M. FROEHLICH.

OVEN.

APPLICATION FILED JULY 17, 1919.

1,426,059. Patented Aug. 15, 1922.

4 SHEETS—SHEET 1.

Fig. 1.

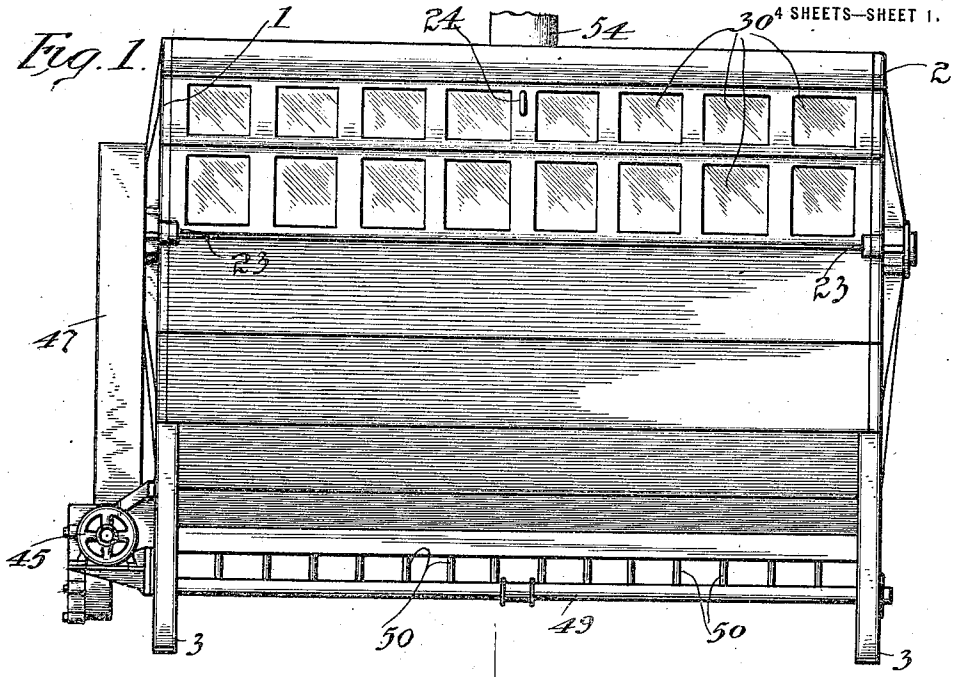
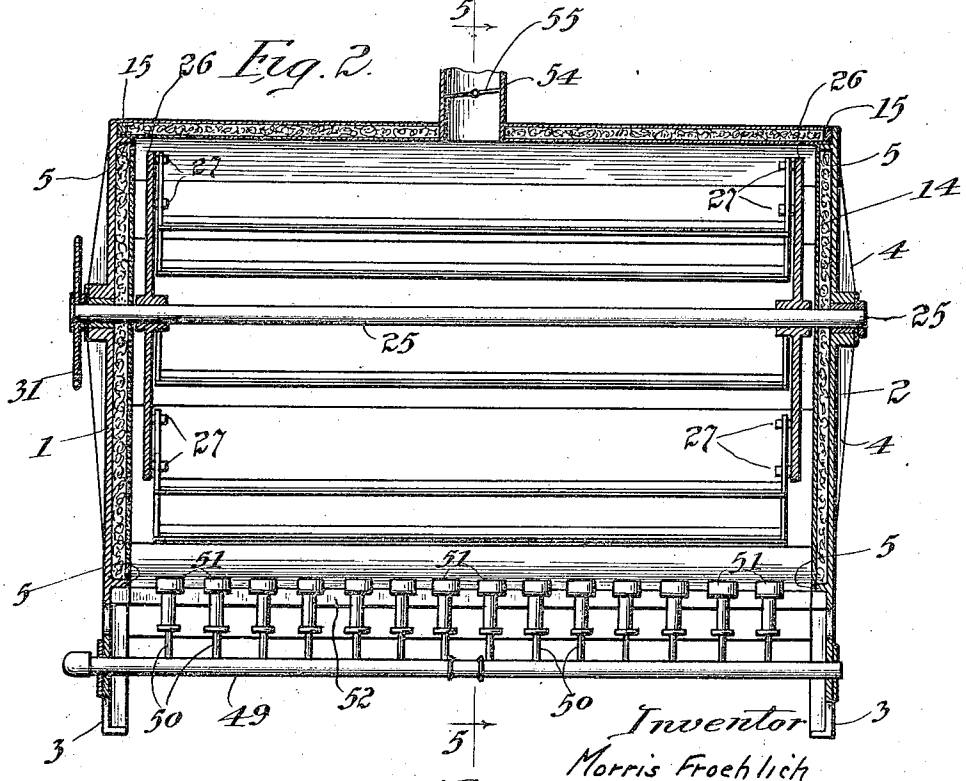



Fig. 2.




