

Aug. 2, 1932.

H. KUCKEL

1,869,899

OVEN

Filed Oct. 3, 1929

3 Sheets-Sheet 1

Fig. 1.

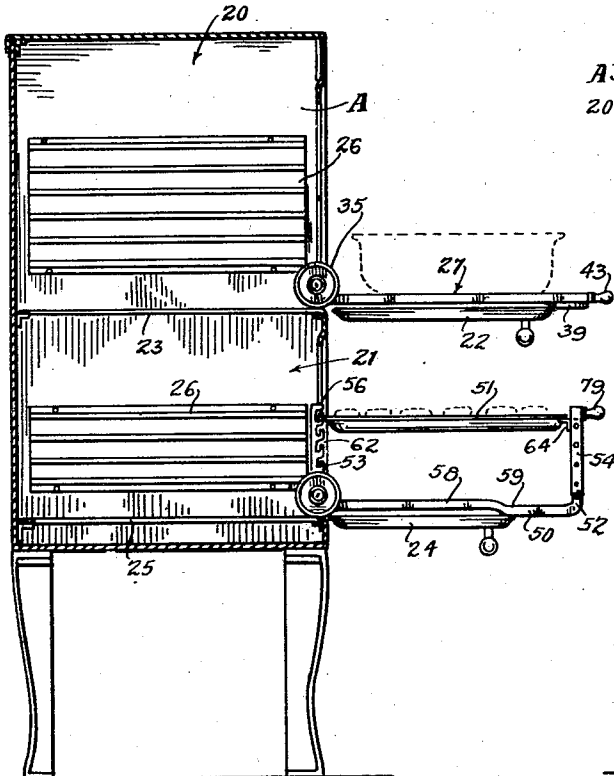


Fig. 2.

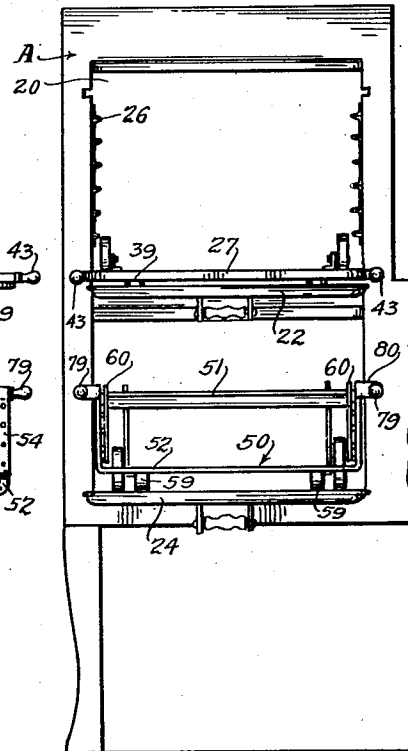


Fig. 3.

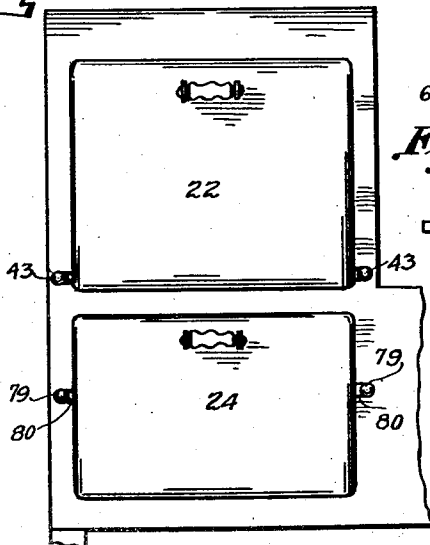


Fig. 16.

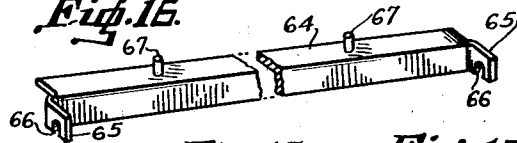


Fig. 17.

