Sept. 11, 1956 H. M. REEVES 2,762,677

GAS RANGE DRAWER STRUCTURE

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Fig. 1

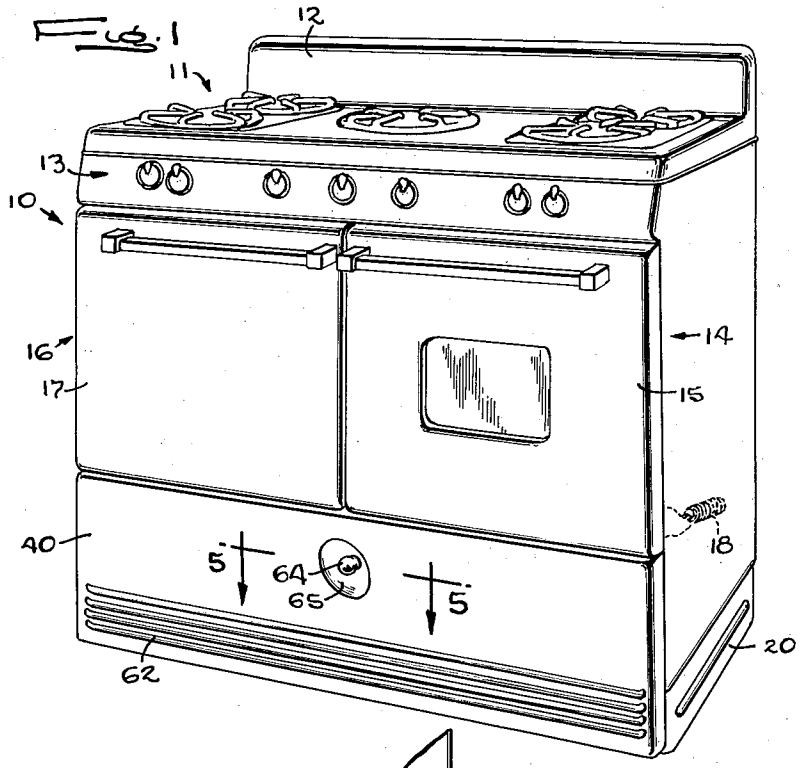
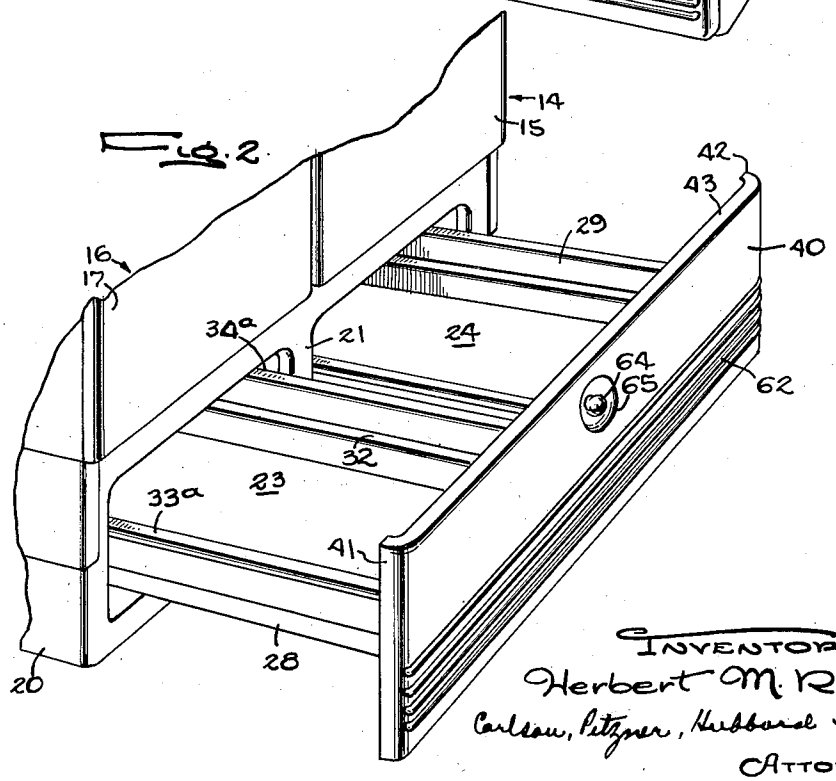