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4 SHEETS—SHEET 2.

Fig. 3.

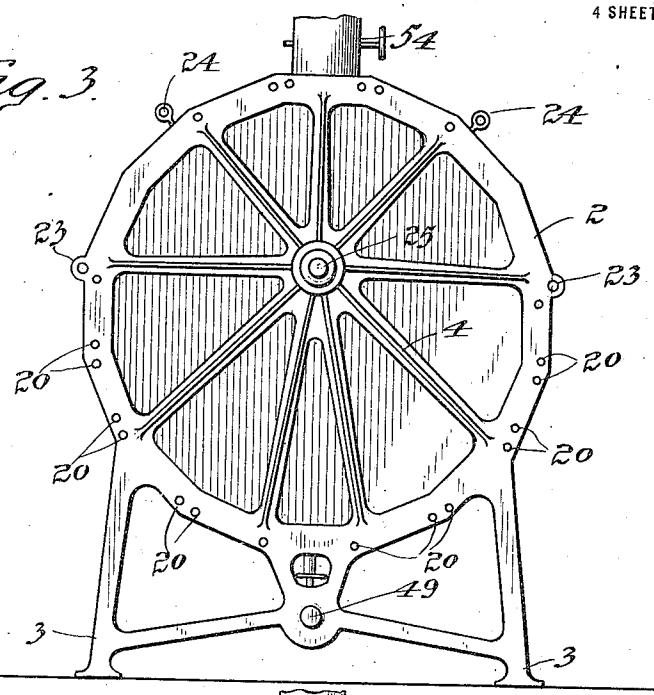
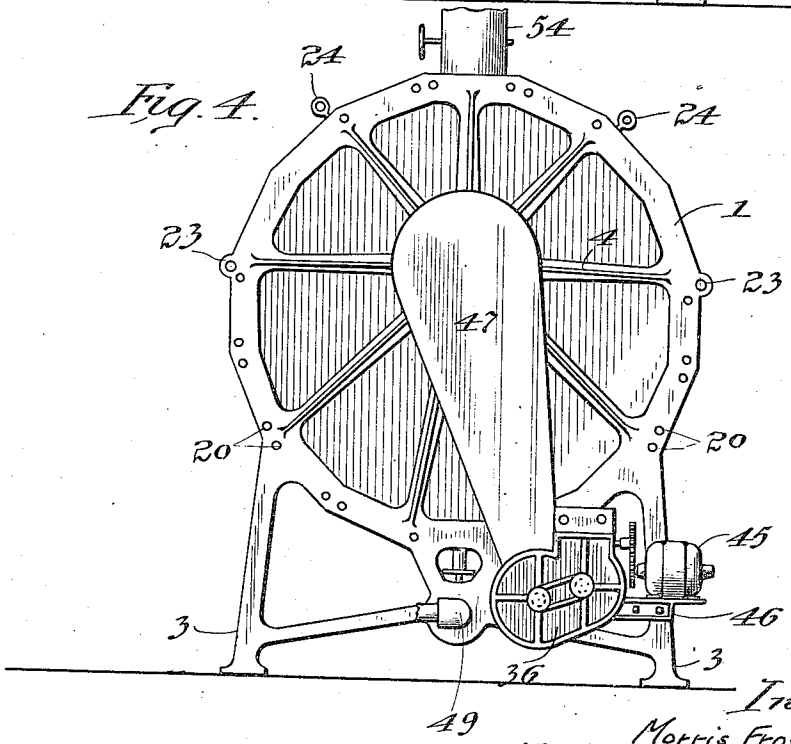



Fig. 4.




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4 SHEETS—SHEET 3.

Fig. 5.