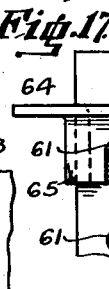


Fig. 18.

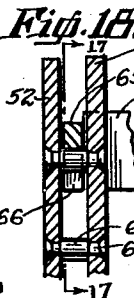
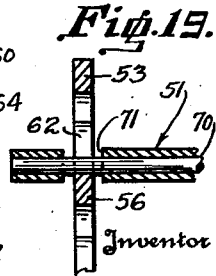


Fig. 19.



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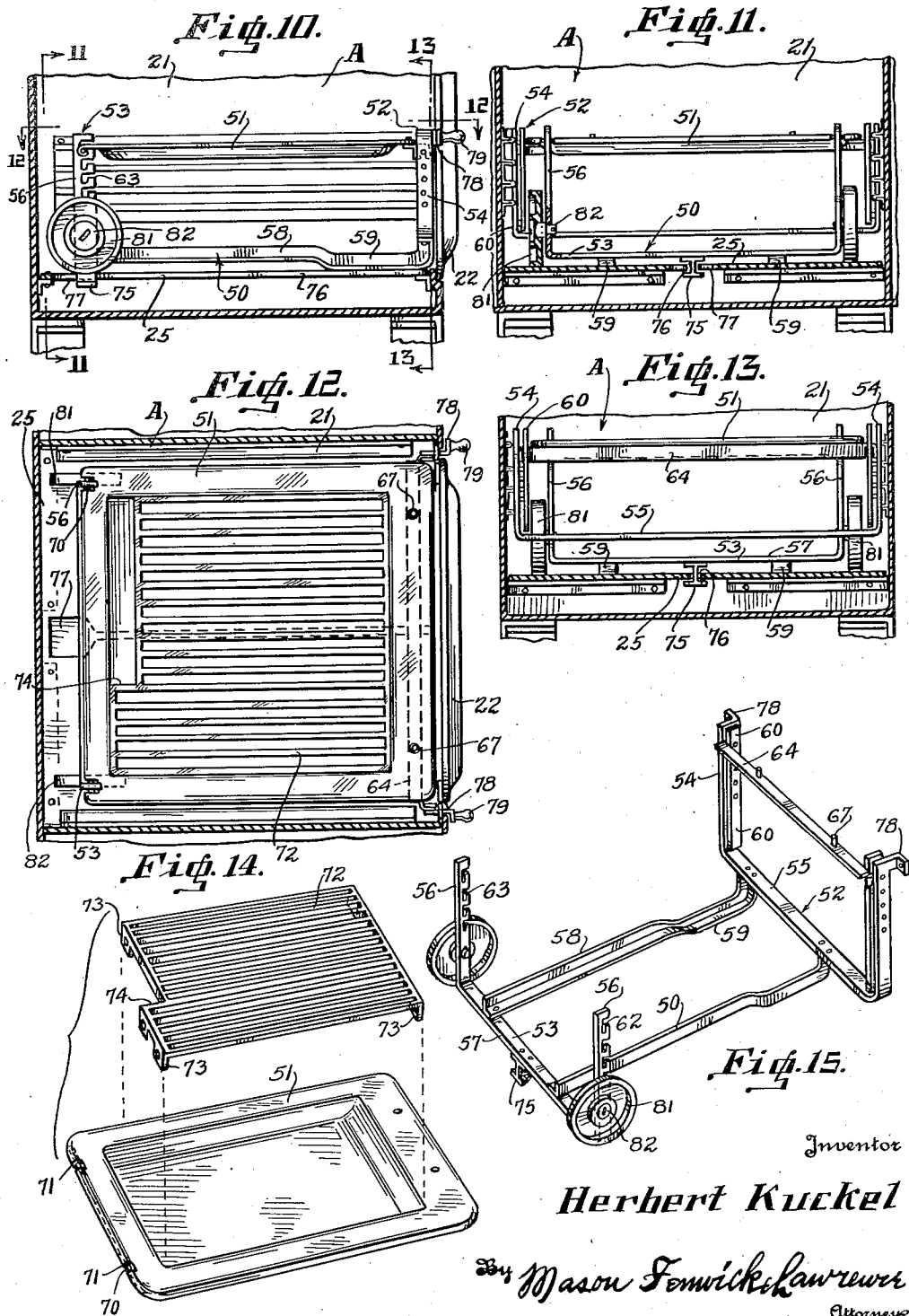
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3 Sheets-Sheet 3



