L. B. & N. GOLDBERG.

KNOCKDOWN STOVE.

APPLICATION FILED FEB. 7, 1913.

1,106,555.

Patented Aug. 11, 1914.

2 SHEETS—SHEET 1.

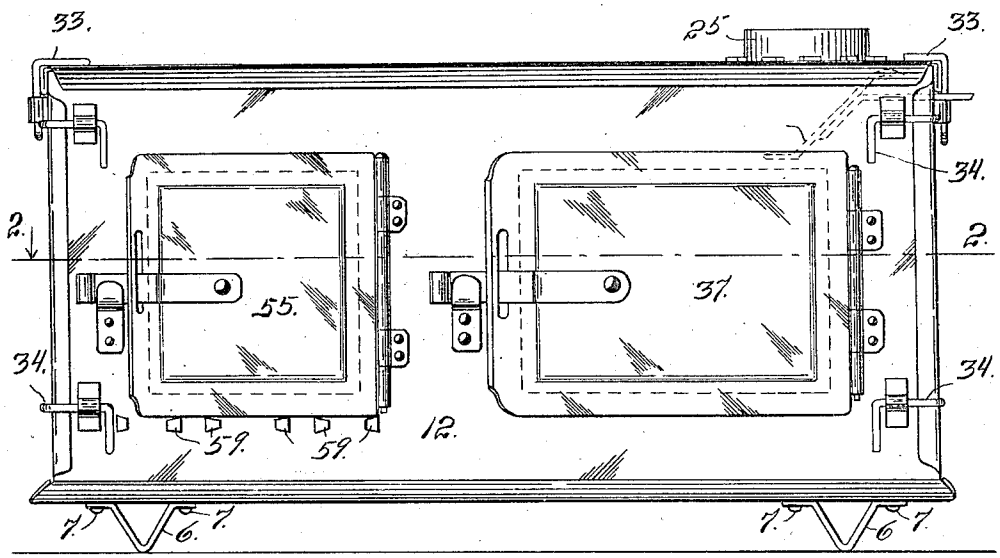


Fig. 1.

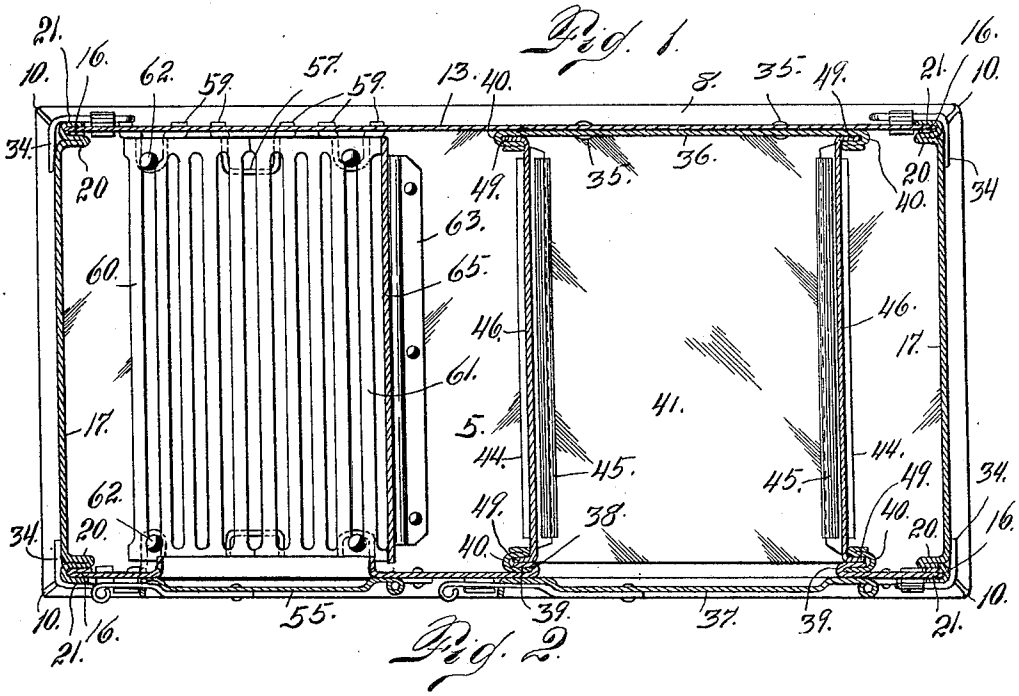


Fig. 2.

