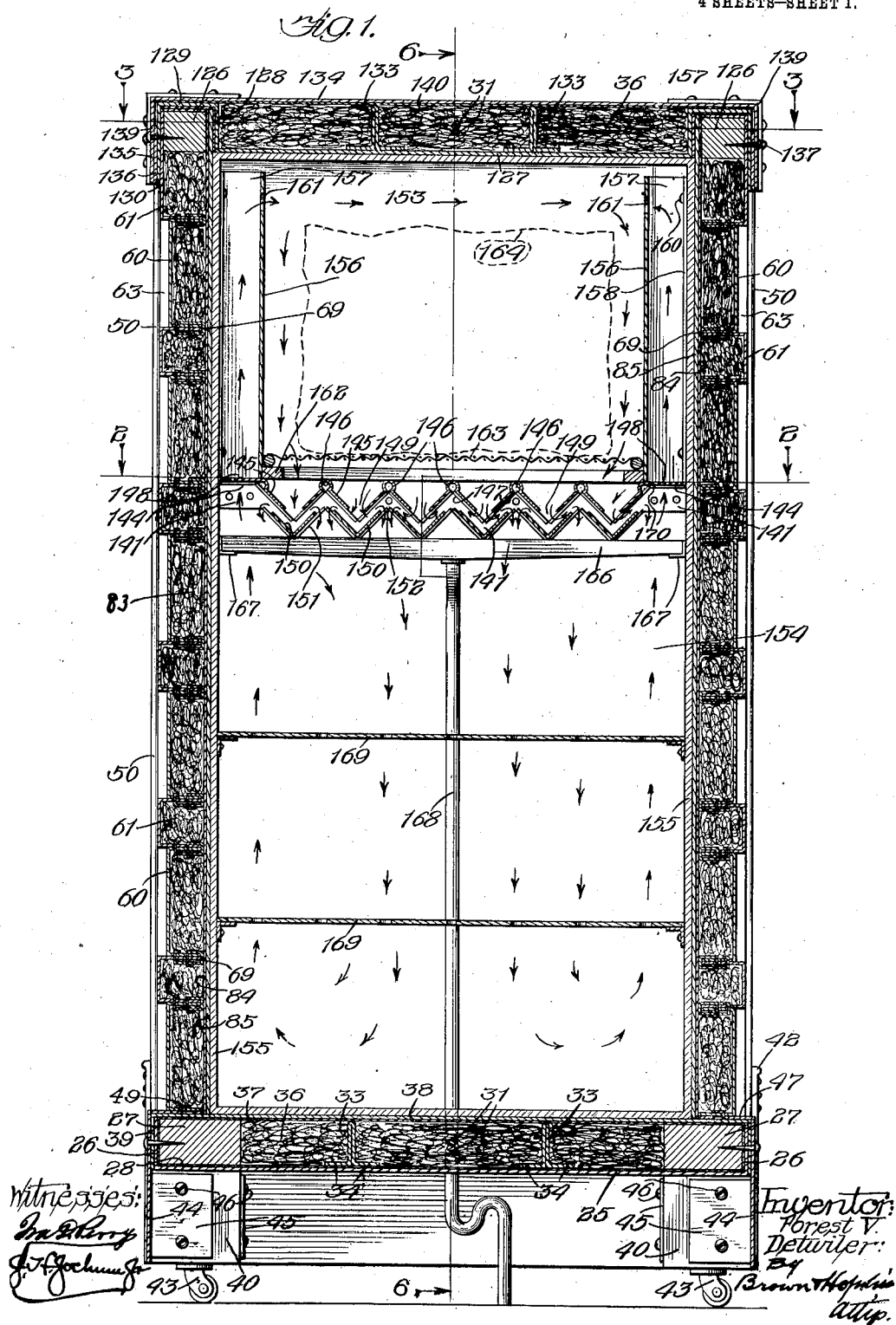


1,063,514.

4 SHEETS—SHEET 1.

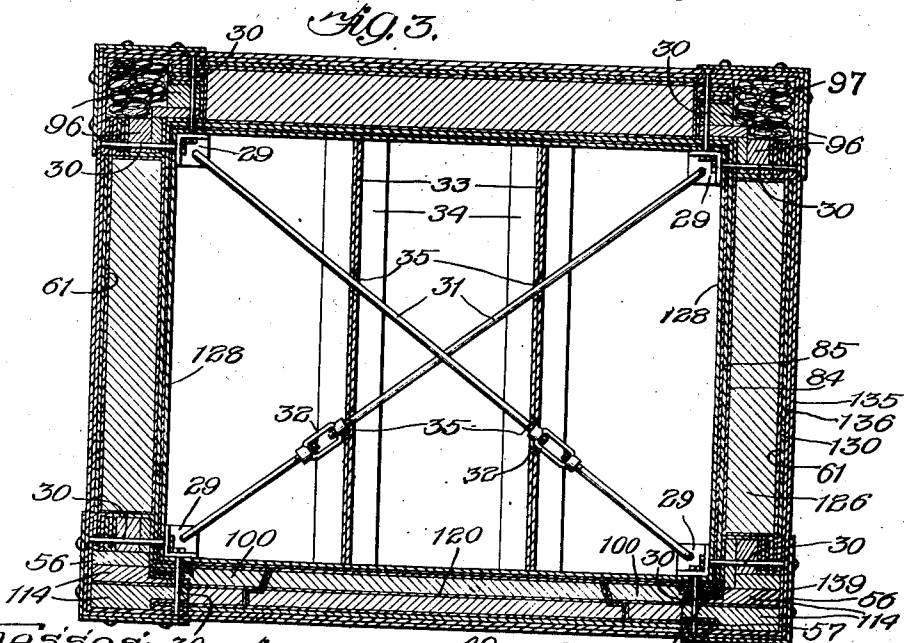
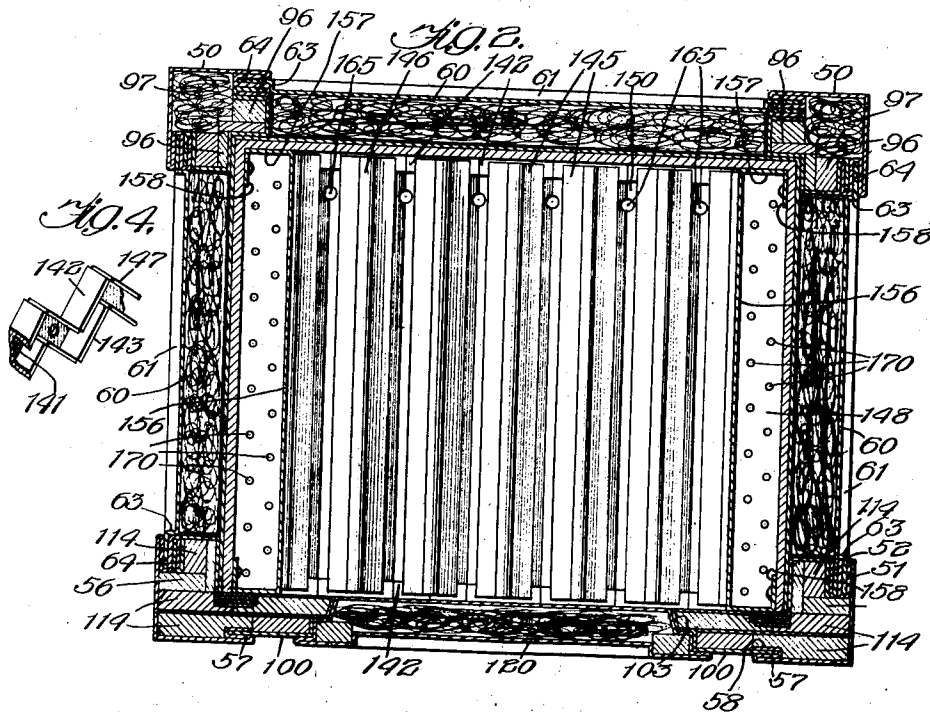


F. V. DETWILER.
REFRIGERATOR.
APPLICATION FILED JUNE 18, 1909.

1,063,514.

