

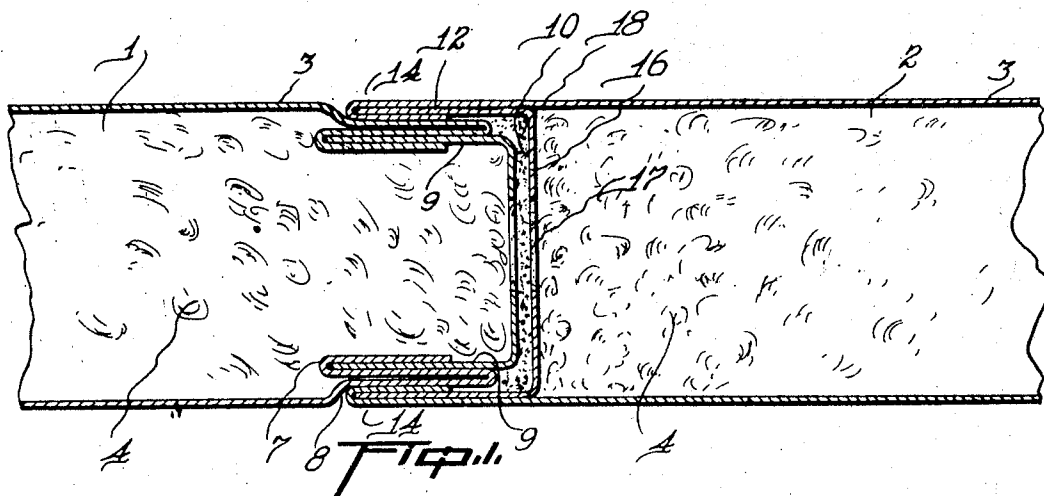
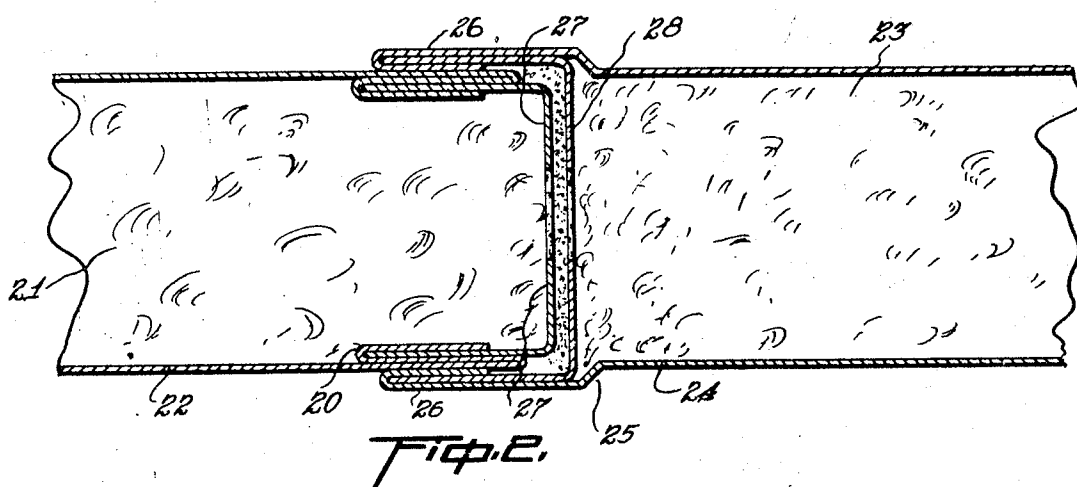
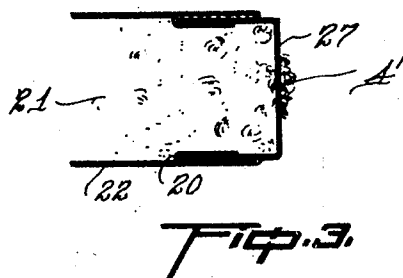
Nov. 10, 1931.

G. A. YOUNG

1,831,281

INSULATING WALL STRUCTURE

Filed Dec. 5, 1929



INVENTOR

George A. Young

BY

Robert R. Butler

ATTORNEYS

UNITED STATES PATENT OFFICE

GEORGE A. YOUNG, OF DETROIT, MICHIGAN, ASSIGNOR TO YOUNG BROTHERS COMPANY,
OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN

INSULATING WALL STRUCTURE

Application filed December 5, 1929. Serial No. 411,874.

The present invention pertains to oven walls made up of metallic panels filled with insulating material. The principal object of the invention is to provide an effective joint between such panels in such a manner as to avoid metal-to-metal contact as much as possible and thus reduce the metallic continuity from wall to wall of the panels. It will be understood that where a heat retaining wall is erected, it is desirable to avoid metallic conducting paths from one side of the wall to the other.

