

Nov. 12, 1935.

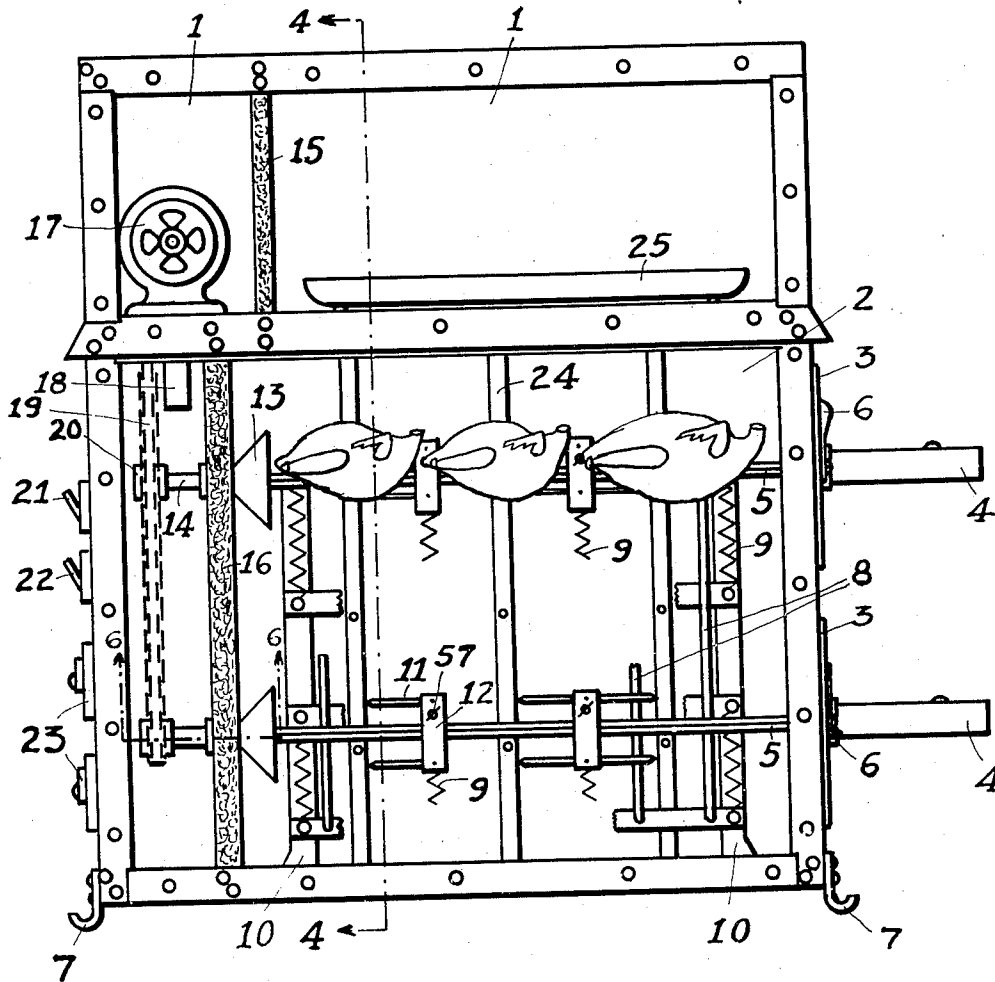
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2,020,808

ROTISSERIE OVEN

Original Filed Sept. 20, 1932 3 Sheets-Sheet 1

Fig. 1.



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ROTISSERIE ÖVEN

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Fig. 2.