Patented June 3, 1913.

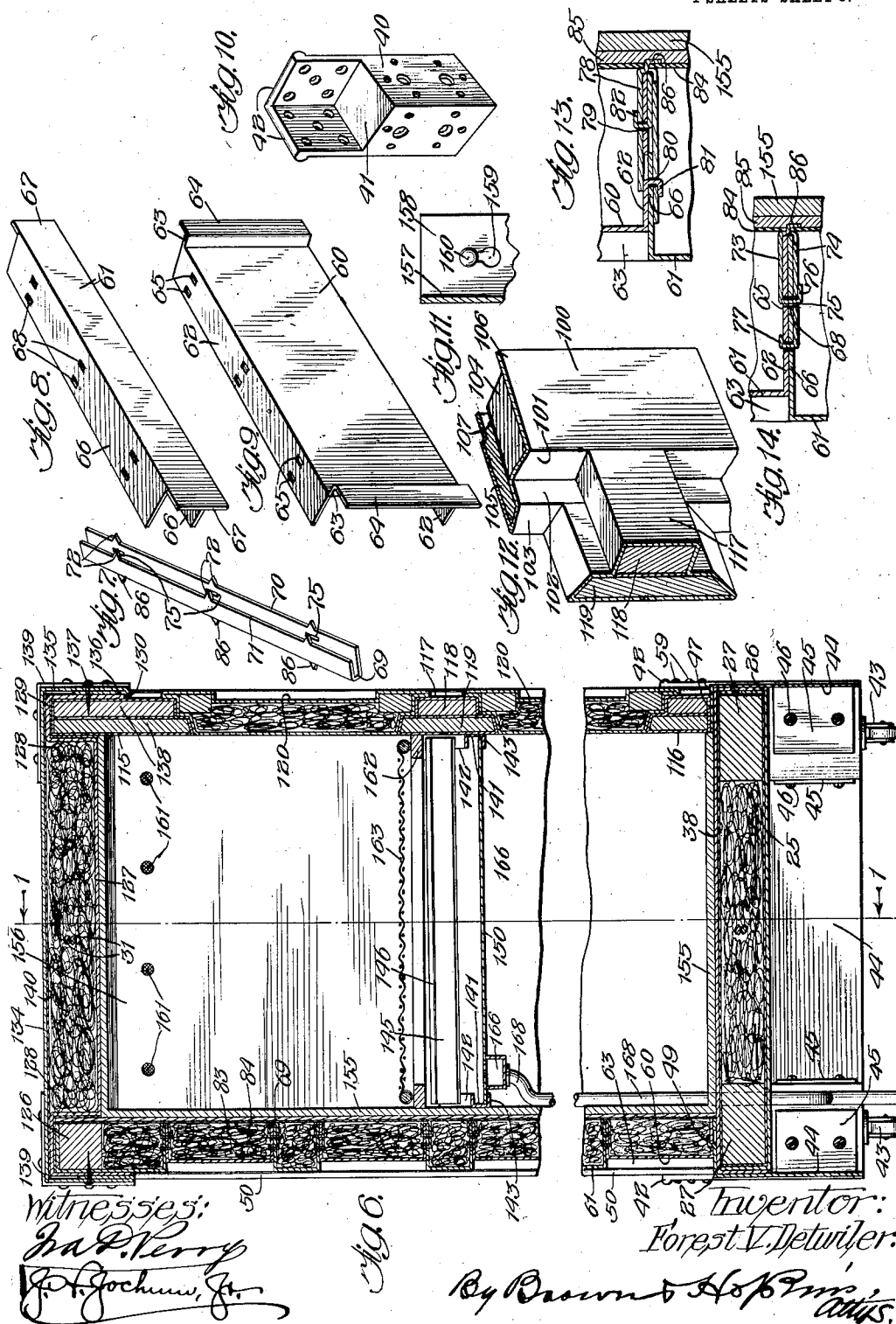
4 SHEETS—SHEET 2.



Witnesses:
R. P. Perry
J. J. Gochman Jr.

Fig. 5.
49 48 106 107 45 47 44
By *Drummond Hoff*
Forest V. Detwiler:
attor.

4 SHEETS—SHEET 3.



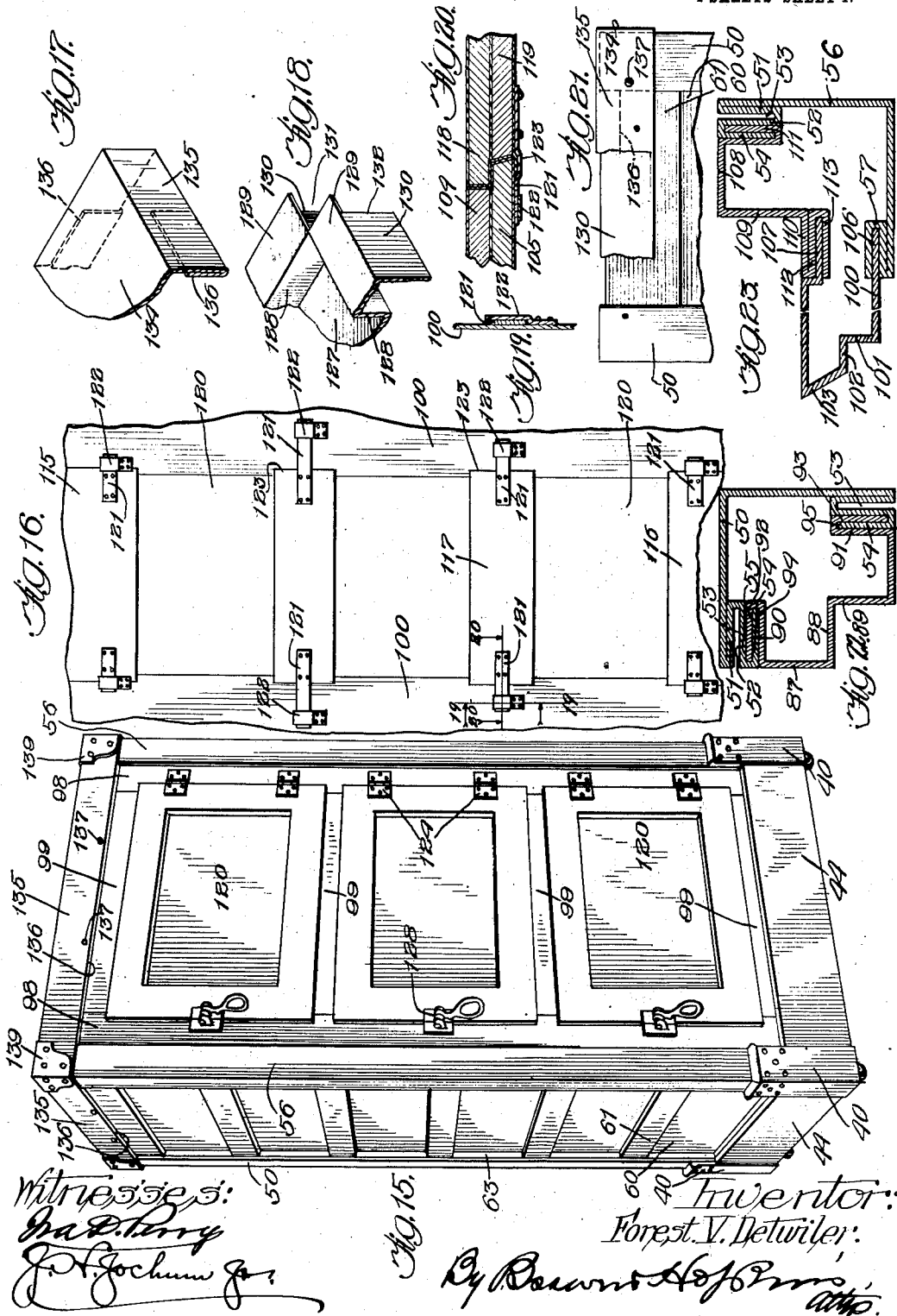
F. V. DETWILER.
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Patented June 3, 1913.

