Dec. 23, 1958 J. P. RAPIN 2,865,064

METAL AWNING AND LOCKING MEANS THEREFOR

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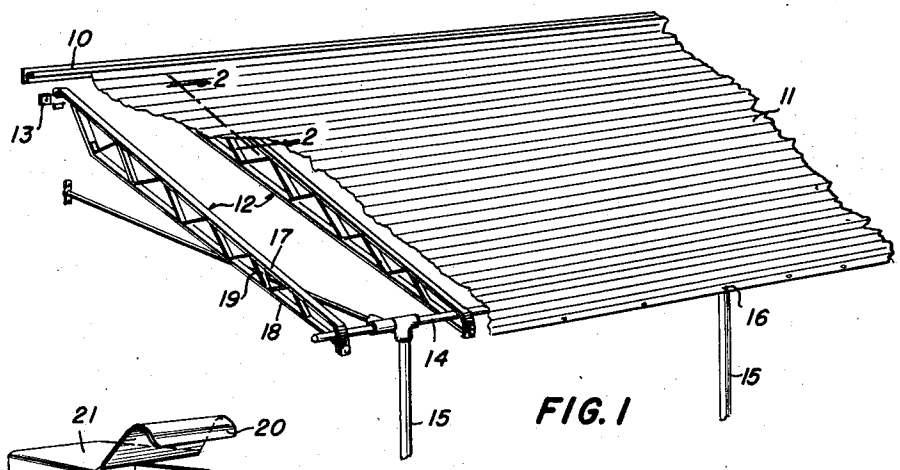


FIG. 1

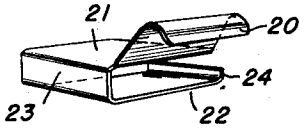


FIG. 3

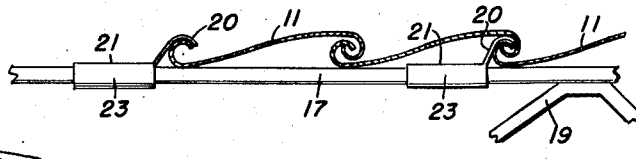


FIG. 2

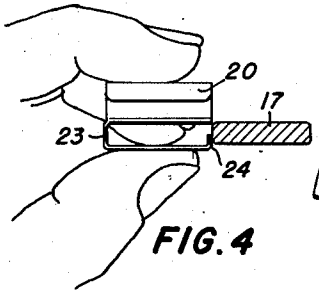


FIG. 4

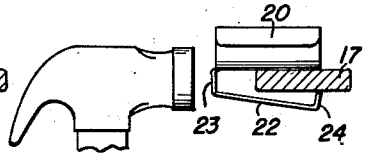


FIG. 5

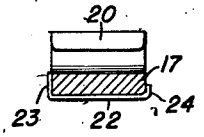


FIG. 6

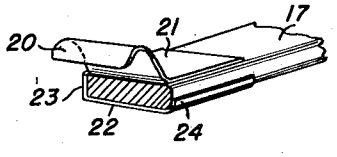


FIG. 7

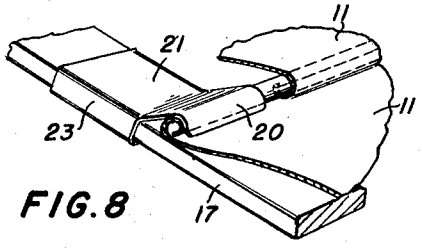


FIG. 8

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METAL AWNING AND LOCKING MEANS THEREFOR

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Application July 11, 1956, Serial No. 597,198

1 Claim. (Cl. 20—57.5)

This invention relates to metal awnings and similar structures such as, for example, porch or patio roofs, marquees, and the like, and, more particularly, to such structures made of a plurality of narrow strips of sheet metal roll-formed with curled edges, and subsequently assembled into interlocking engagement with similar strips to make a metal fabric that is to be secured in position by means of a Norse type of clip.

On some types of patio awnings, it is common practice to provide a roller to hold this fabric in such a way that it may be unrolled and held as an awning when required and rerolled as desired.

It sometimes is not desirable as a practical matter, to leave such an awning in place during heavy windstorms, as it might become bent and distorted due to movement thereof caused by the wind.

It is considered that this fabric would be well suited to roof more permanent structures, that is, to form a permanent roof over porches and patios, or to form a covering for a permanent garden shelter, as well as provide marquees in garden restaurants. These latter uses, however, have heretofore been impractical since, as in the case of the awnings, the wind would cause damage by bending the fabric. Also, unless securely held against movement, such a fabric would be very noisy even in a light wind.

It is an object of the present invention therefore to provide means, such as a clip element, by which such a fabric may be secured to a frame so that it may be used to roof a permanent structure.