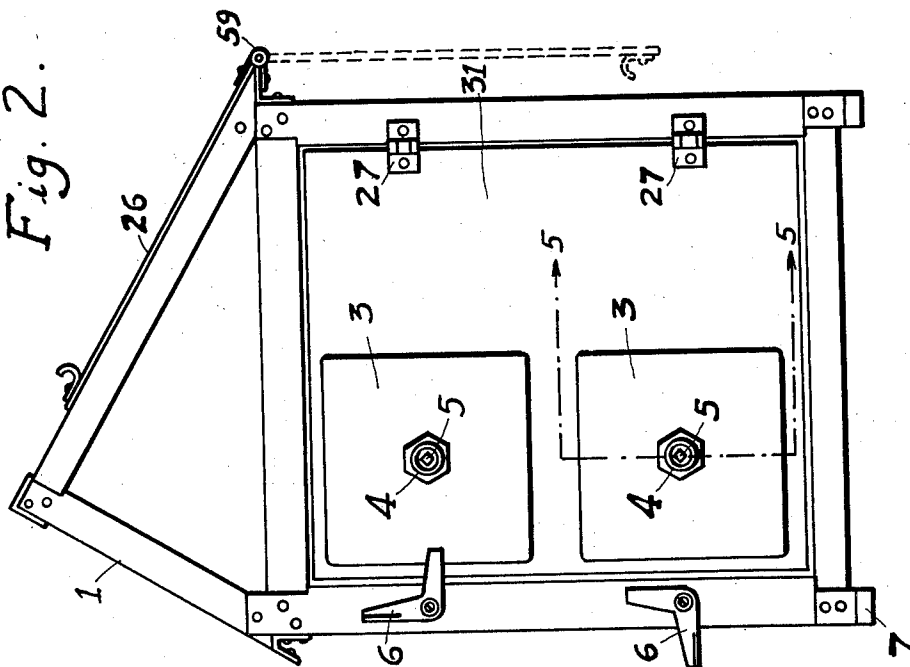
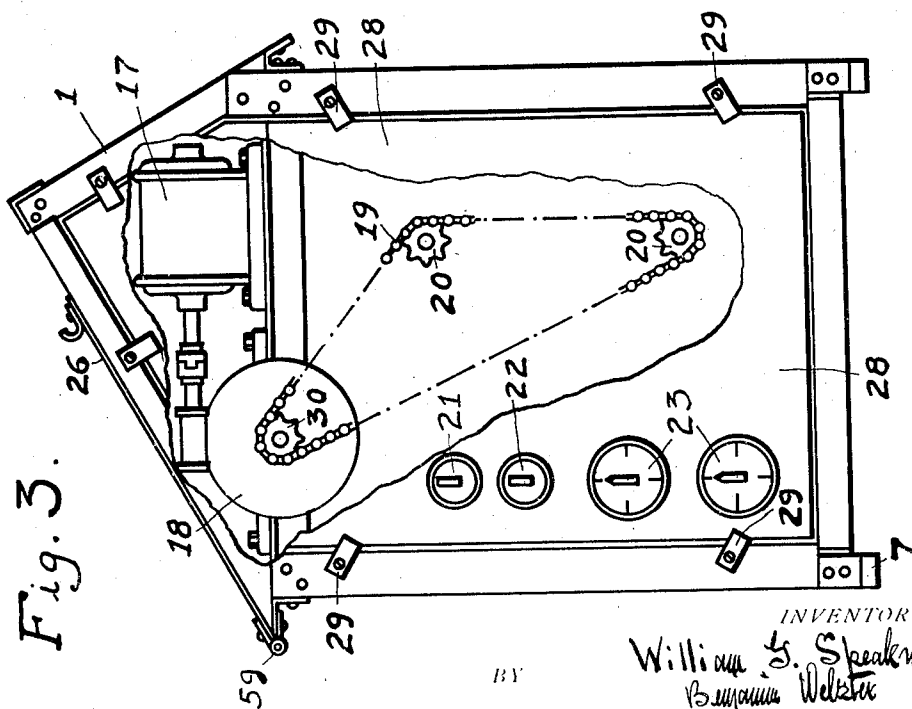


Fig. 3.



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Fig. 4.

