

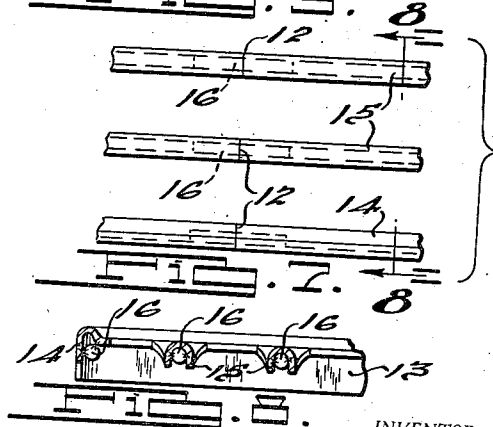
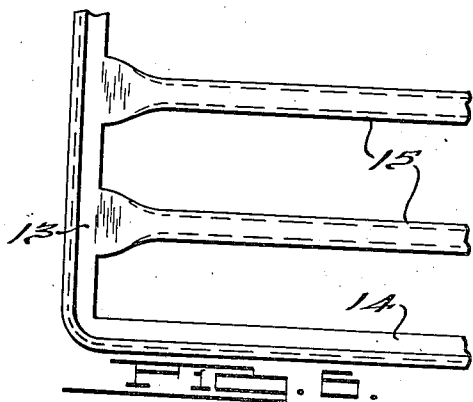
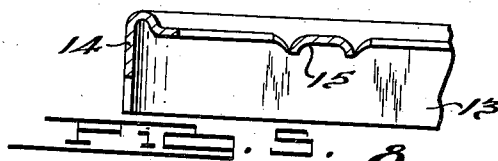
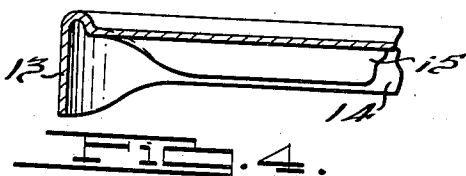
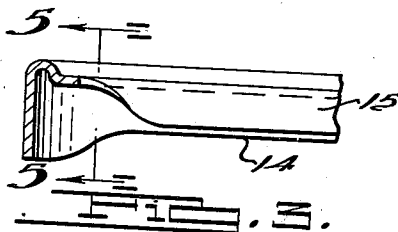
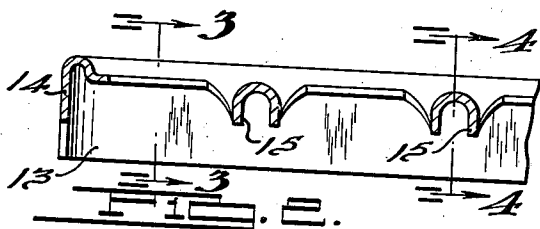
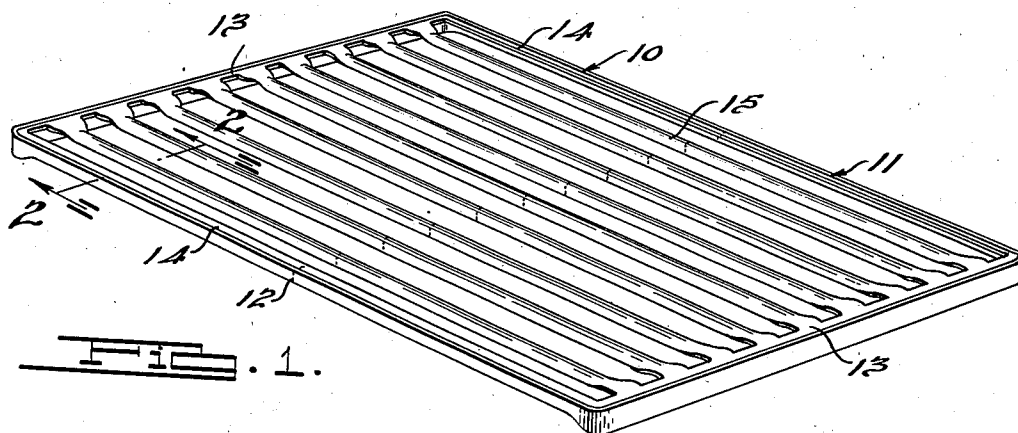
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REFRIGERATOR SHELF

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REFRIGERATOR SHELF

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3 Claims. (Cl. 211-153)

The present invention relates to an improved shelf and has more particular reference to a thermally conductive corrosion resisting shelf particularly useful as a refrigerator shelf.

Prior to the present invention it has been common practice to fabricate refrigerator shelves or the like from ordinary steel wire. As is known, such wire is very susceptible to corrosion and unless carefully treated is readily oxidizable and forms rust, scale and other corrosion products on its surfaces. In order to overcome this disadvantage it has been common practice to galvanize, tin dip, or otherwise coat shelves formed of this wire to form a protective non-corrosive skin thereon and in addition to put the shelves through a separate plating operation. A shelf constructed of wire possesses a considerable weight of material per unit of size and has comparatively little exposed surface. Since its coating is likely to wear off relatively quickly or to chip, it is also very subject to corrosion.

