

March 10, 1936.

O. M. OTTE

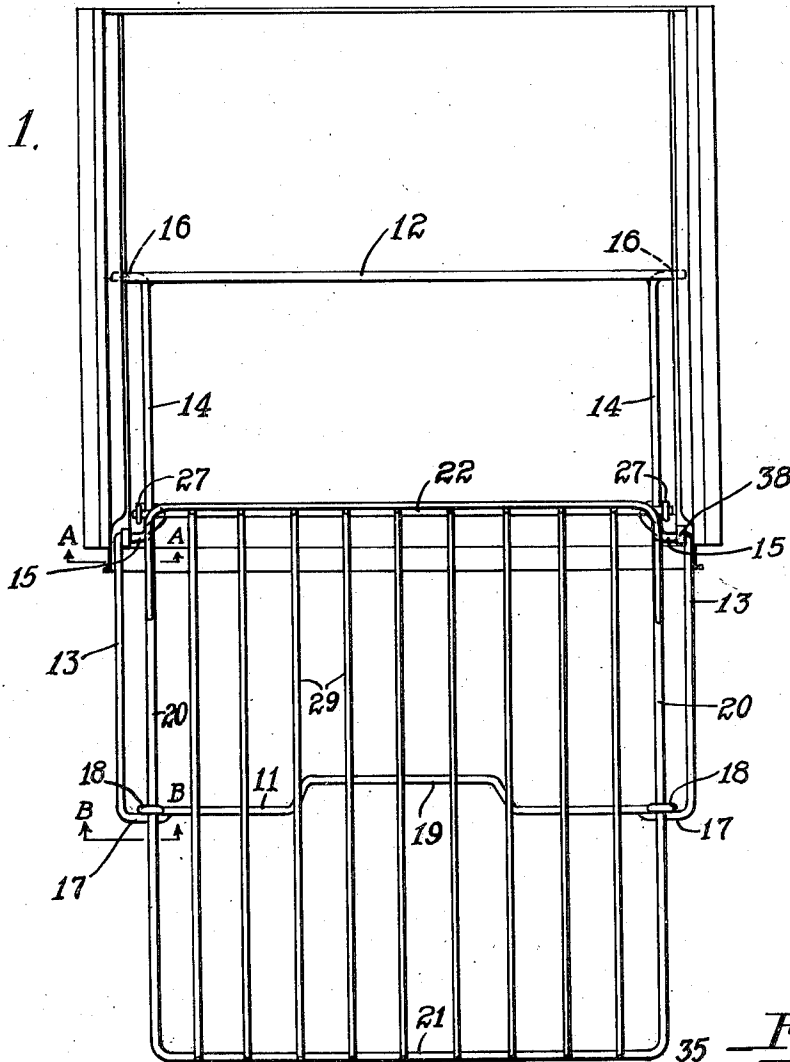
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SLIDING SHELF STRUCTURE

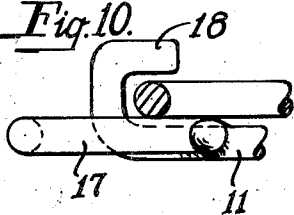
Filed Sept. 2, 1931

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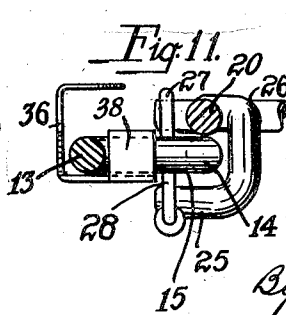
*Fig. 1.*



