

March 29, 1932.

A. J. LINDEMANN ET AL

1,851,855

BROILER

Filed April 13, 1929

3 Sheets-Sheet 1

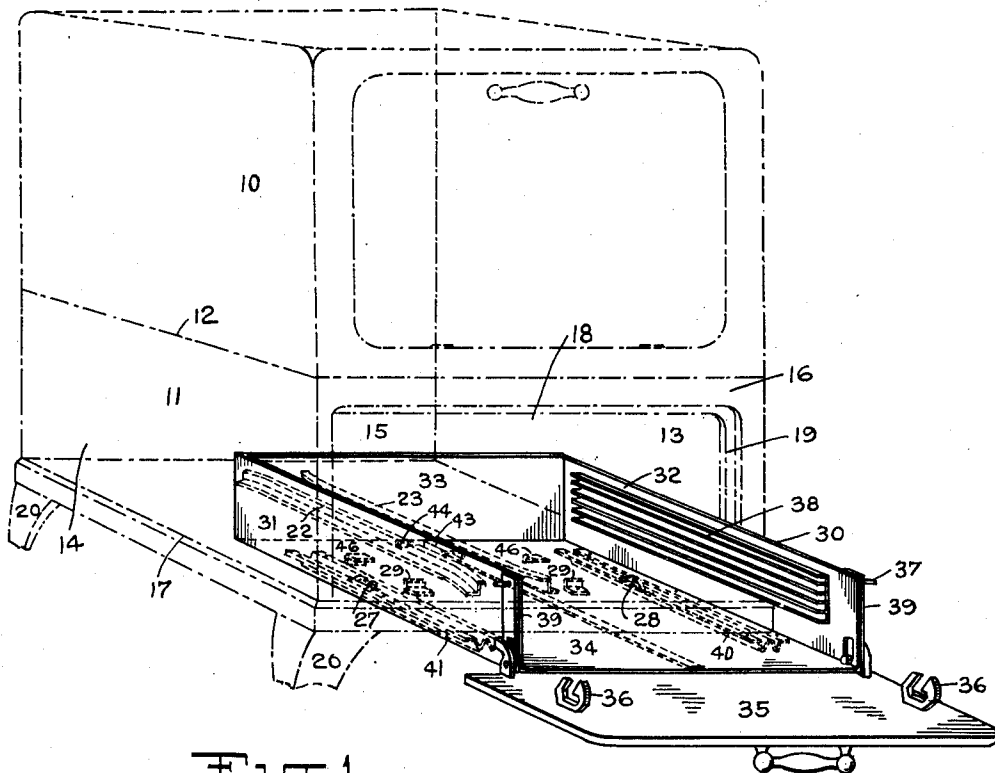


Fig. 1

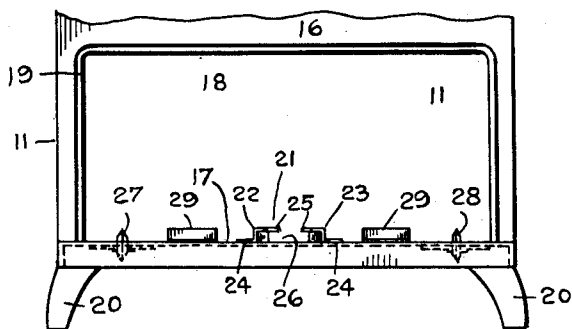


Fig. 2

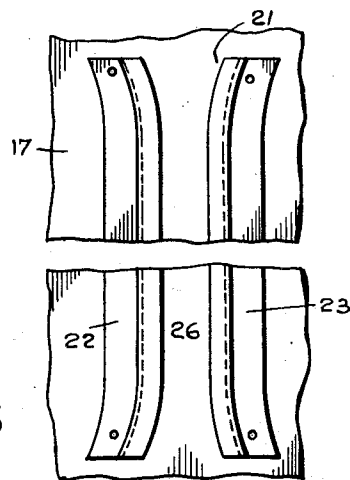


Fig. 3

Inventors
 Albert J. Lindemann.
 Walter C. Lindemann.
 Adolph F. Schmidt.
 By their Attorney
 S. J. Cox.

March 29, 1932.