Fig. 2



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Fig. 3

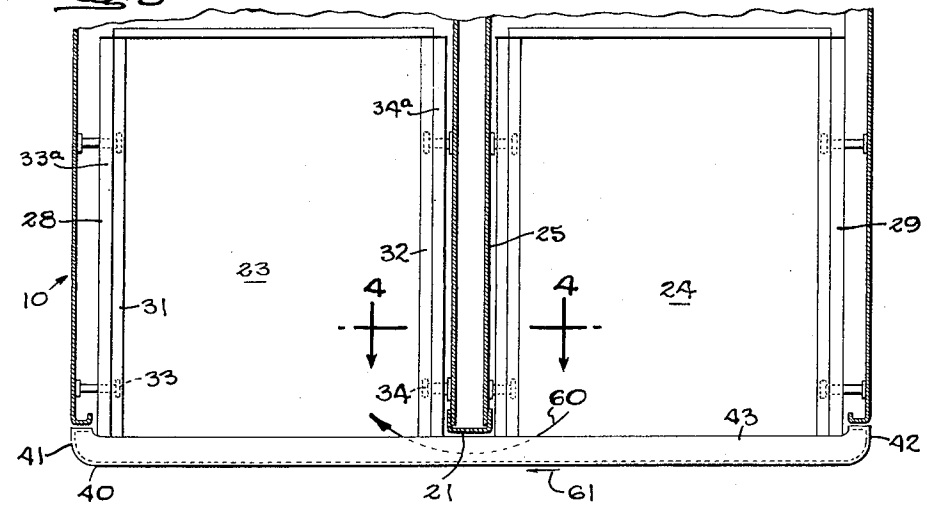


Fig. 4

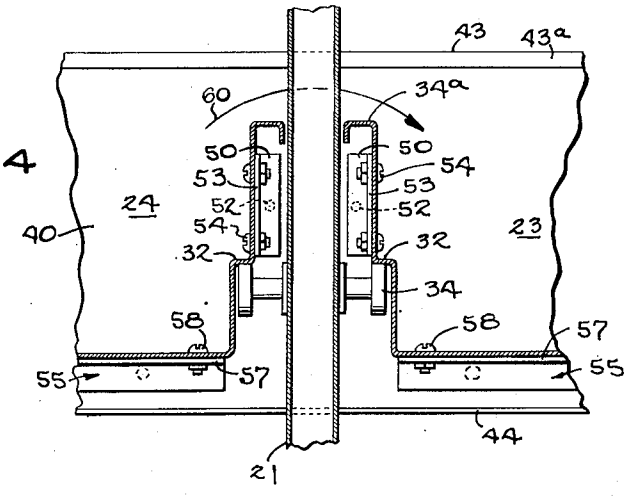
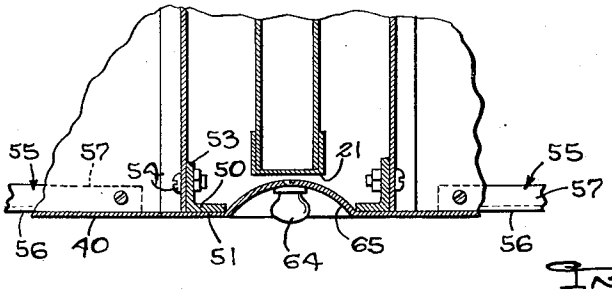


Fig. 5



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GAS RANGE DRAWER STRUCTURE

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Application February 11, 1954, Serial No. 409,647

1 Claim. (Cl. 312—341)

The present invention relates to ranges and more particularly to a storage drawer construction for use therein.

It is an object of the present invention to produce a storage drawer construction which is intended for use directly under the oven and broiling compartment and which is subjected to the heat therefrom but which has improved heat dissipating features causing the heat to be transferred away so that the temperature in the storage space is lowered. It is a more detailed object to provide a storage drawer construction in which pots and pans may be stored without heating them to a dangerous degree and which enables other objects to be stored with reduced danger from charring or overheating.

It is another object to provide a storage drawer for a range which presents a neater, more workmanlike appearance as compared to that of independent separately-mounted drawers, avoiding the variations in spacing, both horizontal and vertical, associated with the use of individual drawer panels. Such associations are usually glaringly apparent to a prospective buyer and detract from the desirability of the range. It is conversely an object to provide an improved drawer construction which has an appearance, from an aesthetic standpoint, which is clean and uncluttered, which connotes stability, and which tends to tie the range together as an artistic unit.