Inventor

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UNITED STATES PATENT OFFICE

HERBERT KUCKEL, OF NEW ORLEANS, LOUISIANA

OVEN

Application filed October 3, 1929. Serial No. 397,118.

This invention appertains to cooking stoves and more particularly to the oven structure thereof.

One of the primary objects of my invention is to provide novel means for facilitating the handling of meat and the like both in the baking or roasting oven and in the broiling oven during the cooking process, whereby the meat can be easily turned, basted, or otherwise handled in a hot oven and conveniently and quickly placed in or removed from the oven without danger of the cook becoming burned.

It has heretofore been proposed to provide ovens with sliding trays, but these attachments have not been efficient in use nor commercially successful.

It is therefore another prime object of my invention to provide a tray or carriage both for the roasting or baking oven and the broiling oven which is easy to manipulate and which will not become displaced from off of the door of the oven when the same is withdrawn out of the oven and which will be effectively guided into and out of the oven without the necessity of providing guide tracks and the like for the supporting rollers.

Another salient object of my invention is the provision of a movable tray or carriage arranged within the oven of a cooking stove which can be of substantially the ordinary construction, the carriage or tray having novel supporting rollers at its inner end for engaging the floor of the oven and novel runners formed directly thereon adjacent to its forward end for engaging the oven door when the carriage is withdrawn from the oven over the door, the rollers permitting the easy tilting of the carriage, so as to allow the meat to be conveniently basted and to allow the easy movement of the carriage into and out of the oven.

A further object of my invention is the provision of novel means for forming the runners on the carriage or supporting tray, the runners being arranged inwardly of the sides of the carriage whereby displacement thereof from off of the sides of the door and accidents incident thereto are entirely eliminated.

A further important object of my invention

is the provision of a novel guide carried by the carriage having positive engagement with the floor of the oven, whereby the carriage will be effectively guided during its travel into and out of the oven and whereby the carriage will be limited in its withdrawal from the oven so as to prevent accidents, the guide and the oven floor being so constructed as to permit the quick removal of the carriage from the oven when desired.

A further important object of my invention is the provision of novel means for constructing the carriage for the broiling pan whereby the broiling pan can be quickly associated with or removed from the carriage yet held against accidental movement and in the desired adjusted position relative to the flame.

A further important object of my invention is the provision of novel means for constructing the front bar of the broiling carriage whereby a support for the front edge of the broiling pan can be adjustably associated therewith, the support acting as a brace for the front bars of the carriage to prevent spreading thereof under the heat of the oven, said front bars also forming a support at their upper ends for the manipulating handles of the carriage.

A further object of my invention is to provide novel means for forming the broiling tray or pan itself to permit the association thereof with the rear arms of the broiler carriage and to permit the meat carried by the tray to be conveniently basted.

A still further object of my invention is to provide an improved device of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market and incorporated with a cooking stove at a small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:—

Figure 1 is a vertical section through the oven portion of a cooking stove showing my

improved device incorporated therewith, the oven doors being in their lowered positions and the carriages for supporting the meat being pulled out of the oven.

5 Figure 2 is a fragmentary front elevation of a cooking stove showing my improved device incorporated therewith and the carriages in their extended position.

10 Figure 3 is a view similar to Figure 2 with the carriages in their innermost position and the oven doors in their closed position.

Figure 4 is a vertical section through the baking or roasting oven of the stove showing my improved carriage in its innermost position and the oven door closed.