4 SHEETS-SHEET 4.



Witnesses:
H. J. Gochum for

Inventor:
Forest V. Detwiler:
By Edward H. Hoffmann

UNITED STATES PATENT OFFICE.

FOREST V. DETWILER, OF CHICAGO, ILLINOIS.

REFRIGERATOR.

1,063,514.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed June 18, 1909. Serial No. 502,874.

To all whom it may concern:

Be it known that I, FOREST V. DETWILER, 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 Refrigerators, of which the following is a specification.

This invention relates to improvements in refrigerators and more particularly to the construction thereof, and the primary object of the invention is to provide an improved refrigerator of sectional construction and one in which the sections may be shaped or formed and then assembled to produce a refrigerator of any desired size.

A further object is to provide improved means whereby the units or panels comprising the walls may be individually placed and secured in position, or the sections may be assembled, and secured together as a complete wall before being placed in position.

A further object is to provide an improved refrigerator which will be thoroughly insulated, and improved means for holding and securing the insulation or packing in position, whereby the insulation will be prevented from settling to obviate the danger of producing air spaces in the walls after the refrigerator has been completed.

A further object is to provide improved fastening devices for the units or sections.

A further object is to provide an improved form of top and bottom for the refrigerator and improved means for bracing the same.

A further object is to provide corner posts or uprights for the refrigerator, and improved means for bracing or strengthening the same.

A further object is to provide an improved sectional refrigerator which will be simple, durable, cheap and light in construction and effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating the embodiment of the invention, and in which—

Figure 1 is a longitudinal sectional view of an improved refrigerator of this character constructed in accordance with the principles of this invention and taken on

line 1—1 of Fig. 6. Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1. Fig. 3 is a horizontal sectional view on line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of one of the members for supporting the sections of the bottom of the ice chamber or compartment. Fig. 5 is a perspective view of one of the brace members of the refrigerator. Fig. 6 is a sectional view on line 6—6 of Fig. 1. Fig. 7 is a detail perspective view of one form of fastening clip for the units or sections of the walls of the refrigerator. Fig. 8 is a perspective view of one of the wall units or sections. Fig. 9 is a perspective view of another of the wall units or sections. Fig. 10 is a perspective view of one of the corner pieces. Fig. 11 is a detail view, partly in section, of the manner of fastening the partitions within the ice compartment or chamber to form up-going air circulation passages. Fig. 12 is a detail perspective view of a portion of the upright and cross-stiles of the front of the refrigerator showing the manner in which the stiles are assembled with respect to each other. Fig. 13 is an enlarged detail sectional view through the abutting edges of two of the wall units or sections and showing one form of fastening device and the manner in which the fastening device supports the insulation or packing. Fig. 14 is a view similar to Fig. 13 of another form of fastening device. Fig. 15 is a detail perspective view of an improved refrigerator constructed in accordance with the principles of this invention. Fig. 16 is a detail elevation of the rear of the front wall of the refrigerator showing the manner of supporting and securing the cross stiles in position, which form the door openings. Fig. 17 is a detail perspective view of one of the members of the top of the refrigerator. Fig. 18 is a detail perspective view of one corner of the bottom member of the top of the refrigerator. Fig. 19 is an enlarged detail sectional view on line 19—19 of Fig. 16. Fig. 20 is an enlarged detail sectional view on line 20—20 of Fig. 16. Fig. 21 is a detail elevation of the upper portion of one of the walls of the refrigerator, with parts broken away, showing the relative positions and the manner of assembling the top of the refrigerator. Fig. 22 is an enlarged detail horizontal sectional view of one of the rear corner posts. Fig. 23 is a view similar to Fig. 22 of one of the front corner posts.

Referring more particularly to the drawings and in the present exemplification of the invention, the numeral 25 designates one of the members of the bottom of the refrigerator which member is constructed of metal and may be of any desired size and configuration but in the present exemplification of the invention the refrigerator is shown as being rectangular in cross section. The bottom 25 is preferably provided with a circumferential peripheral flange 26 (shown more clearly in Fig. 1) and this flange 26 may be of any desired height according to the thickness of the bottom. Arranged within the flange 26 and resting upon the bottom and extending preferably for the entire length of each side of the bottom are filler members 27, which latter may be constructed of any desired or suitable material but are preferably constructed of wood and are preferably of a height that the upper face thereof will stand substantially flush with the upper edge of the flange 26. If desired, a suitable packing of heat non-conducting or insulating material 28, such as asbestos or the like, may be provided, which rests upon the bottom 25 and upon which material the filler members also rest.

Secured to the inner faces of the adjacent portions of the filler members 27 and arranged within the corners formed by the members are clips 29 which latter are held in position in any desired or suitable manner, preferably by means of fastening devices 30, which pass through portions of the clips and through the filler members. Tie-rods 31 are provided and the extremities of each of the rods engage diagonally opposite clips 29 and each of the tie-rods is provided with a turn button 32 by means of which the sections of the rods may be adjusted to create a tension upon the clips and to brace the bottom section. Arranged within the bottom thus formed are supporting members 33 which may be constructed in any desired or suitable manner, but are preferably formed of sheet metal and bent upon themselves as shown. The extremities of the bent portions are deflected as at 34 and away from each other to form a base upon which the member rests and these bases are adapted to rest upon the heat insulating material 28. These members are of a height that the upper edges thereof will stand substantially flush with the upper faces of the filler members 27 and any number may be provided. The members 33 extend entirely across the space between opposite filler members and are preferably provided with cut-out portions 35 (see Fig. 3), into which cut-out portions the tie-rods 31 project. Suitable heat non-conducting material 36, such as mineral wool, asbestos or the like, is provided, which fills the spaces between the members 33 and the fillers 27 and a suitable

heat non-conducting material 37, such as asbestos or the like, is provided to cover the material 36 and rests upon the faces of the fillers and the edges of the members 33. The top 38 of the base is preferably formed in a manner similar to the bottom 25 and is constructed of metal provided with a circumferential peripheral flange 39. The top member 38 is preferably of a size slightly larger than the bottom member so that when the top 38 is placed in position, the flange 39 will encompass the flange 26 of the member 25. When the bottom of the refrigerator is thus formed, the lower corner pieces, designated generally by the reference numeral 40 and shown in Fig. 10, are secured thereto. These corner pieces are provided with a shoulder 41 and upright portions 42 along two sides of the portion 41 to form a corner into which the corners of the bottom are inserted. Each of the corner pieces 40 are preferably hollow to receive a block to which is secured a caster 43.

