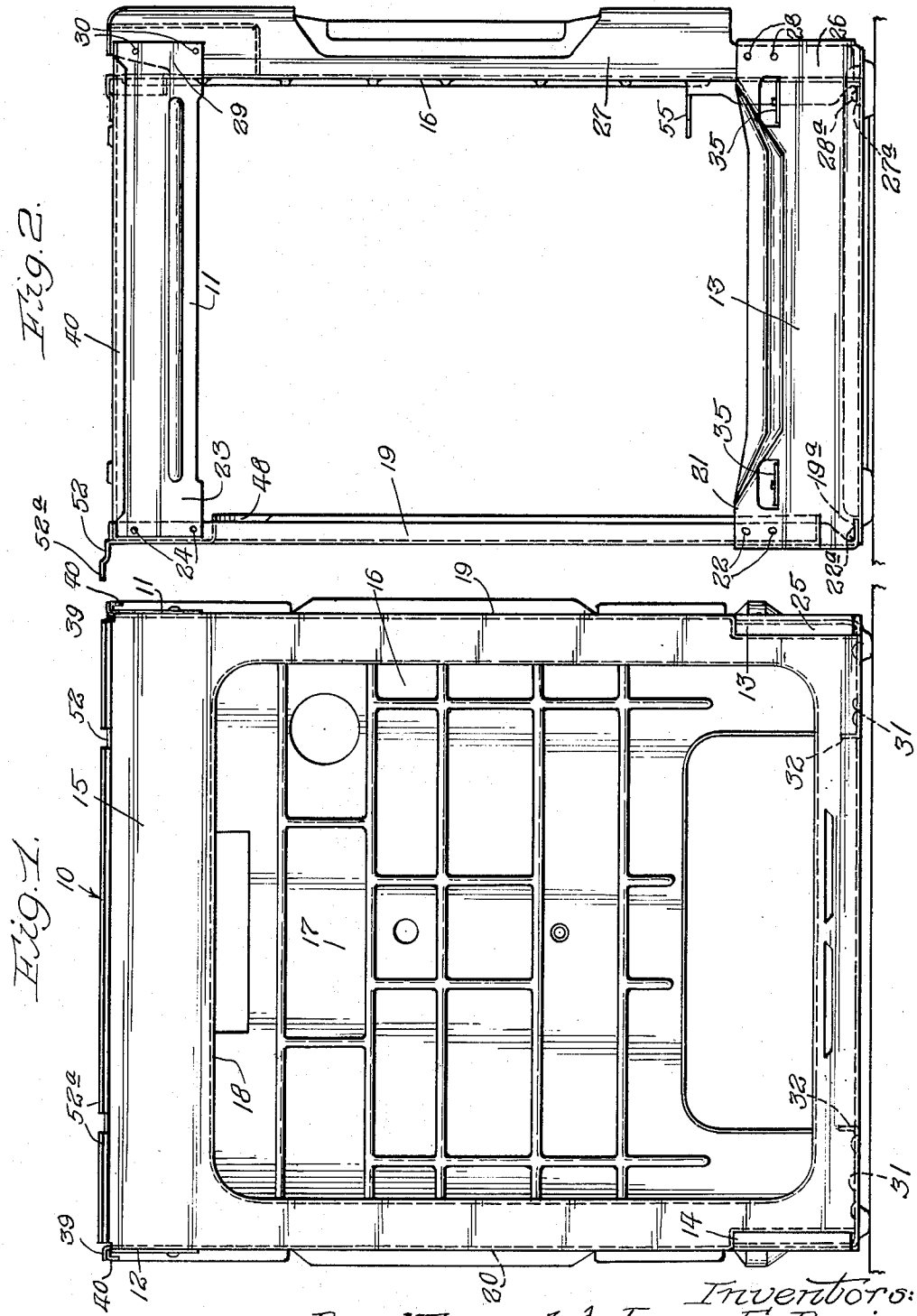


Fig. 2.