Witnesses

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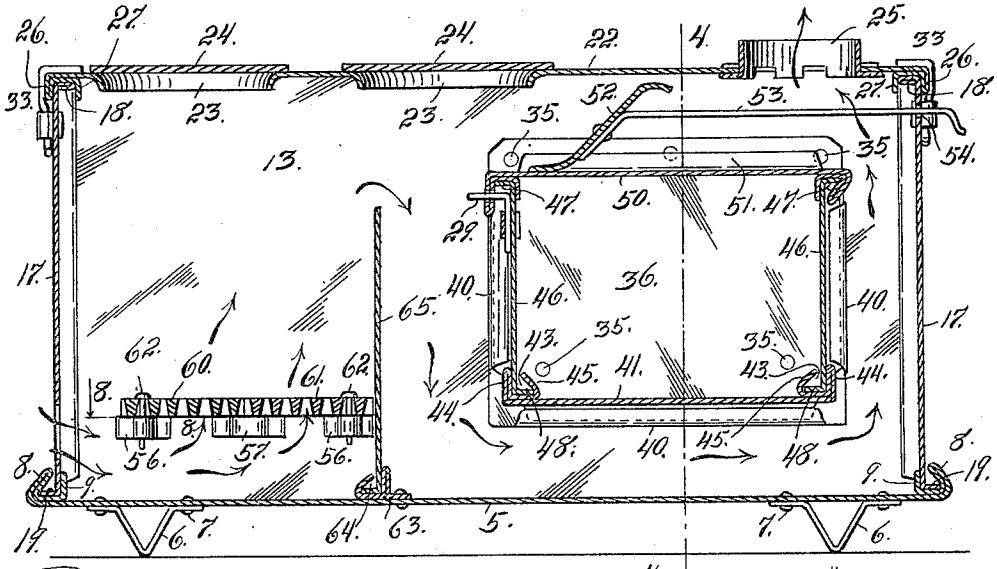


Fig. 3.

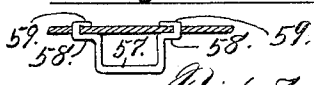


Fig. 8.

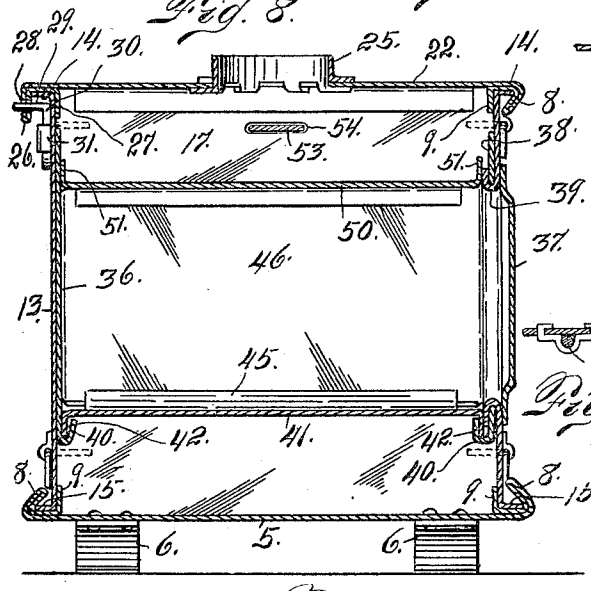


Fig. 4.

