Nov. 29, 1960 F. MILAVEC 2,962,137

LOUVRE

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FIG. 1

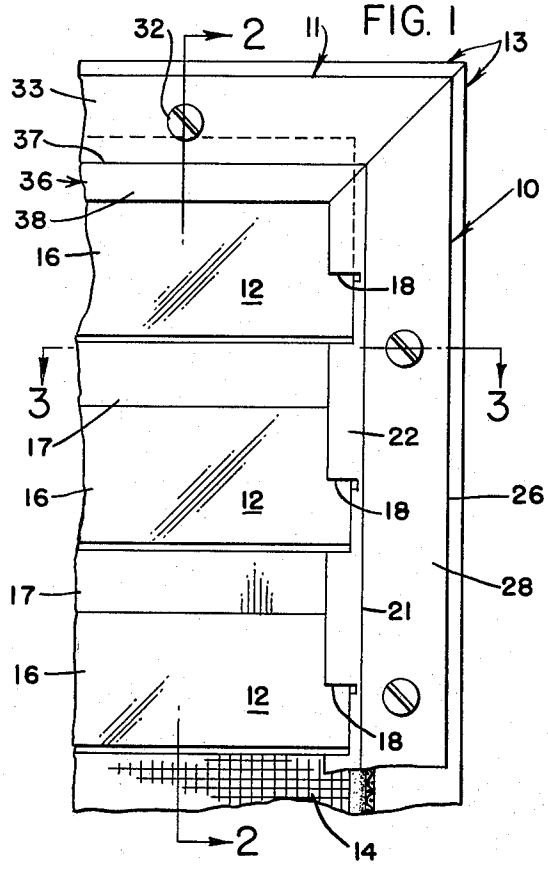
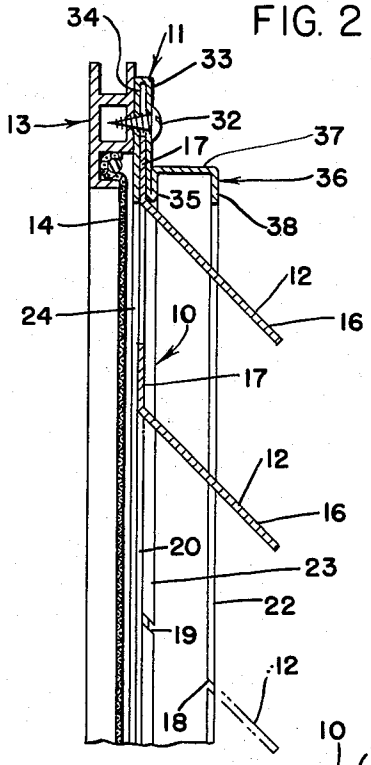