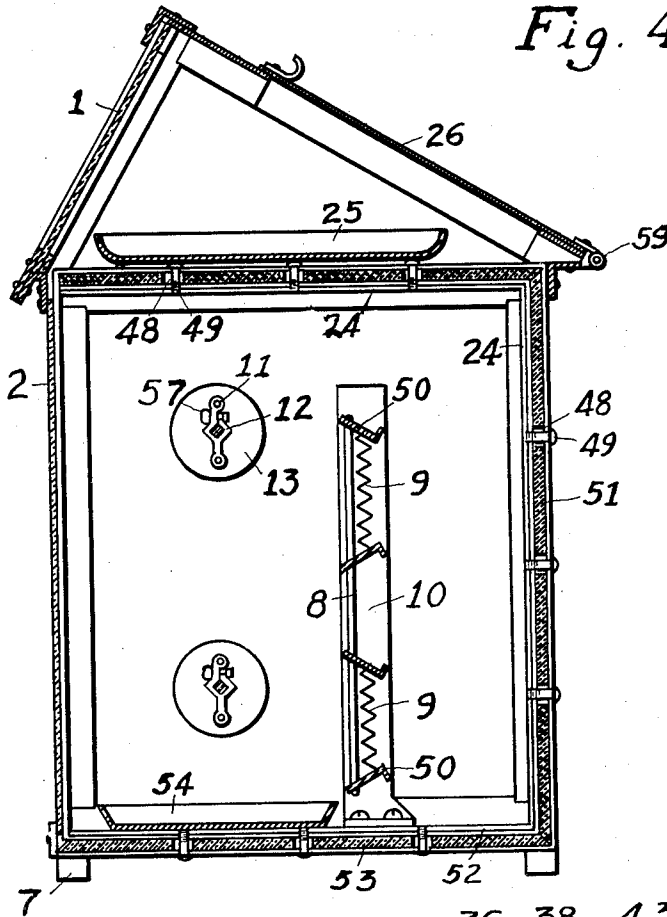


Fig. 5.

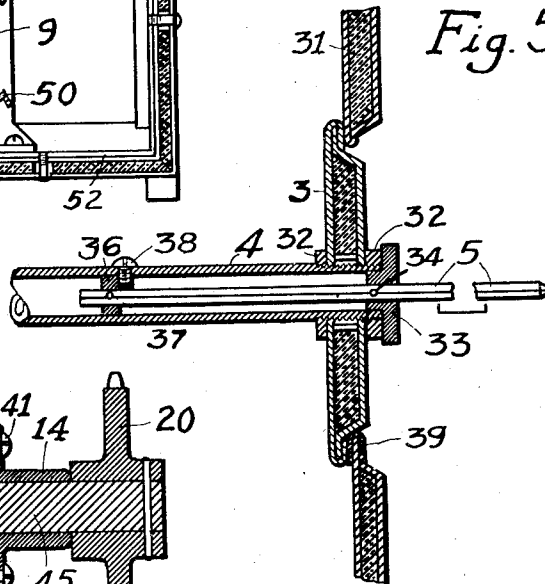
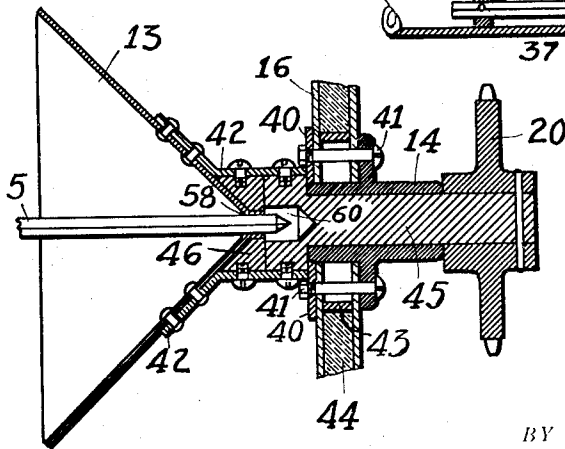


Fig. 6.

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2,020,808

ROTISSERIE OVEN

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 poration of Delaware, and one-fifth to Gaetano
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Application September 20, 1932, Serial No. 633,996
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10 Claims. (Cl. 219—35)

This invention relates to devices for roasting chicken or meats and more particularly to an electrical roasting device.

The objects of the invention, among others, are: First, to provide an electrical heating device adapted to roast meat by direct heat rays while the roast is slowly turned before the heating unit after the French or rotisserie manner; second, to provide such a device in an enclosed oven; third, to provide such a device in a heat-insulated enclosed oven; fourth, to provide a motor-operated mechanism for revolving the roasting spits in such a device; fifth, to provide in such a device an improved make-and-break connection between the operating mechanism and the rotatable spit; sixth, to provide a combined door and heat-shield for the handle of the spit; seventh, to provide a detachable mounting for the electrical resistance coils; eighth, to provide a storage chamber on the oven; and to provide advertising-display visibility for the various elements of the device. Other objects will appear as the description proceeds.