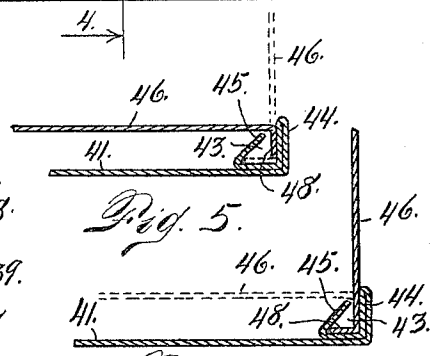


Fig. 5.

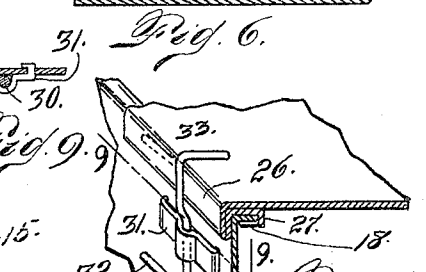


Fig. 6.

Fig. 9.

Fig. 7.

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UNITED STATES PATENT OFFICE.

LOUIS BENJAMIN GOLDBERG AND NATHAN GOLDBERG, OF DENVER, COLORADO.

KNOCKDOWN STOVE.

1,106,555. Specification of Letters Patent. Patented Aug. 11, 1914.

Application filed February 7, 1913. Serial No. 746,777.

To all whom it may concern:

Be it known that we, LOUIS B. GOLDBERG and NATHAN GOLDBERG, citizens of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Knockdown Stoves; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in knock down stoves and has for one of its objects the provision of a joint between members arranged at right angles to each other, which joints shall be rigid and secure and yet capable of being assembled very quickly.

Another object of the invention is the provision of a removable grate with means for preventing lateral motion of the same.

A further object is to provide a removable baffle plate between the grate and oven.

Still another object is to provide means for securing brackets upon the walls of the stove without the use of rivets.

Other objects will appear hereinafter as we proceed with the description of that embodiment of the invention, which, for the purposes of the present application, is illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of our improved stove. Fig. 2 is a horizontal section upon the line 2—2, Fig. 1. Fig. 3 is a central vertical longitudinal section. Fig. 4 is a cross section upon the line 4—4, Fig. 3. Figs. 5 and 6 are detail sectional views illustrating the manner of setting up the oven. Fig. 7 is a fragmental detail partly in section, illustrating the application of one of the fastening elements. Fig. 8 is a section taken upon the line 8—8, Fig. 3. Fig. 9 is a section upon the line 9—9, Fig. 7.

The same reference numerals refer to like parts throughout the views.

In the drawings, which form a part of this specification, the numeral 5 refers to the base of the stove, which is mounted upon short supports or legs 6, riveted to the base as at 7. Each edge of the base is provided with a groove formed by bending the metal back upon itself, the fold 8 being turned inwardly and the edge 9 being bent up at right angles to the base 5. The groove is narrow at its mouth, that is, between the edges of the parts 8 and 9, it being at this point only slightly wider than the thickness of the metal. As clearly indicated in Fig. 2, the bent edges of the base are beveled off at the corners 10 in order to make smooth joints.

The front and rear side plates 12 and 13 have flanges 14 and 15 bent outwardly therefrom at right angles at the top and bottom edges, respectively. The end edges of these plates are merely bent over at 16 to form rounded edges and to increase the stiffness of the metal at these places. The end plates 17 have top and bottom flanges 18 and 19, the flange 18 being doubled upon itself for purposes of rigidity. The flanges 18 also extend inwardly instead of outwardly, as is the case with the flanges 14, 15 and 19. The side edges of the plates 17 have U-shaped grooves into which the side edges of the plates 12 and 13 fit, the grooves being formed between folds 20 and the parallel edges 21 of the plates.

The top or cover 22, is provided with holes for pots and kettles, the edges of the metal being bent to form flanges 23. Lids, 24 may be supplied for the holes. The cover 22 also has an opening around which is fixed a collar 25 for the reception of a pipe (not shown).