Accordingly, it is a principal object of the present invention to provide a thermally conductive ventilated shelf formed from material practically non-corrosive throughout the life of the shelf, and one so designed and fabricated that it possesses a maximum strength and surface per unit of weight.

Another object of the invention is to provide a shelf of the foregoing character which is relatively light in weight and therefore more convenient to handle and use without reducing its strength appreciably or otherwise hampering its effectiveness in operation.

It is a further object of the invention to provide a shelf made up of joined members cut or otherwise formed from an initially flat sheet or sheets of corrosion resisting metal such for instance as stainless steel; and one which, due to its novel structure, may be manufactured for costs comparable to the cost of conventional types of shelves.

It is still another object of the invention to provide a shelf which is pleasing and ornamental in appearance.

Other objects and advantages of this invention will appear in the following description and appended claims, reference being had to the accompanying drawing forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Fig. 1 is a perspective view showing a shelf embodying one form of the present invention.

Fig. 2 is a cross section of the shelf shown in

Fig. 1 taken substantially along the line 2-2 of Fig. 1 in the direction of the arrows.

Fig. 3 is a cross section of the shelf depicted in Fig. 1 and is taken substantially along the line 3-3 of Fig. 2 in the direction of the arrows.

Fig. 4 is a cross section taken substantially along the line 4-4 of Fig. 2 in the direction of the arrows.

Fig. 5 is a cross section taken substantially along the line 5-5 of Fig. 3 in the direction of the arrows.

Fig. 6 is a somewhat enlarged partial plan view of one corner portion of the shelf shown in Fig. 1.

Fig. 7 is a partial plan view of a pair of connecting pieces and also one end frame portion of the shelf shown in Fig. 1, and indicates one way in which the members or sections thereof may be joined together.

Fig. 8 is a cross section taken substantially along the line 8-8 of Fig. 7 in the direction of the arrows.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

Referring to the drawing and in particular to Fig. 1, there is illustrated a shelf embodying one form of the present invention. The shelf there shown is made up of a pair of sections or members indicated generally by the reference numerals 10 and 11. These members or sections are joined to form the completed shelf and the line of juncture is indicated by the broken line shown at 12 (Fig. 1). Suitable joining means may be utilized, such for instance as welding, which provides a particularly simple and effective means. However, a preferred method for joining the members 11 and 12 is illustrated in particular in Figs. 7 and 8. As there shown a plurality of reinforcing and connecting pieces 16-16 are provided. One piece 16 is inserted in the channel of each of the fingers or members 15 as well as the channel in each end frame portion 14. Each piece 16 is preferably made to conform to the inner contour of the channel

with which it is used and, therefore, fits smoothly thereto when inserted. The pieces 16—16 may be of any suitable size and formed from any suitable material and are positioned in the channel to extend beyond each side of the line indicated at 12 representing the line of juncture of the sections or members 10 and 11. The abutting ends of the fingers 15 and of the end frame portions 14 on each of the members 11 and 12 are firmly fixed to the piece 16 in any suitable manner. For instance, spot welding provides one practical effective joining means.

Each of the members 10 and 11 is substantially identical in size and shape. Each member consists of a marginal framing portion made up of the tying side portion 13 together with each of the end frame portions 14—14. Consequently, each member 10 and 11 possesses a generally three-sided or substantially U-shaped marginal frame having a side portion from which two initially free-ended end portions extend. A plurality of intermediate initially free-ended fingers or projections 15—15 extend from side tying portions 13 of each of the members 10 and 11 at substantially evenly spaced intervals and run parallel to the end framing parts 14 thereof. These projections or fingers 15 are substantially of the same dimensions and are preferably integrally formed with the tying portions 13 in the manner pointed out in detail hereinafter. Since the members 15 and 14 are substantially of the same size in each of the sections 10 and 11 and occupy corresponding positions they may be aligned when placed in the abutting position indicated in Fig. 1. Since they are joined in this abutting position they form a completed shelf possessing a closed marginal framing portion made up of the two side parts 13—13 of each of the members 10 and 11 and the joined end frame pieces 14—14 of the said members. In addition, the joined fingers 15 on each of the members make up pieces interconnecting the said frame which are substantially evenly spaced from each other thereby providing a plurality of unbroken slots located between each of these connecting pieces and extending from one side frame portion 13 to the other. Moreover, it will be noted that the above mentioned framing portion is relatively narrow.

It is to be understood, however, that the shelf may be made up of more than two sections or it may be of a one-piece construction. However, the pair of joined sections described constitutes a preferable construction.

