

June 7, 1955

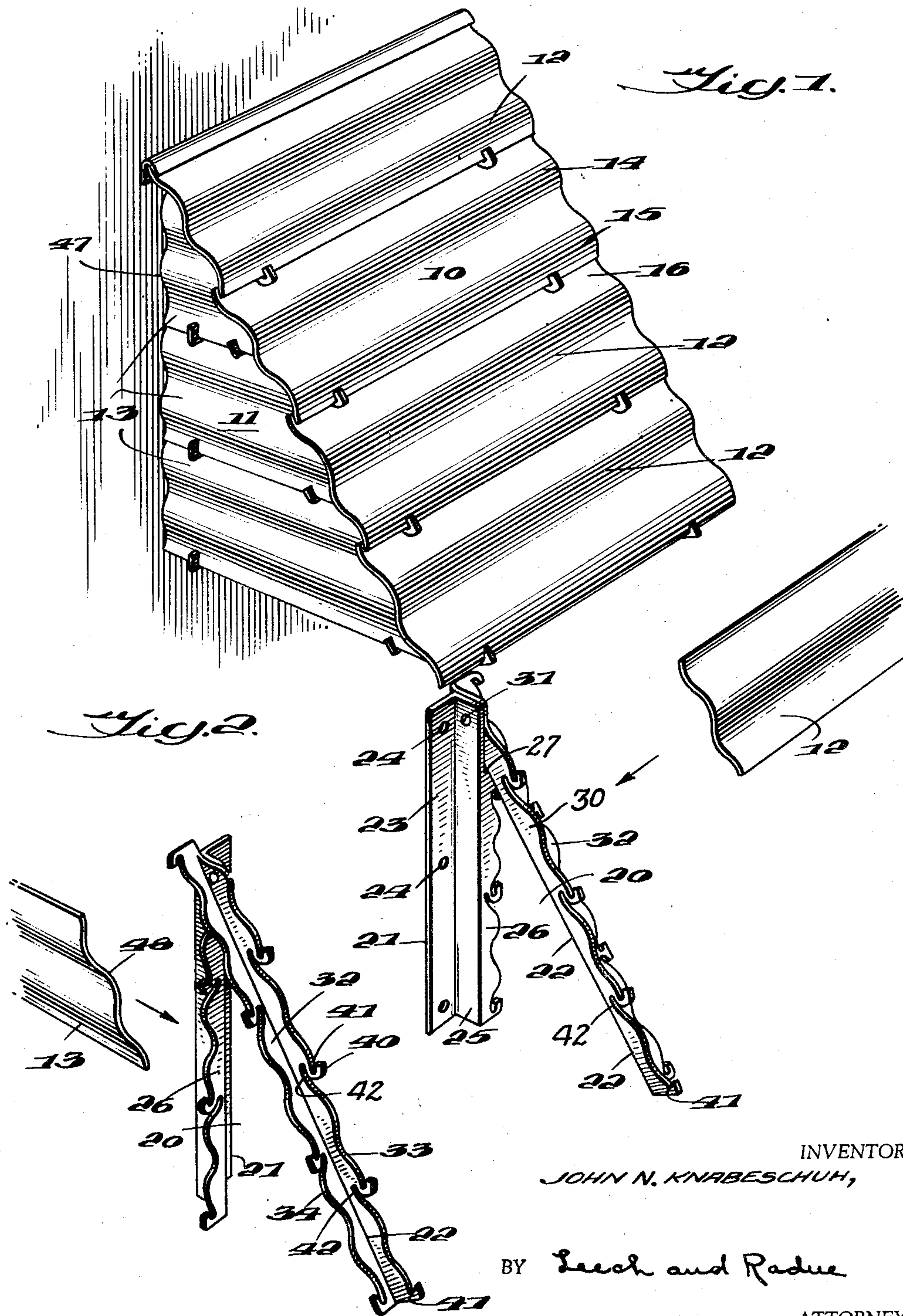
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AWNINGS