A. J. LINDEMANN ET AL

1,851,855

BROILER

Filed April 13, 1929

3 Sheets-Sheet 2

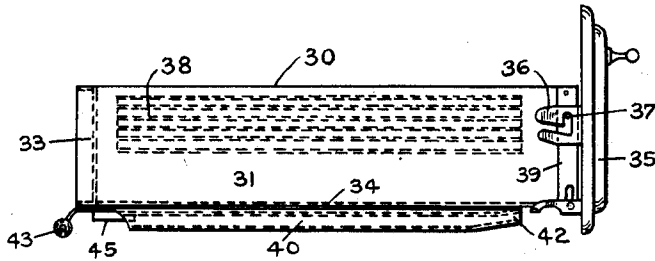


Fig. 4

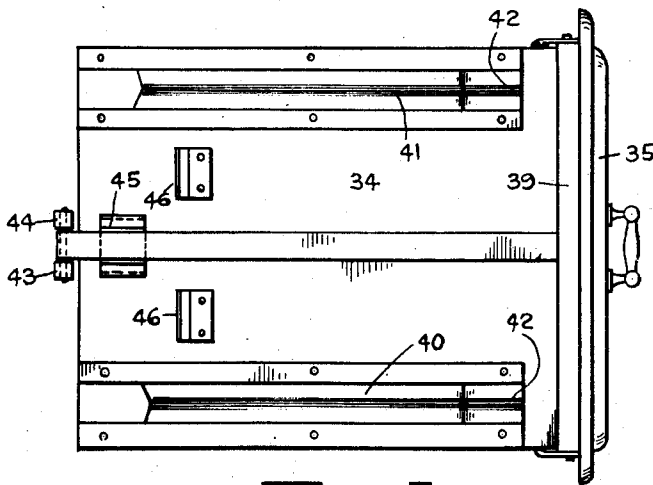


Fig. 5

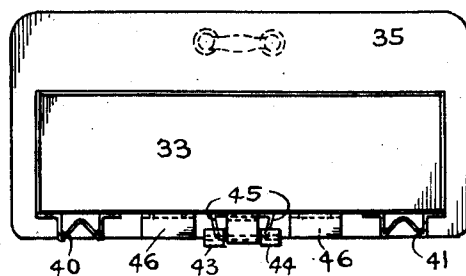


Fig. 6

Inventors
Albert J. Lindemann
Milton C. Lindemann
Adolph T. Schmidt
By their Attorney
S. J. Cox

March 29, 1932.