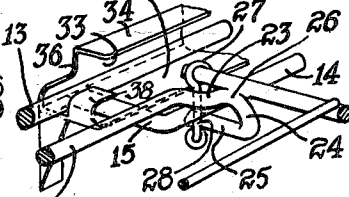
*Fig. 10.*



*Fig. 11.*



*Fig. 12.*



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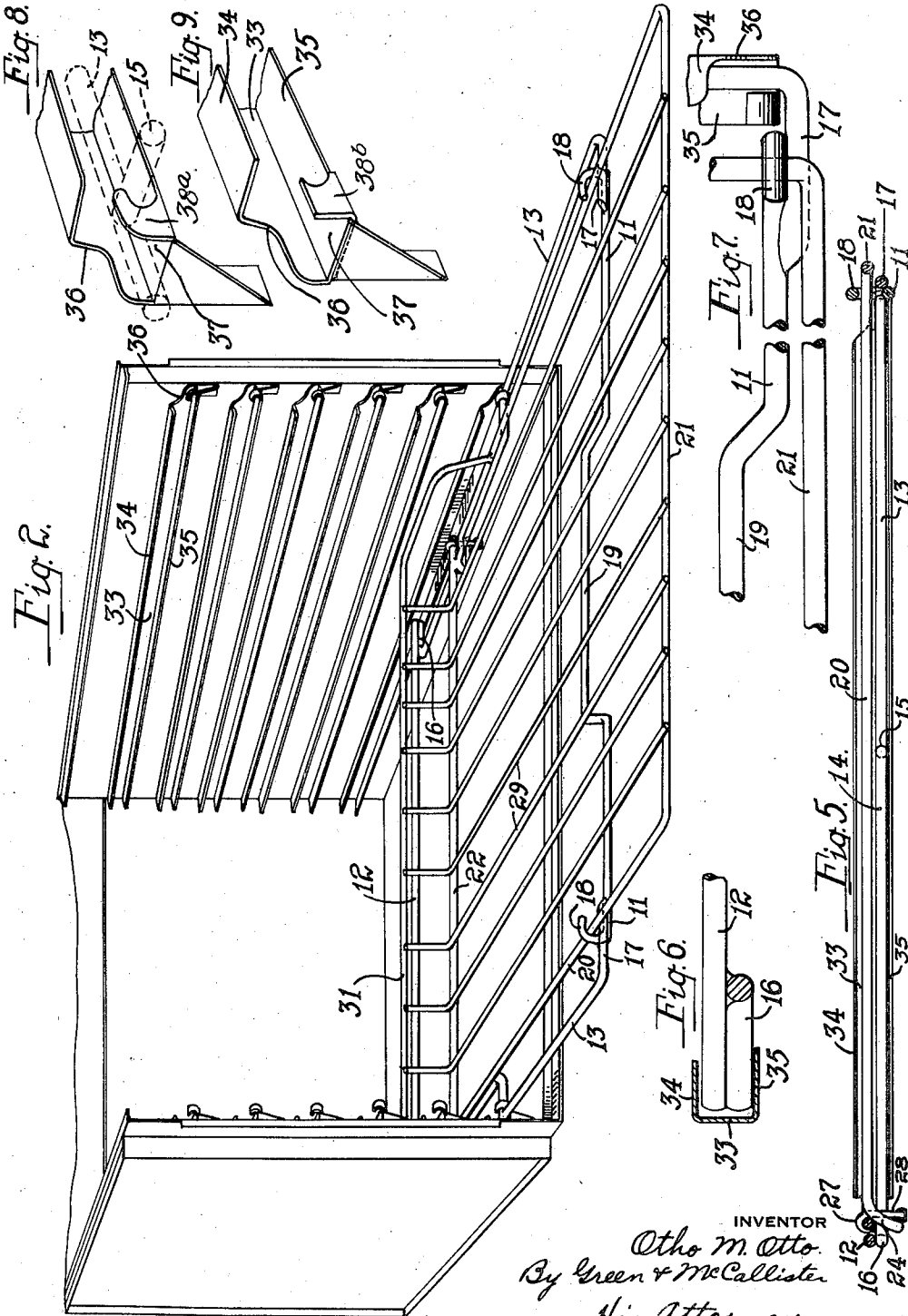
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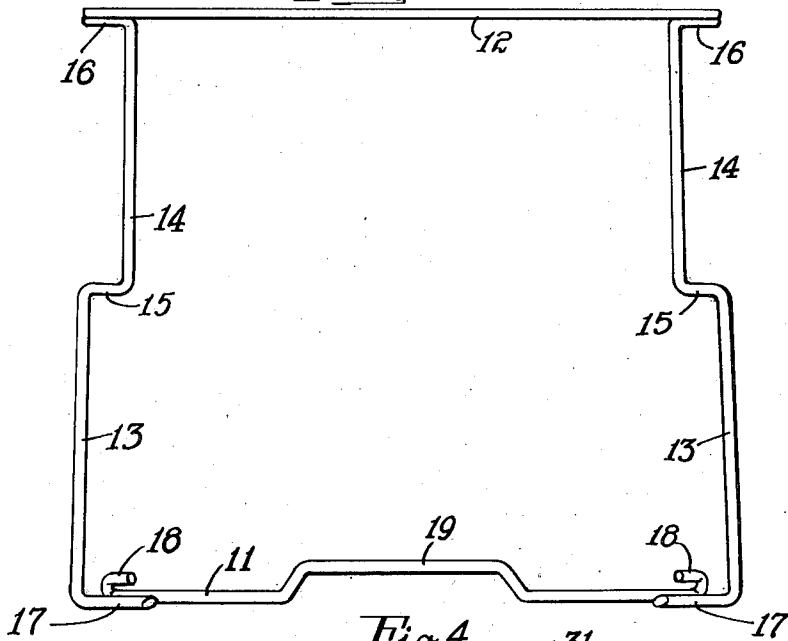
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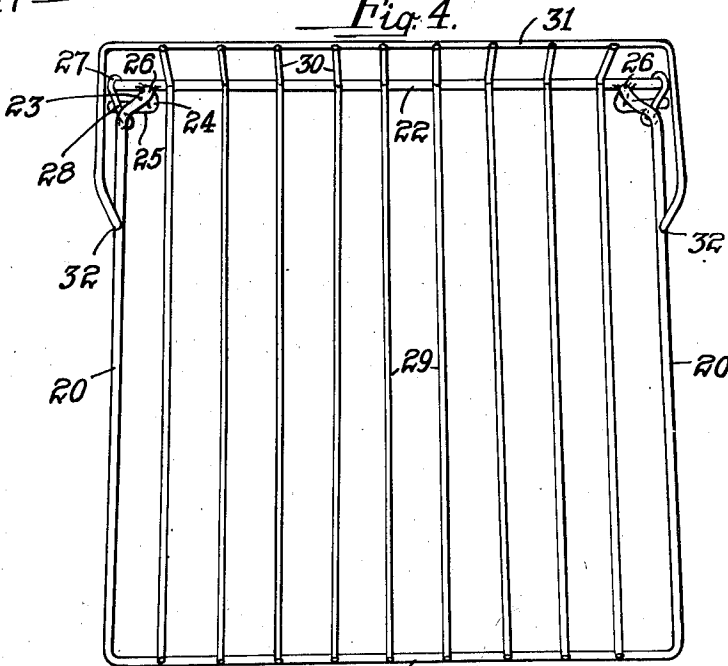
Filed Sept. 2, 1931

