

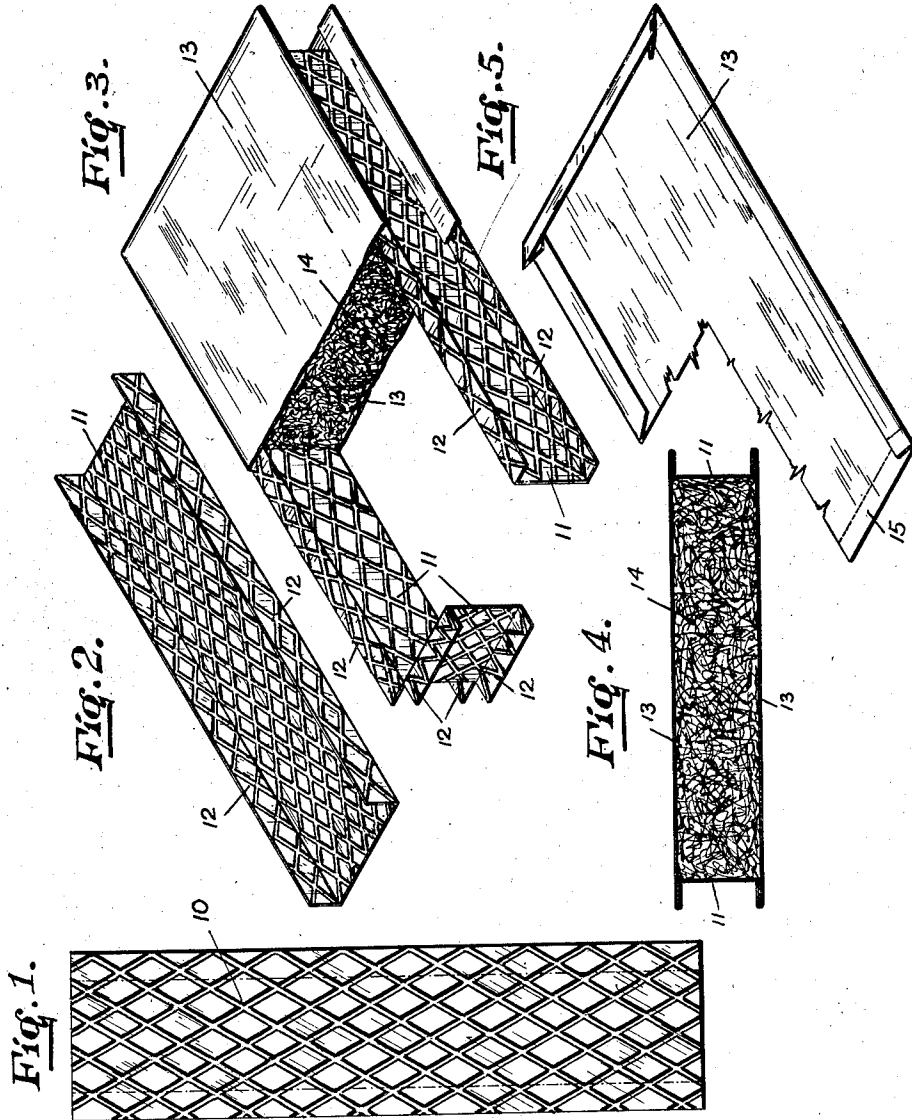
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WALL AND PARTITION CONSTRUCTION FOR INSULATING PURPOSES

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WALL AND PARTITION CONSTRUCTION FOR INSULATING PURPOSES

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This invention relates to insulating structures particularly for enclosing or subdividing areas used for heating and drying purposes, also to the fabrication of said structures and their resultant structural and functional characteristics.

The general object of the invention is to provide a structure adapted to be used in drying ovens or the like, and be employed in the wall or ceiling enclosing partitions; or wherever else it is desired to use an enclosing wall or section having insulating properties.

In the construction of drying ovens for example, it is highly desirable to provide a wall structure which is not unduly heavy, which may be easily assembled, which will avoid heat losses to as great a degree as possible, and which in its design and assembly lends itself to adaptation in the erection of structures of different sizes, shapes, and capacities.

In providing wall structures of this character, it has usually been the practice to utilize a plurality of lengths of channel iron in combination with metal enclosing sheets to form a relatively thick sectional partition adapted to contain any desirable insulating material between the confining sheets. The channel iron strips are usually fastened together by bolts or rivets and the sheets secured thereon in similar manner. In consequence, heat losses, especially by conduction through the channel members, assume considerable proportions, and expedients, such as cutting away inner channel material to avoid such losses, are little effectual at best and are only adopted at a cost of strength in the structure. It is evident, also, that the use of heavy frame members is not only expensive but requires much labor, heavy fabrication, and does not permit of ready assembly, disassembly or change in structural size and design.

A feature of applicant's invention therefore resides in the provision of an all metal border confining band adapted to be used with enclosing sheets, the band being designed to be used in strips of any desired size and enclose any number of partition sides without necessarily being broken up into separate lengths.

A further feature resides in the design of the border strip whereby they may be readily interlocked with partition sheets used for confining insulating material. As a result, assembly or disassembly may be expeditiously carried out and partitions of different sizes fabricated and assembled without delay or extra expense.

Another feature covers the use of border strips whose structure reduces, to a minimum, heat losses, and whose use in walls or partitions is so constituted that no portion need be cut away to avoid heat losses, the employment in the manner contemplated also assuring structural sturdiness meeting every requirement of load or stress.

