May 28, 1940. C. ROSSINI ET AL 2,202,537

BROILER

Filed Nov. 28, 1939

Fig. 1.

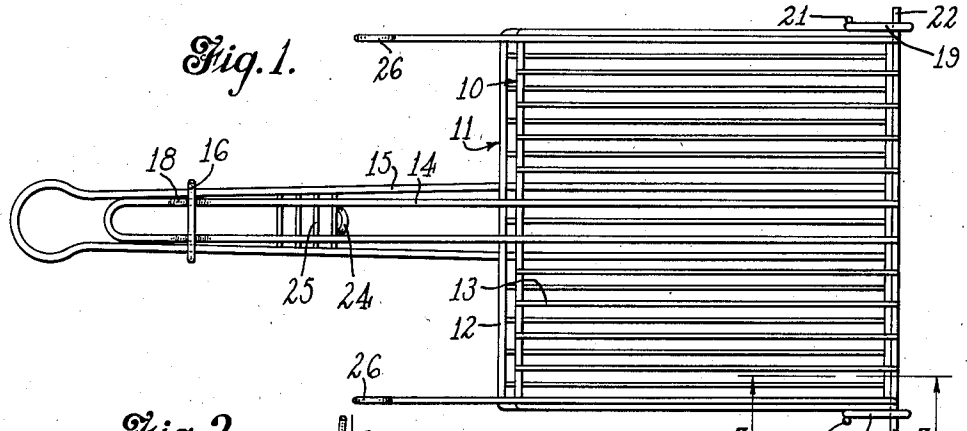


Fig. 2.

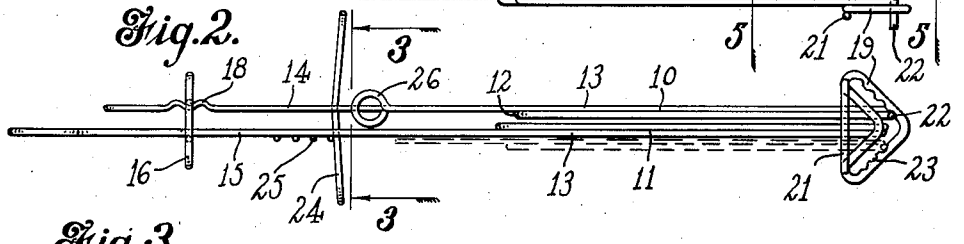


Fig. 3.

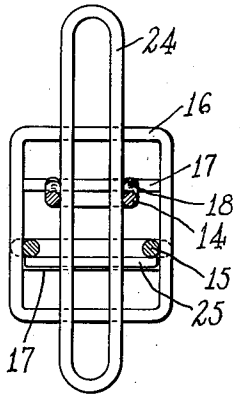


Fig. 4.

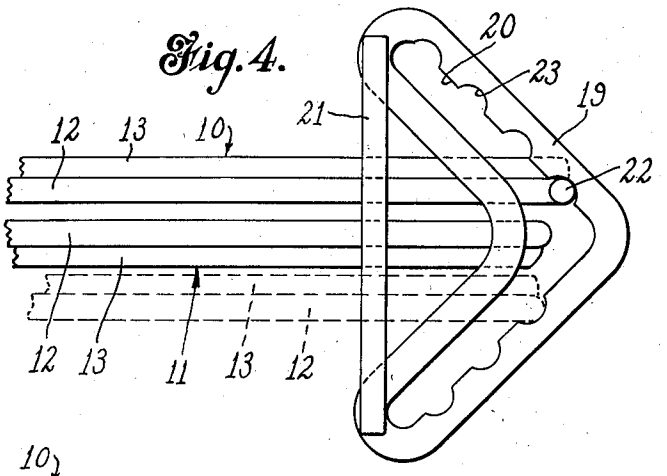
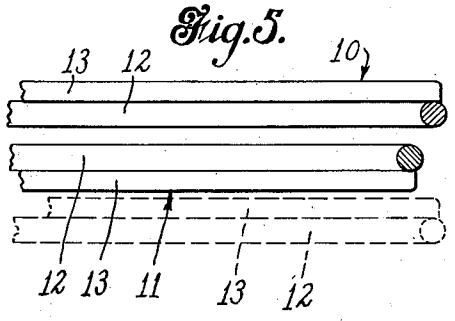


Fig. 5.



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UNITED STATES PATENT OFFICE

2,202,537

BROILER

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New Haven, Conn.

Application November 28, 1939, Serial No. 306,438

9 Claims. (Cl. 53—5)

This invention relates to broilers, and more particularly to a broiler which comprises a pair of cooperating grid members of substantially the same shape and configuration, which are hingedly connected together at one end and adapted to be clamped together, with the material to be broiled between them.