A. J. LINDEMANN ET AL

1,851,855

BROILER

Filed April 13, 1929

3 Sheets-Sheet 3

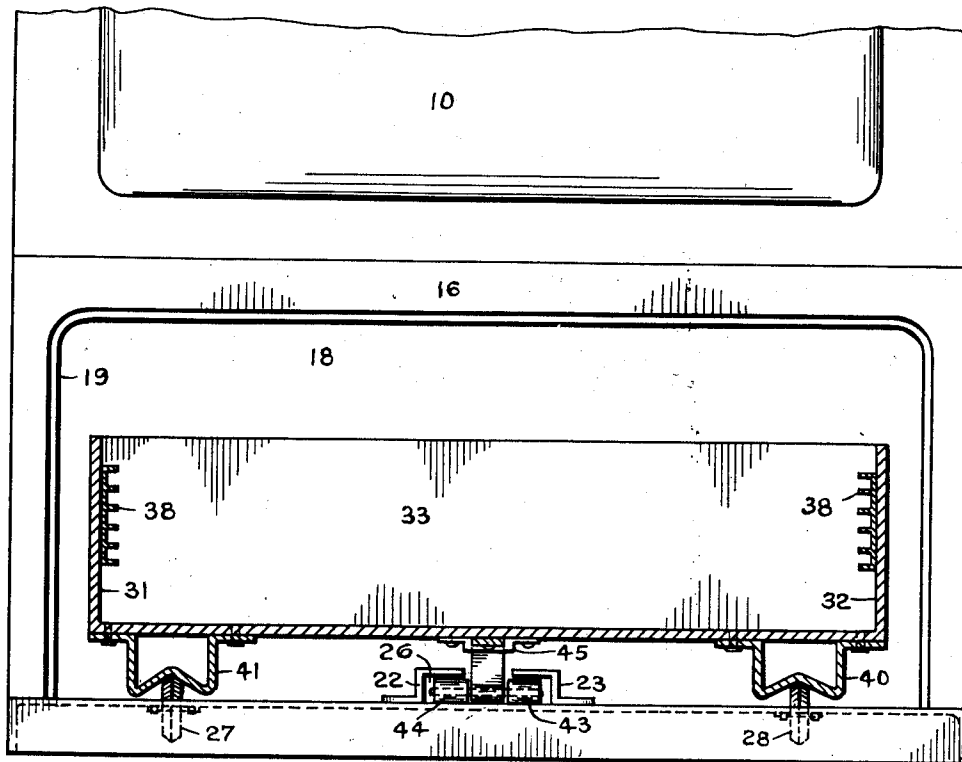


Fig-7

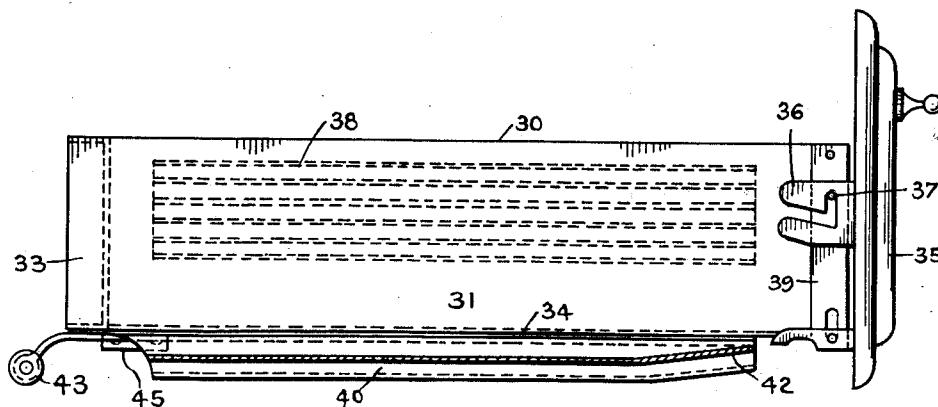


Fig-8

INVENTORS
Albert J. Lindemann
Walter C. Lindemann
BY Adolph T. Schmidt
S. J. Cox ATTORNEY

UNITED STATES PATENT OFFICE

ALBERT J. LINDEMANN, WALTER C. LINDEMANN, AND ADOLPH T. SCHMIDT, OF MILWAUKEE, WISCONSIN, ASSIGNORS TO A. J. LINDEMANN & HOVERSON COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN

BROILER

Application filed April 13, 1929. Serial No. 354,778.

The improvements relate to cooking ranges and more particularly to compartments to be used in connection with gas ovens and ranges, but may be employed in electrically heated and other stoves. The principal object of the improvements is to provide a compartment of simple, efficient and convenient construction and operation in combination with a cooking range. A further object is to provide a cooking compartment of sturdy and rugged construction and yet be neat in appearance, readily slidable in or removable from the stove.

A still further object is to provide a construction of the aforementioned type having novel anti-friction and alignment means, as well as an improved manner of slidably supporting the compartment. In accordance with the mathematical axiom that three points determine a plane, it is an object of the improvements to embody that principle in a novel range construction thereby insuring, at all times, the proper support of movable compartments without twisting or strain thereof.

Other objects and advantages of the present improvements will be apparent to those skilled in the art upon reference to the accompanying specification and drawings, in which

Fig. 1 is a phantom perspective view of a portion of a cooking range, illustrating one application of the present improvements comprising a broiler construction;

Fig. 2 is a front elevation of the broiler housing;

Fig. 3 is a fragmentary plan view of the broiler housing tracks;

Fig. 4 is a side elevation of the broiler compartment;

Fig. 5 is a bottom plan view of the broiler compartment;

Fig. 6 is a rear end view of the compartment;

Fig. 7 is a front vertical view of the device illustrated in Fig. 1, taken on a line across the face of the housing, the drawer being illustrated in section;

Fig. 8 is a view similar to Fig. 4 showing the contour of the track in section.

