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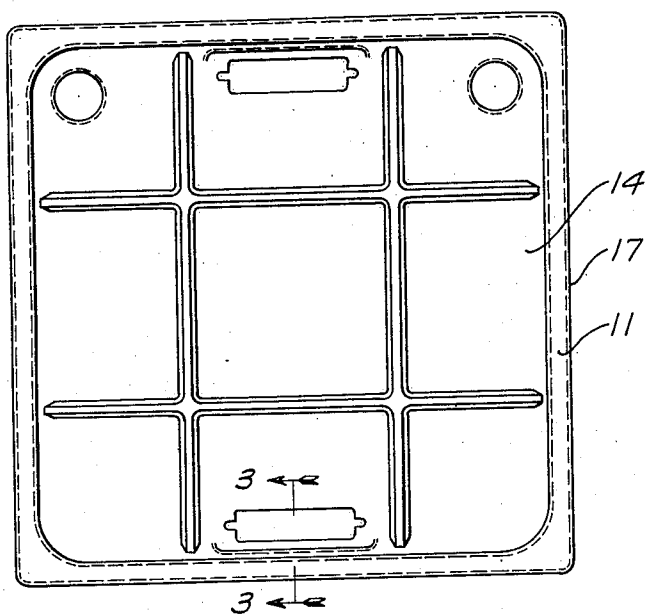
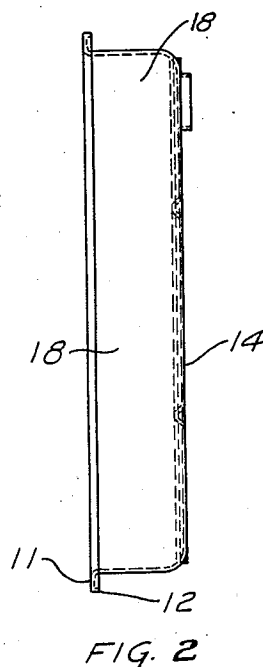
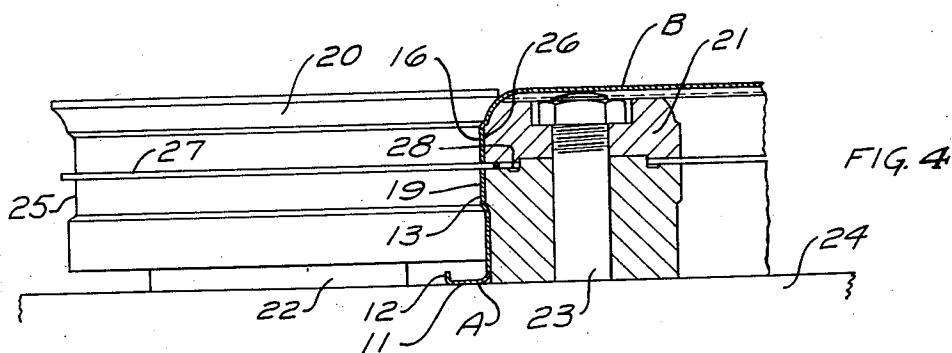
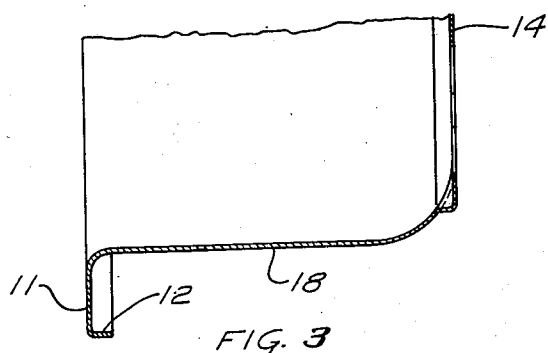
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2,253,499