Fig. 1.

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Fig. 4.

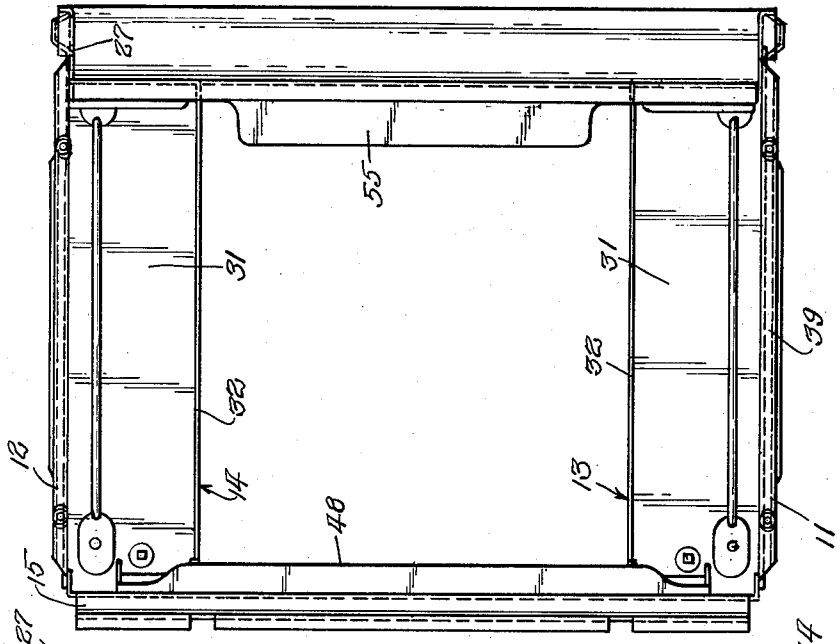
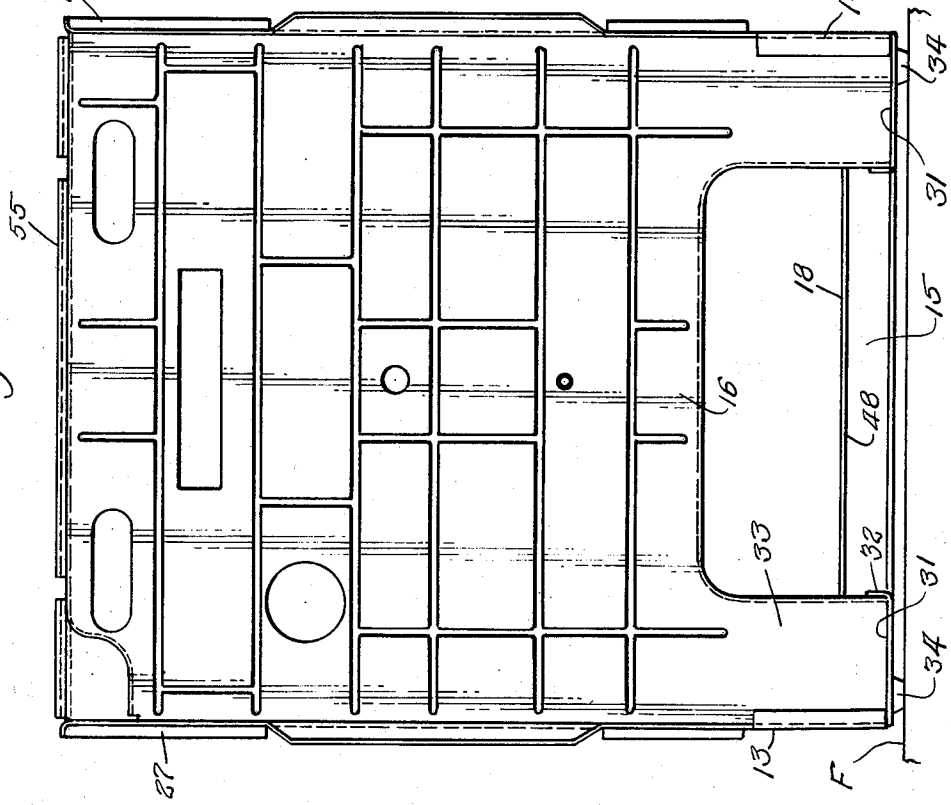


Fig. 3.