In the drawings, the improvements have been illustrated in position beneath an oven of a gas or electric range but it is understood that they may be variously embodied in ranges of this character. For convenience in illustration the greater portion of the range has been omitted; that shown in Fig. 1 includes the oven 10 of any suitable form which is provided with oven and broiler burners (not shown). The broiler burners may be located in the upper portion of broiler housing 11, just beneath partition 12 which defines the oven bottom and broiler housing top.

The broiler housing is defined by the top 12, sides 13 and 14, back 15, front 16, and base or bottom 17. The front 16 has an opening 18 defined by offset flange 19 surrounding said opening. The oven 10 and housing 11 are supported by frame members 20 and these members in turn may be supported in any convenient manner on the range.

The base 17 of housing 11 is provided with guide means 21 extending from the front to the rear thereof and positioned substantially centrally of the base. This guide means comprises a plurality of spaced tracks 22 and 23, which, as seen in Fig. 2 have flanges 24 for securing the tracks to the base. Each track has a vertical wall rising from flange 24 and terminates in an inwardly extending flange 25. As positioned on base 17, these tracks form with the base; a channel or groove 26, lengthwise of the housing, said channel having an open portion extending the length thereof, due to the spacing of the tracks.

Upon reference to Figs. 1 and 3, it is seen that the tracks 22 and 23 flare or diverge adjacent each end and terminate short of the front and rear of the housing. The flared front portion of the guide means 21 thereby affords an entrance means to the channel 26, as hereinafter described.

Anti-friction means in the form of rollers 27 and 28 are also mounted in the housing base 17. As illustrated these rollers are located near the front of the compartment, one on each side of guide means 21 and between it and the sides of the housing. Protruding upwardly from the base of the housing, are a plurality of stop means 29, which are sub-

stantially in alignment (transversely of the base 17) with rollers 27, 28, and the forward end of guide means 21.

The broiler compartment 30 comprises a drawer shaped member having sides 31, 32, back 33, bottom 34 and an open top and front end. A U-shaped reinforcement plate 39 is bolted, welded or otherwise secured about the forward open end of the compartment and thereby braces and holds sides 31, 32 and bottom 34 in proper position and insures against distortion of or injury to the compartment. This plate as well as the sides of the compartment are slotted to receive the hinge pins of door 35. This door is accordingly hinged to open downwardly about a horizontal axis to give the user access to the interior of the compartment and a view thereof without drawing the compartment completely from the housing.

Stop means for holding the door in horizontal position are also provided as illustrated in Fig. 1. When closed, as seen in Fig. 4, the door 35, held by latch 36 and pin 37, forms the front end of the compartment. Further details of the door and hinge arrangement may be had upon reference to our copending application filed August 21, 1928, Serial No. 301,060. A broiler pan (not shown) is adapted to seat on ledges 38 provided on each side of the compartment and may be removed and replaced at different levels by simply unlatching the door 35 and placing it in open position (Fig. 1).

The bottom 34 of the drawer or compartment 30 is provided with tracks 40 and 41. As illustrated, these tracks are mounted adjacent the side edges of the drawer or compartment and are formed with grooves which serve as guide means for the drawer or compartment in which rollers 27 and 28 are adapted to ride. Upon reference to Fig. 4, it is notable that the forward end of each track is provided with a depression or recess 42 (see Fig. 4).

Rollers 43 and 44 are also provided on the bottom of the compartment and are positioned substantially centrally of the rear end thereof. A guide member 45 is located near said rollers and projects downwardly from the bottom 34. Stop means 46 also protrude from the compartment bottom and are positioned so as to be in alignment with stops 29 on the housing base, when the compartment is within the housing.

When the compartment 30 is assembled in the housing 11, the rollers 27, 28, on the housing base, are disposed in the grooves of tracks 40 and 41 of the compartment. Likewise, the rollers 43 and 44 of the compartment are disposed in the channel 26 defined by the tracks 22 and 23 on the base of the housing. It is notable that all the rollers project a slight distance from the plane of their mountings whereby the compartment bottom is suspend-

ed slightly above the housing bottom so that free sliding movement of the compartment is afforded by the cooperating rollers and guides. Accordingly the opposed faces of the housing and compartment are spaced so that friction is reduced to a minimum and wear of the parts is restricted to the tracks of each.