Suitable base members 44 (see Fig. 5) are provided which are constructed preferably of sheet metal and are of a length equal to the distance between the adjacent faces of opposite corner pieces. The extremities of these members 44 are deflected laterally as at 45 to form spaced parallel ears or projections which are adapted to rest against the adjacent face of the respective corner pieces 40 and are secured in position in any desired or suitable manner, preferably by means of suitable fastening devices 46 which pass through apertures in the ears or projections 45 and corresponding apertures in the corner pieces 40. The ears or projections 45 are of a width somewhat less than the width of the body portion of the members 44 and are arranged adjacent one edge thereof. The other edge of the member 44 is deflected laterally as at 47 to form an overhanging lip or projection which extends over the ears or projections 45 and are spaced therefrom to form an opening 48 intermediate the flange 47 and the adjacent edges of the projections 45. This space 48 is of a width slightly greater than the thickness or height of the bottom of the refrigerator so that when the members 44 are secured in position between the corner pieces 40, the overhanging or projecting lip or flange 47 will extend over and rest upon the top member 38 of the bottom, as shown more clearly in Figs. 1 and 6, and the space 48 will be substantially filled by the adjacent edges of the bottom of the refrigerator.

The projecting flange 47 of the members 44 are provided with cut-out portions 49 which are bent out of the body portion of the flange to form projecting ears or extensions for a purpose to be set forth, and any number of these ears or extensions may be provided.

Corner posts 50 are provided which are of a substantially L-shaped configuration and are constructed of sheet metal. These corner posts are of a length substantially equal to the height of the refrigerator and the edges of the rear corner posts are each bent upon themselves and adjacent the inner face as at 51 and then outwardly as at 52 to form an outwardly opening space 53. The edges are then bent inwardly as at 54 and spaced from the portion 52 to form inwardly opening portions 55.

The edges of the front posts 56 adjacent the rear posts 50 are bent in a similar manner to the edges of the rear posts and the other edges of the front posts 56 are bent inwardly adjacent the inner face thereof as at 57 and then outwardly as at 58 to form outwardly opening spaces for a purpose to be hereinafter set forth. The corner posts thus formed are adapted to rest upon the respective corners of the bottom of the refrigerator and adjacent the corner pieces 40 so that the faces of the corner posts will engage and rest against the inner faces of the extended portions 42 of the corner pieces and are secured in position against displacement in any desired or suitable manner, preferably by means of fastening devices 59, such as screws, bolts, nails or the like, which pass through the extended portions 42 and the adjacent portions of the corner posts.

The sides and rear walls of the refrigerator are constructed of a series of units or panels 60, 61, (see Figs. 8 and 9). The panel 60 comprises a body portion of any desired height and of a length substantially equal to the space between the adjacent faces of the uprights or corner posts. The side edges of the body portion are deflected laterally as at 62 to form spaced parallel deflected flanges extending beyond one face of the body portion. These flanges 62 terminate short of the extremities of the body portion and said extremities are deflected as at 63 in an opposite direction from the flanges 62 so as to form parallel portions projecting from the opposite face of the body portion. The extremities of these deflected portions 63 are bent or deflected as at 64 outwardly to extend beyond the extremities of the body portion and to form flanges substantially parallel with the face of the body portion. The flanges 62 are provided with apertures or openings 65 passing therethrough for a purpose to be set forth.

The unit or panel 61 is of a size preferably somewhat narrower than the panel 60 and is provided with laterally projecting flanges 66 projecting from its edges and beyond one face thereof and these flanges 66 terminate short of the extremities 67 of the body portion. The body portion, together with the projecting extremity 67 thereof is of a

length equal to the length of the panel or unit 60 and the flanges 64 thereon, and the flanges 67 of the panels or units 61 are of a width that when the units or panels 60, 61 are placed together with the flanges resting against each other, the body portion of the panel 61 will stand flush with the faces of the flanges 64. The flanges 66 on the panel or unit 61 are also provided with apertures or openings 68 similar to the apertures or openings 65.

When the uprights or corner posts 50, 56 are secured in position in the manner already set forth, the side and rear walls of the refrigerator may be assembled by placing the units or panels into position separately and in building the walls one of the panels, preferably the panel 60, is placed in position first so that the flanges 64 thereof will enter the outwardly opening recesses, or grooves 53 formed by the bends 51, 52, in the edges of the corner posts and lowered to the bottom of the refrigerator until one of the flanges 62 of the unit or panel rests upon the upper surface of the bottom of the refrigerator. As the panel 60 is lowered into position the ears or extensions 49 on the member 44 will enter the corresponding apertures or openings 65 in the flange and when in position the extensions or ears are deflected or bent downwardly upon the inner face of the flange for securing the panel or unit in position, as shown more clearly in Figs. 1 and 6.

After the panel or unit 60 has been placed in position a panel or unit 61 is superposed thereon in the same manner, that is, by inserting the projecting extremities 67 of the body portion into the outwardly opening grooves or recesses 53 and lowering the panel or unit until it rests upon the flange of the panel or unit already inserted. These panels are superposed alternately until the desired height of the refrigerator is obtained, and if desired, suitable cement, such as white lead or the like, may be provided which is placed upon the outer faces of the flanges of the units or panels so as to form fluid tight joints.

Any suitable means may be provided for fastening or securing the panels together, such as a clip or fastening device designated generally by the reference numeral 69, which is preferably constructed of metal and is of substantially U-shaped formation. One of the sides 70 of the clip is preferably somewhat wider than the side 71 and each of the sides is provided with projecting ears or prongs 72 extending beyond their edges. These clips or fastening devices are of a length substantially equal to the distance between the uprights or corner posts and are adapted to be inserted over the edges of the adjacent flanges 62, 66, of the units or panels 60, 61, and the prongs 72 thereof are

adapted to enter the registering apertures 65, 68, and to be flanged down against the flanges 62, 66, for securing units or panels together.

5 In the form of clip or fastening device 73, shown in Fig. 14, one of the sides 74 thereof is provided with apertures or openings 75 which are adapted to register with the apertures or openings 65, 68, in the flanges 62, 10 66, and the prongs 76 of the fastening devices are adapted to enter these registering apertures and to be flanged down against the body portion of the other arm or side. The prongs 77 on the other side of the clip 15 pass through other registering apertures and are flanged or bent down upon one of the flanges of the unit or panel.

In the exemplification of the invention shown in Fig. 13 the clip or fastening device 20 78 is provided in its sides with apertures or openings 79, 80. The flange 62 of the unit or panel 60 is provided with a cut-out portion 81 in the form of a prong and the flange 66 of the unit or panel 61 is provided with 25 similar prongs 82. These prongs 81, 82 are adapted to pass through suitable apertures or openings in the adjacent flange in the next adjacent unit or panel and also respectively through the apertures or openings 79, 30 80 in the clip or fastening member 78 and are adapted to be flanged or bent down as shown to secure the units together. When the units or panels are thus secured together, the adjacent flanges thereof will 35 form laterally projecting ribs which extend transversely across the walls of the refrigerator and these ribs or flanges form channels into which is inserted suitable heat non-conducting or insulating material 83, such 40 as mineral wool, asbestos, or the like, and these ribs serve as means for supporting the insulating material to prevent the latter from settling, thereby obviating the formation of air spaces in the walls of the refrigerator. 45

Suitable heat non-conducting material 84, such as asbestos or the like, is provided, which is adapted to rest upon the edges of the ribs thus formed and additional insulating or heat non-conducting material 85 may 50 be also provided which rests upon the heat non-conducting or insulating material 84.