15 Figure 5 is a vertical section taken at right angles to Figure 4 and on the line 5—5 of Figure 4 looking in the direction of the arrows.

20 Figure 6 is a horizontal section taken on the line 6—6 of Figure 4 looking in the direction of the arrows.

Figure 7 is a detail plan view of the blank from which the body or grate of the carriage can be formed.

25 Figure 8 is a transverse section through the body or grate of the roasting or baking carriage taken on the line 8—8 of Figure 6 looking in the direction of the arrows.

30 Figure 9 is a detail perspective view of the bottom of the oven constructed in accordance with my invention.

Figure 10 is a vertical transverse section through the broiling oven showing the broiling carriage therein and in its innermost position.

35 Figure 11 is a section taken at right angles to Figure 10 on the line 11—11 of Figure 10 looking in the direction of the arrows, one of the carriage wheels being shown broken away and in section to illustrate the bearing therefor.

40 Figure 12 is a horizontal section taken on the line 12—12 of Figure 10 looking in the direction of the arrows.

45 Figure 13 is a vertical transverse section taken on the line 13—13 of Figure 10 looking in the direction of the arrows.

50 Figure 14 is a perspective view of the broiler pan and the grate or meat support therefor, the grate or meat support being shown in a raised position from said pan.

Figure 15 is a detail perspective view of the broiling carriage.

55 Figure 16 is a detail perspective view of the front supporting bar for the broiler pan removed from the carriage.

60 Figure 17 is an enlarged detail section through one of the front bars of the broiling carriage taken on the line 17—17 of Figure 18 looking in the direction of the arrows.

Figure 18 is a detail sectional view taken through one of the front posts or standards of the broiling carriage on the line 18—18

of Figure 17 looking in the direction of the arrows, and

70 Figure 19 is a detail section taken through one of the rear posts of the broiling carriage and tray illustrating the means for detachably connecting the rear edge of the broiler tray with said carriage.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates a cooking stove which can be of any preferred construction or make and the same includes the usual baking or roasting oven 20 and the lower broiling oven 21. The roasting or baking oven 20 is provided with the usual pivoted door 22 which, when in its lowered position has its inner face flush with the bottom wall 23 of said oven. The broiler oven 21 is likewise provided with a pivoted door 24 which, when in its lowered position, has its inner face flush with the bottom wall 25 of the broiling oven. These ovens are of the usual or any preferred construction and can be provided with the ordinary guides 26 for the ordinary supporting plates or racks of the oven (not shown). The bottom walls 23 and 25 of the ovens 20 and 21 are, however, of a novel construction, as will be later pointed out.

In connection with the baking or roasting oven 20 I employ my novel device or carriage 27, which is so constructed as to move into and out of the oven 20 over the bottom wall 23 thereof. I desire to point out at the present time that my improved device or carriage 27 is mainly and primarily intended to be used in connection with the cooking of meats and the like and the ordinary oven rack can be used for baking cakes, biscuits, muffins and other baked foods, as it is only essential to provide means in an oven for handling heavy meats and to provide a device which will permit the convenient turning of the meat and the basting thereof.

My improved device 27 comprises a body portion or grate 28 which is of a novel construction. The body or grate 28 is preferably stamped out of a single blank of sheet metal and the blank therefor is shown in Figure 7 of the drawings and indicated by the reference character 29. This body or grate includes the front and rear bars 30 and 31, the side bars 32 and the intermediate grate bars 33. The rear ends of the side bars 32 are offset as at 34 for the reception of the rollers or supporting wheels 35, which will be later described. The side bars 32 and the grate bars 33 are of a substantially inverted U-shape in cross section and are provided with depending flanges 36. Likewise the marginal edges of the front and rear bars 30 and 31 and the edges thereof between the grate bars are provided with depending flanges 37. It is to be noted by reference to Figure 7, that