METHOD OF MAKING OVEN LININGS

Filed Sept. 14, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

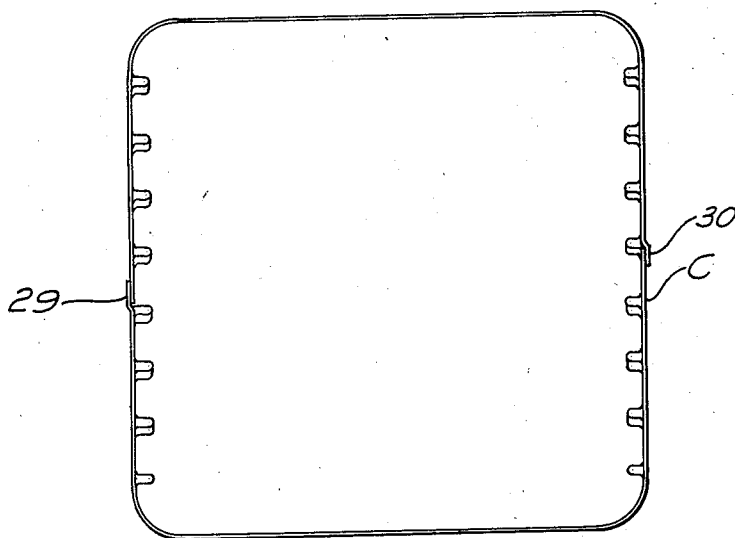


FIG. 5

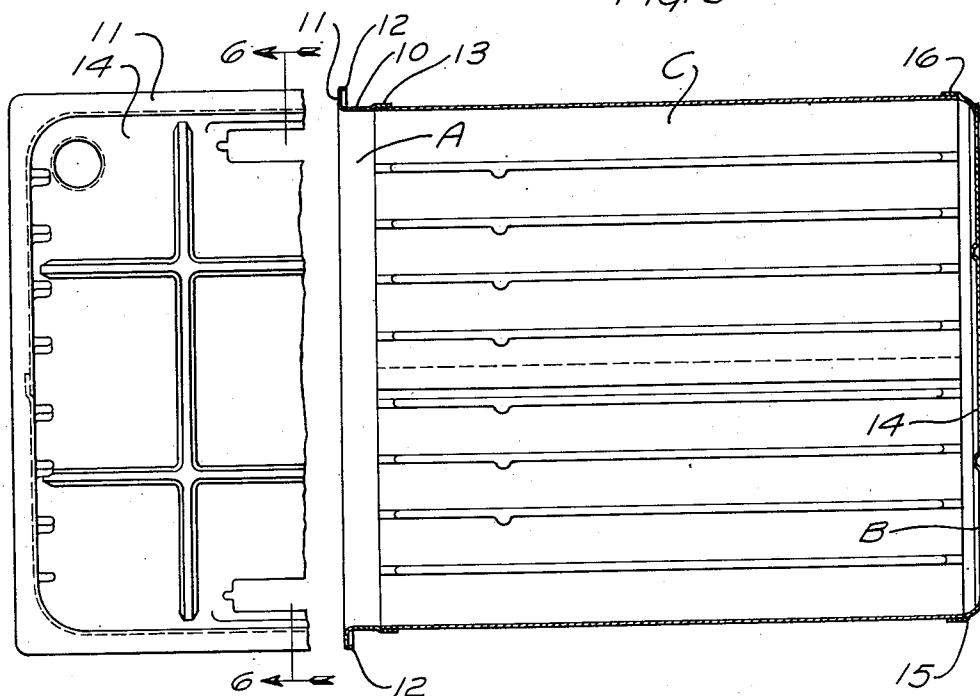


FIG. 7

FIG. 6

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METHOD OF MAKING OVEN LININGS

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2 Claims. (Cl. 113—120)

This invention relates to the method of making sheet metal linings for ovens.

The principal object of this invention is the provision of a simple and economical method of making oven linings having an interior surface free from undesirable protuberances. This object is attained in part by forming from a single sheet of metal a pan-like structure, severing the side wall of the pan to produce two separate parts, separating the parts and inserting between and securing to the two separate parts an intermediate body portion. This object is also attained in part by offsetting the metal along the severed edges of the pan-like structure so as to provide for a rabbeted joint between the edges of the intermediate body portion and the two separated parts of the pan-like structure.

For a more detailed description of the invention, reference should now be had to the accompanying drawings, wherein:

Figure 1 is a plan view of a pressed sheet metal blank from which the front and back ends of the oven lining are produced;

Figure 2 is a side elevation of the blank shown in Figure 1;

Figure 3 is a fragmentary cross-sectional view taken on substantially the line 3—3 of Figure 1;

Figure 4 is a side elevation, showing some parts in cross-section, of a part of the machine for severing the blank shown in Figure 1 and the blank in position to be cut in two;

Figure 5 is an end elevational view of the center or main body portion of the oven lining;

Figure 6 is a vertical cross-sectional view of the complete oven lining; and

Figure 7 is a fragmentary front elevational view of one half of the completed oven lining.

An oven lining of the type to which this invention relates is shown in Figures 6 and 7. It consists of three parts, a front end section A, a rear end section B, and an intermediate body section C.

The front end section A consists of a side wall 10 forming a part of the side wall of the oven lining, a laterally outwardly extending flat rim 11, and a rearwardly extending marginal flange 12. The rim 11 forms a front wall of the oven lining and defines a door opening. The rear edge of the side wall 10 is offset outwardly to provide a rabbet 13.

The rear end section B of the oven lining consists of a back wall 14 and a side wall 15 extending forwardly therefrom. The side wall 15 forms a part of the side wall of the oven lining. It is

offset outwardly adjacent its front edge to provide a rabbet 16.

The intermediate body section C of the oven lining is of substantially rectangular cross-section (see Fig. 5) and is open at both ends. Preferably the section is made in two U-shaped parts with their edges overlapping and secured together at 29 and 30. However, it is not essential that it be made in this way, and any other desired method may be used.