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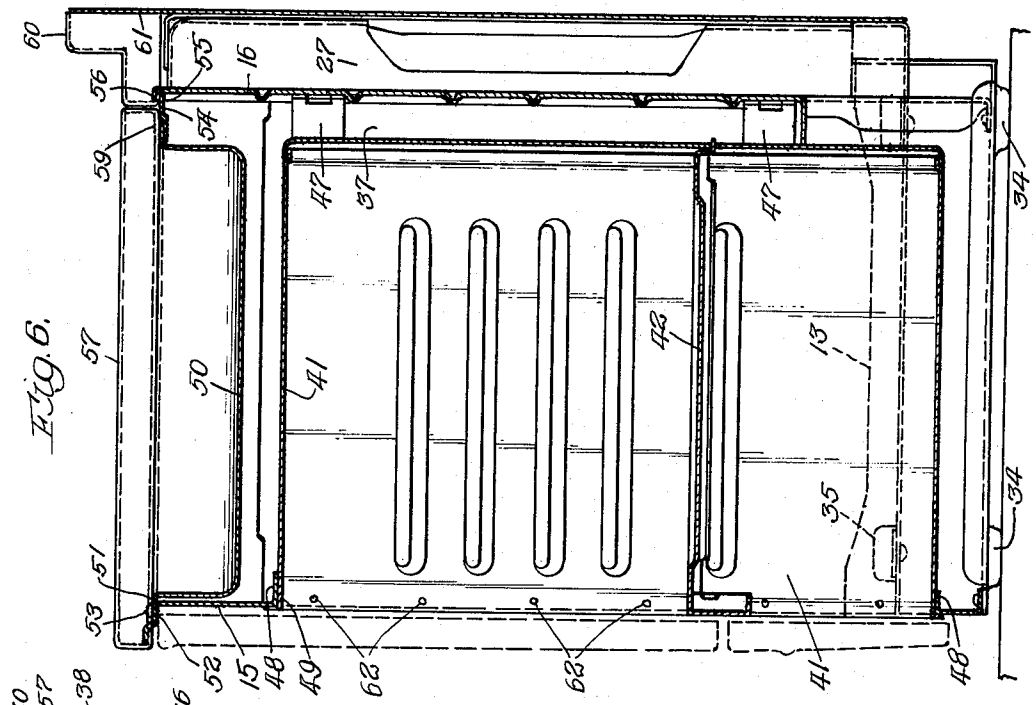


Fig. 6.

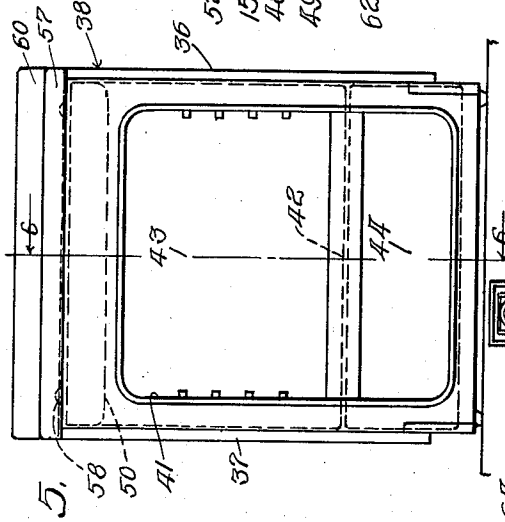


Fig. 5.