FIG. 2



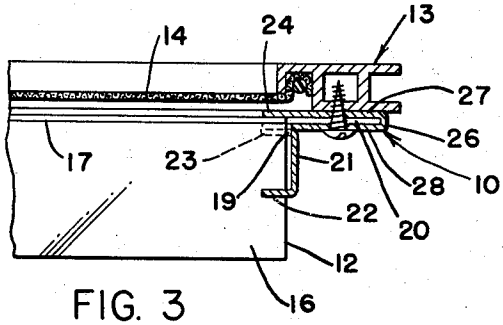


FIG. 3

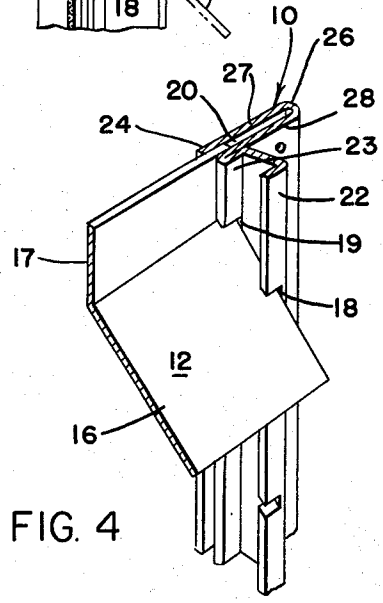


FIG. 4

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LOUVRE

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FIG. 5

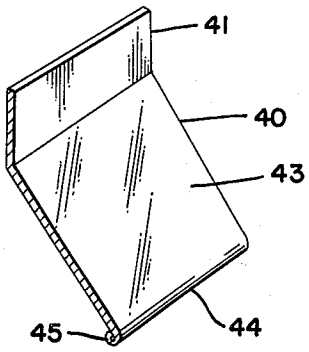


FIG. 6

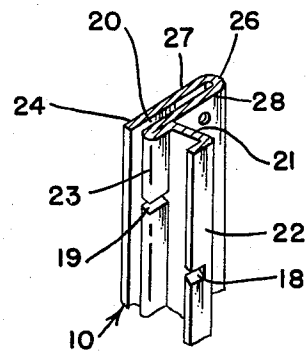


FIG. 7

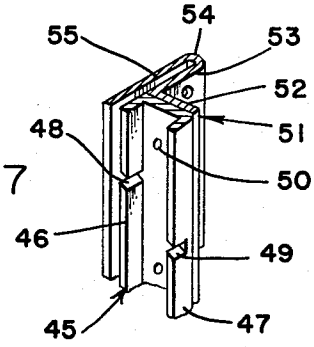
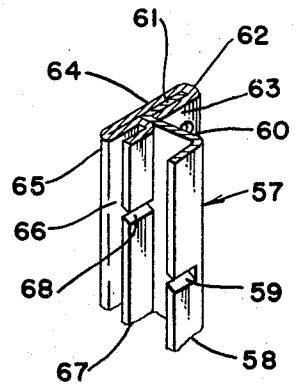


FIG. 8



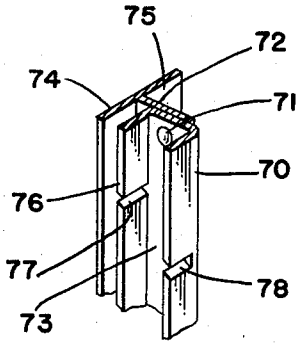


FIG. 9

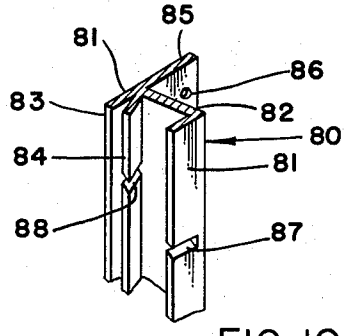


FIG. 10

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LOUVRE

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7 Claims. (Cl. 189—63)

This invention is particularly directed to a louvre structure which is useful in connection with residential housing, commercial and business establishments and it is adapted for attachment to metal screen structures having framing members of aluminum, steel or the like with a suitable fly screen therebetween.

This invention relates to a louvre structure formed with dihedral angled slats adapted for attachment to a screen and positioned generally outwardly therefrom to provide a sun shield for the building to which it is attached.

In general in the prior art in the field of louvre structures there are a number of examples, such as:

U.S. Patent No. 2,355,847
U.S. Patent No. 2,397,458
U.S. Patent No. 1,596,776
U.S. Patent No. 8,679
U.S. Patent No. 2,555,626

However, a structure for simple attachment to a screen or the like has not been found, particularly one having a means for attaching the slats or louvre members in a frame.

This invention is directed to a peripheral framing member or side channel structure generally of E shape in cross section, with a wing attached to said E for attachment to the frame of a screen. The slat extends between the E shaped cross section framing member and is fitted in angled slots in two legs of the E to hold the dihedral angled slat between the oppositely disposed E shaped framing members.

In general this invention consists of a louvre structure comprising a multiplicity of dihedral angled slat members positioned between E shaped framing members having angled slots between the outer legs of the E and having a narrow slot to position one side of the dihedral angle to hold the slat firmly in position.

An object of this invention is to provide a new and simplified louvre structure having a multiplicity of slats with a framing member incorporating an E shaped cross section with a wing or other means for attachment to the framing structure. Two of the members of the E shaped peripheral framing member have angled slots therein to hold the dihedral angled slat therein.

A further object of this invention is to provide a new and simplified louvre structure with improved holding means for the slat.

To the accomplishment of the foregoing and related ends, said invention then consists of the means hereinafter fully described and particularly pointed out in the claims; the following description setting forth in detail one approved means of carrying out the invention, such disclosed means, however, constituting but one of the various ways in which the principles of the invention may be used.

In the drawings:

Fig. 1 is a fragmentary elevation plan view of a corner of this louvre structure;

Fig. 2 is a cross-sectional view of Fig. 1 along the line 2—2, showing the slats in cross section and the upper framing member;

Fig. 3 is a fragmentary cross-sectional view of Fig. 1 along the line 3—3, showing the cross section through one of the side framing members;

Fig. 4 is a fragmentary perspective view of a portion of the slat and the portion of the side framing member;

Fig. 5 is a perspective view of a portion of a modified slat having a rolled edge;

Fig. 6 is a fragmentary perspective view of the framing member itself;

Figs. 7 to 10 inclusive are modifications of the framing member.