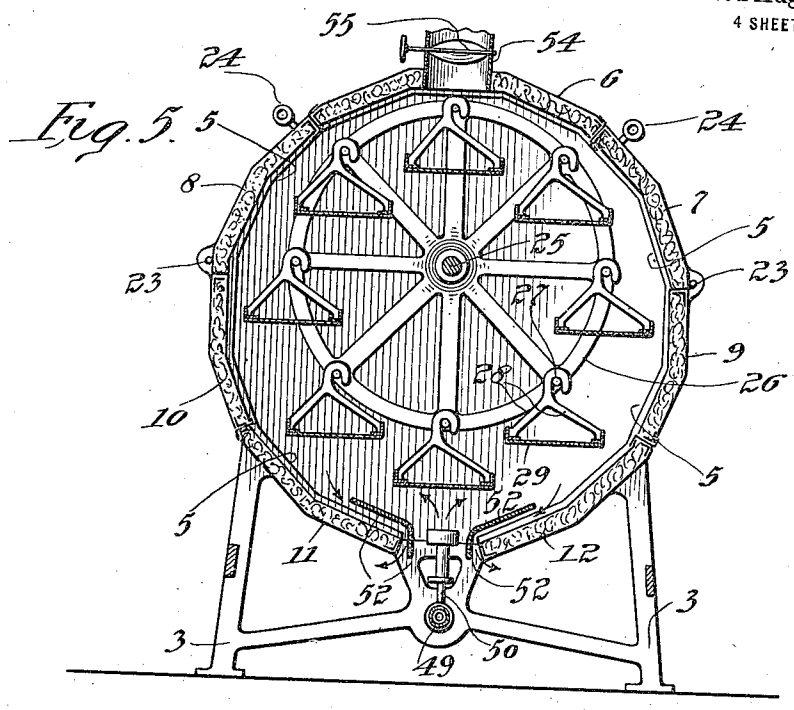



Fig. 7.

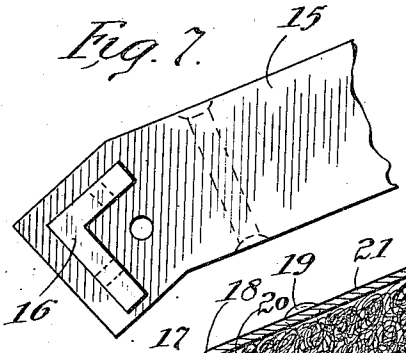



Fig. 6.

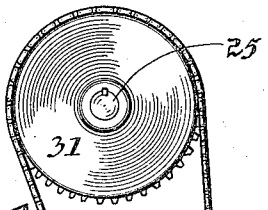



Fig. 9.

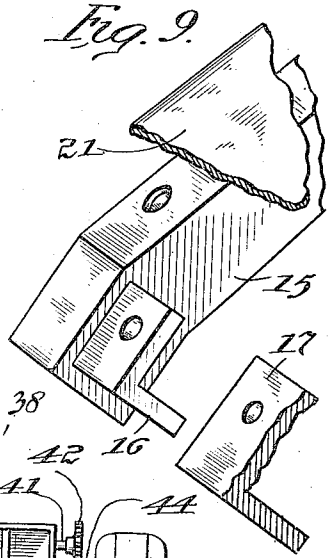
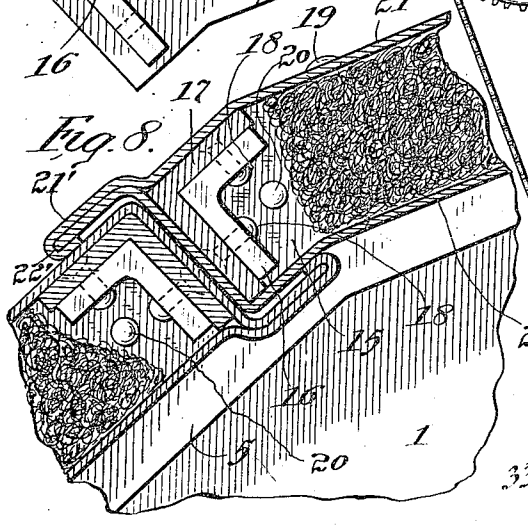



Fig. 8.




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4 SHEETS—SHEET 4.

Fig. 10.