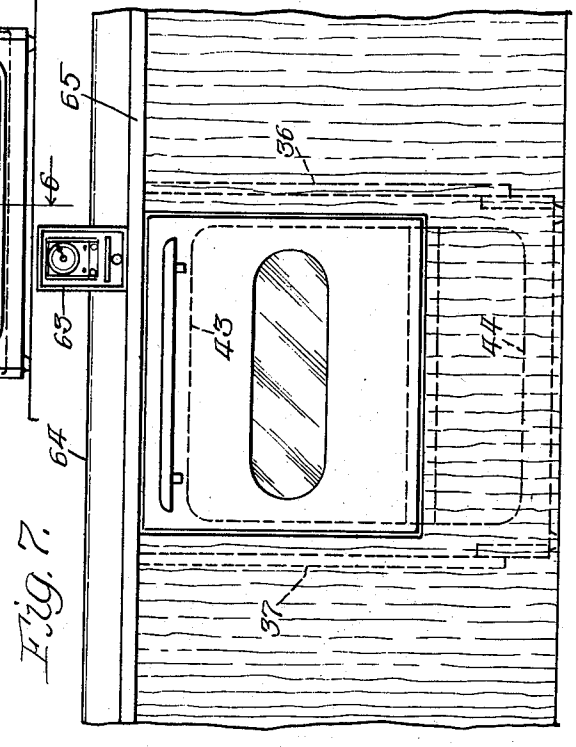


Fig. 7.

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FRAMELESS RANGE

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4 Claims. (Cl. 126—39)

This invenion relates to ranges and in particular to a frameless range cabinet.

The presently known range cabinets have serious disadvantages, one of which is the requirement of the use of a substantial number of relatively costly dies in the manufacture thereof. Concomitantly, such known cabinets utilize a substantial number of parts which, in addition to increasing the cost of manufacture of the parts themselves, increases the cost of assembly of the cabinet. Further, such complexity of construction substantially reduces the flexibility of the design and interchangeability of parts. A principal feature of the present invention is the provision of an improved range cabinet structure effectively reducing or eliminating the above-discussed disadvantages of the known cabinet structures.

Another feature of the invention is the provision of such a range cabinet which is extremely simple and economical of manuafcture.

A further feature of the invention is the provision of such a range cabinet structure which is frameless and which comprises a basic structure of a pair of top rails, a pair of bottom rails, a front panel and a rear panel.

A still further feature of the invention is the provision of such a range cabinet structure arranged for facilitated mounting of associated chamber defining means such as oven and broiler compartment means.

A yet further feature of the invention is the provision of such a range cabinet structure having new and improved means for associating the parts thereof.

Other features and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

FIG. 1 is a front elevation of a frameless range cabinet embodying the invention;

FIG. 2 is a right side elevation thereof;

FIG. 3 is a rear elevation thereof;

FIG. 4 is a top plan view thereof;

FIG. 5 is a front elevation thereof with an oven member and a broiler member installed therein and a cook top installed thereon to define a free standing range;

FIG. 6 is an enlarged vertical section taken substantially along the line 6—6 of FIG. 5; and

FIG. 7 is a fragmentary front elevation of a wall mounted oven utilizing the cabinet structure.

In the exemplary embodiment of the invention as disclosed in FIGS. 1–4 of the drawings, a frameless range cabinet generally designated **10** is shown to comprise a pair of elongated laterally spaced top rails **11** and **12**, a pair of elongated, laterally spaced bottom rails **13** and **14**, a front panel **15**, and a rear panel **16**. The rails are secured at their opposite ends to the front panel and rear panel respectively and co-operatively define four substantially parallel edge portions of a hexahedral space **17** therebetween. The front panel **15** is provided with an opening **18** through which access to the space **17** may be had.

