Oct. 9, 1962 A. L. LANG 3,057,446

BAR FRAMING FOR WIRE MESH PANELS

Filed Jan. 6, 1958

FIG. 4

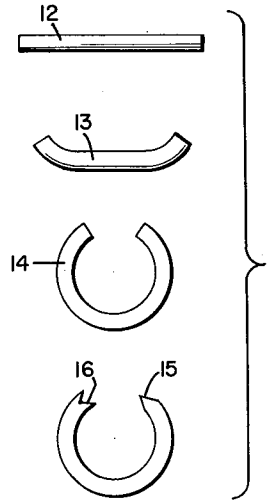


FIG. 2

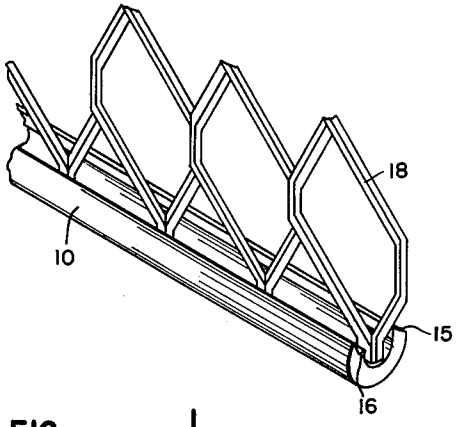
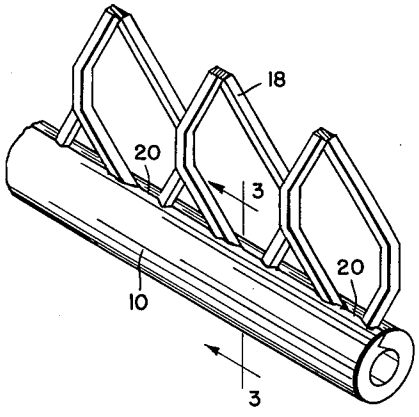


FIG. 1



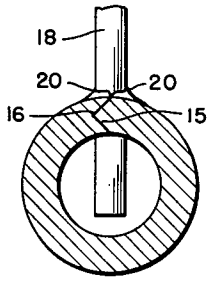


FIG. 3

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United States Patent Office

3,057,446
Patented Oct. 9, 1962

3,057,446

BAR FRAMING FOR WIRE MESH PANELS

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Filed Jan. 6, 1958, Ser. No. 707,331
1 Claim. (Cl. 189—84)

This invention relates to means for reinforcing the marginal edges of wire mesh or sheet metal panels and provides for the easy engagement of the wire framing to the mesh so that partitions and enclosures can be easily constructed from relatively light weight material. This wire mesh material will be under sufficient tension to provide a strong partitioning means which will allow relatively free passage of light and air.

Economy in building materials, labor costs of erection, and ground values indicate the desirability of employing relatively large buildings for factories, warehousing and the like. However, where relatively large floor areas are provided it becomes necessary to divide them in order to separate operations and to give lockable partitions therein. It is also desirable to have partitioning means that can be factory produced in various modules so as to lend themselves to various combinations in erection and to permit their dismounting and rearrangement when the need arises.

There are many forms of metal mesh material currently available which are suitable for these uses. One of the desirable types is the so-called expanded metal type, where a sheet of metal is cut in part and then stretched in one dimension so that the sheet will stretch to several times its usual size in that one dimension and thus produce diamond shaped openings. The thickness of the metal plate and the width of diamond framing formed will determine the general strength of the mesh thus produced. Many other types of metal mesh are also employed such as the various forms of woven material. These may be woven in squares or diamonds or other shapes in which the intersecting wires are secured at the various intersections by twisting, welding or soldering, or in some instances by merely hot dip galvanizing the wire after it is formed into mesh. All of these various forms of open mesh formed of metal lend themselves to partitioning and ceiling arrangements but they must normally be reinforced in order to be practical in use; otherwise they will sag or bulge in or out and become unsightly in use.

The most preferred constructions are those in which the wire mesh is surrounded by a framework to which the mesh is fixedly secured under some degree of tension to the end that the mesh will be retained in a flat plane. These framed elements or panels are normally made in relatively small sizes so that they can be first, easily handled in erection and in transportation, and secondly so that they can be made to various modules and thus a given group of panels can be made into many different forms of partitions and the like. As the frame panel has become more generally used it becomes desirable to employ a form of framing and means for supporting and joining a number of panels together so as to avoid the labor incidental to making a framework on the job and then securing the wire mesh to the framework. This present invention is believed to provide a very satisfactory solution of this general problem.

The principal object of this present invention, therefore, is to provide a bar-like marginal framing for wire mesh or sheet stock which will provide an economical manner of framing the material in various size panels which may be easily united with the panel closure material in a manner that most effectively prevents the margins from pulling out of the enclosing frame.