In order to hold the insulating materials 84, 85, in position and against displacement, 55 suitable fastening means may be provided and for this purpose the fastening devices or clips 69 are provided with prongs 86 which are preferably formed by cutting out a portion of the body of the clips at its edges 60 and between the sides of the clips and these prongs 86 are adapted to penetrate and to be embedded in the insulating materials 84, 85, and then deflected or bent so as to securely hold the insulating material in position. 65

In order to brace the rear corner posts 50 suitable reinforcing members, designated generally by the reference numeral 87, are provided and these members are preferably constructed of sheet metal and their body 70 portions are preferably bent to form faces 88, 89, which are arranged at right angles to each other to form one corner of the inner wall of the refrigerator. The edges of these members 87 are bent as at 90, 91, away from 75 the faces 88, 89, and the extremities of these portions 90, 91 are bent upon themselves respectively as at 92, 93, to form outwardly opening recesses 94, 95. These members 87 are of a length equal to the length of the 80 corner posts 50 and are adapted to be secured to the corner posts by inserting the forwardly bent extremities 92, 93 thereof into the rearwardly opening recesses 55, of the corner posts so that the rearwardly 85 bent extremities 54 of the corner posts will enter the forwardly opening recesses 94, 95 of the members 87 and when thus placed in position may be slid down from the top of the posts 50 until the lower edges or ex- 90 tremities of the members 87 rest upon the respective corners of the bottom of the refrigerator. Suitable filler members 96 may be provided which are constructed of any 95 suitable or desired material, such as wood, which are arranged to brace or re-inforce the faces 88, 89 and may be placed in position or secured to the member 87 either before the latter is placed in position or afterward. The space formed between the fillers 100 96 and the body portions of the corner posts 50 are filled with suitable heat non-conducting material or insulation 97, such as mineral wool, asbestos or the like.

The front wall of the refrigerator is provided with upright stiles, designated generally by the reference numeral 98 in Fig. 15 and cross stiles 99. The upright stiles 98 are constructed of metal and comprise a main body portion 100 having a deflected 105 portion 101 and an offset portion 102 (see Fig. 12) arranged at substantially right angles to the deflected portion 101 to form a shoulder and a deflected portion 103 preferably arranged in a plane inclined to the 115 plane of the portion 101 to form a beveled edge around the frame, as shown more clearly in Fig. 2. A filler 104, preferably in the form of strips of wood, is arranged adjacent the offset portion 101 and a similar 120 filler 105 is arranged adjacent the inclined portion 103 of the upright stile. One edge of the filler 104 terminates short of the edge 106 of the stile 100, and one edge of the filler 105 terminates short of the edge 125 107 of the rear face of the stile 100.

The upright stiles 100 are placed in position by inserting the edge 106 of the stile in the outwardly opening recess formed by the deflected edge 57. A reinforcing mem- 130

ber designated generally by the reference numeral 108 is provided which is constructed of metal and is bent to form faces 109, 110 which are arranged at right angles to each other to form the front corners of the inside face of the refrigerator. One extremity 111 of the member 108 is bent upon itself to form an outwardly opening recess adapted to receive the inwardly bent extremity 54 of the corner post 51 and so that the extremity 111 will enter the space between the portions 52, 54 of the corner post. The other edge of the member 108 is bent back upon itself as at 112, and the extremity of such portion is bent forwardly as at 113 to form an outwardly opening recess adapted to receive the extremity 107 of the upright or stile 100. Suitable filler members 114 such as wood strips or the like, are provided for filling the space formed between the various members forming the front corner posts when the members are assembled. With this construction it will be apparent that when the top of the refrigerator is removed the upright stiles may slide freely in the guides and may be readily removed when desired and replaced. The stiles when in position are adapted to rest upon the front edge of the base or the bottom of the refrigerator.

The upper and lower cross stiles 115, 116 and the intermediate cross stiles 117 are constructed of metal and may be of any desired configuration. These stiles are provided with fillers 118, 119. The filler 118 is arranged in advance of the filler 119 and is adapted to project beyond the ends of the latter so as to rest upon the offset portions 101, 102 of the upright stiles and the filler 119 is of a width somewhat greater than the filler 118 so as to project beyond the sides thereof to form abutting shoulders for the doors 120. The cross stiles are removably secured to the upright stiles in any desired or suitable manner, preferably by means of metallic members 121, which are secured to the rear face of the stile 98 to project beyond the ends thereof and to engage and rest in suitable clips or supports 122 which are secured to the rear face of the upright stile 100. The clips 122 are preferably arranged in a staggered relation with respect to each other so that when the lowermost stile 116 is being placed in position by sliding the same between the upright stiles from the top to the bottom thereof, the projecting members 121 thereon will not be interfered with by any of the supporting clips or members 122, either during the insertion or the removal of any of the cross stiles, as shown more clearly in Fig. 16.

The metallic portions of the cross stiles project beyond the fillers 119 at the rear faces of the stiles as at 123, shown more

clearly in Figs. 16 and 20 so as to overlap the edges of the upright stiles to form fluid tight joints and to prevent the outside air from directly entering the refrigerator through the crack or opening formed at the junction of the ends of the cross stiles with the upright stiles.

The doors or closures 120 are secured to the upright stiles in any desired or suitable manner, preferably by means of the ordinary hinges 124, and suitable fastening devices 125 may be provided for each door.

Obviously any number of cross stiles 117 may be provided according to the number of door openings desired.

When the walls of the refrigerator are thus formed and assembled and placed in position and the refrigerator built to the desired height, the upper edge of the uppermost unit or panel of the sides and back will stand substantially flush with the top edges of the corner posts, and the upper edge of the uppermost cross stile 115, together with the upper edges of the upright stiles 98 will stand substantially flush with the upper edges of the uprights or corner posts. Arranged within the uppermost units or panels of the sides and rear walls, are filler members 126 (see Fig. 6) which are temporarily held in position by resting upon the non-conducting material or insulation within the panel. When the parts are thus assembled, the upper extremities of the corner posts are trued in any desired or suitable manner and the top of the refrigerator may be placed in position.

The top of the refrigerator comprises a bottom member 127 which is constructed of metal and is provided with circumferential peripheral walls 128 formed by bending the metal into shape. The ends of the side walls 128 are deflected laterally as at 129 (see Figs. 6 and 18) and these deflected portions or flanges 129 are of a width substantially equal to the width or thickness of the adjacent unit or panel and the uppermost stile. The extremities of the deflected portions 129 are bent downwardly as at 130 to rest against the outer face of the adjacent unit or panel and the outer face of the uppermost cross stile 115. The corners of the deflected portions 129 are cut-away as at 131 so as to receive the adjacent corner of the corner posts. The downwardly bent portions 130 preferably extend a short distance below the bottom of the member 127 of the top and this member 130 is cut-off at its ends as at 132 so as to terminate short of the extremities of the laterally deflected portions 129 so that the portions 130 will extend into the space between the corner posts to stand in close proximity to the outer face of the adjacent members, as shown more clearly in Fig. 18. When the bottom member of the top is thus placed in position, 130

it will project downwardly for any desired distance between the uprights or corner posts according to the thickness of top it is desired to construct, which is governed by the height of the surrounding walls or peripheral flanges 128. When in position supporting or reinforcing members 133, similar to the members 33 are provided which rest upon the bottom 127 or upon suitable heat non-conducting material if the latter is employed. In order to strengthen the top, the clips 29 are secured in the corners of the top and within the receptacle formed by the bottom member by means of the fastening devices 30 in a manner similar to the manner in which the clips 29 are secured in position in the bottom but in the top the fastening devices 30 pass through the corner posts and the fillers 96, as shown more clearly in Fig. 3. When the brackets or clips 29 are in position the tie rods 31 are secured thereto and the turn buttons 32 adjusted.

When the tie rods have been tightened, the heat non-conducting or insulating material 36 is placed in position and the top member 134 is next placed in position. This member is in the form of a cover having a body portion provided with downwardly projecting circumferential flanges 135, which is adapted to be placed over the top so as to encompass the corner posts and to extend down against the outer faces of the adjacent panels and stile as shown more clearly in Figs. 1, 6, 15 and 21. A portion of the downwardly extending flanges 135 is cut-away adjacent each of the corners of the top and the extremities of the flanges are bent upwardly and against the inner faces of the flanges, as shown more clearly in Fig. 17 so that when the cover 134 is placed in position the upwardly bent portions 136 will form shoulders and will extend into the space between the adjacent faces of the corner posts, as shown more clearly in Fig. 15.