One side edge of the cover 22 is bent to form a groove similar to the grooves upon the edges of the base and the parts forming which are similarly numbered. (See Fig. 4.) The other three edges of the cover are provided with U-shaped grooves formed by the fold 26 and the parallel flange 27. The width of these latter grooves is just sufficient to accommodate the flanges 14 and 18.

The fold 26, extending over the flange 14 has a longitudinally extending slot 28 for the reception of an arm 29 upon a rock shaft 30 which is rotatably mounted in a bracket 31, the rock shaft having an additional arm 32 at the opposite extremity for convenience in operation. The bracket 31 is formed of a strip of metal bent near its middle point to form in conjunction with the stove wall a journal, the bracket being attached to the stove wall by the passage of its extremities through slots in the wall, said extremities being then bent back against the wall to clench the bracket in place as illustrated in

detail in Fig. 9. Similar locking devices 33 are used to clamp the cover to the end walls or plates and other devices 34 for locking the side and end plates to each other. In the latter cases, however, the locking fingers do not pass through slots, but instead they extend around corners in a manner that will be readily understood from the inspection of the drawings, Fig. 7 in particular.

Upon the side 13 of our improved stove, we attach, by means of rivets 35, a plate 36 which forms a support for one side of the oven and upon the opposite wall about the opening for the door 37 we secure a plate 38, the middle portion of which is cut away to correspond with the door opening, the plate 38 being clenched in place by the bent over edges 39 on the side plate 12 around the door opening. The plates 36 and 38 are both bent at their side and bottom edges to form grooves 40.

The bottom plate 41 of the oven has depending end flanges 42 adapted to rest in the bottom grooves 40 and grooves 43 upon its side edges, the latter grooves being precisely identical with those upon the base 5 of the stove except that the folds 44 are outside and perpendicular to the plate 41 and the flanges 45 inclined outwardly. The sides of the oven are formed of plates 46 provided at their top edges with outwardly bent flanges 47 and at their bottom edges with inwardly bent flanges 48. Upon the side edges are inwardly bent flanges 49 engaging the side grooves 40 of the plates 36 and 38. The cover 50 of the oven has side grooves which are exactly similar to the corresponding grooves upon the stove cover 22, and therefore need not be further described. The ends of the cover 50 are merely bent up to form flanges 51 which possess sufficient resiliency to press against the side walls of the stove and form a tight joint.

A damper plate 52, extends substantially across the space above the oven and is slidable thereon, being controlled by a bar 53 which slides through an opening 54 in the end plate 17. The damper, when in the position illustrated in Fig. 3 causes the draft to drive the heated air around the oven as indicated by the arrows, but when the damper 52 is drawn to the extreme right, as indicated by dotted lines in Fig. 1, the draft is more direct passing over the oven.

Oppositely disposed upon the side plates 12, and 13 of the oven and below the opening for the fuel door 55, are supporting brackets 56 and 57 which are formed of strips of metal bent into U-shape and provided with flat portions 58 (see Fig. 8), constituting bearing surfaces for resting against the inner sides of the stove walls, the extremities of the strips being bent at right angles, passed through slots in the stove walls, and bent over as indicated at 59. Upon these supporting brackets we lay a removable grate formed preferably in two sections 60 and 61, after which pins 62 are passed through the grate sections and into the smaller of these supporting brackets thereby preventing any lateral movement of the grate sections upon the brackets.

Upon the base 5 of the stove, we mount a transversely extending strip of metal 63 which is bent to form a groove 64 similar in shape to the grooves 43 upon the bottom plate 41 of the oven. Within the groove 64 we mount a vertical baffle plate 65 which extends entirely across the stove directing the air upwardly through the grate bars.