Filed March 26, 1954

2 Sheets-Sheet 1



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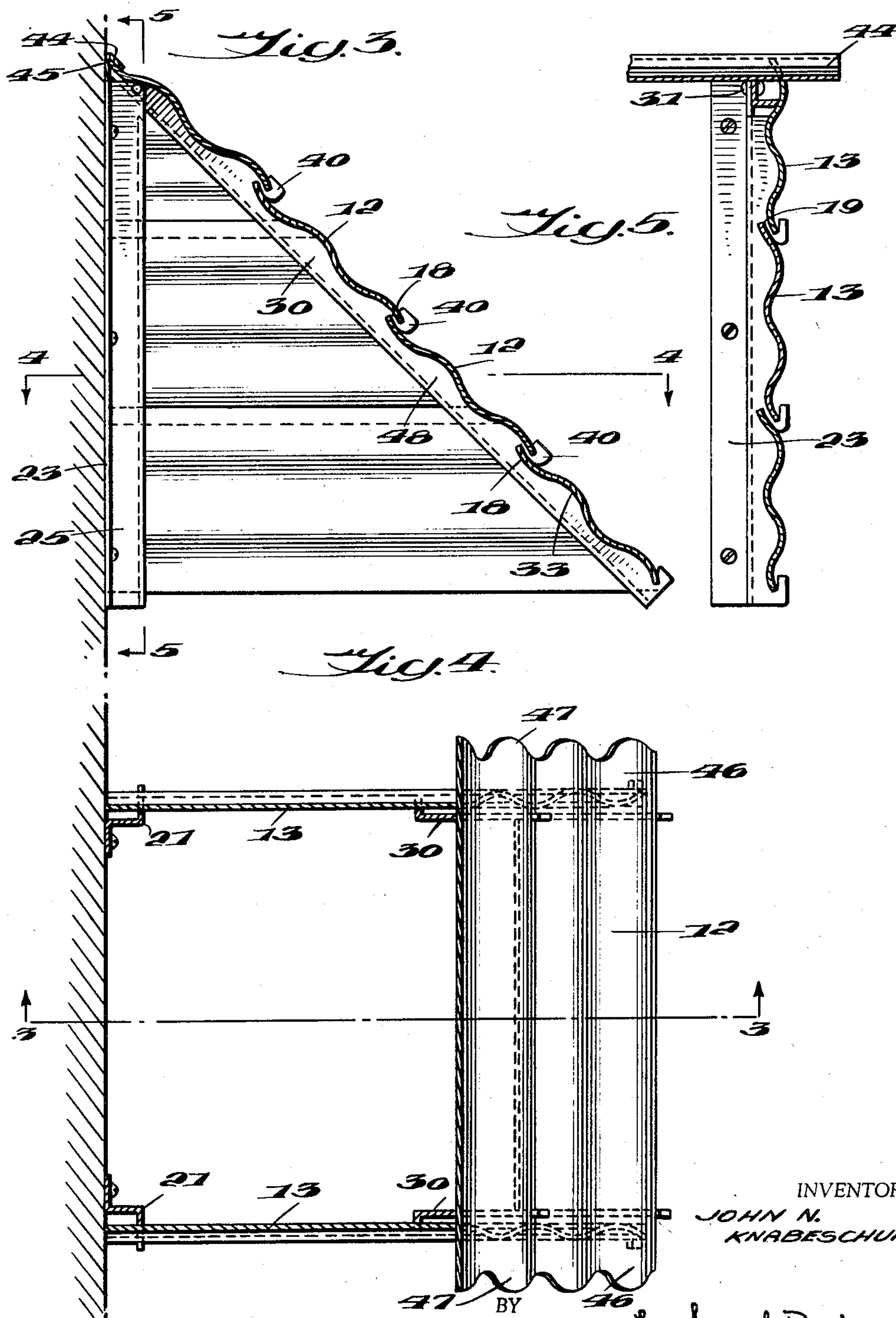
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1

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AWNINGS

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4 Claims. (Cl. 20—57.5)

This invention relates to awnings and more particularly to non-folding, relatively rigid, multi-slatted awnings adapted for more or less permanent attachment to walls and/or window frames.