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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE

2,033,859

## SLIDING SHELF STRUCTURE

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Application September 2, 1931, Serial No. 560,741

30 Claims. (Cl. 211—143)

This invention relates to sliding shelf structures for ovens, broilers, refrigerator cabinets, or like compartments where full extension sliding shelves are desired.

I am aware that a large number of patents have been issued for sliding or extension shelf structures and an object of this invention is to produce an extremely simple, rugged, full extension shelf structure capable of being used in any compartment the side walls of which are provided or capable of being provided or equipped with aligned channel-like ways or guides for supporting the shelf structure.

A further object of this invention is to provide a full extension shelf structure having but two main parts and being capable of utilization in combination with the channel-like ways or guides or shelf supports now used for supporting the shelves in oven and broiler compartments of electric, gas or other stoves.

These, as well as other objects which will readily appear to those skilled in the arts to which this invention relates, I attain by means of the structure described in the specification and illustrated in the drawings accompanying and forming part of this application.

In the drawings:—

Figure 1 is a top plan view of a full extension sliding shelf structure shown in combination with aligned channel-like shelf support of a compartment such as a compartment of an oven or broiler and in this view the shelf is shown fully extended.

Fig. 2 is a view in perspective showing the shelf structure, the compartment and a number of pairs of aligned channel-like shelf supports for the side walls thereof, and in this view the shelf is shown partially extended.

Fig. 3 is a view in perspective of the grid or tray support of the structure.

Fig. 4 is a view in perspective of the grid or tray of the structure.

Fig. 5 is an enlarged view in side elevation and shows the side bars of the shelf structure both support and grid as they appear within one of the shelf supports or guideways of the compartment side walls when the shelf structure is collapsed or wholly within the compartment.

Fig. 6 is a detail view of a portion of the shelf structure and shows the same within one of the compartment guideways or shelf supports.

Fig. 7 is a detail view in plan of a portion of the shelf structure shown in Figs. 1 and 2.

Figs. 8 and 9 are detail views showing modified forms of the forward end structure of the compartment guideways or shelf supports,

Figs. 10 and 11 are detail views of portions of the shelf structure shown in Figs. 1 and 2 and are taken on lines A—A and B—B respectively of Fig. 1 and

Fig. 12 is a view in perspective of a portion of the device shown in Figs. 1 and 2.

The shelf structure proper consists primarily of two parts, preferably made from iron wire rod. One of the parts comprises a frame (Fig. 3) which in the main is rectangular and which is adapted to slide within the channel-like guideways or supports of the compartment. These supports are preferably spot welded to the compartment side walls.