Free sliding movement of the compartment is thereby afforded, outward movement thereof being limited by the contact of cooperative stop means 29 and 46. It is important to note that the compartment 30 is somewhat smaller than housing 11 and occupies only the lower portion thereof. However, door 35 is much larger than the open end of compartment 30, and serves to close the opening 18 of the housing.

As the compartment is moved inwardly and approaches the complete closed position the rollers 27, 28 of the housing enter recesses 42 of the tracks 40 and 41, thereby causing the compartment to slide "home" into closed position with the door 35 sealing the housing opening 18 by engaging flange 19. These depressions or recesses in the tracks which are occupied by the rollers, as described, serve to releasably hold the compartment in closed position.

Upon reference to Fig. 1, it is seen that the rollers 27 and 28 are disposed out of alignment with rollers 43 and 44. This arrangement affords a sturdy construction for supporting the broiler compartment during all its movements and also in all positions in which it may come to rest. The compartment 30 is thus afforded support at a plurality of spaced bearing points offset from one another so that sliding movement is facilitated. Accordingly the weight of the compartment is uniformly distributed and the compartment is maintained substantially level or on an even keel since it is supported at all times at three spaced points, which points define the apices of an imaginary triangle. Obviously, therefore, twisting of the compartment and consequent sticking or binding is eliminated.

While the cooperating guides and rollers prevent lateral movement of the compartment with respect to the housing, i. e., a wobbling movement, the guide means 45 projects downwardly and rides between the edges of flanges 25 of tracks 22 and 23. Accordingly, the compartment is held in proper alignment and is prevented from sidewise movement about its own vertical axis.

Should it be found desirable to completely remove the compartment 30 from the housing 11, the former is pulled out as far as it will go and then canted upwardly by lifting the door handle until stops 46 on the compartment bottom are clear of stops 29, and then withdrawing the compartment. Reinsertion of the compartment may be accomplished in a similar manner. The diverging

entrant portion of guide means 21, facilitates these operations, since rollers 43, 44 are afforded more space for entry to and withdrawal from channel 26.

5 The novel arrangement of rollers 43 and 44 permits them to ride beneath and in alignment with the overhanging flanges of tracks 22 and 23. Accordingly, these members cooperate to retain the compartment level and to prevent sagging of the forward portion 10 when that portion is protruding (as in Fig. 1) and the center of gravity of the compartment is in advance of rollers 27 and 28. The rollers 43, 44 and mounting thereof are designed to afford a nice fit in channel 26 thereby insuring against looseness between the 15 compartment and housing.

The advantages of the present improvements cannot be overemphasized. Since the 20 weight of the broiler compartment and its contents are, by natural forces, exerted in a downward direction, the most efficient support for this weight is beneath same. Accordingly, by the present improvements, the 25 supporting means comprising the guides and anti-friction rollers are disposed solely on the bottom of the housing and compartment, where they oppose and carry the weight superposed thereon. Obviously, no sagging of 30 the base of the compartment is possible, as is the case when broilers are supported by means on the side walls thereof.

Furthermore, the guide means in the present improvements are in alignment with the 35 force of gravity, so that there is no tendency to wrench said means from their mountings, as is frequently the situation where such means extend laterally from the side walls of the broiler compartment or housing. Accordingly, the constant weight as well as the 40 destructive effect of the traveling compartment to the tracks, does not exert a strain tending to loosen the tracks.

45 The novel means for releasably holding the compartment in closed position is of marked advantage. The slight inclination of the tracks 40, and 41, defining recesses 42 in which the rollers 27, 28 may rest, serves to hold the compartment in sealed condition. This feature 50 tends to conserve heat, and is of distinct advantage to the housewife since she is assured, when closing the compartment, that it will remain closed.

55 As aforementioned, the present improvements have been illustrated and described in their application to a broiler construction, but it is understood that the improvements are not limited thereto. The invention is equally 60 applicable to oven constructions and other baking or cooking compartments. Accordingly, the novel arrangement may be applied to oven pans or any element adapted to support food, such as bread, cakes, pies, etc., 65 wherein it is desirable to wholly or partially

remove or insert same, into or from the heating area for inspection or for other reasons.