When the cover is placed in position, suitable fastening devices 137 may be inserted through the flanges and into the filler members 126 of the uppermost unit or panels of the side and rear wall and through the fillers 138 of the uppermost stile 115 and these fastening devices 137 serve as means for supporting and securing the filler members 126 in position. Corner pieces 139 are also provided which are placed over the corners of the top to protect the same and these corner pieces are fastened or secured in position in any suitable manner.

If desired, heat non-conducting material or insulation 140 (see Figs. 1 and 6) may be provided adjacent the top 134, which rests upon the edges of the members 133 and also upon the deflected portions or flanges 129 of the bottom member 127 of the top.

Secured to opposite walls of the refrigerator

and within the casing thus formed are supporting members designated generally by the reference numeral 141 in Fig. 4. These members 141 are constructed of metal and are provided with spaced parallel flanges 142, 143. The member together with the flanges are of a zigzag formation to form substantially V-shaped supports, which are separated from each other by V-shaped depressions and these members are secured preferably one to the rear wall and one to one of the cross stiles in the front wall of the refrigerator. The members 141 extend entirely across the casing and the extremities 144 thereof are deflected laterally, as shown more clearly in Fig. 1. These members are secured in any desired position in the refrigerator and constitute the supports for the bottom of the ice chamber or compartment. The bottom of the ice compartment is constructed of a plurality of inverted V-shaped members 145, the connecting edges 146 of which are preferably enlarged and rounded as shown. These members are adapted to rest upon the V-shaped portions 147 of the supporting members 141 and one side of each of the end members is deflected laterally as at 148 and is adapted to rest upon the laterally deflected portions 144 of the members so that when the members 145 are in position they will be spaced laterally from each other to form air circulation passages 149. Inverted V-shaped members 150 are also provided and these members are supported by the inverted V-shaped supporting portions 151 of the members 141. The inverted V-shaped portions 150 are arranged below the air circulation openings 149 between the members 145 and are themselves spaced laterally from each other to form air circulation openings 152 so that the down-going air from the ice chamber 153 will have a tortuous passage into the food compartment 154.

The members 145, 150 are supported by their extremities engaging and resting upon the supporting members 141 so that any one or more of the members may be readily removed when desired.

The inner lining of the casing 155 is constructed of any desired or suitable material, such as porcelain or the like, and is of a size and configuration to fit within the casing so that the side and rear walls thereof will rest against the inner faces of the sides or rear walls of the outer casing and the top and bottom will rest against the top and bottom of the outer casing. The front of the inner casing is open and is closed by the front wall of the outer casing so that when the doors 120 are opened, access may be had to the interior of the casing.

Removably supported within the ice compartment or chamber 153 are partitions 156

which are constructed of any suitable material, preferably metal and are of a length to extend across the ice compartment, preferably from the front to the rear wall. The ends of the partitions 156 are deflected as at 157 and the extremities of the deflected portions 157 are bent or deflected as at 158 to form portions substantially parallel with the body portion of the partition. These extremities 158 are provided with one or more key-hole slots 159, and secured to the wall of the inner casing are projections 160 preferably in the form of headed members which are adapted to enter the enlarged portions of the key-hole slots 159 so that the shanks of the fastening members will enter the reduced portions of the slots to hold the partitions removably in position. The portions 157 of the partitions may be of any desired width and serve to space the partitions 156 from the adjacent walls of the refrigerator to form up-going air circulation passages. These partitions terminate short of the top of the ice compartment and are also provided with apertures or openings 161 adjacent the top edge thereof through which the up-going air discharges into the ice compartment so as to contact with the ice to lower the temperature and when the temperature is lowered the air will be discharged downwardly through the bottom of the ice compartment and into the food compartment 154.

Arranged within the ice compartment and between the partitions 156 is a frame 162 which is preferably supported by the apices 146 of the inverted V-shaped members 145. A reticulated member 163, such as wire gauze or the like, is supported by the frame 162 and upon which the ice 164 rests.

The V-shaped members 150 are arranged to break joint with the inverted V-shaped members 145 and these members 150 are each provided with an aperture or opening 165, preferably adjacent the rear ends thereof and through which the drip water from the ice is discharged into a trough or pan 166, which latter is of any desired width and is arranged below the openings. This pan or trough 166 extends entirely across the refrigerator and preferably transversely of the V-shaped members and is removably supported in position in any desired or suitable manner, preferably by means of brackets 167. The bottom of this pan or trough preferably inclines toward the center from the opposite ends, and a discharge pipe 168 is connected to the trough or pan adjacent the center thereof and is arranged to extend through the food compartment and through the bottom of the refrigerator.

The food compartment is provided with a plurality of shelves 169 removably supported in position and which shelves are

provided with apertures or openings through which the air currents may circulate.

The laterally deflected portions 148 of the end inverted V-shaped members 145 extend across the spaces between the partitions 156 and the adjacent walls of the ice compartment and are provided with a plurality of apertures or openings 170 (shown more clearly in Figs. 1 and 2) and through which the up-going air currents pass.

It is, of course, to be understood that suitable packing material may be provided at any desired point to cover or protect the joints between the sections wherever it is found necessary and it is also to be understood that if it is found to be necessary the flanges of the metallic sections may be provided with a suitable coating of white or red lead or any other suitable water-proofing material, such as cement or the like, to form air tight joints between the sections.

In order that the invention might be fully understood, the details of the foregoing embodiment thereof have been thus specifically described, but

What is claimed as new is—

1. A sectional refrigerator including independent wall panels constructed of sheet material, one edge of one panel being disposed in closed proximity to one edge of the adjacent panel, and an independent fastening element engaging over said edges for securing the panels together to form unit members.

2. A sectional refrigerator including independent wall panels constructed of sheet materials, one edge of one panel being disposed adjacent one edge of the next adjacent panel, and fastening means engaging over the adjacent edges for securing the panels together.

3. A sectional refrigerator including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, fastening clips engaging the adjacent edges for securing the panels together, and means for preventing displacement of the clips.

4. A sectional refrigerator, including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, fastening clips engaging the adjacent edges for securing the panels together, and inter-engaging means on the clip and panel for preventing displacement of the clip.

5. A sectional refrigerator including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, fastening clips engaging the adjacent edges for securing the panels together, the clip and the panel being provided one with an aperture and the other with a cut out portion adapted to

enter said aperture for securing the clip against displacement.

6. A sectional refrigerator including independent wall panels, each provided with laterally projecting flanges, one of the flanges on one panel resting against one of the flanges of the next adjacent panel, and fastening clips engaging over the edges of the abutting flanges for securing the panels together.

7. A sectional refrigerator including independent wall panels, each provided with laterally projecting flanges, one of the flanges on one panel resting against one of the flanges of the next adjacent panel, and fastening clips engaging over the abutting edges of the flanges, the said clip and the said flange being provided with means on one of them adapted to penetrate the other for securing the parts together and the clip against displacement.

8. A refrigerator including wall panels, each provided with laterally projecting flanges, one of the flanges of one panel resting against one of the flanges of the next adjacent panel, said abutting flanges being provided with apertures, and fastening devices engaging over the flanges and protruding into the apertures.

9. A refrigerator including wall panels, each provided with laterally projecting flanges, one of the flanges of one panel resting against one of the flanges of the next adjacent panel, said abutting flanges being provided with apertures, and independent fastening devices engaging over the flanges, said fastening devices being provided with projecting portions adapted to protrude through the apertures and to be flanged or bent toward the faces of the flanges.