It is a general object of the present invention to provide a novel and effective awning of the type described.

More particularly it is an object of the present invention to provide an awning comprising a pair of spaced top-connected vertical and sloping frame or stringer members, overlapping slats or louvers connecting the sloping members of the pair and rigid slat members connecting the vertical and sloping members of each pair to hold the sloping members extended, the slats being assembled to the stringers without the use of separate fastener elements by virtue of their resilient nature.

An important object of the invention consists in the use of transversely flexible and longitudinally rigid slats for forming the top and sides of the awning.

Another important object of the invention comprises the use of slats of colored, translucent, plastic reinforced with fiberglass and provided with large-radius longitudinal corrugations to provide resistance to bending.

Still another object of the invention resides in the provision of connected frame or stringer members of Z and angle bar constructions, respectively, whereby appropriate fitting of the slats in the notches and hooks on the stringer edges is achieved.

Other and further objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specification wherein is disclosed a single exemplary embodiment of the invention, with the understanding that such changes may be made therein as fall within the scope of the appended claims without departing from the spirit of the invention.

In said drawings:

Fig. 1 is an outside perspective view of an awning constructed in accordance with the present invention;

Fig. 2 is an exploded perspective view illustrating the framework assembly;

Fig. 3 is a vertical central section through the awning as taken on the plane of line 3—3 of Fig. 4;

Fig. 4 is a horizontal section through the awning taken on the plane of line 4—4 of Fig. 3; and

Fig. 5 is a fragmentary vertical section taken on the plane of line 5—5 of Fig. 3.

Awnings for windows of homes take many forms, probably the earliest and one still popular is the canvas awning of the folding variety wherein the frame may be lifted by ropes to furl the awning closely against the window frame. Such awnings may be classed as of the impermanent variety because of the relatively short life of the canvas and the ease with which it may be torn by high winds and faded in color by the weather. Of the more permanent variety, awnings have been made from wooden slats or the like and recently from metal. Unless non-ferrous metals are used protection against weather is difficult. Ordinary paints are subject to

2

chipping, flaking, fading and dulling, so that what is initially a beautiful awning soon becomes unsightly and requires considerable attention and upkeep. Even if non-ferrous metals are used for the principal parts of the awning, there is the problem of color to match or contrast with the exterior of the house and again paint or similar coloring coatings must be resorted to, which while not required for protection nevertheless must be maintained and reapplied periodically for the sake of appearance.

In contrast to the above, the present invention covers a permanent type of rigid awning in which color is incorporated in materials wholly resistant to weather and capable of maintaining their newness of appearance over many years of use. The materials are strong and light, easily fabricated, assembled and installed. In appearance the awning is superior to those of the various types alluded to above. Moreover, the covering material of the awning is translucent and permits the entrance of a substantial amount of illumination while excluding direct sunlight. The awning can readily be arranged to ventilate so that it does not act as a reservoir of heated air outside of a window.

Referring now to the drawings, there is illustrated a rigid permanent awning comprising a sloping area 10 projecting outwardly from the wall of a house, and a pair of side wings or triangles 11 serving to close in the awning against the entrance of sunlight or rain from the sides. All of the exposed surfaces of the awning are constructed of thin corrugated sheets of plastic and fiberglass with permanent color incorporated. Material suitable for household size awnings is formed of a plastic impregnated mat of random directed, interlocked, sparsely positioned fiberglass threads or bundles of fibers. The sheet material is of the order of one-sixteenth inch thick, has a shiny, almost vitreous surface of irregular configuration resulting from the strands of fiberglass being thicker than the layer of plastic in which they are incorporated.