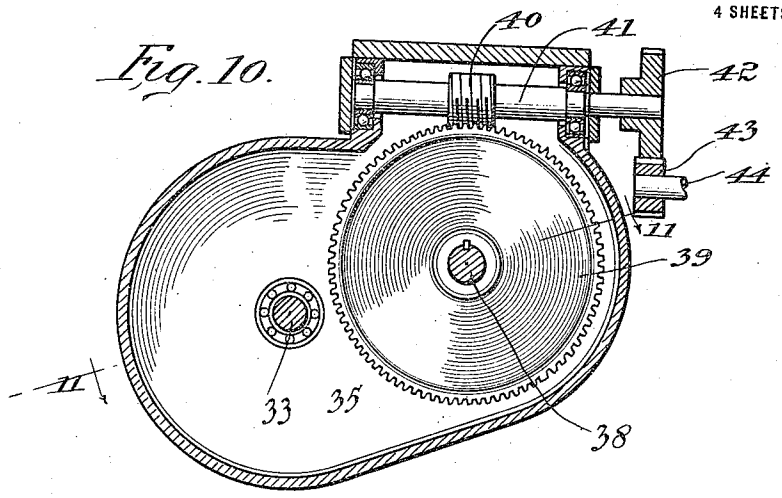



Fig. 11.

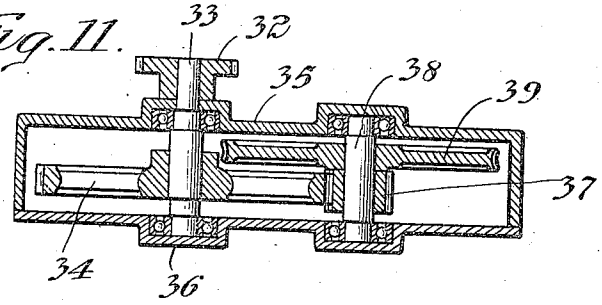
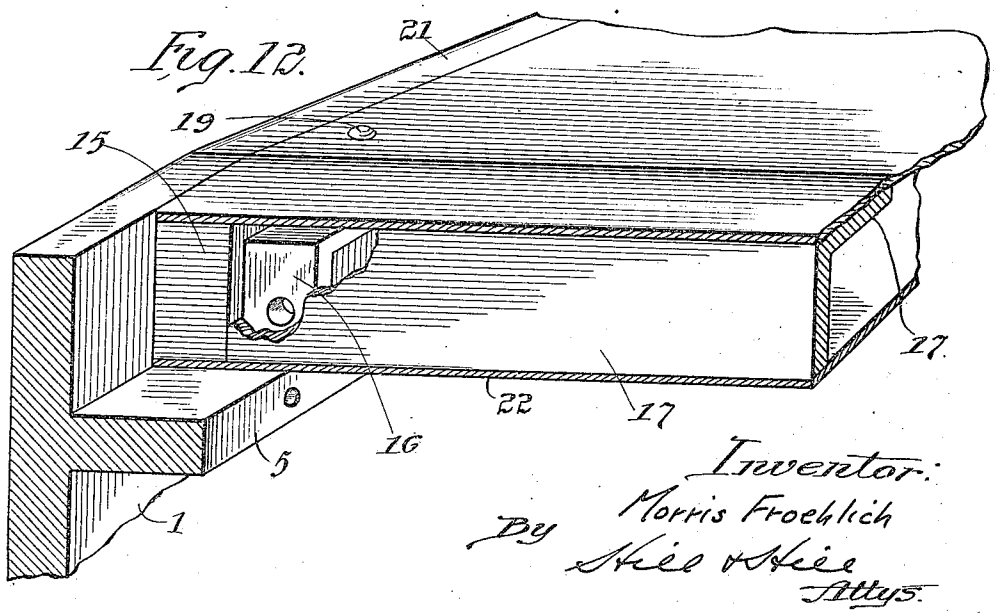



Fig. 12.




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# UNITED STATES PATENT OFFICE.

MORRIS FROEHLICH, OF CHICAGO, ILLINOIS.

## OVEN.

1,426,059. Specification of Letters Patent. Patented Aug. 15, 1922.

Application filed July 17, 1919. Serial No. 311,466.

*To all whom it may concern:*

Be it known that I, MORRIS FROEHLICH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ovens, of which the following is a description.