A further object is to provide a bar frame arrangement

for the marginal framing of panels of wire mesh which are so constructed that they are very compact and economical.

A further object of this invention is to provide economical structural shapes made of relatively light metal flat stock which can be die-formed or drawn, rolled or extruded to give the structural strength required and in addition to provide engaging means for the bar framing so as to hold it securely in place.

Further objects, advantages and capabilities will be apparent from the description and disclosure in the drawings, or may be comprehended or are inherent in the device.

In the drawings:

FIGURE 1 is a fragmentary view, in perspective, illustrating a preferred form of bar framing material and illustrating the manner in which it engages the mesh elements of an expanded metal screen.

FIGURE 2 is a view similar to FIGURE 1 but showing the members only arranged together and before the bar frame is locked in place by suitable pressure means.

FIGURE 3 is an enlarged cross-sectional view, in fragmentary form, taken along the line 3—3 of FIGURE 1.

FIGURE 4 illustrates in a succession of views the manner of forming the substantially circular bar frame from flat strip metal stock.

Referring more particularly to the disclosure in the drawings, the reference numeral **10** designates a preferred form of the bar stock framing used in this present invention. This stock may be formed by many of the different methods used in making seamed tubing, however, for most work it is most economically formed after the showing of FIGURE 11 in which a strip a sheet steel as **12** is sequentially formed as at **13** and **14**. When the form shown at **14** has been reached it is most economical to use rotary or planing cutters to make a point at **14** and a corresponding V at **16**. It follows that considerable strength is required in this framing material to provide a residual clamping force and as a result there will normally be ample thickness of material to permit machining the edges after the showing at **15** and **16** to provide a male and a female interlocking configuration extending as a uniform ridge and groove respectively throughout the length of said bar. A satisfactory strength is normally provided in bar **10** when the wall thickness exceeds the diameter of the wire forming the mesh panel or the equivalent in expanded mesh screening. For certain uses extruded stock may be used and the edge profile would be formed by the die at the time of extrusion.

The wire mesh or expanded metal screening indicated at **18** is sheared to a straight line and then set into the open tubular form of bar **10** after the showing of FIGURE 2. The next operation is to apply pressure to both sides of the open tube and to force the edges into tight engagement after the showing of FIGURES 1 and 3. The exact method of applying the pressure will be a function of the weight of stock used and the type of machine equipment available. With suitable fixtures a pressing, rolling or swedging pressure closing operation should all produce a satisfactory joining of tubing **10** to make a solid interlocking assembly with the wire mesh or other panel closure material. It is desirable to point out that sufficient pressure should be employed to cause the seating of the sharp V edge **15** into the sharp V groove **16**. However, this can only occur intermediate to the intruded elements of screen **18** because the screen itself, even though somewhat deformed—and this is desirable for holding, will be able to actually upset the V-shaped margins of tube **10** where elements **18** occur, where it would not be so easily accomplished if the margins of the tubes were left as indicated at **14** in FIGURE 11. By deforming the

V portions of the tube, as is indicated particularly at **20**, the union of the screen and the tube becomes so complete that either or both of the elements will be distorted beyond subsequent use if they are pulled apart.

In order to achieve the various objects of this present invention, as noted in the preamble of the specification, it becomes equally important with the forming of bar **10**, to provide supporting and joining means for the various panels which are formed by framing screen **18** with the bar framing material **10**.

In addition to the foregoing this framing construction is a very useful framing of plywood and sheet stock of various types. It will frame and hold taut such items as cloth, fabrics, canvas and fiber or plastic netting.

Having thus described my invention, I wish to be understood as not limiting myself to the exact details of construction shown but instead wish to cover those variations thereof which will occur to the average skilled worker in the field having knowledge of this disclosure and which lie within the scope of my invention, as described in the appended claim.

I claim:

A bar frame for sheet mesh panel closures, comprising: a tubular bar having an opening on one side adapted to receive an edge of a sheet mesh panel closure; said bar

formed of sheet stock of sufficient thickness to permit forming the two edges of the open bar into an interlocking arrangement; a centrally positioned V-shaped groove formed in the surface of one edge of said bar and extending the entire length thereof and a coacting V-shaped ridge centrally positioned in the other edge of said bar and extending the entire length thereof; said bar adapted to be pressure closed on the margin of the panel closure metal mesh sheet to form a fixed engagement therewith by inclosing angularly disposed portions of said metal mesh within said tubular bar and the metal of the two edges of said bar meeting between the outstanding portions of said metal mesh and said interlocking V-shaped edges distorted by elements of said metal mesh as said tubular bar is closed to form said bar frame.

References Cited in the file of this patent

UNITED STATES PATENTS

1,567,446	McClure	Dec. 29, 1925
1,863,873	Quarnstrom	June 21, 1932
2,000,232	Hyde	May 7, 1935
2,111,448	Hoffman	Mar. 15, 1938
2,266,593	Emmons	Dec. 16, 1941