W. H. WHITTIER.

REFRIGERATOR DOOR CONSTRUCTION.

APPLICATION FILED APR. 22, 1919.

1,379,067. Patented May 24, 1921.

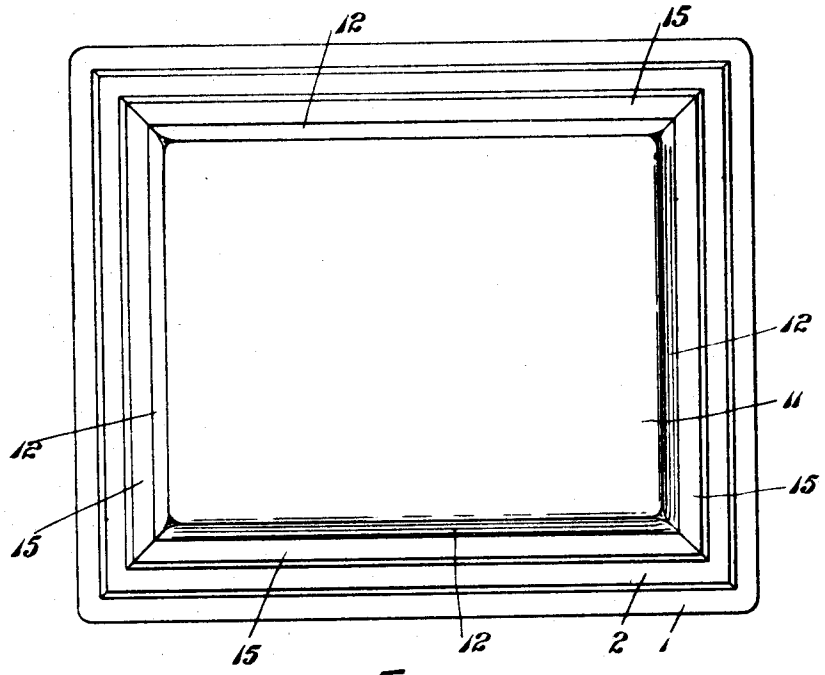


Fig. 1.

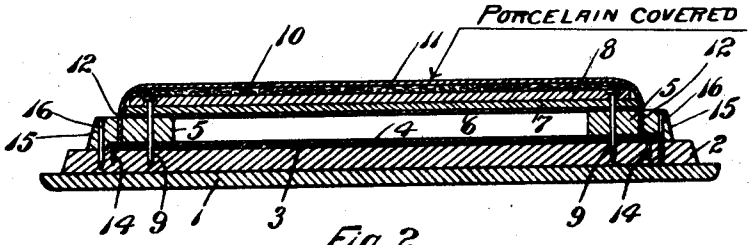


Fig. 2.

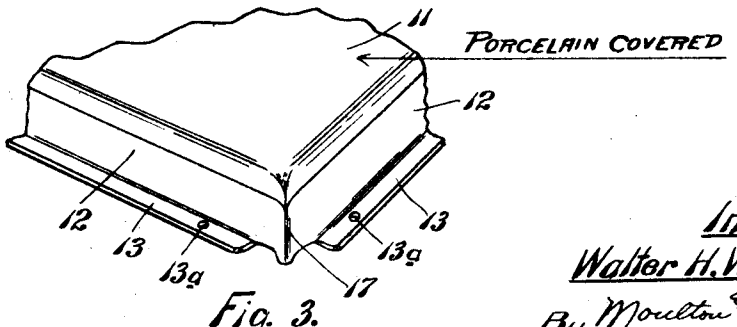


Fig. 3.

Inventor
Walter H. Whittier
By Moulton & Lurvans
Attorneys

UNITED STATES PATENT OFFICE.

WALTER H. WHITTIER, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO GRAND RAPIDS REFRIGERATOR COMPANY, OF GRAND RAPIDS, MICHIGAN, A CORPORATION OF MICHIGAN.

REFRIGERATOR-DOOR CONSTRUCTION.

1,379,067. Specification of Letters Patent. Patented May 24, 1921.

Application filed April 22, 1919. Serial No. 291,984.

To all whom it may concern:

Be it known that I, WALTER H. WHITTIER, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Refrigerator-Door Construction; and I do hereby 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.

This invention relates to a refrigerator door structure, and has for its object and purpose a more effective and finished structure of refrigerator door than has been made heretofore, and one in which a porcelain covered metal inner lining of novel and practical construction is used and which is secured to the door in a novel, effective and economical manner. For an understanding of the invention and the construction which embodies the same, reference may be had to the following description, taken in connection with the accompanying drawing, in which,

Figure 1 is an elevation of the rear side of a refrigerator door equipped with my invention.

Fig. 2 is a horizontal section therethrough, and

Fig. 3 is a fragmentary perspective view illustrating the corner construction of the porcelain covered door lining, and the way in which the outturned flanges are formed on said lining.

Like reference characters refer to like parts in the different views of the drawing.