The other part of the shelf structure comprises a grid (Fig. 4) which in the main is rectangular and which forms the shelf proper.

The support frame has sliding movement with relation to the compartment guideways and this movement is limited so that when the shelf structure is in extended position, the support frame is extended about half way of the guideways and the grid about half way of the support frame whereby the grid is substantially fully extended or outside of the compartment.

The support frame at its rear end has a fairly close fit within the compartment side wall guideways so that the tipping motion allowed the shelf structure as a whole is reduced to a minimum; the clearance between the rear of the support frame and the guideway flanges is merely that necessary to permit easy sliding movement of the support frame.

The shelf structure as a whole is removable from the compartment side wall guideways in order that it may be placed within one or the other of the pairs of such guideways which are arranged at different heights within the compartment in the same manner as the ordinary shelves are now arranged or within different pairs of guideways with which oven and broiler compartments are now generally provided.

Each pair of guideways is provided with a forward stop for limiting the outward movement of the shelf support frame and therefore the outward movement of the grid. These stops take different forms as shown in the drawings and the forward end of each upper flange is cut away to provide a way for the easy insertion of the shelf structure within a pair of guideways or supports. The forward end structure of the guideways is shown in Figs. 1, 2, 5, 7, 8, 9 and 12.

The support frame comprises a front member 11, a back member 12 and side members, each

having an outer portion 13 and an inner portion 14.

The support frame is generally rectangular and portions 13 and 14 of each side bar parallel one another and the compartment side walls.

Portions 13 and 14 of each side bar are connected by a short connecting portion 15 which preferably stands at right angles to portions 13 and 14. The forward and rear ends of the side bars are bent at right angles, the rear portion 16 being bent outwardly and lying below the back bar 12 to which it is preferably spot welded. The forward ends 17 of the side bars are bent inwardly and lie alongside of the end portions of the front bar 11 and to these they are preferably spot welded.

The ends of front bar 11 are bent upwardly and inwardly to form hook-like elements 18 which act as guides for the grid in its movements relatively to the support frame. The central portion 19 of the front bar is depressed inwardly as shown in Figs. 1, 2, 3 and 7.

The grid which forms the shelf proper is composed of side bars, a front bar, a rear bar and support rods which extend between the front and rear bars and which are preferably spot welded thereto.

These support rods are slightly longer than the distance between the front and back bar and their rear ends are turned upwardly at right angles to the remainder of the rods to form a back-stop or fence. A rod extends across the tops of these upstanding back portions and is spot welded thereto. This top rod at the corners of the grid is bent forwardly and extends forwardly a slight distance at which point each side is bent downwardly and is spot welded to the side bars of the grid.

The side bars 20 and the front bar 21 are preferably formed from iron wire rod bent into the shape shown in Fig. 4 and this rectangle is closed by the back bar 22 which abuts against the rear portion of each of the side bars 20. At its rear end, each side bar 20 is preferably bent inwardly as at 23, thence downwardly as at 24 and thence outwardly as at 25. This bending forms a hook at the rear end of each side bar which hooks under the inner bars 14. The back bar 22 which is welded to the rear portion of each side bar at elbow 26 extends outwardly beyond inner portion 14 of the support frame side bars and overlies the same, thus upper and lower bearing members are formed above and below the inner portion 14.

The back bar 22 adjacent its opposite ends is preferably reduced in order to retain an eye 27 which loosely surrounds the back bar and is part of a short length of wire 28 which forms a stop pin turnably mounted within such reduced portion.

Normally the stop pin on each side of the grid or on each end of the back rod 22 hangs downwardly and in contact with the forward side of the outwardly extending portion 25 of the side bar so that it forms a stop as the grid is slid forwardly in the support frame and this stop at the extreme limit of forward movement collides with connecting portion 15 of the side bars.

The support rods which are numbered 29 are located in spaced relation above the front and back rods 21 and 22 and are preferably spot welded to the same. These support rods at the rear of the grid are bent upwardly a short distance as at 30 and to the tops of these rods a rail 31 is preferably spot welded. This rail at the rear corners of the grid is bent forwardly and

downwardly, terminating at 32 at which points the ends of the rails are preferably spot welded to the side rods 20 of the grid. The rail is more in the nature of a finishing piece, the upstanding ends 30 of the support rod serving as a guard, back-stop or fence which prevents pans and the like from slipping off the back end of the grid, if the same happens to be pulled forward too rapidly.