Further features covering assembly of the border strips with the enclosing sheets, the use of expanded metal to reduce heat losses, yet without sacrifice to sturdiness of structure, and covering other advantages in manufacture, economy of use, and in numerous adaptations wherein the invention may be employed, will be more apparent from the following description to be read in connection with the accompanying drawings in which:

Fig. 1 represents a sheet of expanded metal adapted to be formed into a border strip of the character employed in applicant's invention;

Fig. 2 shows the strip in a form adapted for use as a confining border band;

Fig. 3 is a perspective view of a confining border band of the type shown in Fig. 2, in combination with a pair of confining sheets forming an enclosure for insulating material;

Fig. 4 is a cross section of a wall structure or partition such as that shown in Fig. 3, illustrating the method of assembly, and

Fig. 5 shows one form of fashioning a confining sheet so that it may be easily combined with a border strip to form an enclosure.

In the figures, like numerals refer to similar parts. For the purpose of inexpensively fabricating walls or partitions for drying oven work or the like, applicant preferably utilizes expanded metal in sheets such as 10. The metal may be as thin as desired and constituted so that it may be easily worked and fashioned in any form. For purposes of

utilizing expanded metal in sheet form for partition purposes, applicant preferably bends a strip of expanded metal such as that in the form of a channel 11. The strip may be of any length and its thinness is of little moment. Due to the character of expanded metal, it may be bent at desired points and formed into any shape as for example that of a square as in the form shown in Fig. 3. Upon bending a strip to form a corner, sides 12 of the channel may be easily broken as illustrated whereas the middle strip maintains its integral character throughout. While all the figures show a sheet of expanded metal comprising the channel members, it is to be understood that the invention is not limited to channels of this type but includes any type of expanded metal channel by which engineering expediency may best be suited.

In order to readily form a wall or a partition unit in which a channel such as 11 is employed, applicant utilizes an enclosing sheet 13 whose edges are bent over, as shown in Fig. 5, to form receiving guides for the side members or ears 12 of the expanded metal channels 11. The sheets 13 may be as thin as desired and are merely used as shown in Fig. 3, in combination with the channels to form an enclosure for insulating material 14. The insulating material may be rock wool, asbestos or any other desired heat insulator.

In order to expeditiously assemble the channels and confining sheet, the sheets 13 have three of their sides bent over to form V's with the main surface. The fourth side 15 remains flat. The channel is then formed so that its dimensions, in bent form, correspond to the dimensions of the confining sheet. It is an easy matter then to slide the channel within the confining sheets; or to slide the channel into one confining sheet and then slide the other sheet on the opposite edges 12 of the channel. The confining sheets and channel within form the enclosure. The bent edges of the confining sheets are then clamped firmly on the edges 12 of the channel, as shown in Fig. 4. The channel and confining sheets then form an integral unit. The space between the sheets is thereupon filled with the insulating material and forms a partition available for use in the wall or sealing structure of a drying room oven or in any other capacity where it is desired to use an enclosing wall or section having insulating properties. The open edge 15 is, of course, clamped in position to correspond with that of the other three edges when the insulating material is placed between the confining sheets and it is desired to enclose the confined area.

The sections may, of course, be made in any length, depending upon the particular requirements to be met and economical use of materials on hand. Any number of sections

may be placed in contiguous relation to form a wall or partition. By the use of expanded metal or the like, conduction loss is held to a minimum and there is no necessity for cutting out channel portions as is at present usually the practice. The method of joining the channel band and confining sheets makes for a reinforced unit whose strength is uniform throughout the structure and which easily resists load stress and torsion strains.

It should be understood that any system of wall construction in which a metal member may be fashioned in the form of an elongated channel or the like and combined in substantially the manner indicated with confining sheets which may be assembled slidably on the channel and clamped in position to form an enclosure is deemed within the purview hereof.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention what I claim as new, and desire to secure by Letters Patent, is:

1. An insulating structure comprising a plurality of enclosing sheets, a continuous border band of expanded metal in combination with said sheets, the band being formed to be slidably positioned within the sheets and insulating material confined within said sheets and border band.

2. Wall structure of the character described comprising confining sheets having their edges in the form of guides, a strip of material of perforate body structure adapted to fit within the guides and forming a complete enclosure, and insulating material within the enclosure.

3. An insulating partition having a strip of expanded metal bent in the form of a rectangle for binding partition walls together in spaced relation to each other, said strip being adapted to interlock with the partitions, and means for assembling the partition whereby the spaced members may be slidably positioned on the strip.

4. A structure for use in a drying oven comprising a sheet of metal of perforate character having a relatively small heat conductivity characteristic, said sheet being provided with guides, means for shaping said sheet as desired, said guides being adapted to be broken at desired points, confining partitions having channels adapted to be positioned on said guides, said channels and guides being adapted to be clamped together, said sheet and partitions forming an enclosure for insulating material.

5. An insulating structure comprising a single strip of expanded metal shaped in the

form of a rectangle, said strip having extensions integral therewith forming guides, said guides being broken at the corners of the rectangle, confining sheets adapted to be
5 slidably positioned on the guides, each of the sheets having its edges bent to embrace the guides on each side of the rectangle, said sheets and said strip defining a space for insulating material.

10 6. In combination, in a structure of the character described, a pair of sheets of integral character throughout having each of its edges bent to form confining guides, and
15 a single sheet of material of perforate character having extensions fitting in the guides, all of said sheets defining a space for insulating material.

20 7. An insulating partition having two of its dimensions determined by the area of a pair of confining sheets, the third dimension being determined by the width of a metallic
25 strip whose opposite longitudinal edges are clamped within the four edges of each of said sheets, said strip being composed of interconnecting strands of metal forming a perforate sheet of slight conductivity, and a layer of rock wool between the confining sheets.

In testimony whereof I affix my signature.

30 RYAN SADWITH.

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