the edges of the blank are bent down to provide the marginal flanges and that portions of the metal are cut out to provide the spaces between the grate bars as indicated by the reference character 38 and that the edges of the grate bars are bent down to provide the flanges. The forward edges of the flanges of the grate bars, or rather certain of the grate bars as at 39, are of a greater width than the rear end thereof to provide runners for engagement with the bottom wall 23 of the oven, and the inner face of the oven door 22 when the carriage is pulled outward from the oven. In operation, it will be noted that these runners operate in effect as brakes tending to hold the grate wherever it may be lowered so that the runners contact with the oven floor or the top of the door. Further it will be apparent that by making the flanges or runners 39 and 59 depend below the main body of the grate, they will operate to lock the grate in its fully extended position as illustrated in Figure 1 by allowing the grate to seat on the door.

The front bar 30 has riveted or otherwise secured thereto at its opposite ends the laterally extending handle brackets 40 and these brackets are offset adjacent to their outer ends as at 41 for extension through notches 42 formed in the front wall of the stove whereby when the carriage is in its innermost position the brackets will protrude through the notches on each side of the oven door 22 and the outer ends of the brackets have secured thereto in any desired way manipulating handles or grips 43 which are preferably formed from non-heat conducting material such as wood.

Back of the offset portions 34 of the side bars 32 are riveted or otherwise secured angle shaped wheel brackets 44 into which are adapted to be received the axles 45 of the wheels 35. These axles are in the nature of screws and are provided with enlarged heads which are countersunk within the outer faces of the wheels and these heads form bearings for the wheels.

At the longitudinal center of the body or grate 27 is riveted or otherwise secured to the rear bar 31 thereof, the depending guide member 46 which is of a substantially I-shape in cross section as shown in Figure 5 of the drawings. This I-shaped guide 46 is received within a longitudinally extending slot 47 formed in the bottom wall 23 of the oven and it is to be noted that this I-shaped guide forms an efficient means for guiding the carriage during its travel into and out of the oven.

Further the guide acts as a stop for limiting the extreme outer movement of the carriage from the oven, whereby the carriage cannot be accidentally pulled out from the oven and off of the door. Likewise this guide will prevent lateral shifting of the carriage and prevent the binding of the wheels against the

side walls of the oven. The rear end of the slot 47 is enlarged as at 48 so that the I-shaped guide 46 can be lifted from out of the slot 47 and over the wall 23 when it is desired to remove the carriage from the oven for any purpose.

It is to be noted, that due to the guide 46 in the slot 47 that the necessity of providing guide-tracks for the wheels is entirely eliminated and these travel over the upper surface of the bottom wall 23.

From this construction, it is obvious that the baking pan for the meat can be readily placed on the trav or carriage when the same is withdrawn from the oven as clearly shown in Figure 1 of the drawings and that the meat can be readily slid into the oven without danger of the carriage binding on the oven parts in any way. When it is desired to baste the meat it is merely necessary to lower the door 22 and to grasp the handles or hand grips 43 which are at all times arranged exteriorly of the oven and pull out on the carriage. If desired the carriage can be slightly elevated at its front end so that the carriage can be moved on its rear wheels only or the carriage can be pulled straight out and the front thereof will slide over the oven floor and door.

When it is desired to bake the meat it is merely necessary to tilt the carriage upwardly on the wheels or rollers which will permit the meat juices to drain toward one end of the pan where the same can be conveniently reached by a big spoon or the like. I lay particular stress on the formation of the body or grate of the carriage and the wheels and runners for the carriage and the means provided for guiding the carriage into and out of the oven.

An essential part of my invention is the carriage 50 for the broiling oven and this carriage functions similar to the carriage 27 but I have so constructed this carriage as to permit the broiling pan indicated by the reference character 51 to be raised or lowered so as to adjust the vertical position thereof.