The channel-like supports which are preferably spot welded to the metal sheets forming the compartment side walls are of channel section having a web 33, an upper flange 34 and a lower flange 35. The flanges preferably stand at right angles to the web and at the forward end of each channel-like support the top flange is cut away for a short distance as clearly shown in Figs. 1, 2, 8, 9 and 12 at 36 so as to provide a forwardly projecting portion or table 37 on the bottom flange. That is, the bottom flange projects forwardly a distance ahead of the top flange whereby what might be termed an unroofed table is provided at the forward end of each channel-like support. This unroofed table is particularly useful in the operation of placing the assembled shelf structure proper consisting of support frame and grid, in place in one or the other of the pairs of aligned guide-like support members attached to the compartment side walls.

The forward end of the lower flange 35 of each channel-like support is provided with an upstanding and backwardly extending stop member 38. This stop may be made in different ways and in Figs. 8, 9, 11 and 12 of the drawings I have illustrated several methods of forming the same. In Fig. 8, the stop 38<sup>a</sup> is integral with bottom flange 35 while in Fig. 9 the stop 38<sup>b</sup> is formed separately and spot welded to the underside of bottom flange 35. In all forms, the stop member lies in the path of connecting portion 15 of the side bars and this connecting portion 15 in the extreme forward movement of the support frame collides with the stop and thus further forward movement of the support frame is prevented.

From this it will be seen that I have produced an extremely simple, rugged and efficient full extension shelf structure capable of being used in oven and broiler compartments of stoves of practically all types as well as similar compartments where it is possible to provide the side walls of the same with channel-like guideways or where the same are already provided with such guideways.

In the ideal structure the support frame, the guideways and the grid or shelf proper will all be constructed of a non-rusting metal such as a chromium nickel iron alloy of the type generally known as 18-8 of which Allegheny metal is an example.

A less desirable but still highly efficient structure is one in which the guideways, side members of the support frame as well as the side members and the front and back members of the shelf proper are constructed from such non-rusting metal.

If the complete structure is made from a rustable metal or if any portions of the same are made from a rustable metal, the complete structure or those rustable portions may be galvanized or coated with some non-rusting metallic coating such as cadmium. For ovens or broilers however such coating is not deemed necessary especially where the inter-engaging parts are made from a non-rusting metal.

Having thus described my invention what I

consider new and desire to secure by Letters Patent is:

1. The combination with aligned oppositely positioned guideways for a compartment, of a support frame having front and back members and a pair of side bars each of which is bent intermediate its ends to provide spaced inner and outer portions lying in parallel planes and which in turn parallel said guideways, a shelf slidable fore and aft on the support frame, means at the rear of said shelf for slidably engaging the inner portions of the frame side bars, a stop adjacent each guideway for limiting the outward sliding movement of said support frame and means for limiting the outward sliding movement of said shelf with relation to said support frame.

2. The combination with aligned oppositely positioned guideways for a compartment, of a support frame having front and back members and a pair of side bars, each of said side bars being provided with spaced inner and outer portions lying in parallel planes and which in turn parallel said guideways, a shelf slidable fore and aft on the support frame, means at the rear of said shelf for slidably engaging said inner portions of the frame side bars, means adjacent the support frame front member for holding down the forward end of the shelf, a stop adjacent each guideway for limiting the outward sliding movement of said support frame and means for limiting the outward sliding movement of said shelf with relation to said support frame.

3. The combination with aligned oppositely positioned channel-like guideways for a compartment, of a support frame having front and back members and a pair of side bars each provided with spaced inner and outer portions lying in parallel planes and which in turn parallel said guideways and are joined by a cross connecting portion, a shelf slidable fore and aft on the support frame, a stop adjacent each guideway and with which the cross connecting portions of the support frame side bars are adapted to contact for limiting the outward sliding movement of said support frame and pivoted means adjacent the rear of the shelf for contacting with at least one of said cross connecting portions whereby the outward sliding movement of said shelf with relation to said support frame is limited.

4. The combination with a compartment of parallel aligned oppositely positioned guideways, of a support frame having front and back members and a pair of side bars, each of which is provided with spaced inner and outer portions lying in parallel planes and which in turn parallel said guideways, a shelf slidable fore and aft on the support frame, means at the rear of said shelf for engaging the inner portions of the frame side bars, means carried by the support frame front member for holding down the forward end of the shelf, a stop adjacent the forward end of each guideway for limiting the outward sliding movement of said support frame and pivoted means at the rear of the shelf for limiting the outward sliding movement of said shelf with relation to said support frame.

