Oct. 27, 1953 A. G. FEDER 2,657,110

BROILER STRUCTURE

Filed June 23, 1949

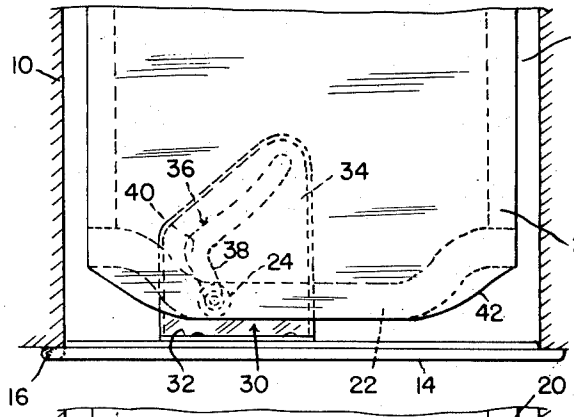


FIG.2.

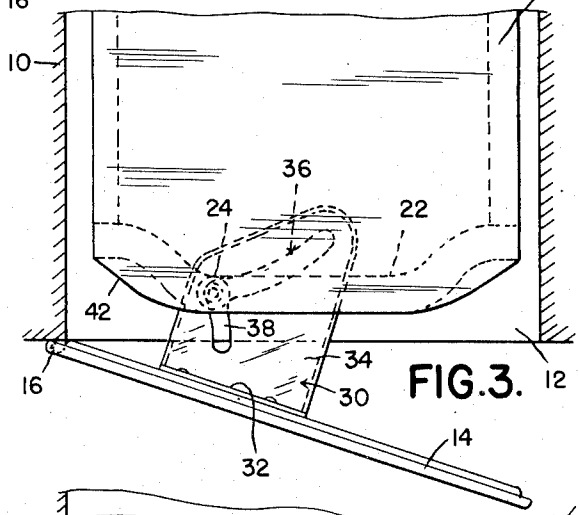


FIG.3.

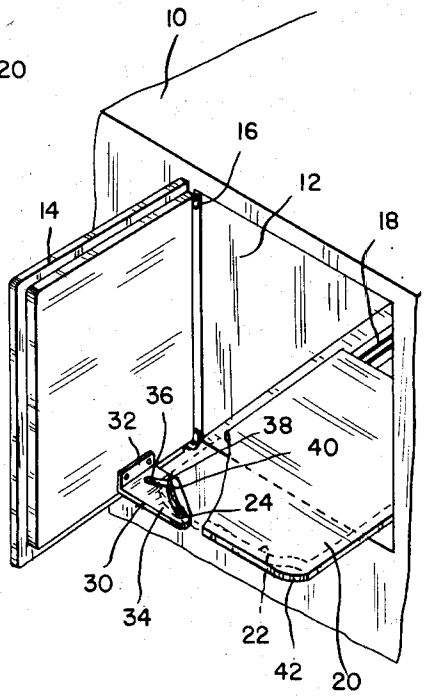


FIG.1.

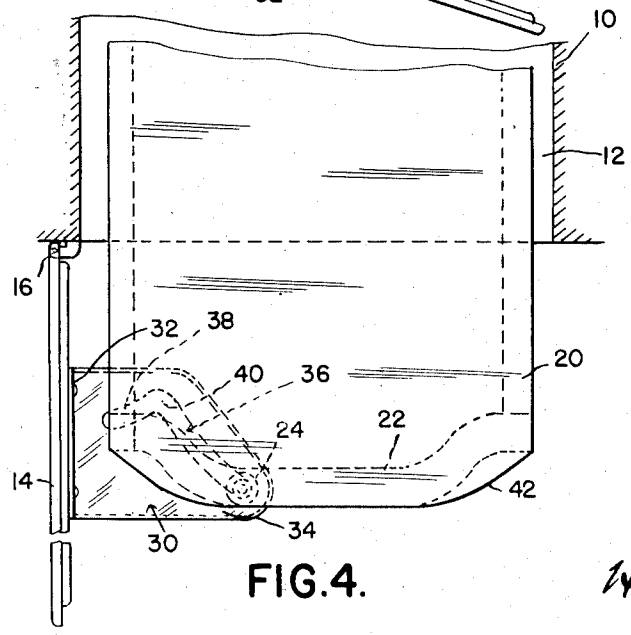


FIG.4.

INVENTOR.
ARTHUR G. FEDER
BY Whittemore, Hulbert & Belknap
ATTORNEYS

Patented Oct. 27, 1953

2,657,110

UNITED STATES PATENT OFFICE

2,657,110

BROILER STRUCTURE

Arthur G. Feder, Detroit, Mich., assignor to Detroit-Michigan Stove Company, Detroit, Mich., a corporation of Michigan

Application June 23, 1949, Serial No. 100,929

1 Claim. (Cl. 312—274)

1

The present invention relates to broiler structure.

It is an object of the present invention to provide in a broiler a tray slidable on the bottom thereof in combination with a hinged door for closing the front of the broiler space and means interconnecting the door and tray to permit partial opening movement of the door without effecting movement of the tray and to provide for automatic partial withdrawal of the tray as the door is swung from its partially open to fully open position.

It is a further object of the present invention to provide in a broiler a slidable tray, a bracket on the inner side of the door of the broiler, a cam slot in the bracket and a follower on the tray effective to cause outward movement of the tray in response to open movement of the door.