It is a further object of the present invention to provide a light weight and strong permanent or semi-permanent roof support and cover for patios, et cetera.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claim.

For a fuller understanding of the nature and objects of the invention reference should be had to the following details description taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective view, partly broken away, of a patio roof incorporating the present invention;

Figure 2 is a fragmentary view, partly in section, showing the fabric secured to a rafter element, by means of such clips;

Figure 3 is a perspective view of a clip;

Figures 4, 5, and 6 are sections showing the application of a clip to a rafter element;

Figure 7 is a fragmentary section of a rafter element with a clip mounted thereon, and

Figure 8 is a perspective view broken away showing a clip holding the fabric to a rafter element.

Figure 1 shows a partly broken away stationary patio awning which may be considered a permanent structure

or at least may be considered permanent during the seasons of the year in which the patio is used over, or to provide, outdoor living-room space.

A conventional molding **10** is secured along the wall of the house and the slatted fabric **11** is fastened to it to make a weather tight joint thereagainst.

Truss rafters **12** are secured to the house wall by a clip **13** for each such rafter. The lower end of the rafter is supported by a pipe or other conventional support **14, 15.** The edge of fabric **11** is secured to the ends of rafters **12** by any conventional fastening **16** which may be a rivet, a self threading screw, or a bolt piercing the lowermost slat of fabric **11.**

It is obviously desirable to secure the fabric **11** to the rafters **12** at points between molding **10** and the securing element **16.** If this is not done, even a light wind will raise the fabric **11** and cause it to drop repeatedly against the rafters **12,** which would be very annoying due to the resulting noise. In heavy wind conditions an unsecured fabric will cause destruction of the fabric **11** by beating against the rafters **12** and bending or distorting them. It has been suggested that this fabric could be secured to the rafters by means of nails, screws, or bolts similar to securing means **16** piercing some of the slats. If this is done however, it will be found that the appearance of the patio roof will be unsightly and it will be very difficult to keep it tight and leak-proof due to having holes through the slats. For this reason the device shown by itself in Figure 3 has been developed as a means to secure the fabric **11** to the truss rafters **12,** and in an out of the way, substantially concealed position without penetration of the slats. Truss rafters **12** may conveniently be made of an upper chord strip **17,** a lower end chord strip **18,** and a zigzag truss element **19** secured to both chord strips. The size and sectional shape of these chord strips is clearly a matter of design, depending in a measure on the size and span of the awning or roof assemblage to be made. For domestic use a size of ¾" by 3/16" has been used.

As seen in Figure 2 the fabric **11** is laid on top of the rafter in contact with upper chord element **17** and is secured to chord element **17** by the use of the clips in the manner clearly shown in the Figures 3 and 8. This clip includes a hook element **20** formed as an extension of upper clamp element **21,** which in turn is secured to lower clamp element **22** by the downwardly folded intermediate portion **23.** The other end of lower clamp element **22** is turned upwardly into a "snap" retaining edge **24.** The space bounded by surfaces **21, 22, 23** and **24** corresponds to the size of the upper chord element **17** tightly to embrace it.

As is clear from Figures 4, 5, and 6, the clip readily can be mounted. After the fabric **11** has been put in place on top of the rafters **12,** and secured at its lower end by means **16,** the clips may be applied on each rafter at every third or fourth slat of the fabric. To do this, the hook **20** is applied to a joint between adjacent slats near the rafter element. Retaining element **24** is forced downwardly to open the gap between upper portion **21** and the edge of **24** to receive element **17,** and the clip is pushed or tapped, perhaps with a hammer, until portion **24** engages the far edge of element **17.** Clips may of course be used at every slat edge but this is not considered necessary under most conditions.

It will therefore be seen that a clip has been provided which securely will hold the sheet metal slatted fabric against the rafters of a patio, porch, or other structure in such a manner as to be capable of withstanding considerable wind velocity without harm.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended

that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claim is 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:

A patio awning assemblage including a supporting frame to rest upon a ground surface, a plurality of truss rafters, and a fabric of slats of sheet material, each being roll-formed longitudinally with oppositely curled longitudinal edges to provide beads, which beads are interlockingly secured together at their edges, said rafters including spaced upper and lower rafter elements, the upper element of which is of flat strip material and supports said

fabric, and a clip formed from a single blank of resilient sheet metal provided with a first hook to engage the interlocked beads of adjacent slats, and the remainder of said clip being formed into flat, parallel portions, connected together at one end and open at the other, one portion of which terminates in a second snap-retaining hook, and said portions being spaced apart a distance equal to the thickness of said flat strip, which strip is embraced by said parallel portions and said second snap-retaining hook to secure said fabric to said upper element.

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