5. The combination with a compartment of parallel aligned oppositely positioned channel-like guideways, of a support frame having front and back members and a pair of side bars, each of which side bars is provided with spaced inner and outer portions lying in parallel planes and which in turn parallel said guideways, a shelf slidable fore and aft on the support frame, means at the rear of said shelf for slidably engaging the

inner portions of the frame side bars, means carried by the support frame front member for holding down the forward end of the shelf, a stop adjacent the forward end of each guideway for limiting the outward sliding movement of said support frame and pivoted means adjacent the rear of the shelf for limiting the outward sliding movement of said shelf with relation to said support frame.

6. The combination with aligned oppositely positioned guideways for a compartment, of a support-frame having front and rear bars and a pair of side bars, these side bars being each bent at a point intermediate its length inwardly to provide a stop-shoulder and to offset the inner portion of the side bar to a plane inside of the adjacent guideway, the outer portions of said side bars being adapted to slide in said guideways, the inner end of said support-frame being provided with lateral projections slidably engaging in said guideways to thereby assist in guiding the support-frame in its back and forth movements and to prevent its forward portion tilting downwardly when the support-frame is slid to its outer position, and a shelf slidable fore and aft on said support-frame and provided at its inner end with devices for slidably engaging the aforesaid inwardly offset portions of the side bars of the support-frame and for engaging said inwardly bent stop-shoulders of the support-frame to arrest the outward movement of the shelf.

7. The combination with aligned oppositely positioned support members on the side walls of a compartment, of a shelf and a removable horizontal support frame therefor; said frame and shelf being formed from wire; said frame being provided with front, back and side members; said side members being bent intermediate their ends to provide offsets serving as stops for limiting the forward movement of the shelf with relation to its support frame; said shelf being adapted to slide with relation to said frame; said shelf at its rear end being provided with means for hooking under the side members of the frame whereby the rear of the shelf is prevented from tipping when the shelf is extended; the support frame being provided with portions which extend laterally beyond the shelf and rest on the support members of the compartment side walls; there being means for preventing the rear of the support frame from tipping when the shelf is extended.

8. The combination with a compartment having frame supports extending inwardly from its side walls, of a support frame formed from wire and removably supported on said frame supports and having front and rear cross bars and side bars extending between said front and rear cross bars, a portion of each side bar being spaced a distance away from the compartment side walls and serving as a shelf guide, a shelf formed from wire and slidable fore and aft on the support frame front bar and at its rear end being provided with loops which slidably engage the shelf guides of the support frame for guiding and supporting the shelf.

9. The combination with a compartment having frame supports extending inwardly from its side walls, of a support frame formed from wire and removably supported on said frame supports and having front and rear cross bars and side bars extending between said front and rear cross bars a portion of each side bar being spaced a distance away from the compartment side walls

and serving as a shelf guide, a shelf formed from wire and slidable fore and aft on the support frame front bar and at its rear end being provided with loops which slidably engage the shelf guides of the support frame for guiding and supporting the shelf; the side bars of the frame having bends therein forming stops for limiting the outward movement of the shelf on the frame.

10 10. The combination with a compartment having frame supports extending inwardly from its side walls, of a support frame formed from wire and removably supported on said frame supports and having front and rear cross bars and side bars extending between said front and rear cross bars, a portion of each side bar being spaced, a distance away from the compartment side walls and serving as a shelf guide, a shelf formed from wire and slidable fore and aft on the support frame front bar and at its rear end being provided with loops which slidably engage the shelf guides of the support frame for guiding and supporting the shelf; there being stop means for limiting the outward movement of the shelf with relation to the support frame, said stop means being capable of being rendered ineffective in order to permit the shelf to be separated from the support frame.

11. A sliding shelf construction including a shelf having open hooks adjacent one end, a frame having longitudinal bars with which said hooks are slidably engaged for guiding and supporting said shelf on said frame, said longitudinal bars having transversely extending means for slidably supporting said shelf, said longitudinal bars having bends therein forming stops to limit the outward movement of said shelf on said frame and having portions adjacent said stops extending laterally in the direction of an open side of said loops, so that said shelf may be removed from said frame, the side extremities of said shelf being spaced from a vertical plane of the side extremities of said support frame.

12. A sliding shelf of wire construction including a supporting frame having longitudinal bars and a suitable transverse bar connecting said longitudinal bars, a shelf formed from wire and slidable fore and aft on said support frame and being provided with engaging portions adjacent its rear end for slidably engaging said longitudinal bars for guiding and supporting said shelf, said longitudinal bars having horizontally deflected portions allowing a removal of said shelf from said frame, said bars having additional deflected portions for providing stops for limiting the maximum outward travel of said shelf along said supporting frame, said shelf having upwardly extending wire portions adjacent the back and sides thereof for holding articles thereon.