10. A refrigerator including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, independent fastening devices engaging the adjacent edges for securing the panels together, insulating material and means supported by the fastening devices for securing the insulating material in position.

11. A refrigerator including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, independent fastening devices engaging the adjacent edges for securing the panels together, and insulating material adjacent the panels, said fastening devices being provided with a projecting portion adapted to penetrate the insulating material for securing the latter in position.

12. A refrigerator including wall panels, each provided with laterally projecting flanges, one of the flanges of one panel resting against one of the flanges of the next adjacent panel, an independent fastening device engaging over the abutting edges of the

flanges, and insulating material resting against the flanges, said fastening device being provided with a cut-out portion in line with the edge of the flange and adapted to be embedded in the insulating material to hold the latter in position.

13. A refrigerator including wall panels provided with inwardly projecting horizontally disposed portions, said portion on one panel, standing adjacent the horizontal portion on the next adjacent panel, an independent fastening device provided with prongs, said device engaging over said adjacent horizontally disposed portions with the prongs penetrating said portions, said fastening device being provided with a projecting prong extending beyond the edges of the said horizontally disposed portions and insulating material supported by the said horizontally disposed portions and extending across the edges thereof, the last said prong penetrating the insulating material to secure the latter in position.

14. A refrigerator including corner posts provided with guide-ways, removable walls supported by the posts, said walls each comprising sections secured together and having opposite edges of each of the sections movable in the guide-ways, a top, and a bottom, and means for securing the parts against displacement with respect to each other.

15. A refrigerator including corner posts provided with cooperating guide-ways extending longitudinally thereof, sectional walls constructed of sheet material, opposite edges of each of the wall sections being inserted and movable in the guide-ways, means for securing the wall sections together, and a top and bottom for the refrigerator.

16. A refrigerator including corner posts provided with cooperating guide-ways extending longitudinally thereof, sectional walls, opposite edges of each of the sections of the respective walls being inserted and movable in the guide-ways, means for securing the wall sections together, a sectional front, and a top and bottom for the refrigerator.

17. A refrigerator including corner posts, provided with cooperating guide-ways extending longitudinally thereof, removable walls, opposite edges of the walls extending into and movable in the guide-ways, a sectional front for the refrigerator, said front including upright and cross stiles, said upright stiles being movable in the guide-ways of the respective posts, and a top and a bottom for the refrigerator.

18. A refrigerator including metallic corner posts provided with cooperating guide-ways extending longitudinally thereof, removable walls, opposite edges of the walls extending into and movable in the guide-ways, a sectional front for the refrigerator,

said front including upright and cross stiles, said upright stiles being movable in the guide-ways of the respective posts, said cross stiles being removably secured to the upright stiles to form door openings, closures for the openings and a top and a bottom for the refrigerator.

19. A refrigerator including metallic corner posts, removable metallic walls slidable between cooperating posts, a removable front comprising upright metallic stiles and metallic cross stiles separate from and removably secured between the upright stiles to form door openings, portions of the extremities of the cross stiles extending across the joints formed between the ends of the cross stiles and the adjacent edges of the upright stiles, said upright stiles slidably engaging the respective corner posts, a top and a bottom for the refrigerator, and closures for the said door openings.

20. A refrigerator including hollow corner posts, fillers for the posts, removable front, back and side walls slidable between cooperating posts, a removable top and a removable bottom for the refrigerator.

21. A refrigerator including hollow corner posts, each of said posts comprising oppositely disposed members removably secured together, removable sides, back and front slidable between cooperating posts, and a removable top and removable bottom for the refrigerator.

22. A metallic refrigerator including hollow metallic corner posts, each post comprising oppositely disposed members having overlapping edges for removably securing the respective members together, removable sides, back and front slidable between cooperating posts, and a removable top and removable bottom for the refrigerator.

23. A refrigerator including hollow corner posts, each post comprising oppositely disposed members having overlapping portions for slidably connecting the members together, each of said posts being provided with guide-ways and cooperating with the respective guide-ways on adjacent posts, removable sides, back and front walls slidable in the respective guide-ways, and a removable top and removable bottom for the refrigerator.

24. A metallic refrigerator including hollow metallic corner posts, each post comprising oppositely disposed members having overlapping portions for slidably connecting the members together, fillers for the posts, each of said posts being provided with guide-ways and cooperating with the respective guide-ways on adjacent posts, removable sides, back and front walls slidable in the respective guide ways, and a removable top and removable bottom for the refrigerator.

25. A refrigerator including corner posts

provided with longitudinally extending guide-ways, the guide-ways on each post cooperating with the respective guide-ways of the opposite post, removable sectional walls comprising independent panels, the ends of the panels projecting into and slidable in the adjacent guide-ways of the respective posts, the faces of the body portions of some of the panels being disposed in different vertical planes with respect to others of the panels, a removable front, a removable top and a removable bottom for the refrigerator.

26. A refrigerator including corner posts provided with longitudinal guide-ways, the guide-ways on each post cooperating with the respective guide-ways of the opposite post, removable sectional walls comprising independent panels, the ends of the panels projecting into and slidable in the adjacent guide-ways of the respective posts, the faces of the body portions of some of the panels being disposed in different vertical planes with respect to others of the panels, means for detachably securing the panels together, a removable front, a removable top and a removable bottom for the refrigerator.

27. A refrigerator including corner posts, provided with longitudinal guide-ways, the guide-ways on each post cooperating with the respective guide-ways of the opposite post, removable sectional walls comprising independent panels, the ends of the panels projecting into and slidable in the adjacent guide-ways of the respective posts, the faces of the body portions of some of the panels being disposed in different vertical planes with respect to others of the panels, means for detachably securing the panels together, a removable sectional front slidable in guide-ways of opposite posts, means for securing the sections of the front together, a removable top and a removable bottom for the refrigerator.

28. A refrigerator, including walls comprising unit panel members, corner posts provided with longitudinal guide ways into which each of the respective edges of the panel members are adapted to be inserted whereby the members are slidably supported between the posts, said members being adapted to be superposed one upon the other, and means for detachably securing the panel members together.

29. A refrigerator, including walls comprising unit panel members, corner posts provided with longitudinal guide-ways into which the edges of the panel members are adapted to be inserted whereby the members are slidably supported between the posts, said members being adapted to be superposed one upon the other, means for detachably securing the panel members together, insulating material supported by the members and extending across the abutting edges, and means adapted to penetrate the

insulating material to hold the latter in position.

30. A refrigerator, including walls comprising unit panel members, hollow corner posts provided with longitudinal guide-ways, each post comprising oppositely disposed members having overlapping portions for detachably securing the members together, the edges of the panel members projecting into and movable in the guide-ways whereby the members may be superposed one upon the other, and means for detachably securing the said panel members together.

31. A refrigerator including walls comprising unit panel members, hollow corner posts provided with longitudinal guide-ways, each post comprising oppositely disposed members having overlapping portions for detachably securing the members together, the edges of the panel members projecting into and movable in the guide-ways whereby the members may be superposed one upon the other, means for detachably securing the said panel members together, and a removable top for the refrigerator, said top being supported by and inclosing the upper ends of the corner posts.

32. A refrigerator including walls comprising unit panel members, hollow corner posts provided with longitudinal guide-ways, each post comprising oppositely disposed members having overlapping portions for detachably securing the members together, the edges of the panel members projecting into and movable in the guide-ways whereby the members may be superposed one upon the other, means for detachably securing the said panel members together, said top being provided with a depending circumferential flange adapted to extend over the upper ends of the posts and the upper edge of the uppermost panel members.