The fiberglass sheet is cut into strips or slats preferably to a uniform width of approximately six inches, which provides a convenient and pleasing size for use in household awnings. The strips 12, 13 are applied in overlapping horizontal arrangement both on the sloping surface 10 and the triangular sides 11, for proper shedding of rain.

As seen the longitudinally disposed corrugations are large in respect to the slat width so that preferably but two crests 14 and 15, respectively, appear on the outer face of each slat. The slats are so cut in respect to the crests and channels that the upper edge of each is preferably just beginning to rise from a channel 16 whereas the lower edge is just beginning to turn down from a crest, thus providing a form of interlock, which, however, as seen in Fig. 3 allows a space 18 of the order of one-half inch between slats 12 for ventilation purposes. This spacing 19 also appears in connection with the slats 13 of the vertical triangular sides seen in Fig. 5.

Any suitable frame may be used to support the corrugated slats in the positions illustrated, nevertheless a specific type of frame has been provided formed from angle members of aluminum. A convenient size for this purpose is webs and flanges of approximately one and one-half inches width each with a metal thickness of the order of one-eighth inch. The complete frame is illustrated in Fig. 2 with top and side slats 12 and 13 about to be positioned thereon, and comprises a pair of units 20, one for each side of the awning. These units are alike but reversed in construction, and each is composed of a vertical stringer 21 and a top connected inclined stringer 22.

Each vertical stringer is a Z-bar having an inwardly

3

facing flange 23 adapted to be mounted against a wall, window frame or the like, and for convenience perforated at 24 for attaching means. The vertical stringer has an intermediate web 25 extending outwardly from flange 23 and supporting the laterally directed flange 26 facing away from the companion frame unit. The upper portion of web 26 is cut away above point 27 as shown to expose the outer face of web 25 for engagement by the inner face of flange 30 of the inclined stringer 22.

The inclined stringer 22 is an angle bar having similar right angled flanges, of which 30 is parallel to web 25 of the vertical stringer and secured against it at the upper end by a bolt 31 or the like. The second flange 32 extends laterally from the lower edge of the flange 30, as clearly seen.

The full length of the outer edge of each flange of the inclined members 22 is cut to a sinuous configuration to reasonably closely engage and support the under surface of the slats which rest thereon. This configuration is seen at 33 and 34 on the outwardly and laterally directed webs respectively of the inclined stringers.

It is a purpose of the present invention to provide for attaching the slats to the several sides of the awning without the use of any supplementary fastening means, and for this purpose each of the sinuous edges as just described is formed to provide slots and hooks for engaging the edges of the respective slats and holding them firmly in position in their overlapping relationship. Figs. 2 and 3 give the best idea of the arrangement of these fastening means, particularly for the inclined stringers. Along the vertical edge of the stringer, at positions roughly spaced a distance equal to the width of a slat, are the hooks 40 integral with the flange and projecting out beyond the sinuous outline. Each hook 40 defines a notch 41 directed upwardly to receive the lower edge of a slat. The back of each hook is spaced from the flange to provide beneath it a slot 42 forming an extension of the sinuous curve of the edge of the flange to receive the upper edge of a slat underlying the lower edge of the slat just above it and spaced from it as shown at 13 in Fig. 3 to provide for ventilation.

To install slats 12 on the sloping stringers the lowermost one is positioned with its upper edge in slots 42 and the slat is compressed in the direction of its width to spring its lower edge into the notches 41 of the lowermost hooks. Successive slats are similarly placed in position, the top one resting merely in the notches of the topmost hooks. Its upper edge is engaged by the bead 44 of flashing 45 which is separately secured to the wall or window frame, whichever is most convenient. It not only secures the top slat but keeps the rain from entering between the awning and the wall or window frame. The flashing strip 45 could be secured to the frame structure but windows occur in many different widths so it would be inconvenient. It is simpler to keep the individual frame units entirely separate and mount them independently of each other, cutting the flashing and slats to the desired length.