Reference is made to the drawings for illustration of a preferred embodiment of the invention, in which

Fig. 1 is a front elevation,

Fig. 2 is a right end elevation,

Fig. 3 is a left end elevation, a part broken away,

Fig. 4 is a section on line 4—4 of Fig. 1.

Fig. 5 is a section on line 5—5 of Fig. 2, and Fig. 6 is a section on line 6—6 of Fig. 1.

The device shown is adapted for six roasts, three chickens being mounted on the upper spit as shown in Fig. 1, and the lower spit providing also for three roasts. The pyrex glass window 1 gives visibility to the storage chamber above the oven adapted to receive the roasted chickens etc. This window 1 also exposes the motor chamber. Through the pyrex glass window 2 are seen all of the elements of the roasting device. In the right-end wall are two oven doors or heat-shields 3 having extending handles 4 in which the spits 5 are rotatably mounted. The doors 4 are secured in the right end wall of the oven, which is also hinged at the rear, providing a side door 31 for the oven, by the L-shaped fasteners 6 which also lock the side door 31 in position. The device as a whole is mounted on suitable feet 7. The frame 10 carries the electric resistance wires 9, an upper and a lower bank related to the upper and lower spits 5, and the guard lattice 8, the several components of the heating unit being secured by screws or other securing means,

The longitudinal subframes 50 for the resistance banks 9 render them easily removable for cleaning or boiling, thereby permitting the interior of the oven to be easily cleaned throughout. Skewers 11 are mounted in clamps 12 which are mounted for lengthwise adjustment on the spits 5, and are quickly loosed or fastened in any position by the thumb nuts 57. When the attendant observes through the pyrex window 2 that the roasts on the skewers 11 are suitably browned 10 he takes the appropriate handle 4 in hand, releases the corresponding latch 6, his hand being shielded against burning by the small door 3, and pulls out the spit 5 from the cone 13. A noncircular or square-shaped hole 58 in the oven 15 end of the shaft from the operating mechanism is centrally positioned with reference to the apex of the cone 13 which is also carried on the operating shaft. In inserting the spit 5 with the roasts in position it is only necessary for the attendant to locate the cone 13 with the pointed end of the spit 5 and it is thereupon guided into the square hole 58 in the shaft of the actuating mechanism simultaneously meshing and turning the spit 5 in the oven and in the handle 4 from 25 which it is spaced by a suitable rotatable bushing. The importance of this mechanism for practical service may be realized by considering the fact that the air in the vent when the door 3 is removed is at roasting temperature and it 30 is therefore essential to operation by an attendant without burning the hand that the operation of removal or insertion be quickly consummated.

The sprocket and cone-shaft bearings 14 are mounted in the insulating partition 16 symmetrically and oppositely disposed with reference to the doors or shields 3. The insulating partition 15 at the left end of the storage chamber provides a separate chamber for an electric motor 17, the shaft of which operates a worm-gear assembly 18 having a sprocket 30 connected with the sprocket chain 19 which actuates two sprocket wheels 20 each concentric with a cone 13. A suitable switch 21 disposed on the door 28 may be connected with electric lamps or flood lights (not shown) so disposed as to brilliantly illuminate the interior of the device and so produce a brilliant and eye-arresting advertising display. A suitable switch 22 controls the motor. Multiple point resistance switches 23 are 50 connected respectively with the upper and lower electrical resistance heating banks 9 permitting one or both to be operated at various temperatures. Vertical and horizontal cleats 24 support the inner wall of the oven. A tray 25 lies in the 55

bottom of the storage chamber. The door 26 of the storage chamber is hinged at 59 so that it can be swung up, back, and down to the dotted line position shown in Fig. 2. The oven door 31 is mounted on the hinges 27 so that it may be opened and swung back to the rear. The end door 28 gives access to the motor 17 and the gear-actuating mechanism and is removably secured by the six turn buttons 29.