33. A refrigerator including walls comprising unit panel members, hollow corner posts provided with longitudinal guide-ways, each post comprising oppositely disposed members having overlapping portions for detachably securing the members together, the edges of the panel members projecting into and movable in the guide-ways whereby the panel members may be superposed one upon the other, means for detachably securing the said panel members together, a hollow top for the refrigerator, insulating material within the top, and means for bracing the top.

34. A refrigerator including front corner posts, a removable front for the refrigerator slidably supported between the posts, said front comprising separate upright stiles and separate cross stiles removably secured between the upright stiles to form door openings, and closures for the openings.

35. A refrigerator including front posts, each of said posts being provided with a plurality of longitudinal guide-ways, a removable front for the refrigerator comprising upright and cross stiles to form door openings, each of said upright stiles being provided with spaced parallel projecting portions adapted to enter and move in the guide-ways in the respective posts, and closures for the door openings.

36. A sectional front for refrigerators comprising spaced upright stiles, cross stiles extending across the space between the upright stiles, means for removably supporting the cross stiles, and means for preventing lateral movement of the cross stiles with respect to the upright stiles.

37. A sectional front for refrigerators comprising spaced upright stiles, cross stiles extending across the space between the upright stiles, and means for removably supporting the cross stiles, portions of the cross stiles extending over the adjacent edges of the upright stiles to prevent lateral displacement of the cross stiles with respect to the upright stiles and to cover the joint therebetween.

38. A sectional front for refrigerators comprising spaced upright stiles, cross stiles extending across the space therebetween, and inter-engaging means on the stiles for removably holding the cross stiles in position.

39. A sectional front for refrigerators comprising spaced upright stiles, a plurality of cross stiles extending across the space therebetween, there being projections on the cross stiles extending beyond the ends thereof, and supporting members secured to the respective upright stiles and adapted to receive the projections on the respective cross stiles for removably securing the latter in position.

40. A sectional front for refrigerators comprising spaced upright stiles, a plurality of cross stiles extending across the space therebetween, there being projections on the cross stiles extending beyond the ends thereof, and supporting members secured to the respective upright stiles and adapted to receive the projections on the respective cross stiles for removably securing the latter in position, and supporting members on the respective upright stiles being arranged in a staggered relation with respect to each other.

41. A sectional front for refrigerators comprising spaced uprights, a plurality of cross stiles extending across the space therebetween, members secured to the inner faces of the cross stiles and projecting beyond the ends thereof, and upwardly opening supports secured to the inner faces of the upright stiles and adapted to receive the mem-

bers of the respective cross stiles, the supports on each upright stile being arranged out of alinement with the other supports.

42. A top and bottom member for refrigerators, each comprising a top and bottom spaced from each other and having overlapping edges, means for reinforcing the members and arranged therebetween, heat insulating material also arranged between the top and bottom members, and bracing means also disposed between the top and bottom members.

43. A top and bottom member for refrigerators, each comprising a top and bottom spaced from each other and having overlapping edges, means for reinforcing the members and arranged therebetween, heat insulating material also arranged between the top and bottom members, and adjustable bracing means also disposed between the top and bottom members.

44. A top and bottom member for refrigerators, each comprising a top and bottom spaced from each other and having overlapping edges, means for reinforcing the members and arranged therebetween, heat insulating material also arranged between the top and bottom members, a sectional transverse bracing rod, one end of each of the sections being anchored with respect to the members, and means adjustably connecting the other ends of the rod sections.

45. A top and bottom member for refrigerators each comprising spaced upper and lower members, spacing means for the latter said members, clips secured to one of the members and diagonally opposite to each other, rod sections, one end of one of the rod sections engaging one of the clips and one end of another section engaging the other clip, and means adjustably connecting the other ends of the rod sections.

46. A top and bottom member for refrigerators, each comprising spaced upper and lower members, one of the members being provided with a surrounding flange integral therewith for closing the space between the members, clips secured to one of the members and opposite to each other, rod sections, one extremity of the sections engaging the clips, means adjustably connecting the other ends of the rod sections, and spacing members arranged between the said upper and lower members.

47. A top for refrigerators comprising a bottom member of sheet material having its edges bent upwardly to form a surrounding wall, the end of said edges being deflected laterally to form a support adapted to rest upon the upper edges of the respective walls of the refrigerator, the extremities of said edges being bent downwardly to engage and rest against the outer face of the refrigerator wall, the corners of the deflected portions being cut away to form spaces to receive the corner posts, insulating material supported by the member, and an upper member having a downwardly projecting circumferential flange adapted to extend over the edges of the lower member and to stand adjacent the downwardly deflected extremities of the lower member.

48. A top for refrigerators comprising a bottom member having its edges bent upwardly to form a surrounding wall, the end of said edges being deflected laterally to form a support adapted to rest upon the upper edges of the respective walls of the refrigerator, the extremities of said edges being bent downwardly to engage and rest against the outer face of the wall, the corners of the deflected portions being cut away to form spaces to receive the corner posts, insulating material supported by the member, and an upper member having a downwardly projecting circumferential flange adapted to extend over the edges of the lower member, the extremities of the said flange being bent upon itself to stand between said flange and the downwardly deflected extremities of the lower member, the said upwardly bent portion of the flanges of the upper member terminating short of the corners of said member whereby said portion will stand between the corner posts.

49. A refrigerator including in combination corner pieces, spacing members removably secured to and supported by the corner pieces, said members being provided with upwardly projecting portions having laterally deflecting flanges adjacent their upper ends and a removable bottom for the refrigerator supported by the corner pieces, the edges of the bottom extending beneath the respective flanges.

50. A refrigerator including in combination corner pieces provided with supports, a removable bottom resting upon the supports, and spacing members removably secured to and extending across the space between the corner pieces and below the supports, said members extending higher than the supports between the corner pieces, the upper extremities of the spacing members extending over and resting against the upper face of the said bottom.

51. A refrigerator including in combination corner pieces provided with supports, a removable bottom resting upon the supports, spacing members removably secured to and extending across the space between the corner pieces and below the supports, said members extending higher than the supports between the corner pieces, the upper extremities of the spacing members extending over and resting against the upper face of the said bottom, and fastening devices passing through the said members and engaging the bottom for holding the latter in position.

52. A sectional refrigerator each wall thereof including independent wall panels constructed of sheet material, one edge of one panel being disposed adjacent one edge of the next adjacent panel and independent fastening means engaging over the proximate edge of adjacent panels.

53. A sectional refrigerator formed of independent wall panels constructed of sheet material, one edge of one panel being disposed in close proximity to one edge of the adjacent panel, and an independent fastening element securing the adjacent edges together to form unit members, said fastening elements being located entirely within the walls of the refrigerator and engaging over the proximate edges of adjacent panels.

54. A sectional refrigerator including independent wall panels, each provided with laterally projecting flanges, one of the flanges on one panel being disposed in close proximity to one of the flanges on the next adjacent panel, and fastening clips engaging over the edges of the adjacent flanges for securing the panels together.

55. A refrigerator including wall panels,

each provided with laterally projecting flanges, one of the flanges of one panel being disposed adjacent one of the flanges of the next adjacent panel, a fastening element engaging over the edges of the adjacent flanges and interlocking means on said element and flanges for securing the wall panels together and the said element against displacement.

56. A refrigerator including independent wall panels, one edge of one panel being disposed adjacent one edge of the next adjacent panel, insulating material disposed next to the panels, independent fastening flanges engaging the adjacent edges for securing the panels together and means on the fastening device for securing the said insulating material in position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of June A. D. 1909.

FOREST V. DETWILER.

Witnesses:

J. H. JOCHUM, Jr.,
M. W. CANTWELL.