It is a further object to provide a storage drawer construction which avoids the danger of chipping baked enamel surfaces, a characteristic hazard where two independent drawer panels are mounted adjacent one another.

It is still another object to provide a storage drawer construction having a maximum of convenience, one drawer pull serving to expose the entire storage area but which maintains the advantages of segregation inherent in the usual two-drawer arrangement. It is a related object to provide a range drawer construction in which transfer of an implement from one compartment to the other is facilitated and in which the hand is guided by a smoothly continuous "rolled" edge, wiht elimination of sharp edges or flanges in the working area. It is another object contributing to convenience to provide a drawer construction which may be easily and smoothly operated with minimum force and which does not have a tendency to bind or skew. It is a still further object to provide a range drawer construction which is stronger than the conventional two-drawer construction and which may be operated with ease even when heavily loaded.

It is yet another object to provide a range drawer construction which may be produced at low cost in this highly competitive field, requiring fewer parts or subassemblies, which substantially eliminates the necessity for "fitting" or final adjustment even where substantial play is provided at the drawer guides, and which enables use of a single drawer pull recessed into a space which is normally unused.

Other objects and advantages of the invention will become apparent on reading the attached detailed description and upon reference to the drawings in which:

Figure 1 is a general perspective of a kitchen range incorporating the present invention.

Fig. 2 is a fragmentary perspective showing the lower part of the range of Fig. 1 with the storage drawer assembly partially extended.

Fig. 3 is a plan view of the drawer assembly of Fig. 2 in partial section to show the details of construction.

Fig. 4 is a fragmentary section taken along the line 4—4 in Fig. 3 and showing the manner in which the individual drawers are secured to the unitary drawer panel.

Fig. 5 is another fragment taken along the line 5—5 in Fig. 1.

While the invention has been described herein in connection with a preferred form or embodiment, it will be understood that I do not intend to limit the invention to such embodiment, but intend, on the contrary, to cover various modifications and alternative constructions included within the spirit and scope of the appended claim.

Turning now to the drawings, the range indicated at 10 in Fig. 1 has a cooking surface 11 and a conventional back panel 12. Extending along the front edge of the range is a control panel 13. Arranged side by side below the control panel are an oven compartment 14 having an oven door 15, and a broiler compartment 16 having a broiler door 17. As is conventional, the oven door 15 may be hinged along its lower edge and may be counterbalanced by coil springs 18 located below door level and behind the lower corners of the door. The broiler door 17 may be hingedly mounted along its left hand edge for swinging movement, such mounting being well within the scope of one skilled in this art. The range 10 is further provided with a base 20, the structure being rigidified by a central column 21 which extends from the base upwardly to support the upper portion of the range. Such central column 21 divides the lower portion of the range into two storage compartments 23, 24, which are conventionally separated by a frame plate 25 between them joined at its front edge to the central column 21.

Slidably received in the storage compartment 23 is a storage drawer 28, a similar drawer 29 being provided in the adjacent storage compartment 24. The storage drawer 28 which may be taken as representative and the means for slidably mounting it are shown in Figs. 3 and 4. Here it will be noted that the side walls of the drawer are not flat but are stepped in cross section to provide flat way or guide surfaces 31, 32. The drawer 28 is supportingly cradled on rollers 33, 34 which extend inwardly into the compartment 23 and which are spaced to engage the way surfaces. The rollers 33, 34 are rotatably supported on the side walls of the compartment by some convenient means such, for example, as shown in Fig. 3. Each of the rollers has endwise clearance so that it may rotate freely, thereby resulting in a certain amount of lateral play for each drawer as a unit. The upper edges of the drawer are bent reversely downward as indicated at 33, 34 to provide a smooth edge surface of substantial width.

In accordance with the present invention, the drawers 28, 29 in the present construction are both intimately and rigidly connected at their forward ends to a common drawer panel which extends the width of the range, which not only serves as a closure for the two storage compartments but also serves to transmit heat away from a heated compartment. The common drawer panel, which has been indicated at 40 in the drawings, is formed of a single piece of metal which is stamped to provide inturned end flanges 41, 42, and inturned top flange 43, and an inturned bottom flange 44. The inturned top flange 43 has its rear edge bent downwardly to form a skirt 43*a*, as shown for example in Fig. 4, thereby providing a smoothly continuous top surface free of any sharp edges along substantially its entire length.