My invention belongs to that general class of devices known as ovens and relates more particularly to the type known as rotary ovens for the baking of bread, cakes, etc. The invention has among its objects the production of an oven of the kind described that is simple, durable, efficient, compact, attractive and suitable for use wherever found applicable. It has among its further objects the production of an oven which may be economically manufactured, shipped, or transported and set up. Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosures herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts,

Fig. 1 is a side elevation of my improved oven;

Fig. 2 is a sectional view through the same;

Fig. 3 is a view in elevation of one end;

Fig. 4 is a similar view of the other end;

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 2;

Fig. 6 is a view in elevation of the driving mechanism, the casing part 47 removed;

Fig. 7 is a view in elevation of a portion of one of the side section frame members;

Fig. 8 is a sectional view of a portion of two sections enlarged to more clearly show the construction;

Fig. 9 is a view showing in perspective the portions of the sectional frame disassembled to show the construction;

Fig. 10 is an enlarged view of a portion of the driving mechanism.

Fig. 11 is a sectional view taken substantially on line 11—11 of Fig. 10; and

Fig. 12 is a perspective view illustrating the construction of the sections.

Referring to the drawings, 1 and 2 represent end frames which are preferably formed with the leg portions 3 and reinforced by the ribs 4, so that the same may be made of substantially light weight. As most clearly shown in Fig. 2, each end frame is provided with a flange 5 extending about the same and arranged to provide a seat for the side walls which are made in sections. In the construction shown I provide a top section 6, door sections 7 and 8, and other sections 9, 10, 11 and 12, which are constructed as hereafter described and suitably detachably secured to the end frames.

The sections are substantially similar, and therefore a description of one section will suffice for all, it being understood that the various sections may vary in width or contour as found necessary or desirable. Referring particularly to Figs. 7, 8, 9 and 12, each section consists of the end portions or parts 15 which are preferably of the desired size and shape and made of suitable material. As shown, each part is provided with a lug 16 adjacent each end to which are secured the side irons 17—17, which with the end parts make up the section frame. The angles 17 may be secured to the lugs 16 by the rivets 18 or equivalent means for the purpose. Extending over the frames are the cover plates 21 and 22 of sheet metal, these being secured to the end parts 15 as well as to the angle irons 17 if desired by means of suitable rivets 19 or equivalent means for the purpose. In Figs. 8, 9 and 12, I have shown the covering 21—22 of relatively heavier gage material than would ordinarily be employed, in order that the construction might be clearly understood. Arranged between the cover sheet 21—22 I pack asbestos or its equivalent which serves as insulation for the sections and prevents the escape of heat from the oven. In Fig. 8 a portion of the asbestos is shown removed in order to show the construction. As most clearly shown in Fig. 8, one section at one edge is formed with the cover plates 21′—22′ extended up so as to overlap the exterior of the adjacent section, while the adjacent section is formed with its adjacent edge provided with an overlapping portion that will overlap on the inside, it being understood that it is immaterial which section laps on the outside and which on the inside, one being preferably provided with the outside of the lap and the other with the

inside. The end walls, as most clearly shown in Fig. 2, are provided with the plates 14 between which and the end frame may also be arranged asbestos or other non-heat-conducting material. One or both of the sections 7 and 8, as shown both, may be hinged as at 23 so that the oven may be opened up to permit the placing of the articles to be baked within the oven or removing the same, or to permit the inspection during the baking. If desired, handles 24 or the equivalent may be placed as shown. I have shown one door section provided with the transparent panes 30, so that inspection may be made without opening the door. The several sections are secured in place on flange 5 by the bolts or screws 20 passing through the end frames 1 and 2 and engaging the frame parts 15.

It will be understood that the members designated as 15 and 17, when fastened together in any appropriate manner constitute the side wall frames to which the space plates are attached receiving the insulating material.

In assembling the parts of this device, the end walls or frames should be constructed as shown, as well as the various sections of the device. The side wall sections are secured to the end frame in the manner described. The shaft 25 may then be inserted through one end, and the parts 26 mounted thereon, after which the shaft may be projected through the other end and securely fastened. The shelf members are preferably inserted through the door openings, and attached to their proper supports, after which the hinged door openings are closed.