As is well known to users of such broilers, the materials to be broiled may vary greatly in thickness, and it is therefore desirable to have the hinge connection between the grids such that they may be suitable for use with material cut in very thin slices, or with material having relatively great thickness. In order to effect this result, the hinge connection between the grid members has in some instances consisted of a slotted member secured to one grid and trunnions upon the other grid movably mounted in these slots. In our prior Patent No. 2,148,879, such a grid is shown, wherein the slotted member provided upon one grid is inclined forwardly or toward the handles, so that when the material is placed between the grid members the trunnions will automatically assume the desired position in the slot to effect the proper clamping of the material therebetween when the plane of one grid is substantially parallel to that of the other.

In certain instances it has been found that the trunnions are inclined to slip upwardly and forwardly in the slot unless some means is provided to limit such movement and maintain the trunnions against the rear wall of the slot.

Also it is desirable for several reasons to so construct the grid members that they may be reversed or swung through an angle of substantially 360° about their hinge connection, so that either of the grid faces may be used as the outside faces, and the other faces as the inside faces. One reason for this is that the grids sometimes tend to become warped due to the heat to which they are subjected, and if this occurs the reversing of the grids will have a tendency to restore them to their original flat shape. Also due to the construction of the grids, the bars thereof will usually be farther apart when they are in one position than when they are in reverse position, so that their reversal will effect some adjustment in the spacing between the grids, to allow for material of greater or less thickness.

One object of the present invention, therefore, is to provide a broiler of the character described, provided with a hinge connection comprising inclined slotted members on one grid member within which ride trunnions on the other grid member, and means on the grid members to limit the movement of the trunnions upwardly and forwardly in the slots, so that the trunnions will tend to be held firmly in a predetermined position.

A still further object of the invention is the provision of a broiler having a pair of cooperating grid members which will be substantially automatic in their adjustment for materials of different thicknesses, and which will at the same time be reversible whereby the inner surfaces of the grid members may become the outer surfaces.

Still another object of the invention is the provision of a broiler comprising a pair of cooperating grid members which will be reversible, as described, and which will at the same time have a substantially automatic adjustment for materials of different thicknesses, regardless of the position in which the grid members are used, and which broiler will also be provided with means for holding the grid members rigidly in position and preventing relative movement thereof while in use.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing:

Fig. 1 is a top plan view of a broiler embodying our improvements;

Fig. 2 is a side elevational view of the same;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Fig. 4 is an enlarged side elevational view of the hinge connection between the grids; and

Fig. 5 is a sectional view on line 5—5 of Fig. 1.

To ilustrate a preferred embodiment of our invention, we have shown a broiler comprising a pair of grid members 10 and 11, which as shown are of rectangular form, each comprising a substantially rectangular frame 12 having a plurality of longitudinal rods or wires 13 spanning the opposite end members of this frame.

As shown in Figs. 1 and 2, these grid members are provided with handles 14 and 15, respectively, which handles may be formed as a continuation of certain of the wires 13. The handle 15 may be somewhat longer than the handle 14, and carry a loop member 16, which may be moved to position to engage or disengage the handle 14 so as to clamp the grid members together or release them for opening. The loop 16 may, as shown in Fig. 3, be provided with a number of spaced bars 17 to allow for various adjustments between the grid members, depending upon the thickness of the material which is to be broiled at any particular time, and the handle 14 may be provided with notches or corrugations 18 so that the en-

gagement of the loop 16 therewith will be relatively more secure against accidental release.

As previously stated, it is desirable to have an adjustable hinge connection between the grids at their rear ends or the ends opposite the handle members, and it is also desirable to have such a connection as will permit the reversal of the grids. As shown particularly in Figs. 4 and 5, the wires 13 are provided on one face of the rectangular frame 12, and it will be seen that these wires are, therefore, farther apart when the grid is in full-line position, shown in Fig. 4, for example, than when in dotted-line position, shown in that figure, in which case the upper grid has been reversed.

In order to provide such a connection there is secured at each end of one of the grids 12, in this case the lower grid, as shown in Figs. 2 and 4, a slotted member 19 providing a slot 20 of substantially V-shaped form. These members may be secured to the grid 11 by a welding operation, and if necessary may be provided with a brace 21 to secure them firmly in place. The grid 10 may be provided with trunnions 22, which trunnions are slidably mounted in the slots 20. It will be observed that the members 19 are secured in such a position that the angle or vertex of the V is substantially in the plane of the grid 11, with the slot at this point disposed rearwardly of the grid, so that it is open from one end to the other, and from this point the slot extends upwardly and forwardly both above and below the grid. The upper or rear wall of the slot 20 may be provided with indentations or notches 23 within which the trunnions 22 may seat, so as to prevent the tendency of the trunnion to slip along the slot after it has once been secured in place.