The three parts A, B and C are assembled in the relationship shown in Figures 6 and 7, with the ends of the intermediate body section C lying in the rabbets 13 and 16 of the front and rear end sections A and B respectively. Thus, as will be seen from Figure 6 particularly, the interior surfaces of the lining at the joints between the parts are flush with each other.

The front and rear end sections A and B of the oven lining are made from a single flat sheet of metal. The sheet is drawn in suitable dies and in any desired number of operations into a rectangular pan-like blank 17 shown in Figures 1 to 3. Essentially the blank comprises a bottom 14, an upstanding side wall 18 surrounding the bottom, a laterally outwardly extending rim 11 and a marginal flange 12 parallel to the side wall 18. After the blank 17 has been formed in the manner just described, the side wall 18 is pressed outwardly in a zone intermediate the bottom 14 and the rim 11 to form an outwardly offset groove 19 parallel to the bottom 14. Preferably at the same time that the groove is formed the blank is cut in two along a line parallel to the bottom 14 and intermediate the sides of the groove, thus providing the two end sections A and B of the oven lining having rabbets 13 and 16 adjacent the line of severance. It will be obvious, however, that the steps of forming the offset groove and the cutting of the blank into two parts need not necessarily be combined, but each step may be an independent operation.

A portion of a machine for forming the groove in the side wall of the blank and severing the blank into two parts is shown in Figure 4. It consists primarily of a pair of forming rolls 20 and 21 rotatably mounted on spindles 22 and 23 on a bed or table 24. Preferably one of the rolls is so mounted as to be movable radially of the other roll, whereby the two may be separated to allow the insertion of the blank 17 between them. The roll 20 is provided with a groove 25, and roll 21 has a cooperating rib 26 for forming the groove 19 in the wall 18 of the blank 17. Roll 20 is also provided with a circular cutting ring 27 which

cooperates with a groove 28 in the roll 21 for cutting the blank 17 into two parts.

In operation the rolls 20 and 21 are moved apart, an edge of the blank 17 is inserted between the rolls with the rim 11 of the blank lying on the bed 24, and the rolls are brought together under heavy pressure. The rolls 20 and 21 are then rotated, and the cutting ring 27 cuts the blank in two while the groove 25 and rib 26 form the offset 19 in the side wall 18 of the blank.

After the two end sections A and B have been formed as just described, they are separated and the intermediate body portion C is positioned between the sections A and B with the edges of section C disposed with the rabbets 13 and 16. The three parts are then permanently secured together by welding the overlapping edges of the parts A and C and the parts B and C. The joints thus formed are then metal finished to provide a smooth interior for the lining which is free from any objectionable protuberances.

It will be apparent from the foregoing description of this invention that it provides a method of making an oven lining with relatively few operations and from relatively few parts. It is more economical than previous processes because of the small number of operations, and because of the very small amount of scrap metal produced. Furthermore, the interior of the lining has smoothly rounded corners and is entirely free from undesirable protuberances, thereby providing a structure which is easily cleaned.

The scope of the invention is indicated in the appended claims.

I claim:

1. The method of making a sheet metal oven lining of the type which consists of a hollow shell of substantially rectangular cross-section having a back wall at one end thereof and a laterally outwardly extending peripheral rim defining a door opening at the other end thereof; which comprises the steps of drawing a flat sheet of metal into a substantially rectangular pan-like blank having a bottom, an upstanding side wall

surrounding the bottom, and a rim extending laterally outwardly from the edge of the side wall remote from the bottom, subsequently forming an outwardly offset groove in the side wall of the blank parallel to the bottom thereof and of a depth substantially equal to the thickness of an intermediate section, severing said blank along a line parallel to and intermediate the sides of the offset groove to form two end sections having rabbets at their severed edges, positioning a separately formed intermediate body section between the two end sections with the opposite ends of the intermediate body section received in said rabbets so that the inner surfaces of the end sections are flush with the inner surface of the intermediate body section, and finally securing the end sections to the intermediate section.

2. The method of making a sheet metal oven lining of the type which consists of a hollow shell having a back wall at one end thereof and a laterally outwardly extending peripheral rim defining a door opening at the other end thereof; which comprises the steps of drawing a flat sheet of metal into a pan-like blank having a bottom, an upstanding side wall surrounding the bottom, and a rim extending laterally outwardly from the edge of the side wall remote from the bottom, subsequently forming an outwardly offset groove in the side wall of the blank parallel to the bottom thereof and of a depth substantially equal to the thickness of an intermediate section, severing said blank along a line parallel to and intermediate the sides of the offset groove to form two end sections having rabbets at their severed edges, positioning a separately formed intermediate body section between the two end sections with the opposite ends of the intermediate body section received in said rabbets so that the inner surfaces of the end sections are flush with the inner surface of the intermediate body section, and finally securing the end sections to the intermediate section.

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