Arranged within the oven and supported by the end frames is a rotatable shaft 25, which carries the shelf carrying members 26 secured thereto. Each member 26 is provided with pins 27 from which are suspended the frame parts 28 carrying the bars 29, forming substantially shelves upon which the articles to be baked may be carried. The shaft 25 may be driven in any suitable manner. As shown, it is provided with a sprocket wheel 31, this being driven by a sprocket chain or the equivalent from a sprocket wheel or pulley 32. As shown, my driving mechanism is preferably enclosed by the housing 47 and a housing or casing 35—36. The sprocket 32 is mounted on a shaft 33 which carries a gear 34 meshing with the gear 37 on the shaft 38. Shaft 38 is driven by a worm wheel 39 meshing with the worm 40 on shaft 41. As shown, shaft 41 is provided with a gear 42 meshing with the gear 43 on the shaft 44 of the motor 45. Motor 45 is carried from a bracket 46 secured to one of the legs 3 of the frame 1.

As will be seen by referring to Fig. 5, there is a space between the sections 11 and 12 at the bottom of the oven. Adjacent this space is a gas pipe 49 from which extend the pipes 50 carrying burners 51 of suitable design. These burners project to adjacent the interior of the oven. As most clearly shown in Figs. 2 and 5, I provide plates 52 at each side of the burners so that there is a space between the plates for the air to circulate and enter the oven with a space at the outside in which the cooled air or heat may pass. If desired a vent pipe 54 may be provided, the same being shown with the damper 55.

The operation of the oven may be briefly described as follows, assuming that the heat is turned on, or that is, the burners 51 lighted. The motor 46 through the mechanism described, drives shaft 25, causing the carriers or shelves to travel in the interior of the oven. The bread, cake or other material is inserted through one of the doors and placed on the carriers. This may be done while the carriers are moving or the power may be turned off if desired. Ordinarily, the material may be placed on the carriers or removed while the carriers are turning, as the same normally move slowly. At the desired time the contents of the oven are removed.

It will be particularly noted that with the oven as constructed the same may be set up or disassembled in a comparatively short time, so that it may be easily transported or taken through narrow spaces. In a bakery, it may be placed in the front window or at any desired point. Owing to the peculiar construction of the sections, substantially standard form angles 17 may be employed, affording a very rigid and strong construction, as well as one that can be economically manufactured. Owing to the arrangement at the joints, as shown in Fig. 8, the same may be constructed so that considerable expansion or contraction may take place without injury to the oven.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described, or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. In an oven of the kind described and in combination, a pair of end frames each having an inwardly extending flange, a plurality of side wall sections arranged on said flange, each section comprising a frame consisting of end portions provided with lugs adjacent each end and bars secured to said lugs and connecting said end portions, inner and outer cover sheets for said section frames, heat insulating material arranged between said cover sheets, and means for de-

tachably securing said sections to the end frames.

2. In an oven of the kind described and in combination, a pair of end frames each having an inwardly extending flange, a plurality of side wall sections arranged on said flanges, each section comprising a frame consisting of end portions provided with lugs adjacent each end and bars secured to said lugs and connecting said end portions, inner and outer cover sheets for said section frames, heat insulating material arranged between said cover sheets, means for detachably securing said sections to the end frames, movable shelves in the interior of the oven, and heating means arranged in the oven adjacent the bottom thereof.

3. In an oven of the kind described and in combination, a casing consisting of a plurality of end frames and side wall sections connecting the end frames and carried thereby, said sections each consisting of a frame consisting of suitably formed end parts and angle irons connecting said end parts and secured thereto, sheet metal cover sheets arranged on the inner and outer sides of said frame, said cover sheets projecting beyond the frame, whereby when the sections are assembled, the cover sheets of one section will overlap the adjacent section on the outer side of the casing and the cover sheet of said adjacent section will overlap the first mentioned section on the inner side of the casing, means for heating the contents of the casing, a rotatable reel arranged within the casing, and means for driving the same.

4. In an oven of the kind described, and in combination, a pair of end frames each having an inwardly extending flange of angle iron formation, a plurality of side frames mounted upon said flange, each side frame section comprising a frame member having a lug projecting therefrom at each end and bars mounted over and secured to said lug to connect the end portions, cover sheets for said sections, and insulating material disposed between said cover sheets.

5. In an oven of the kind described, and in combination, a pair of end frames each having an inwardly extending flange of angle iron formation, a plurality of said frames mounted upon said flange, each side frame section comprising a frame member having a lug projecting therefrom at each end and bars mounted over and secured to said lug to connect the end portions, cover sheets for said sections, and insulating material disposed between said cover sheets, the lugs of each frame and the connecting bars comprising angle irons.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

MORRIS FROEHLICH.

Witnesses:
ROY W. HILL,
CHARLES I. COBB.