The rails **11**, **12**, **13** and **14** and panels **15** and **16** are connected herein by screw means to define a frameless cabinet structure which, while being readily constructed, affords effectively maximum rigidity and strength and permits the cabinet structure to be economically assembled. More specifically, the front panel is provided with rearwardly turned edge flanges **19** and **20** to which the forward end **21** of the bottom rails is secured by screws **22** and to which the forward end **23** of the top rail **11** is secured by screws **24**. Also, front panel **15** is provided with a rearwardly turned flange **19***a* to which the forward ends of the bottom rails are secured by screws **22***a*. To provide improved rigidity in this area, the forward end of the bottom rails is provided with an inturned flange **25** which is turned around the edge of the front panel **15**, as best seen in FIG. 1.

As best seen in FIG. 2, the rearward end **26** of each bottom rail is secured to a rearwardly turned edge flange **27** of rear panel **16** by screws **28** and the rearward end **29** of the top rails is secured to flange **27** by means of screws **30**. Rear panel **16** has an inwardly turned flange **27***a* which is secured to the bottom flange **31** of the bottom rails by screws **28***a*. Each of the rails and panels herein comprise a sheet metal member and the screws herein comprise conventional sheet metal screws, thus permitting extremely economical construction of the range cabinet structure.

Each of bottom rails **13** and **14** further includes an inturned bottom flange **31** terminating in an upturned distal end portion **32** and supporting the lower end of the front panel **15** and downwardly extending leg portions **33** of the rear panel **16**. Depending bosses **34** on the bottom rail flanges **31** define legs for supporting the cabinet structure on a floor or the like. Each bottom rail is further provided with a pair of outturned tabs **35** for supporting side panels **36** and **37** where the cabinet is to be used as the cabinet of a free standing range **38** as shown in FIG. 5. The top rails **11** and **12** include an outturned top flange **39** terminating in a distal downturned portion **40** under which the upper end of the side panels may be secured by suitable screws (not shown).

The space **17** within the cabinet structure accommodates selectively different chamber defining members such as enclosure **41** provided with a transverse wall member **42** defining an upper oven compartment **43** and a lower broiler compartment **44** as shown in FIG. 5, or enclosures defining a large oven compartment and a broiler or oven compartment. Such enclosures may be secured to the rear panel **16** by suitable brackets **47** as shown in FIG. 6 and by screws **62** to a peripheral rearwardly turned flange **48** of front panel **15** defining opening **18** whereby the front opening, such as opening **49** of enclosure **41**, is substantially coincident with and opens through the opening **18** of the front panel.

When it is intended that the cabinet be utilized as a free standing range **38**, as shown in FIG. 5, a burner box **50** is installed in the upper portion of space **17**. As best seen in FIG. 6, the burner box includes a forwardly turned front flange **51** overlying a corresponding forwardly turned flange **52** on front panel **15** and secured thereto by suitable screws **53**, and a rearwardly turned rear flange **54** overlying a forwardly turned flange **55** on rear panel **16** and secured thereto by suitable screws **56**. A cooking top unit **57** is carried by the front and rear panels to overlie burner box **50**, being secured removably to the front panel flange **52** by suitable snap springs **58** and to the rear panel flange by suitable snap springs **59** permitting pivotal movement of the cooking top unit **57** about its rear edge so that the front end of the cooking unit may be swung upwardly to permit cleaning of the burner box when desired. A separate console **60** is secured to the rear panel flange **55** and to a rear cover panel **61** to extend rearwardly and upwardly from the cooking top unit **57**. Thus, the burner box **50**, cooking top unit **57** and console **60** may be readily installed on the cabinet structure while yet the cabinet structure may be utilized without these elements as a built-in oven, as shown in FIG. 7, when desired. When so used as a built-in oven

device, a modified conventional console 63 may be mounted on back splash 64 of counter top 65 as shown in FIG. 7.

The cook top unit 57 and the burner box 50 are separate from the console 60 and can be used interchangeably with free standing and built-in range units. In conventional free standing ranges the console is an integral part of the cook top. Therefore, the cook top of a conventional free standing range cannot be used as a built-in cook top unit.