It will be apparent that under pressure of material between the grid members 10 and 11 there will be a tendency of the trunnions 21 to slip toward the ends of the slots, or in a forward direction toward the handle members. To prevent such a tendency when the handles are closed, we have provided upon the handle 14 double stop members 24 which extend above and below this handle, and which are, as shown in Fig. 2, slightly inclined rearwardly in both directions from the handle 14. The handle 15 is provided with a plurality of spaced bars 25, which are adapted to engage one or the other of the stop members 24, depending upon the position in which the grids are used. It will be apparent that when the trunnion 22 slides upwardly and forwardly in the slot 20, the upper grid member 10, as shown in Fig. 2, will be moved forwardly with respect to the lower grid member, and hence the stop member 24 will engage different ones of the bars 25, depending upon the thickness of the material being broiled, and the consequent spacing apart of the grid members. As the members 24 are slightly inclined rearwardly, they will have a tendency when engaged with one of the bars 25 to cam the grid member 10 rearwardly against the rear side of the slotted member 19, and thus tend to crowd the grid members together as much as possible so that they will grip the material therebetween. If the indentations or slots 23 are provided, the trunnions 22 will be crowded into these slots.

In order to assist in the turning of the grid when a large quantity of material is being broiled, certain of the bars 13 may be continued to form turning handles 26 adjacent the side edges of the grids, so that one of these handles may be grasped in addition to the handles 14 and 15, and enable the operator to better balance the grid during the turning operation.

While we have shown and described a preferred embodiment of our invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the appended claims.

What we claim is:

1. A broiler comprising a pair of cooperating grid members, a handle secured at one side of each of said grid members projecting therefrom, means to clamp said members together, members hingedly connecting said grid members at the sides thereof opposite the handles, said connecting members comprising means on one grid providing slots in inclined relation relatively to the plane of the grid, and a trunnion upon the other grid member slidable in said slots, and cooperating means on said handles to limit movement of said trunnions in one direction in said slots.

2. A broiler comprising a pair of cooperating grid members, a handle secured at one side of each of said grid members projecting therefrom, means to clamp said members together, members hingedly connecting said grid members at the sides thereof opposite the handles, said connecting members comprising means on one grid providing slots in inclined relation relatively to the plane of the grid, a trunnion upon the other grid member slidable in said slots, and coperating means on said handles to limit movement of said trunnions in one direction in said slots, said means comprising a bar on one of said handles and a projecting stop on the other handle to engage said bar.

3. A broiler comprising a pair of cooperating grid members, a handle secured at one side of said grid members projecting therefrom, means to clamp said members together, members hingedly connecting said grid members at the sides thereof opposite the handles, said connecting members comprising means on one grid providing slots in inclined relation relatively to the plane of the grid, a trunnion upon the other grid member slidable in said slots, cooperating means on said handles to limit movement of said trunnions in one direction in said slots, said means comprising a plurality of spaced bars on one of said handles, and a projecting member on the other handle to engage one of said bars.

4. A broiler comprising a pair of cooperating grid members, handles secured at one side of each of said members, members hingedly connecting said grid members at the side thereof opposite the handles, said connecting members comprising means on one grid providing slots projecting in inclined relation from each face of the grid, and trunnions on the other grid slidable in either of said slots to reverse the relative positions of said grids, and means to clamp said handles together.

5. A broiler comprising a pair of cooperating grid members, handles secured at one side of each of said members, members hingedly connecting said grid members at the side thereof opposite the handles, said connecting members comprising means on one grid providing slots projecting in inclined relation from each face of the grid, trunnions on the other grid slidable in either of said slots to reverse the relative positions of said grids, means to clamp said handles together, and means to limit movement of the trunnions in said slots.

6. A broiler comprising a pair of grid elements,

members secured in spaced relation at one side of one of said elements, each of said members providing a V-shaped slot with the apex of the slot in the plane of the grid, and the legs of the slot projecting in inclined relation, one upwardly and one downwardly from the plane of the grid, trunnions on the other grid element slidable in said slots, and means to clamp said handles together.

7. A broiler comprising a pair of grid elements, members secured in spaced relation at one side of one of said elements, each of said members providing a V-shaped slot with the apex of the slot in the plane of the grid, and the legs of the slot projecting in inclined relation, one upwardly and one downwardly from the plane of the grid, trunnions on the other grid element slidable in said slots, means to clamp said handles together, and cooperating means on said handles to limit movement of the trunnions toward the outer ends of the slots.

8. A broiler comprising a pair of grid elements, members secured in spaced relation at one side of one of said elements, each of said members providing a V-shaped slot with the apex of the slot in the plane of the grid, and the legs of the slot projecting in inclined relation, one upwardly and one downwardly from the plane of the grid, trunnions on the other grid element slidable in said slots, means to clamp said handles together, cooperating means on said handles to limit movement of the trunnions toward the outer ends of the slots, said means comprising spaced bars on one of said handles, and members projecting from both sides of the other handle to engage said bars.

9. A broiler comprising a pair of cooperating grid members, a handle secured at one side of each of said grid members projecting therefrom, means to clamp said members together, members hingedly connecting said grid members at the sides thereof opposite the handles, said connecting members comprising means on one grid providing slots in inclined relation relatively to the plane of the grid, a trunnion upon the other grid member slidable in said slots, cooperating means on said handles to limit movement of said trunnions in one direction in said slots, said means comprising a plurality of spaced bars on one of said handles, a projecting member on the other handle to engage one of said bars, and said member being in inclined relation relatively to the plane of the handle to effect a camming action in cooperating with said bar to urge one of the grids rearwardly with respect to the other.

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