Various modifications within the scope of the improvements will be apparent to those skilled in the art. For example, the guide or track means may be formed, if desired, in the 70 bottom of the compartment or the parts may be arranged in a manner, other than illustrated, and come within the purview of the invention. 75

We claim:

1. In a cooking range, a housing having a roller mounted on the base thereof, a cooking drawer disposed in said housing and having a track and spaced rollers mounted on the 80 bottom of the drawer, said first named roller cooperating with said track and said spaced rollers being mounted centrally of the drawer and adapted to engage the base of the housing.

2. In a cooking range, a broiler housing, a 85 broiler drawer disposed therein and adapted for sliding movement with respect to said housing, said drawer having a track mounted on the base thereof and said housing having a complementary roller mounted on the base 90 thereof and adapted to travel in said track, said track having a recess therein adapted to receive a portion of said roller for releasably locking said drawer in position.

3. A cooking drawer having a base, sides 95 and open top, members forming spaced grooves provided along the base of the drawer, a roller mounted on said base and between said grooves, said roller being disposed adjacent one end of said base. 100

4. A cooking drawer having a base, sides and open top, members forming spaced grooves provided along the base of the 105 drawer, a roller mounted on said base and between said grooves, said roller being disposed adjacent one end of said base and a hinged door defining the forward side of said drawer.

5. A range construction having a three 110 point supporting arrangement comprising a housing having mounted on the base a centrally disposed track and roller members on each side thereof, a cooking drawer disposed in said housing and having a centrally disposed roller and tracks on each side thereof 115 all mounted on the bottom of said drawer, said rollers and tracks cooperating with one another respectively, means for limiting the outward movement of said drawer, said tracks, rollers and limiting means being constructed and arranged whereby complete removal of the drawer from the housing is afforded by slight upward canting of the 120 former.

6. In a cooking range, a housing, a drawer 125 disposed therein and adapted for sliding movement with respect to said housing, one of said members having an angular track member projecting laterally and defining with the base thereof a laterally accessible

channel and the other member having a complementary roller projecting laterally into and disposed within said channel and adapted to engage a wall thereof.

6 7. A range construction having a three
point suspension arrangement comprising a
housing, a drawer disposed therein, one of
said elements having on the base thereof a
substantially centrally disposed track and
10 roller members on each side of said track, the
other element having a substantially centrally
disposed roller and tracks on each side
thereof all mounted on the base of said other
element one of said tracks forming a channel
15 with the base on which it is mounted and
one of said rollers disposed under said track
and within said channel, said rollers and
tracks of the respective elements cooperating
with one another for facilitating sliding
20 movement of said drawer.

8. A range construction having a three
point suspension arrangement comprising a
housing, a drawer disposed therein, the base
of each element respectively having tracks
25 and rollers alternately disposed therealong
with the rollers mounted adjacent the ends
of their respective bases, at least one roller
of the arrangement being disposed substantially
centrally of the housing and drawer,
30 one of said tracks forming a channel with
the base on which it is mounted and one of
said rollers disposed under said track and
within said channel.

9. In a cooking range, a housing having an
35 open front, spaced rollers mounted on the
base of the housing adjacent the front corners
thereof, spaced tracks mounted on the
base of the housing substantially centrally
thereof, a broiler drawer disposed in said
40 housing and movable through the open
front, said drawer having spaced tracks on
the base thereof engaging the aforementioned
rollers, and additional rollers mounted on
the rear portion of the base of the drawer
45 adjacent the center thereof and engaging the
tracks of the housing.

10. A broiler housing having on its base
a substantially centrally disposed trackway,
said trackway comprising laterally extending
50 tracks defining an open top channel, a
broiler drawer in said housing having rollers
projecting from the base thereof into said
channel and engaging the under side of the
laterally extending tracks.

55 Witness our hands this 8th day of April,
1929, county of Milwaukee, State of Wisconsin.

ALBERT J. LINDEMANN.
WALTER C. LINDEMANN.
60 ADOLPH T. SCHMIDT.