13. Extension shelving for compartments comprising a support frame having means for non-tiltably supporting the same in a compartment, said frame having side rails running parallel to the side walls of the compartment and rigidly connected fore and aft by cross members, and a provision shelf having its rear end slidably mounted on and loop connected to the support frame side rails so as to prevent upward tilting of the rear end of the provision shelf, said shelf having its forward end slidably mounted on the front cross member of the support frame, said front cross member having portions overhanging the sides of the provision shelf for guiding the forward end of the shelf as it is moved to and fro on the support frame and pre-

venting accidental upward tilting of the forward end of the shelf.

14. In a sliding shelf structure, the combination of a shelf member and a shelf support member, said shelf member being slidably mounted on said shelf support member, and means including a member pivotally supported on said shelf member adjacent the rear end thereof for removably and slidably supporting said shelf upon said shelf support member and movable into and out of operative position for preventing the separation of said shelf member and said shelf support member.

15. In a sliding shelf structure, the combination of a shelf support member and a shelf member slidably mounted thereon, said shelf member adjacent the rear end thereof having L-shaped members slidably cooperating with side members of said support member, and means forming a closed loop with at least one of said L-shaped members for holding said shelf upon said support member, said means including means for opening said loop in order to permit a removal of said shelf from said support member.

16. In a sliding shelf structure of wire construction, the combination of a shelf member and a shelf support member, said shelf support member having oppositely disposed side members and being provided with means for mounting it in a compartment, said shelf having means cooperating with said side members of said support member for slidably holding it upon said support member, means on said support member for limiting outward movement of said shelf with respect to said support member, and additional means extending upwardly from said support member adjacent one end thereof for cooperating with said shelf member and guiding it in its movement, said additional means being constructed so as to permit a removal of said shelf member from said support member.

17. In a sliding shelf structure, the combination of a shelf support member and a shelf member slidably mounted thereon, said shelf having suitable side rails, hook means adjacent the rear of said shelf member for slidably holding said shelf on said shelf support member, and means extending upwardly from said support member adjacent the front end thereof and extending above and towards the rails of said shelf for guidably and removably supporting said shelf in its slide with respect to said support member.

18. In a compartment having support projections incorporated in its wall make-up, the combination of a sliding shelf structure of wire construction, said structure including a support frame and a shelf slidably mounted thereon, said support frame having side members and a front cross member for supporting the shelf, said support frame having laterally extending offsets for resting on the support projections of an adjacent wall of the compartment, said shelf having extensions at its rear lying above and below the side members of said support frame, said support frame having upwardly extending loop portions for cooperating with sides of said shelf for guiding it in its movement, and means on said support frame for preventing its rear from tilting when the shelf is extended.

19. In a sliding shelf structure, the combination of a shelf support member and a shelf slidably mounted thereon, means adjacent the rear of said shelf for removably and slidably holding said shelf upon said support, said support member having a transverse member adjacent its front for slidably supporting said shelf in its movement

with respect to said support member, said transverse member having a rearwardly bent portion adjacent the substantial center thereof, so that forward ends of said shelf may be readily manually grasped for extending it without grasping said transverse member of said support member.

20. In a sliding shelf structure, the combination of a shelf support member having side bars and a shelf member slidably mounted thereon, said shelf member adjacent the rear thereof having an open loop portion adapted to fit over a side bar of said shelf support member, the side bar of said shelf support member adjacent the front end thereof having a U-shaped portion projecting in the direction of the opening of said loop portion of the shelf member, so that said shelf member may be slid thereto and be removed from said support member, said shelf support member having a portion extending upwardly with respect to an adjacent side rail of said shelf member for guidably supporting said shelf in its slide with respect to said support member.

21. A sliding shelf construction including a channel-like guideway for compartment side walls having its upper flange shorter than its lower flange and having its lower flange provided with a hook-like stop adjacent its forward end formed by an integral projection on the lower flange of said guideway and extending upwardly from the longitudinal edge thereof, said stop projection presenting a bearing edge toward the rear portion of said guideway, a shelf having means slidably mounted in said guideway, and means cooperating with said stop projection and engageable with said bearing edge thereof for limiting the forward movement of said shelf on said guideway.

22. A sliding shelf construction including a channel-like guideway for compartment side walls having its lower flange provided with a stop adjacent its forward end formed by an integral projection on the lower flange of said guideway and extending upwardly from the longitudinal edge thereof, said stop projection presenting a bearing edge toward the rear portion of said guideway, a shelf having means slidably mounted in said guideway, and means slidable fore and aft in said guideway and cooperating with said stop projection and engageable with said bearing edge thereof for limiting the forward movement of said shelf on said guideway.