In general in connection with louvre structures, there are a great number of devices for holding a series of louvres or slats and these may be either curved or straight with various types of side framing members. This invention is an improvement and provides for a simplified framing structure which holds the slat by different means, in that the slat is not in a single plane, either straight or curved, but forms a dihedral, and it has one leg of the dihedral extending for a greater length than the second leg. The second leg is substantially vertical within the side framing member. This permits the slats to be positioned on the site or in the factory from extrusions and provides reduced shipping costs as well as ease of handling. The slats fit within an E shaped side framing member having a wing or extrusion to attach it to a structure.

Fig. 1 is the fragmentary view of the entire louvre, and **10** shows one side framing member and **11** shows the top framing member with a plurality of louvres **12** which are supported by the framing members **10** and **11**. This invention is adapted to be fastened to a screen member shown generally at **13** which may be of any particular cross section and has secured thereto a window screen element **14**.

As seen in connection with Figs. 1, 2, 3 and 4 the slat **12** is a dihedral having a large planar portion **16** and a smaller planar portion **17**. The large planar portion extends between two cut sections or formed sections **18** and **19** in the E shaped cross section side framing member. The vertical portion of the dihedral **17** extends in a slot indicated generally at **20**. The shape of the extrusion is generally that of an E having a backing or vertical member **21**, a lower leg **22** which is outwardly of the screen section, a middle leg **23** and an inner leg **24**. Between the leg **24** and leg **23** fits the vertical portion **17** of the louvre as seen in slot **20**. The inner and middle leg portion may be formed in various shapes to form a wing portion shown generally at **26** having an inner strip member **27** and an outer strip member **28**. The slat **12** will be positioned into the side framing member and securely held in place against any movement either longitudinally or vertically because of the vertical portion **17** riding in the groove **20** and because the notch **19** prevents vertical displacement.

Fig. 2 shows a vertical cross-section of the horizontally extending portion of the screen **13**. The upper strip is indicated generally at **11**, fastened as by means of screw **32**, formed of an outer strip **33** and an inner strip **34** folded together. The slat **12** has its vertically extending planar portion **17** fitted between the slats and securely held therebetween. The lower section is that of a channel member with a return bend portion indicated at **35** forming a U or channel member as seen generally at **36** having one portion which is perpendicular to the general plane of the strip as seen at **37** and a portion parallel to the general plane of the strip as seen at **38**. This forms a framing member for the top framing element.

In addition to this structure, the side framing elements are seen generally in connection with Figs. 7 through 10 in four variant forms.

Fig. 5 shows an alternate view of a slat 40 having a vertical portion of the dihedral 41 and an angled portion 43. The dihedral is at an obtuse angle. The lower edge of the dihedral 44 has a rolled portion 45, and this may be formed by various techniques and strengthened to provide a sturdier structure against accidental blows or possible twisting under strong wind conditions.

It will be seen, of course, that the louvre of this invention, shown outwardly of a screen element, has utility for use with the windows of a house to shade the window but at the same time it may be used in connection with attic louvres. Under some conditions these louvres would be provided with the screen outwardly and with one or more of the louvres positioned therein. In order to keep the rain off, these louvres may be inverted from the cross-sectional view shown in Fig. 2 so that rain or the like will drip down and not get inside a house but at the same time insects, birds and animals could not use them for nesting purposes.

The cross-sections shown in the drawings in Figs. 7 through 10 basically have the same general configuration, in that they basically comprise an E shaped member having a wing portion to secure it to the house, window, screen or the like, and though they may differ in the general method of fabrication, such as the extrusion shown in Fig. 10, members riveted together in connection with Fig. 7, members which are rolled together as in Fig. 8 or a T member as seen in Fig. 9, they provide the same basic components. Because they differ slightly, different numerals will be used to define the parts of each of these side framing members.

Figs. 4 and 6 are substantially the same except that Fig. 4 has the obtuse dihedral slat shown in position in fragmentary form.

Fig. 7 is formed of two members, the channel member generally being designated by the numeral 45 having one leg 46 forming the middle leg of the E, an outer leg forming another portion of the E at 47, each of which has a corresponding slot therein 48 and 49, and this channel member 45 is then riveted as at 50 to a backing member shown generally at 51 having a strip back to back with the back of the channel as at 52 to which it is riveted and a member perpendicular thereto as at 53, and a bend 54 around 180° as well as a flat member substantially parallel thereto 53 forming the upper leg of the E as at 55.

Fig. 8 shows a further construction generally comprising a Z-shaped member 57 having an outer leg 58 with a slot therein 59, a center web section forming the backing member 60 and a further leg to the Z as at 61. The further leg is folded into an end member shown generally at 62 having one bend portion 63 bent around the leg of the Z and having a further bend portion 64 bent with a return bend portion at 65 into a channel member shown generally at 66 which encompasses the vertical portion of the slat. This is bent to form the middle section of the E of the channel as at 67 and there is a slot shown at 68 in the middle leg.