The framing portion of the shelf is provided with a particular configuration. This configuration consists of the downwardly depending flanging extending about the four sides of the frame. Preferably this flanging is so made that the frame portion is provided with a beam-like contour in cross section such as the L-shaped contour shown in the drawings, in particular in Figs. 1 and 2. Other suitable configurations may be imparted however, such as an I-shaped contour, a T-shaped one, and so forth. Moreover, the end parts of this framing portion may be provided with a flanging depending to a somewhat less extent than that of the side portions, as shown in particular in Fig. 1; and the flanging may be rounded at the points of juncture in the way also there indicated. The framing portion of the shelf is also preferably provided with a raised portion. This raised portion is positioned at the outer side of the upper or horizontal part of the frame and extends about the four sides

of the shelf. This raised portion provides a shoulder preventing articles placed on the shelf from sliding off. The raised portion can be made in the same operation as the flanging. However, this raised portion may be dispensed with if desired.

The joined extensions or fingers 15 are also provided with a particular configuration. This configuration is such that the said joined pieces are of a generally hollow rounded shape and substantially U-shaped in cross section as best shown in Fig. 2. The joined fingers 15 are preferably integral with the side framing portions 13 and are united therewith in a particular manner. As shown in Figs. 1 and 6, at the point of juncture the said fingers are flat and are gradually bent into their rounded configuration. In Fig. 5 there is illustrated the shape of these fingers at a point when they are approaching their ultimate rounded shape. It will be noted, however, that the upward rounded extremity of the joined fingers 15 lie in a plane with the flat upper edge of the frame portions of the surface as best shown in Fig. 4. However, other suitable configurations may be imparted to the joined fingers 15—15, such as a V-shaped contour, a flat one, and so on. Moreover, these joined members need not be united with the frame in the particular way aforescribed, although this structure is a preferable one. They may be so joined in any suitable manner and not necessarily made integral therewith. In fact, it is again expressly pointed out that the above described configuration of the entire shelf is but a preferable one and not necessarily the only suitable one. This particular configuration is preferable because it provides substantially a maximum strength as well as surface per unit of weight. Therefore, it makes possible the use of a relatively thin sheet of metal without any appreciable reduction in strength in the completed shelf. This structure also substantially eliminates waste metal and as a result provides a superior product at manufacturing costs comparable to the costs of presently employed shelves.

The shelf is preferably formed from a substantially non-corrosive or corrosive resisting metal such as stainless steel, Monel metal or the like. Since the construction of the shelf is particularly designed to effect marked savings in material the use of these relatively expensive materials is rendered commercially feasible. However, ordinary corrosive metals may be employed in which event, however, the shelf should be coated with a protective material. Tin dipping, or the like, may be utilized to provide this coating. In addition, the surface may be provided with an additional coating chiefly for decorative purposes such as chromium plating or the like. Moreover, the shelf may be suitably smoothed and polished such as by grinding operation, a buffing operation, or the like.

From the foregoing it is apparent that I have provided a shelf, such as a refrigerator shelf, of novel construction. Shelves made in accordance with the present invention in particular may be formed from sheet material without waste metal and possess a maximum strength and surface per unit of weight so that a thin sheet of metal may be employed and, consequently, reduce the cost of manufacture while at the same time making the use of superior corrosive resisting materials practical and commercially feasible. In ad-

dition, I have provided a shelf having a ventilated surface and one which is highly thermally conductive and possesses a pleasing ornamental appearance.

I claim:

1. A fabricated thermally conductive refrigerator shelf comprising a pair of co-planar sections each having an edge portion terminating in laterally extending end pieces, said edge portion being provided with a downwardly depending flanging from its outer edge and with an upwardly extending ridge throughout its length and also having a plurality of rounded extensions provided with downwardly depending flangings substantially throughout their length, said extensions being carried by said marginal portions and being positioned at substantially evenly spaced intervals parallel to the aforesaid end pieces, each of said extensions having a flat portion extending from and forming an integral portion of said marginal portion, a plurality of connecting pieces disposed within said projections and extending on both sides of the line of junction of said sections, said sections being positioned with said projections and said end pieces in abutting relationship and being joined together by said connecting pieces.

2. A fabricated thermally conductive refrigerator shelf comprising a pair of co-planar sections, each section having an edge portion and a plurality of projections extending therefrom, said edge portion having a downwardly extending flanging and an upwardly extending ridge, each of said projections being of a rounded contour and having a flat portion extending from and forming an integral part of said edge portion, said sections being positioned with said projections in abutting relationship, and connecting pieces disposed within the abutting projections and joining them together.

3. A fabricated metallic refrigerator shelf which comprises a pair of co-planar sections, each having an edge portion and a plurality of projections extending therefrom, said edge portion having a downwardly extending flanging and an upwardly extending ridge, each of said projections being of a rounded contour and having a flat portion extending from and forming an integral part of said edge portion, said sections being joined with said projections and said edge portions in abutting relationship.

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