The broiler oven carriage 50 embodies a frame including a front U-shaped bar 52 and a rear U-shaped bar 53. These bars can be made from strap iron or the like and the front bar includes the upstanding legs or standards 54 and the connecting lower cross bar 55. The rear bar 53 likewise includes the upstanding legs or standards 56 and the lower connecting piece 57. These bars 52 and 53 are connected together by means of longitudinally extending side bars 58 which are preferably formed from angle iron. As clearly shown in Figure 15 of the drawings the angle iron bars 58 are riveted or otherwise secured to the cross piece 57 and the rear bar 53 while the forward ends of these bars are riveted to the lower surface of the cross piece 55 of the front bar 52. The forward ends of the angle shaped side bars 58 are offset or struck down-

wardly as at 59 to provide runners for engaging the bottom wall 25 of the broiler oven 21, as clearly shown in Figure 2 of the drawings.

In accordance with my invention I arrange flat strips 60 in spaced parallel relation to the legs or front standards 54 and unite these strips with the legs by means of rivets 61. These rivets have their ends reduced as at 62 and inserted through the standards 54 and the strips 60 after which these ends are up set. This forms an effective means for holding the strips spaced from the standards 54 and the rivets 61 act as support for the broiling pan or tray 51, as will be later described. The inner edges of the rear standards or legs 56 are provided with notches 63 for receiving the rear edge of the broiler pan or tray 51, as also will be later described.

I provide a novel support for the front of the broiler pan or tray 51 and this support consists of a bridge bar 64 which is of angle iron construction. The ends of the bridge bar 64 are provided with the forwardly extending laterally disposed ears 65, the lower ends of which are provided with notches 66. The upper flange of the bridge bar can be provided with pins 67 for a purpose which will also be more fully described. The ears 65 are adapted to be inserted between the standards and the strips 60 with the ears 65 over the pins or rivets 61, these pins or rivets being received within the notches 66. It is obvious from this construction that the bridge bar 64 can be placed over any of the desired rivets or pins 61 and thus held in the desired elevated position. This bridge bar 64 also functions as means for uniting the front standards together so as to prevent the spreading of these standards under the action of heat.

When it is desired to broil meat or the like the tray 51 is placed with its rear edge in the desired notches 63 and the bridge bar 64 is initially placed on the front standards in the desired position. The front end of the pan or tray 51 is now lowered and placed over the pins 67 which can engage under the front bead thereof or the flange of the pan or tray can be provided with openings for receiving the pins. This effectively prevents displacement of the broiling pan accidentally off of the carriage.

If preferred the edge of the pan 51 can be coiled about a reinforcing rod or wire 70 as shown in Figure 19 of the drawings, and the edge of the pan at the rear end thereof can be notched as at 71 to expose the said rod at spaced points and this rod at the exposed points can then be placed in the desired notches 63 for holding the rear end of the pan in place.

I also prefer to use a particular type of supporting tray 72 for the broiling pan and this tray is provided with the depending feet 73 for spacing the same from the bottom wall

of the pan and has one end cut away as at 74. Also the tray is preferably formed narrower than usual. The space left by the cut out portion 74 provides a convenient means for permitting the insertion of a big spoon into the pan for collecting the drippings to permit the basting of the meat and the spoon can be left within the cut out portion if desired.

In this broiler oven carriage, I likewise provide the I-shaped guide member 75 for the rear end thereof and the same is riveted or otherwise secured to the lower surface of the connecting piece 57 of the rear member 53 of the carriage. As shown, the lower flanges of the I-shaped guide member 75 can taper toward the forward end and the same is adapted to be received within a longitudinally extending slot 76 formed in the bottom wall 25 of the broiling oven. The rear end of this slot is enlarged as at 77, so as to permit the removal of the I-shaped guide member 75 therefrom when it is desired to remove the tray or carriage from the broiling oven for any reason. If desired or preferred the bottom wall 25 can be made in two sections with the meeting edges of the sections notched to provide the slot 76.