A further modification is shown in connection with Fig. 9. It comprises a combination of a T section and a channel. A first or outer leg of the channel 70 is fastened at 71 on the back of the channel 73 to the T section 72. The middle leg which is the opposite leg of the channel is seen at 76 and is closely spaced to the T shown at 74 providing an opening for the louvre. The wing or the opposite end of the T shown at 75 serves as a wing for attachment to the screen. The slot in the flanges of the channel 70 and 76 are shown respectively at 78 and 77.

A further modification of the invention is shown in connection with Fig. 10 which would be an extrusion, the latter having the slots milled or cut therein. It generally consists of a winged channel, having a channel section designated generally at 80 with the first leg of the channel shown at 81, a backing for the channel as at 82, the opposite section of the channel as at 83 with a special angled strip shown at 84 forming a sharp acute angle with the backing section of the channel 83 into which the vertical slat may be positioned. The wing section of the channel is shown generally at 85 permitting attachment to a screen or other structure. Holes therefor are shown as at 86. The slots would be milled or cut therein as shown at 87 and 88.

These combinations and variations of my invention provide various ways for making the side framing members and under some conditions one member might be preferred to another. In general, the basic idea is that a plurality of slats preformed may be positioned between the channel members which are simple fabricated structures, and then they are cut to the respective angles and ready for assembly at a warehouse or shop. In this manner sections are provided which can be conveniently made on the site and reduces the cost.

Most of the work calls for a custom fabricated job and in this connection, it is difficult to ship the items because of their bulk and light weight, at reasonable costs. However, by shipping disassembled or simple fabricated members to provide these louvres, the cost would be greatly reduced.

Although the present invention has been described in connection with a few preferred embodiments thereof, variations and modifications may be resorted to by those skilled in the art without departing from the principles of the invention. All of these variations and modifications are considered to be within the true spirit and scope of the present invention as disclosed in the foregoing description and defined by the appended claims.

I claim:

1. In a louvre structure, a pair of side framing members, at least one horizontal member forming a frame with said side framing members, each of said side framing members formed of E shaped cross section with the legs of the E being faced towards each other, said E having an outer leg, a middle leg and an inner leg, the outer leg and middle leg having angled slots therein for positioning slats, said middle and outer leg being spaced substantially from one another, said middle and inner leg being spaced relatively close to one another, a wing portion on the side opposite the legs of the E, means for attaching the louvre structure through said wing portion to another structure, slats between said E shaped side framing channel members, said slats forming an obtuse dihedral angle having one relatively short side to the dihedral and one relatively long side, said short side being positioned between the inner and middle leg of the channel of the E and said long side being positioned within said angled slots of the middle and outer leg of the E shaped side framing member, whereby the slat is firmly positioned between the side framing member and cannot be pulled outwardly or pushed upwardly.

2. The louvre structure of claim 1, in which the slat has a rolled edge on the long side away from the dihedral angle to stiffen the slat against bending.

3. The louvre structure of claim 1, in which the side framing member is formed of a unitary structure, bent in the shape of an E, with the inner and middle leg extending outwardly from the legs of the E to form a wing portion.

4. The louvre structure of claim 1, in which the side framing member is formed of two members, a first member formed of a channel comprising the outer and middle leg portions with the back of the channel formed against a second member, said second member being secured to said first member and having a back portion substantially registering with the back of the channel, and a bent metal section substantially parallel to the legs of the channel bent around outwardly therefrom forming a wing portion for attachment of the louvre.

5. The louvre structure of claim 1 in which the side

framing member is formed of two members, a T section and a channel, flanges of said channel comprising the outer and middle leg portions with the back of the channel fastened to the straight section of the T, said middle leg being spaced from the cross member of the T a slight distance.

6. The louvre structure of claim 1, in which the side framing members are formed of two members, one of the members being an E shaped member having a central web section and a plurality of angles extending substantially perpendicular and in opposite directions therefrom, one of said angles forming the outer portion of the E and the opposite angle forming the wing, a second member encompassing the wing in a return bend portion and having the metal formed to a straight section with a U bend extending from the end thereof, said U bend forming the inner and center legs of the E shaped side framing member.

7. The louvre structure of claim 1, in which the side framing members are formed of an extrusion, with a center section and the three legs to the E extending in the same direction therefrom, one of said legs being the outer leg and the other two legs extending from a common point forming the center and inner legs, and a further member extending in the opposite direction from the inner leg forming the wing for attachment of the louvre to another structure.

References Cited in the file of this patent

UNITED STATES PATENTS

2,210,516	Wheeler	Aug. 6, 1940
2,397,458	Allen	Apr. 2, 1946
2,589,529	Bowers	Mar. 18, 1952