Prior to a further discussion of the advantages of the

present arrangement, more detailed attention may be given to the means for fastening the drawers **28, 29** to the drawer panel **40**, reference being made to Figs. 4 and 5. This figure shows the fastening means at the corners, although it will be understood that such fastening means is employed along substantially the entire presented edge of both drawers **28, 29**. As shown in Fig. 4, the upright portion of the drawer **28** is engaged by an angle **50** having a face **51** which is welded to the panel **40** as indicated, for example, at **52**. The angle **50** in addition presents a rearwardly extending mounting surface **53** which is bolted securely to the drawer **28** by means of bolts **54**. For supporting the bottom of the drawer **28**, an angle **55** is provided having a face **56** which is welded to the drawer panel as well as a rearwardly extending mounting surface **57** secured to the drawer by means of bolts **58**. Such drawer mounting not only provides, in combination with the rigid panel **40**, a high degree of rigidity, but also provides an efficient path for conducting heat from the drawer **28** so that the entire panel **40** becomes an extensive radiating surface of substantial area.

In accordance with one of the more detailed features of the invention, the panel **40** has its front surface spaced outwardly from the central supporting column **21**, and the drawers **28, 29** have their top edges spaced downwardly so as to provide a channel for the flow of heated air from one of the compartments to the other. Such channel lies immediately below the inturned top flange **43**, and the path of air flow therein has been indicated in Figs. 3 and 4 by the arrow **60**.

The importance of the heat transfer features of the present construction will be apparent to one skilled in the range art. In a conventional gas range a burner is installed below the oven compartment and immediately above the associated storage compartment. Since it is generally not considered practical to interpose substantial insulation between the oven burner and storage compartment, the storage compartment tends to become very hot, particularly when the oven is turned on at high temperature for long periods of time. As a result, users of conventional ranges are warned not to store anything in the storage compartment which will be charred or damaged by heat and the storage space is usually reserved for storage of pots and pans. Even so, the pots and pans frequently become dangerously hot to handle, and the wooden handles which may be provided thereon, are often scorched by the heat. Storage of pot holders or other combustibles in the storage compartment not only runs the risk of charring, and such articles may actually catch fire. The situation is much the same in the case of the adjoining broiler compartment. While it is true that the burner used for broiling is generally mounted at the top of the broiler compartment, nevertheless, the heat is directed downwardly and may result in overheating of the storage compartment directly below.

The advantages of the present construction are due in part to the fact that the oven and broiler are rarely used at the same time. Thus, while the storage compartment **24** located below the oven may be quite hot, the adjacent storage compartment is relatively cool. Using the present construction, it is found that extreme overheating of the storage compartment below the oven is avoided by connecting the storage drawer to the panel **40** which extends the entire width of the range. Heat is not only radiated directly from the portion of the panel **40** adjacent the compartment, but is also transmitted longitudinally along the panel as indicated by the arrow **61** in Fig. 3 for radiation by the opposite end of the panel. In addition to the conductive effect, it is found that sufficient convection occurs through the space **60** (Fig. 3) so that the temperature in the storage compartment will not reach a dangerous level.

Quite aside from temperature considerations, it may be shown that a drawer assembly constructed in accordance with the present invention possesses a number of advantages not to be found in more conventional constructions. One skilled in this art will readily appreciate that the fitting of conventional storage drawers poses a troublesome problem. Kitchen ranges are a highly competitive item and great attention cannot be devoted to the maintenance of close tolerances, the perfect alinement of drawer guides, the perfect centering of a drawer panel on a particular drawer or the like. As a result of this, individual drawer panels will, often as not, be vertically out of alinement with one another. Even though such misalinement may not be appreciable when measured in fractions of an inch, nevertheless, the difference in width of the "crack" above the two drawer panels is easily spotted by a prospective purchaser and interpreted as a mark of poor quality. To correct this the drawer panels must frequently be inspected and adjusted in order to bring them into alinement with one another before they leave the factory, a very time-consuming procedure.