In the present invention, such metallic paths are reduced by perforating the end or thickness walls of the panels to a considerable extent. In joining the panels together, the confronting end walls are retained at a distance from each other, and the intervening space is packed with a suitable insulating material. The joint proper consists of sheet metal portions projecting from each panel over a portion of the adjacent panel and secured thereto. Due to the perforated character of the end walls, the latter may be secured to the corresponding side walls by a metal-to-metal joint, thus avoiding the insertion of intervening insulating material as in my Patent No. 1,312,663 of August 12, 1919.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings in which—

Figure 1 is a fragmentary sectional view of a wall constructed and joined according to the invention;

Fig. 2 is a similar view of a modification; and

Fig. 3 is a detail of Figure 2 illustrating the extrusion of the filling material.

Reference to these views will now be had by use of like characters which are employed to designate corresponding parts throughout.

The wall is composed of a number of panels, two of which are illustrated in Fig. 1 and designated by the numerals 1 and 2. Each such panel comprises a pair of sheet metal side walls 3 between which is packed insulating material 4. The ends of this section must obviously be joined to form an enclosure.

One end of each sheet 3 is formed with an S-bend 7 which is offset towards the interior of the panel by means of a bend 8 in the sheet. The ends of a U-shaped end piece 9 are inserted between the two inward plies of the S-bend.

At the opposite end of each panel the ends of the panels are formed with return bends 14 received in the offsets formed by the bends 8. The ends of a U-shaped end piece 16 are received and secured in the return bends, and the member 16 encloses the member 9, leaving a space 10 therebetween. It will be seen that each panel is formed with S-bends at one end and with return bends at the other end. Adjacent panels are joined by inserting the S-bends between the return bends, after positioning the end pieces 9 and 16, and suitably fixing the contacting parts together. Any suitable means such as solder, for example, may be employed for securing the joints between the S-bends and return bends and for securing the end pieces 9 and 16 in the bends.

The end pieces 9 and 16 are perforated by means of slots 17 of considerable length in the dimension perpendicular to that illustrated in Fig. 1. The space 10 between the end walls is packed with heat insulating gasket material 18 which may be introduced in plastic condition. The material 4 is also extruded through the perforations 17 as indicated by the numeral 4' in Figure 3 and functions as a seal or gasket therein.

In the modification shown in Fig. 2, the S-bends 20 in the panel 21 have one ply thereof in the same plane as the face 22, the offset 8 of Fig. 1 being eliminated. Instead, the adjacent panel 23 has its face walls 24 offset outwardly as at 25 and then prolonged and formed with return bends 26 which engages the face walls 22. End pieces 27 and 28 are received in the S-bends and return bends respectively as in Figure 1. Otherwise the construction is completed as described in connection with Figure 1.

Although specific embodiments of the present invention have been illustrated and described, it will be apparent that various alterations in the details of construction may

be made without departing from the scope of the invention as indicated by the appended claims.

What I claim is:—

5 1. In an insulating wall, a pair of insulating panels in end-to-end relation and having their confronting ends spaced apart, said end walls being perforated, and insulating material packed between said ends, one panel
10 having a portion overlapping the other panel and secured thereto.

2. In an insulating wall, a pair of insulating panels in end-to-end relation and having their confronting ends spaced apart, each
15 panel having sheet metal side walls, one end of each wall in one panel having an S-bend, the opposite ends of said walls having return bends, end pieces secured in said bends, one of said end pieces at said confronting
20 ends enclosing the other, and insulating material packed between said end pieces.

3. In an insulating wall, a pair of insulating panels in end-to-end relation and having their confronting ends spaced apart, each
25 panel having sheet metal side walls, one end of each wall in one panel having an S-bend, the opposite ends of said walls having return bends, end pieces secured in said bends, one of said end pieces at said confronting ends
30 enclosing the other, and insulating material packed between said end pieces, said end pieces being perforated.

4. In an insulating wall, a pair of insulating panels in end-to-end relation, each panel
35 having sheet metal side walls, one end of each wall in one panel having an S-bend, the opposite ends of said walls having return bends, end pieces secured in said bends, one of said end pieces enclosing the other, and insulating material in said panels.
40

5. A panel comprising a pair of parallel sheet metal walls having each an S-bend at one end of the panel, the opposite ends of said walls having return bends, end pieces
45 secured in said bends and connecting said side walls, one of said end pieces being adapted to receive an end piece of the same size as the remaining end piece, and insulating material in said panels.

50 In testimony whereof I affix my signature.
GEORGE A. YOUNG.