The construction of the door or shield 3 is shown in Fig. 5. Two jam nuts 32 turning on the inner screwthreaded end of the handle 4 clamp it securely on the shield 3. The bushing 33 fits rotatably within the cylindrical end of the handle 4 and is fixed on the spit 5 by the pin 34. The shield 3 is a shell-like structure with beveled inner edges of simple construction with one edge crimped over the other and it is filled with insulating material such as magnesia. The spit 5 is square shaped and is centrally positioned in the handle 4 from which it is separated by air spaces and bears on its inner end a bushing 36 rotatably mounted in the handle 4 and fixed on the spit 5 by the pin 37. The screw 38 passed through the handle is a position locking screw for the bushing 36 and therefore for the spit 5. The crimped locking edges of the shells forming the shield 3 and the door 31 afford a simple and inexpensive manufacturing construction. The lower edge of the opening in the door 31 adapted to receive the shield 3 which is provided with a U-lip 39 which reinforces the edge and assures a snug fit of the shield 3.

Referring now to Fig. 6 the nut bolts 41 pass through a flange of the shaft bearing 14 and by washers 40 secure the bearing 14 in the partition 16. A circular spacer 43 forms a wall for the insulating material 44. The sprocket wheel 29 is mounted on one end of the shaft or stud 45 in the other end of which is an axial recess 60. A strap 42 is riveted to the cone 13 and to the cone-bushing 46, which has a noncircular or square hole 58 for engaging the spit 5, and to the inner end of the shaft 45 thereby making a single rotatable assembly in the bearing 14. Longitudinal spacers 48 in the walls separate the insulating material 51 into sections and therefore keep it equally distributed while the fastening screws 49 secure the spacers in position and hold the walls equidistant. The inner wall cleats 52 also provide a support for the removable drip pan 54 which overlies the sections of floor insulation 53.

The operation of the device is now fully apparent. Latches 6 are turned back singly to release the adjacent door-shield 3. Handles 4 enable the spit to be withdrawn without burning the hand of the attendant. A plurality of chickens or other roasts are placed on the skewers 11, one at a time, and positioned on the spit, and the clamp nuts 57 locked. When a spit 5 is loaded and inserted in the door of the oven the point is pushed into the cup 13 and home into the hole 58 and the lower edge of the shield 3 is pushed up to secure the lip 39 and the latch 6 is then turned down to lock the oven tight and the spit in rotatable connection. The other spit 5 is similarly loaded. Then the switches 21, 22, and 23 are turned on, the device being illuminated, the motor started to rotate the spits, and the resistance banks heated up. It is evident that cooking in this device gives the delicious palatable flavors of the rotisserie methods of direct heat on the fatter outside layers and also combines the usual roasting process of an oven, the combination of

roasting effects giving an economy in operation as well as delicious flavors to the roast and thorough interior cooking of the inside meat. After roasting is finished as may be observed through the transparent front window the storage chamber door 26 is opened, the spits removed, and the roasts placed on the pan 25 until required for serving.

Having now disclosed one embodiment of my invention and realizing that, in view of my disclosure many modifications in details of construction or design will readily occur to those skilled in the art I do not choose to limit myself except as in the appended claims.

I claim:

1. An electrical roasting device comprising in combination, an oven; a transparent wall in said oven, an electrical heating device in said oven, a rotatable spit having a pointed end and a bearing in the side wall of said oven, said bearing being removably mounted in said side wall, said spit and bearing being removable as a unit and means for driving said spit mounted in the opposite wall of said oven, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

2. An electrical roasting device comprising in combination, an oven, the walls of said oven being formed of sheets of metal with insulation in between; a transparent wall in said oven, an electrical heating device in said oven, a spit having a bearing in the side wall of said oven, said bearing being removably mounted in said side wall, the spit and bearing being removable as a unit, a hand shield connected with said bearing and adapted to close an opening in said side wall said hand shield being formed of two metal walls with insulation in between, a handle for the spit carried on the outside of said shield, and means for locking said shield in said side wall.