The upper end of the front standards 54 of the carriage are provided with forwardly and laterally extending ear or handle brackets 78 to which are secured the manipulating handle 79. These handles extend through suitable notches 80 formed in the front wall of the stove as clearly shown in Figure 3 of the drawings when the broiler carriage is in its extreme position in the broiling oven. This permits the convenient withdrawal of the carriage from the oven without danger of burning the hands of the operator.

The lower ends of the standards 56 support the rear wheels 81 which are mounted on suitable axles 82. These axles 82 are in the nature of screws and are threaded into the standards and are provided with enlarged heads 83 which are countersunk into the outer faces of the rollers. This construction is the same as that provided for the rollers of the baking carriage.

This carriage is operated in the same way as the carriage heretofore described and it is merely necessary to lower the door 24 and pull out on the carriage, when it is desired to attend to the meat or other food being cooked.

Particular attention is invited to the fact that the runners 59 of the broiler carriage and the runners 39 of the baking carriage are located inwardly of the sides of these carriages which effectively prevents these runners from tilting or sliding off of the sides of the oven door during the manipulation of the carriage, which effectively prevents accidents.

From the foregoing description, it can be seen that I have provided a novel device

which will permit the effective handling of meat in a convenient and expeditious manner without danger of the operator burning his or her hands in any way.

Changes in details may be made without departing from the spirit or the scope of this invention, but:—

What I claim as new is:

1. In a stove, an oven having a bottom wall and a hinged door, a carriage slidable into and out of the oven over the door when the same is in its lowered position, the carriage including a grate having front and rear bars, side bars and longitudinally extending intermediate bars, the intermediate bars being provided with depending flanges, wheels carried by the grate and located within the plane of the side edges of the carriage, the flanges of certain intermediate bars having extensions at their forward ends provided with runners for engaging the bottom wall and the oven door when the same is in its lowered position.

2. In an oven attachment for cooking stoves, a carriage comprising a body including front and rear bars, connecting side bars and intermediate longitudinally extending bars, said body formed from a single sheet of metal and having marginal flanges thereon and depending flanges on the intermediate bars, the flanges of the intermediate bars at their forward ends being provided with extensions to provide runners.

3. An oven attachment comprising a carriage for movement into and out of the oven comprising front and rear substantially U-shaped pieces each of which include standards and a connecting bridge piece, longitudinally extending bars connecting the cross strips together of the front and rear pieces, said bars having their forward ends offset downwardly to provide runners, wheels carried by the standards of the rear piece, a pan, and means for adjustably supporting the pan on the standards of the front and rear pieces.

4. An oven attachment comprising a pan carrier including front and rear substantially U-shaped pieces each of which includes upstanding standards and connecting cross strips, longitudinally extending bars connecting the cross strips together inward of the ends thereof, the forward ends of the bars being offset downwardly to provide runners, wheels rotatably carried by the standards of the rear piece, and a depending substantially I-shaped guide member carried by the cross strip of the piece.

5. An oven attachment comprising a carriage including front and rear substantially U-shaped pieces each including standards and a cross strip, means connecting the front and rear pieces together, strips arranged in spaced facing relation to the standards of the front piece, rivets connecting the

strips to the standards and forming supporting pins, a bridge bar and pan supporting rests extending between the standards of the front piece having forwardly extending notched ears, said ears being received between the standards of the front piece and the strip for engagement over selected rivets, the forward edges of the standards of the rear piece being provided with a plurality of equi-distantly spaced notches for receiving the rear edge of the pan to be supported.

6. In a stove, an oven having a bottom wall and a hinged door, a carriage slidable into and out of the oven door when the same is in its open position including U-shaped front and rear pieces, longitudinally extending bars connecting the pieces together having their forward ends offset downwardly to provide runners, supporting wheels rotatably carried by the rear piece, means carried by the piece for adjustably receiving a pan to be supported, the bottom wall having a longitudinally extending slot, and an I-shaped guide member carried by the rear piece slidable in said slot.

In testimony whereof I affix my signature.
HERBERT KUCKEL.

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