The interchangeable elements of cabinet structure 10 provide a basis for free standing ranges and built-in ovens, as shown in FIGS. 5 and 7, respectively. When used as a built-in unit, as shown in FIG. 7, an oven compartment 43 or compartments are installed into the six interchangeable elements used in this built-in unit. This assembly is then installed in substantially flush relationship with a conventional kitchen cabinet panel as shown in that figure. This panel may cover the lower broiler or oven compartment as shown in FIGURE 7 if neither is desired. However, if a broiler or lower oven is desired, the panel in the lower compartment area may be left out and a broiler drawer assembly (not shown) installed.

Thus, cabinet structure 10 provides in a simple economical structure substantially improved flexibility, permitting the use of the basic structure defined by the rails and front and rear panels as the basic cabinet structure of a free standing range suitable for use with either gas or electric burners and heating units, or as a built-in unit similarly suitable for use with electric or gas operated heating units. The space 17 readily accommodates selected conventional chamber forming members so that desired different oven and broiler arrangements may be provided in the basic cabinet structure. By thus adapting the basic cabinet structure for a substantial number of different desired arrangements, substantial economy of constructruction and increased flexibility of design are provided.

Having described our invention as related to the embodiments shown in the accompanying drawings, it is our intention that the invention be not limited by any of the details of description, unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the accompanying claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A frameless range cabinet, comprising: a pair of elongated, laterally spaced top rails each having an outwardly extending flange adapted for selective attachment of a panel thereto; a pair of elongated, laterally spaced bottom rails, each of said top and bottom rails having front and rear ends and cooperatively defining four substantially parallel edge portions of a hexahedron structure; a front panel having an opening therethrough and a forwardly extending flange at its top; means securing the front panel to the front end of each of said top and bottom rails to define a front face of the hexahedron structure; a rear panel having a forwardly extending flange at its top and rearwardly extending flanges at its sides; means securing the rearwardly extending flanges of the rear panel to the rear end of each of said top and bottom rails to define a rear face of the hexahedron structure, said rails, front panel and rear panel defining a hexahedral space; means defining an oven compartment having a front opening; means securing the oven compartment to said rear panel and said front panel to extend through said space with the front opening of said oven compartment being substantially coincident with the front panel openings to add rigidity and strength to said hexahedron structure; a burner box having a peripheral outwardly extending flange overlying said forwardly extending flange of said front panel and said forwardly extending flange of said rear panel; means securing said outwardly extending flange of said burner box to said forwardly extending flanges of said front panel and said rear panel to add further rigidity and strength to said hexahedron structure; means defining a cook top overlying said burner box; means for removably securing said cook top to said forwardly extending flanges of said front and rear panels; console means; and means for securing said console means to said forwardly extending flange and said rearwardly extending flanges of said rear panel to add rigidity and strength to said rear panel and provide an independent mounting of said console means for removal of either said console means or said cook top means to provide increased serviceability and interchangeability.

2. A frameless range cabinet, comprising: a pair of elongated, laterally spaced top rails each having an outwardly extending flange adapted for selective attachment of a panel thereto; a pair of elongated, laterally spaced bottom rails, each of said top and bottom rails having front and rear ends and cooperatively defining four substantially parallel edge portions of a hexahedron structure; a front panel having an opening therethrough, a forwardly extending flange at its top, and rearwardly extending flanges at its sides; means securing the front end of each of said top and bottom rails to said rearwardly extending side flanges of the front panel to define a front face of the hexahedron structure; a rear panel having a forwardly extending flange at its top and rearwardly extending flanges at its sides; means securing the rear end of each of said top and bottom rails to the rearwardly extending flanges of the rear panel to define a rear face of the hexahedron structure, said rails, front panel and rear panel defining a hexahedral space; means defining an oven compartment having a front opening; means securing the oven compartment to said rear panel and said front panel to extend through said space with the front opening of said oven compartment being substantially coincident with the front panel opening to add rigidity and strength to said hexahedron structure; a burner box having a peripheral outwardly extending flange overlying said forwardly extending flange of said front panel and said forwardly extending flange of said rear panel; means securing said outwardly extending flange of said burner box to said forwardly extending flanges of said front panel and said rear panel to add further rigidity and strength to said hexahedron structure; means defining a cook top overlying said burner box; means for removably securing said cook top to said forwardly extending flanges of said front and rear panels; console means; and means for securing said console means to said forwardly extending flange and said rearwardly extending flanges of said rear panel to add rigidity and strength to said rear panel and provide an independent mounting of said console means for removal of either said console means or said cook top means to provide increased serviceability and interchangeability.