23. Extension shelving for compartments comprising a support frame having means for non-tiltably supporting the same in a compartment, said frame having side rails running parallel to the side walls of the compartment and rigidly connected fore and aft by cross members, a provision shelf having its rear end slidably mounted on and loop connected to the support frame side rails so as to prevent upward tilting of the rear end of the provision shelf, said shelf having its forward end slidably mounted on the front cross member of the support frame, said front cross member having portions overhanging the sides of the provision shelf for guiding the forward end of the shelf as it is moved to and fro on the support frame and preventing accidental upward tilting of the forward end of the shelf, and means for limiting the outward sliding movement of said shelf with relation to said support frame.

24. In a sliding shelf structure of wire-like construction, the combination of a shelf support member and a shelf member movably mounted thereon, said support member and said shelf member being formed from wire and having

suitable side rails, means operatively associated with the side rails of said members for movably and removably supporting one with respect to the other, and means cooperating with the side rails of said members for ordinarily preventing an upward tilt of and permitting a removal of one of said members with respect to the other.

25. In a sliding shelf structure of wire-like construction, the combination of a shelf support member and a shelf member movably mounted thereon, said support member and said shelf member being formed from wire and having suitable side rails and suitable cross rails connecting their respective side rails, means movably and removably mounting said shelf member upon said support member, and means mounted on one of said members and cooperating with the other of said members for ordinarily preventing an upward tilt of and permitting a removal of said shelf member with respect to said support member.

26. In a sliding shelf structure, the combination of a shelf support member and a shelf member mounted thereon, said support member and said shelf member having suitable side rails and cross rails connecting their respective side rails, means slidably mounting said shelf member upon said support member, at least one side rail of said support member being distorted for mounting said support member in a compartment and for acting as a stop to limit the slide of said shelf member with respect to said support member.

27. In combination, an oven having a pair of opposed sides, a pair of opposed guideways respectively mounted on said sides, a rack adapted to be removably supported in said guideways and having a rear end and an abutment spaced forwardly from said rear end, each guideway having spaced apart upper and lower flanges, the upper flange having its forward portion cut away and the lower flange having an upstanding lug adjacent its forward end, the distance between said lug and the forward edge of said upper flange being less than the distance between said abutment and said rear end of the rack, said lug and abutment in one partly withdrawn position of the rack, being adapted to abut one another and the rear end of the rack at the same time engaging the under surface of the upper flange.

28. In combination, a pair of channel-shaped guideways arranged with their open portions in opposed relation, the upper flange of each guideway terminating short of the forward edge of the guideway, each guideway having a lug disposed in the open portion thereof at the forward end of the open portion, a rack having a pair of opposed side strips adapted to have sliding movement in the open portions of the respective guideways, and an abutment on each side strip and spaced forwardly from the rear end of said strip, the distance between each lug and the forward edge of the corresponding upper flange being less than the distance between each abutment and the rear end of the corresponding side strip.

29. In combination, a pair of opposed horizontally aligned guideways each having an upper and a lower flange, the upper flange of each guideway having its forward portion cut away, the lower flange of each guideway having an upstanding lug spaced forwardly from the forward edge of the upper flange, a rack having side strips slidably received between the flanges of the re-

spective guideways, and an abutment on each of said side strips and spaced forwardly from the rear end of its side strip, the respective lugs and abutments adapted to engage when the rack approaches the limit of its outward movement, said lugs, abutments and upper flanges being so formed and arranged that when said lugs and abutments are in engagement the rear ends of the side strips of the rack will be confined between said flanges on the guideways.

30. In combination, an oven having a pair of opposed sides, a pair of opposed parallel guideways respectively mounted on said sides, and a rack adapted to be removably supported in said guideways and having a rear end corresponding in width to the distance between said guideways, the opposite sides of said rear end engaging in

said guideways, said rack having an abutment spaced forwardly from said rear end, each of said guideways having spaced apart upper and lower flanges, said lower flange having an abutment adjacent its forward end and said upper flange having its forward end terminating short of said last mentioned abutment, the distance between said last mentioned abutment and the forward end of said upper flange being less than the distance between the rear end of said rack and said first mentioned abutment, said abutments, in one partly withdrawn position of the rack, being in engagement and the rear end of said rack, at the same time, engaging the under surfaces of the upper flanges of the opposed guideways.

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