3. An electrical roasting device comprising in combination, a closed oven, a transparent wall in said oven, an electrical heating device in said oven, a spit having a pointed end and a bearing in the side wall of said oven, said bearing being removably mounted in said side wall, the spit and bearing being removable as a unit, and means for driving said spit mounted in the opposite wall of said oven, said means comprising a rotatable shaft and a noncircular hole in the inner end thereof adapted to engage said spit, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

4. An electrical roasting device comprising in combination, a heat-insulated oven, a transparent wall in said oven, an electrical heating device in said oven, a rotatable spit having a pointed end and a bearing in a side wall of said oven, said bearing being removably mounted in said side wall, the spit and bearing being removable as a unit, and a second bearing for said spit symmetrically disposed in an opposite side wall, said second bearing carrying a cup-shaped element within said oven adapted to guide the end of said spit into the second bearing, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

5. An electrical roasting device comprising in combination, a heat-insulated oven, a trans-

parent wall in said oven, an electrical heating device in said oven, a rotatable and pointed spit having a bearing in the side wall of said oven, said bearing being removably mounted in said side wall, the spit and bearing being removable as a unit, a rotatable actuating member in the opposite side wall of the oven, a noncircular hole in the end of said member, and a cup shaped element mounted on said member about said hole, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

6. An electrical roasting device comprising in combination, a heat-insulated oven, a transparent wall in said oven, an electrical heating device in said oven, a rotatable noncircular and pointed spit having a bearing in a side wall of said oven, said bearing being removably mounted in said side wall, the spit and bearing being removable as a unit, a rotatable actuating member mounted in a bearing in the opposite side wall of the oven, a noncircular hole in the inner end of said member, and a cup shaped element mounted on the inner end of said member around said hole, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

7. An electrical roasting device comprising in combination, a heat-insulated oven, a transparent wall in said oven, an electrical heating device in said oven, a rotatable noncircular and pointed spit having a bearing in a side wall of said oven, said bearing comprising a handle and a heat shield spaced from said spit by bushings, the spit and bearing being removable as a unit, and a rotatable actuating member mounted in the opposite side wall of said oven, a cup-shaped element mounted on said member and a noncircular hole in the inner end of said member and within said cup, the pointed end of the spit being in rotational engagement with the driving means, and being adapted to be withdrawn, or disengaged, when the spit and removable bearing are taken out of the oven.

8. An electrical roasting device comprising in combination, an oven, said oven being closed to all air currents of convection and having enclosing walls formed of inner and outer layers of sheet metal with the interstices substantially

filled with mineral insulating material, a window of transparent heat-resisting material formed in one of the vertical walls, a rotatable bearing in another vertical wall, means external to said wall for rotating said bearing, an opening in the opposite vertical wall, a cover for said opening having inner and outer walls of sheet metal with a filling of mineral insulating material in between, a handle externally mounted on said cover, a spit rotatably mounted in said cover and having an end adapted to engage with the rotatable bearing in the opposite wall, and electrical resistance units mounted within the oven and parallel to said spit.

9. An electrical roasting device comprising in combination, an oven, said oven being closed to all air currents of convection and having enclosing walls formed of inner and outer layers of sheet metal with the interstices substantially filled with mineral insulating material, a plurality of spacing devices between the inner and outer walls adapted to maintain the insulating material in position, a window of transparent heat-resisting material formed in one of the vertical walls, a rotatable bearing in another vertical wall, means external to said wall for rotating said bearing, an opening in the opposite vertical wall, a cover for said opening having inner and outer walls of sheet metal with a filling of mineral insulating material in between, a handle externally mounted on said cover, a spit rotatably mounted in said cover and having an end adapted to engage with the rotatable bearing in the opposite wall, and electrical resistance units mounted within the oven and parallel to said spit.

10. An electrical roasting device comprising in combination, an oven, said oven being closed to all air currents of convection and having enclosing walls comprising insulating material, a window of transparent heat-resisting material formed in one of the vertical walls, a rotatable bearing mounted in another vertical wall, means external to said wall for rotating said bearing, an opening in the opposite vertical wall, a cover for said opening comprising insulating material, a handle externally mounted on said cover, a spit rotatably mounted in said cover and having an end adapted to engage with the rotatable bearing in the opposite wall, and electrical resistance units mounted within the oven and parallel to said spit.

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