3. A frameless range cabinet, comprising: a pair of elongated, laterally spaced toprails each having an outwardly extending flange provided with a distal downturned portion; a pair of elongated, laterally spaced bottom rails, each of said top and bottom rails having front and rear ends cooperatively defining four substantially parallel edge portions of a hexahedron structure, said bottom rails each further having an outwardly extending securing element; a front panel having an opening therethrough, a forwardly extending flange at its top, and rearwardly extending flanges at its sides; means securing the front end of said top and bottom rails to said rearwardly extending side flanges of the front panel to define a front face of the hexahedron structure; a rear panel having a forwardly extending flange at its top and rearwardly extending flanges at its sides, said forwardly extending flanges of the front and rear panels being adapted for selective attachment of a burner box thereto; means securing the rear end of each of said top and bottom rails to the rearwardly extending flanges of the rear panel to define a rear face of the hexahedron structure, said rails, front panel and rear panel defining a hexahedral space; means defining an

oven compartment having a front opening; means securing the oven compartment to said rear panel and said front panel to extend through said space with the front opening of said oven compartment being substantially coincident with the front panel opening to add rigidity and strength to said hexahedron structure; and a pair of side panels disposed to define opposite side faces of the hexahedron structure, said panels having a top edge secured to the downturned portion of the associated top rail and a bottom portion secured to said securing element of the associated bottom rails.

4. A frameless range cabinet, comprising: a pair of elongated, laterally spaced top rails each having an outwardly extending flange adapted for selective attachment of a panel thereto; a pair of elongated, laterally spaced bottom rails, each of said top and bottom rails having front and rear ends and cooperatively defining four substantially parallel edge portions of a hexahedron structure; a front panel having an opening therethrough and a forwardly extending flange at its top, said panel having a rearwardly extending support adjacent said opening; means securing the front panel to the front end of each of said top and bottom rails to define a front face of the hexahedron structure; a rear panel having a forwardly extending flange at its top and rearwardly extending flanges at its sides; means securing the rearwardly extending flanges of the rear panel to the rear end of each of said top and bottom rails to define a rear face of the hexahedron structure, said rails, front panel and rear panel defining a hexahedral space; means defining a compartment having a front opening; means securing said compartment means to said rear panel and the support at the opening of said front panel to extend through said space with the front opening of said compartment means being substantially coincident with the front panel

opening to add rigidity and strength to said hexahedron structure; a burner box having a peripheral outwardly extending flange overlying said forwardly extending flange of said front panel and said forwardly extending flange of said rear panel; means removably securing said outwardly extending flange of said burner box to said forwardly extending flanges of said front panel and said rear panel to add further rigidity and strength to said hexahedron structure; means defining a cook top overlying said burner box; means for removably securing said cook top to said forwardly extending flange of said front panel and pivotally securing said cook top to said forwardly extending flange of said rear panel to permit raedy access to said burner box as for maintenance thereof; console means; and means for securing said console means to said forwardly extending flange of said rear panel to add rigidity and strength to said rear panel and provide an independent mounting of said console means for removal of either said console means or said cook top means to provide increased serviceability and interchangeability.

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