It is a further object of the present invention to provide a structure of the character described in which the tray may be lifted to free the follower on the tray from the cam slot to provide for complete removal of the tray.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a fragmentary perspective view of the broiler showing the door in fully open position.

Figure 2 is a diagrammatic plan view illustrating the relationship of parts when the door is in fully closed position.

Figure 3 is a diagrammatic view similar to Figure 2, showing the relationship of parts with the door in partially open position.

Figure 4 is a diagrammatic plan view similar to Figure 2 showing the relationship of parts with the door in fully open position.

Referring now to the drawings, there is illustrated in Figure 1 a portion of a stove 10 having a broiler space 12 therein provided with a closure door 14 which is hinged about vertical hinges indicated at 16. On the floor of the broiler space there are provided tracks indicated at 18 on which the tray 20 is slidable. In practice, the tray or the trackway or both will be provided with rollers facilitating easy movement of the tray.

The tray is normally formed of sheet metal and in the present case it is provided across its front with a reinforcing bar 22 which supports a downwardly extending roller 24.

At the inner side of the door 14 there is a

2

bracket 30 having a first portion 32 suitably secured to the inner surface of the door as by screws or the like, and an inwardly extending horizontal portion 34 provided with a cam slot 36. The cam slot 36 is of a size to receive the roller 24 so as to interconnect the tray 20 to the door 14 for actuation thereby.

Referring now to Figure 2 the parts are shown with the door 14 in closed position. At this time the tray 20 is in its innermost position and the roller 24 is located at one end of an arcuate portion 38 of the cam slot 36. The arcuate portion 38 is concentric with the axis of the hinge 16.

Referring now to Figure 3 the door 14 is shown as swung to partially open position, this position being selected such that the user may inspect articles in process of cooking in the broiler. For this purpose the arcuate portion 38 of the cam slot is of the length indicated and is so disposed that further opening movement of the door from the position shown in Figure 2 will be accompanied by outward movement of the tray 20.

Referring now to Figure 4 the door 14 is here illustrated in fully open position having been swung open through an arc of ninety degrees from its fully closed position about the axis of the hinge 16. This motion of the door has caused a second angularly disposed portion 40 of the cam slot 36 to act upon the roller 24 so that the tray 20 is moved to a position partially outside the broiler.

The forward end of the tray 20 may be raised, the trackway 18 and associated parts being designed to permit such lifting movement. The lifting movement of the forward end of the tray withdraws the roller 24 from the cam slot 36 and permits the tray to be withdrawn entirely from the broiler so that the broiler compartment and tray may be most easily cleaned. At the same time, horizontal portion 34 of the bracket is located directly beneath the forward end of the tray, and prevents substantial downward tipping, which might otherwise occur if heavy weights were located on the tray adjacent the front thereof. Furthermore, due to the location of the slot 36, substantially the entire plate is located rearwardly of the front edge of the tray when the door is fully open.

The second portion 40 of the cam slot 36 is so shaped that as the door reaches its fully open position, ninety degrees from its fully closed position, the roller 24 reaches the end of the portion 40 of the slot. In other words, since the

tray is mounted only for longitudinally sliding movement and cannot be moved transversely, the tray itself or more specifically the roller **24** on the tray, serves as a stop means for limiting opening swinging of the door to substantially ninety degrees.

It will be observed that the cam slot is so designed that the door may be opened an adequate amount for inspection without moving the tray.

It will further be observed that the forward corners of the tray are rounded off as indicated at **42** and the parts so designed that interference between the corners of the tray and the hinged side of the door is prevented.

The drawings and the foregoing specification constitute a description of the improved broiler structure in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claim.

What I claim as my invention is:

In a stove construction comprising an oven having a front opening and a door for said oven hinged for swinging movement about a vertical axis at one side of the opening: a trackway in said oven extending from front to rear thereof, a tray assembly slidable horizontally on said trackway and freely removable upwardly therefrom in any position of said tray assembly on said trackway, a bracket carried by the door including a relatively wide plate extending inwardly from adjacent the bottom edge of the door and disposed to engage the underside of said tray assembly, said plate having a cam slot therein, said tray assembly comprising a transverse reinforcing bar across its front edge and a cam follower depending therefrom rearwardly from the front edge of said tray and extending into said cam slot, said cam slot having an inner arcuate portion of substantially less than 90 degrees adjacent said door concentric with the hinge axis of said door and an outer portion closed at its outer end shaped to cam said tray assembly outwardly upon opening movement of said door, the closed end of said cam slot constituting an abutment for said cam follower limiting opening movement of the door to approximately 90 degrees, the front corners of said tray being substantially relieved rearwardly to provide for initiation of outward movement of said tray without interference with the door while the door is only partly open, said cam follower being freely removable in an upward direction from said cam slot to provide for ready removal of said tray from the oven, said plate constituting a support for the outer end of said tray assembly when said tray is moved outwardly of the oven to extend substantially beyond the outer end of said trackway.

ARTHUR G. FEDER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
420,295	Knight	Jan. 28, 1890
1,040,855	Betts	Oct. 8, 1912
1,235,362	Nelles	July 31, 1917
2,300,287	Huarisa	Oct. 27, 1942
2,361,525	Ball	Oct. 31, 1944
2,518,985	Geyh	Aug. 15, 1950
2,532,405	Jakeway	Dec. 5, 1950

FOREIGN PATENTS

Number	Country	Date
308,088	Great Britain	Mar. 21, 1929