A somewhat similar problem is raised by the spacing between two adjacent drawer panels. In a conventional range, the doors enclosing the broiler and oven compartments are hinged, and may be accurately positioned with respect to one another. This, however, is not true with the adjacent drawers which have a substantial amount of lateral play and which may be moved relatively to one another up to one quarter inch. Here again, the eye acts as an accurate comparison device and a too wide or too narrow spacing is interpreted as lack of quality. Furthermore, where attempts are made to space adjacent drawer panels closely to one another, they may in fact overlap slightly under manual pressure, so that careless closing can cause severe chipping of the baked enamel on the interfering edge, largely destroying the beauty of the range. All of these disadvantages associated with conventional drawers are overcome by the present drawer assembly in which no differences in spacing of adjacent panels may occur. On the contrary, the drawer panel **40** gives a highly pleasing aesthetic effect, tending to draw all of the portions of the range into a comprehensive and stable unit. To enhance the aesthetic attractiveness, the panel **40** may be provided with horizontal lines or ridges **62** (see Fig. 1) which extend smoothly and continuously from one end of the range to the other. Alinement of this and other types of decorative patterns is assured.

In addition to the above, the present construction affords a measure of convenience not approached by any known prior art construction. First of all, it may be noted that the drawer panel **40** is provided with a single centrally located drawer pull **64** which is fitted into a concave recess **65**. This keeps the drawer pull out of the way and yet provides adequate gripping area. It may be noted, as one of the more detailed features of the invention, that the recess **65** is integrally formed in the panel **40** and extends into a central space adjacent the central column **21**, thereby making use of space not otherwise occupied. In use it is found that pulling outwardly on the drawer pull **64** causes both the drawers **28, 29** to slide out with a smooth action, the force being little more than that to operate a single one of the drawers in a conventional range. A single pull thus exposes the entire storage area and searching back and forth to find a particular pot or pan is unnecessary. Both of the drawers open precisely the same amount which facilitates transferring stored articles between them. Because of the segregation provided by the two drawers, it is much easier for the housewife to keep order between them. As previously stated, the inturned top flange **43** is reversely bent and smoothly continuous, thereby serving as a guiding edge in transferring of articles as well as forming a convenient pull bar for drawing the drawer assembly outwardly once it has been cracked open.

The freedom from binding shown by the present device is particularly noteworthy. In the case of conventional

drawer arrangements, the individual drawers may turn or skew on the order of 5° producing binding of the rollers and sticky operation when the drawer is pulled outwardly at an angle. In the present construction, even where the same roller arrangement is employed, such skewing is reduced to approximately half this amount and any tendency toward binding is correspondingly reduced. This is true, even where one of the drawers is heavily overloaded since the overload is not exclusively borne by the rollers associated with one of the drawers, but is transferred via the panel **40** to the rollers which support the remaining drawer.

With regard to the practical aspects of manufacture, it will be appreciated that the present construction may be manufactured at reduced cost since the cost of manufacturing a single continuous panel **40** is little more than that for manufacturing an individual drawer panel, and since only a single drawer pull is required. No fitting or other adjustment of the drawer is necessary when the range leaves the factory.

What is claimed is:

In a kitchen range the combination comprising a range body having a central partition defining a pair of adjacent storage compartments at least one of which is disposed below the oven portion of said range, a pair of drawers arranged side by side in said compartments,

a single drawer panel extending horizontally across the front of both of said drawers, means for connecting the drawers intimately to said single drawer panel so that the drawers and panel form an integral unit with one another, said drawer panel having inturned edge flanges arranged to abut the range body when the drawers are in closed position, the adjacent sides of said drawers having horizontal guideways thereon and terminating in spaced relation to the top edge flange of said panel to define with said partition a passage for air flow from one compartment to the other around the front edge of said partition, means including said drawer guideways and cooperating rollers on said partition for supporting said drawers for movement inwardly and outwardly of their respective compartments, and means on said drawer panel for applying manual withdrawing force for simultaneous opening of said drawers.

References Cited in the file of this patent

UNITED STATES PATENTS

1,684,589	Kirts	Sept. 18, 1928
2,327,761	Brodbeck	Aug. 24, 1943
2,507,661	Cook et al.	May 16, 1950
2,520,816	Sherman	Aug. 29, 1950
2,580,927	Kahn et al.	Jan. 1, 1952