To improve the appearance and to facilitate supporting the inclined portion of the awning, the slats which are arranged thereon extend a considerable distance laterally beyond the frames, as best seen in Fig. 4, providing an overhang designated 46 and the ends of these slats may be scalloped as shown at 47. The forming of these scallops is facilitated by the corrugated structure of the slats for they can be sawn into this configuration by the use of a convenient power saw with the blade set at an angle of substantially 45° to the face of the table over which the slats are passed.

The slats forming the triangles on the awning sides are arranged horizontally as shown. Each one is cut off squarely, as seen at 47, where it abuts the wall or window frame and at a suitable angle at 48 to engage beneath the overhanging ends of the slats of the sloping portion of the awning.

4

To accommodate and hold the edges of side slats 13 the flange 26 of each vertical stringer and the side flange 32 of each sloping stringer are provided with cooperating sets of hooks and slots shaped as those on the outer flanges of the sloping stringers with the difference that the spacing of the hooks on the sloping stringer side flanges is greater than that on the flanges of the Z-bars because of the inclination.

The side slats are positioned in exactly the same manner as those described in connection with the sloping portion of the awning. The angularity between the vertical and sloping stringers is fixed and determined by the attachment of the side slats to the respective members. These slats being longitudinally corrugated have extreme rigidity and are adequate not only to prevent the awning from collapsing under the weight of a substantial load of snow but have adequate tensile strength to prevent lifting of the awning under the buffeting action of strong winds. The material of the slats is so tough that after having been sprung into position it is so tightly grasped and held by the cooperating hooks and slots that there is no possibility of any rattle or vibration of any of the individual slats or portions thereof, so that the awning is quiet in high winds. With no parts to move relative to each other, there is no wear so that the life of the awning is almost indefinite.

It will be noted that for convenience sake the angle of the inclined portions has been determined such that, for instance, four slats cover the length of the slope while three cover the vertical height. For larger awnings a similar ratio may apply. The extreme strength of the slats by virtue of the longitudinal corrugations makes it permissible to build awnings of considerable length without the use of an intermediate support frame member and without increasing the weight or gauge of the material of the slats.

It will be appreciated that the awning just described is extremely simple to construct, arrange, mount and assemble, which can all be done without the use of any more tools than a screw driver or hammer.

I claim:

1. A frame unit for an awning of the rigid overlapping slat type comprising in combination, a base stringer constructed of a length of metal Z-bar having one flange perforated for vertical attachment flat against a wall or window frame, a second flange parallel to the first extending laterally away from the window and connected to the first flange by an intervening web spacing the same outwardly from the wall, the free edge of said second flange having pairs of opposed means for engaging opposite edges of horizontally disposed, overlapping slats to support them in a plane parallel to said web, said second flange terminating slightly below the Z-bar top to expose the outer web face, a sloping stringer of metal angle bar disposed with one flange parallel to the web of the base stringer, the upper end of said last mentioned flange overlapping the exposed outer face of said web, means securing said flange and web together where overlapped, the outer flange of said sloping stringer extending from the lower edge of the first flange and being directed toward the same side of the unit as the second flange of the vertical stringer, the edges of both flanges of the sloping stringer having pairs of opposed means for engaging opposite edges of horizontally disposed overlapping slats of sets of slats respectively forming a side and the top of an awning.

2. An awning constructed of two spaced frame units as defined in claim 1 assembled with slats having longitudinally extending corrugations, one set of said slats extending horizontally between the sloping stringers and one set being provided for each frame unit extending horizontally between the stringers thereof and serving to hold them in proper relationship, the edges of the flanges of the frame units engaged by the slats being profiled to the same sinuous curve as the mating slat surfaces, and

5

being so formed as to space the overlapping portions of the slats apart for ventilation.

3. The frame unit as defined in claim 2 in which the edges of the flanges engaged by the slats are profiled to position the slats in spaced overlapping relationship and to form the slat engaging and holding means. 5

4. The awning as defined in claim 2 in which the profiling of the flange edges also provides slots and hooks constituting the pairs of opposed means for engaging the opposite edges of the slats to hold them in position. 10

6

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