In assembling our improved knock down stove, the bottom flanges 15 upon the side plates 12 and 13 are caused to enter the side grooves in the base plate, the side plates being held horizontally during the operation and the side plates are then rocked upwardly to the vertical position in which the flanges 9 upon the base plate 5 assist in supporting them. The end plates 17 are then joined to the base 5 in like manner, the grooves 21 receiving the end edges of the side plates as the end plates 17 are folded upwardly. After the sides and ends are in the vertical position, the fastenings 34 are turned to lock them in said positions. Next the angular flange upon the bottom of the baffle plate 65 is dropped into the groove 64 and the baffle plate raised to its vertical position after which the grate sections are placed upon the brackets 56 and 57 and the pins 62 put in position, the forward edge of the grate then abutting against the baffle plate 65 and locking it against movement toward the left in Fig. 3.

The oven is assembled next. Its bottom plate 41 is dropped into position with the flanges 42 extending into the grooves 40 upon the end plates 36 and 38, after which the side plates 46 are joined to the bottom plate 41, the consecutive operations being clearly illustrated in Figs. 5 and 6. The cover 50 of the oven is next held in a vertical position and moved until its triangular shaped groove has received the flange 47 upon one of the side plates 46 when the cover 50 may be rocked downwardly and locked in position by the fastening 29. The bar 53 of the damper plate 52 is then passed through the opening 54 in one end wall of the stove after which the cover of the stove is ready to be placed in position. In placing the cover 22 exactly the same procedure must be followed, as in placing the cover 50 upon the oven, but in addition, fastenings 33 are employed at each end of the stove for assisting in holding the cover in position.

The shape of the grooves upon the edges of the base plate 5 and the similar grooves used elsewhere in the construction is a very

important feature of our invention, attention being called particularly to the fact that the mouth of the groove is only wide enough to admit the flange upon a coöperating plate when the two plates are parallel to each other, thereby eliminating all possibility of the separation of the plates after they have been rocked to their operative positions. Attention is also called to the fact that one side of the groove is perpendicular to the plate upon which it is formed and serves as an abutment for the wall of the cooperating plate, thus lending greatly to the rigidity of the stove when assembled.

We claim as our invention:

1. In a sheet metal knock down stove, a member provided at one edge with a groove, in cross section, substantially the shape of a right angled triangle, one right side of which is arranged perpendicular to the main portion of the member and the hypotenuse of which extends inwardly and upwardly from the edge of the member, the opening of the groove being adjacent said perpendicular side, and only slightly wider than the thickness of the metal employed, and a second member provided at one edge with a flange bent at right angles to the main portion of the member, said flange being approximately the same width as the widest part of the groove, said members being adapted to be joined only by the insertion of the flange in the groove when the members are substantially parallel to each other after which they may be rocked to positions at right angles to each other.

2. In a knock down stove, a base, a baffle plate, a hinge connection between said base and plate, an abutment upon the base arranged to prevent the hinging of said plate in one direction beyond the vertical position and a removable grate adapted when in the adjusted position to bear against the opposite side of the plate and hold it in the vertical position.

3. In a knock down stove, a base provided with an upwardly opening groove on each edge, side and end plates, each plate having a flange upon its lower edge adapted to be inserted into the corresponding one of said grooves, only when the plate is in approximately a horizontal position, said grooves and flanges being shaped to permit the rocking of said plates to the vertical position, and readily releasable means applied to the upper edge of the plates for locking the latter in the vertical position.

4. In a knock down stove, a base provided with upwardly and inwardly opening grooves on each edge, side and end plates, each plate having an angular flange upon its lower edge adapted to be inserted into the corresponding one of said grooves only when the plate is in an approximately horizontal position extending away from the base, said grooves and flanges being shaped to permit the rocking of said plates to the vertical position, readily releasable means applied to the upper edge of the plates for locking the latter in said position, and means for interlocking the side and end plates when in the vertical position.

In testimony whereof we affix our signatures in presence of two witnesses.

LOUIS BENJAMIN GOLDBERG.
NATHAN GOLDBERG.

Witnesses:
CECELIA BUERGER,
OTTO E. HODDICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."