In the construction of the door, an outer member 1 of wood of a size somewhat larger than the opening to be closed by the door is used on the rear side of which a relatively heavy wood backing member 2 is fixed in any suitable manner, the same being of a size to enter the opening in the refrigerator closed by the door, and which, when the door is closed, makes a substantially close contact with the sides of the refrigerator opening. On the rear face of the member 2 a thickness of water proof paper 3 covered by a section of wool felt paper 4 is located, against which a frame of relatively heavy parallel side and end members 5 is placed, the same having a second thickness 6 of water proof paper placed against it, which paper is covered by a second section 7 of wool felt paper 7, the whole being held in place by a wood member 8 placed against the second section of wool felt paper through which nails 9 are passed, said nails also passing through the members 5, the water proof and wool felt papers and into the member 2, thus securing the parts described in fixed relation to each other. While a preferred construction of door has been outlined, it is to be understood that many variations in this structure may be made without departing from the invention.

Against the rear face of the member 8 a layer of cocoa fiber 10 is placed which is covered and held in place by a metal facing or lining of dish-like form having a flat substantially rectangular section 11 from which sides 12 are turned, the sides terminating in outwardly turned flanges 13. This dish-like lining member completely covers the parts of the door described except the two members 1 and 2 and its flanges 13 bear against the rear face of the member 2 and may be attached thereto by nails 14 passing through openings 13^a in the flanges as shown. The outer sides of the lining are covered with porcelain which is baked thereon in suitable furnaces for that purpose. Wood molding strips 15 are placed around the sides 12 of the lining and fixed to the door by nails 16. It will be noted that in the construction of the lining member the corners at 17 are not rounded but are square so that the molding strips 15, when attached lie against the sides 12 of the lining at all points and no openings are left at the corners to be filled after the strips are attached.

It has been common to make the metal inner face or lining of the door so that the edges of sides 12 were brought to bear against a flat surface on the rear side of the door, screws being passed through openings in the part 11 of the lining and through the members making up the door, the screws following substantially the positions of the nails 9 in the construction shown, this necessitating the forming of holes through the lining and in the various members in the door for the passage of the screws and, at the same time, a very accurate and close forming of the lining member to fit tightly against the parts of the rear portion of the door. The screw heads could not be cov-

ered but showed on the rear side of the door thereby breaking the smooth and continuous surface of the lining member. Also it was sometimes the practice to pass nails through the sides 12 into the frame members 5 for attachment of the lining member. The flanges 13 were not used in any case. Inasmuch as the metal lining members have porcelain baked thereon in furnaces, it is important that the metal lining members be so constructed that warping under the heat shall not take place. This was practically impossible to accomplish with a lining which had straight sides, such as 12, only, and in many cases the molding strips 15 had to be cut and finished to conform to a more or less bent and warped side 12 with a resultant greatly increased cost for labor in making the door. With the flanges 13 formed at the edges of the sides 12 and turned outwardly substantially at right angles, this warping under heat is entirely eliminated and the strips 15 may be applied without cutting and forming directly against the sides 12. Moreover the flanges furnish a very ready means of attachment for the lining, the nails 14 passing therethrough into the door.

With my invention an absolutely smooth and unbroken surface of the door face or lining is provided, making the same very easy to keep in a clean and sanitary condition, and at the same time the expense of manufacture is greatly reduced.

I claim:

1. In a construction of the character described a door, a metal facing or lining for the door at the rear side thereof having porcelain baked on its outer side, said facing being of pan-like form having squared corners and provided with out turned flanges at the sides thereof terminating a short distance from said corners and adapted to lie against the rear side of the door, and means engaged with said flanges for securing the facing permanently to the door, substantially as described.

2. In combination, a door, a metal facing or lining on the rear side of the door having porcelain baked on its exposed side, comprising a plate of sheet metal having sides and ends bent toward the rear side of the door and terminating in out turned flanges which lie against the rear side of the door and fastening means passing through the flanges into the door, substantially as described.

3. In combination, a door, a metal facing member for the rear side of the door having porcelain baked on its exposed side comprising a plate of sheet metal having portions at its sides and ends bent inwardly toward the door, said portions terminating in out turned flanges which lie against the door, and strips lying against said portions at the sides and ends of the facing member and over the flanges, said strips being secured to the door, substantially as described.

4. In combination, a door, a heat insulating construction attached to the rear side of the door and covering the central portion thereof, a metal facing or lining member covering said construction, said member having portions at its sides and ends bent inwardly toward the door and covering the sides and ends of the insulating construction, said portions at their free edges being turned outwardly to form flanges, and means secured to the door engaging with and covering said flanges, said lining having porcelain baked on and covering its exposed side, substantially as described.

5. A facing member for the rear side of refrigerator doors comprising a pan-like member of sheet metal having porcelain baked to one side thereof and with the sides and ends of said member terminating in out turned flanges which are slightly short of the corners of said members, substantially as described.

6. A facing member for the rear side of a refrigerator door comprising a plate of sheet metal pressed to form a pan-like member with sides and ends and square corners, each of said sides and ends having an out turned flange integral therewith and lying nearly the full length of each of said sides and ends but terminating a short distance from the corners of said member, said member on its outer side having porcelain baked thereto, substantially as described.

In testimony whereof I affix my signature.

WALTER H. WHITTIER.