Nov. 27, 1962 R. PIANA 3,065,574

PLASTIC STRIP FOR ROOF

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Fig. 1

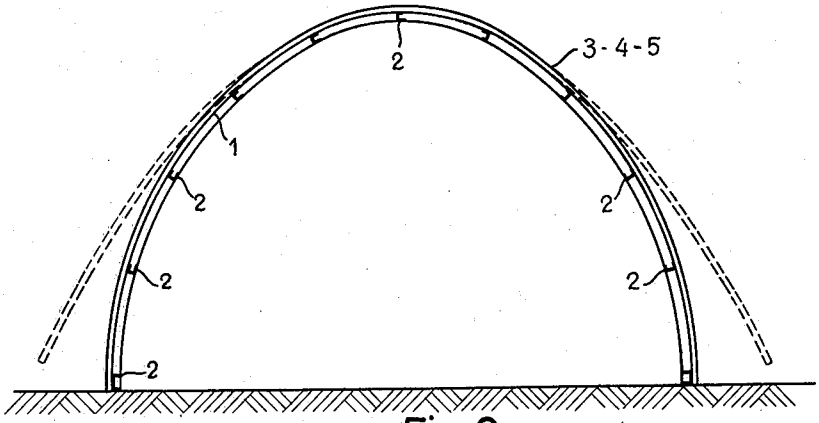


Fig. 2

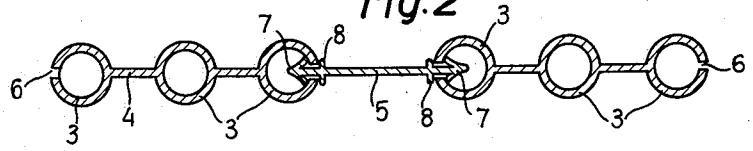


Fig. 3

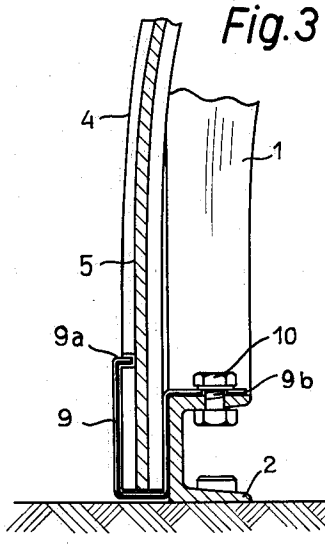
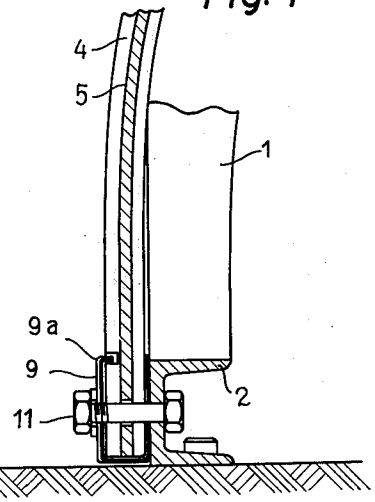


Fig. 4



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Fig.6

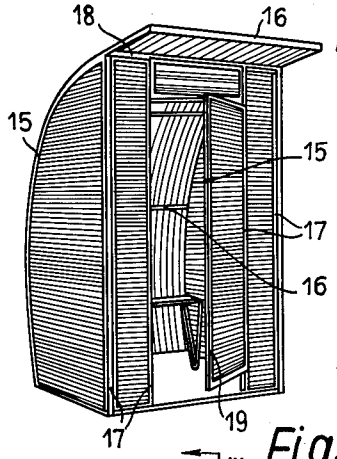


Fig.7

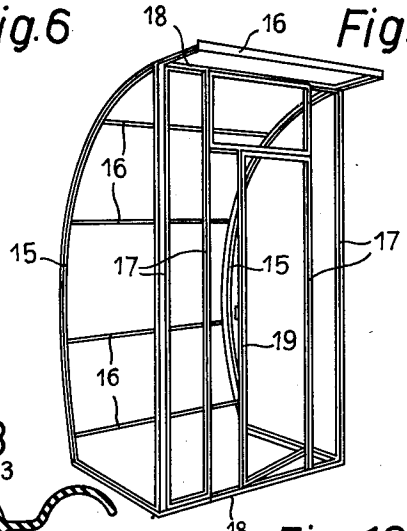


Fig.8

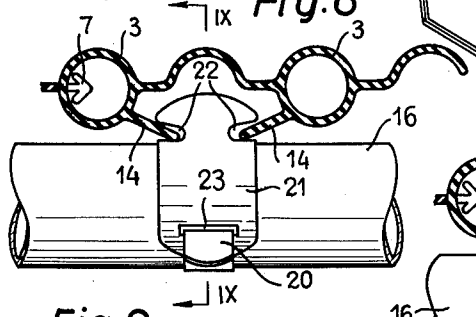


Fig. 10

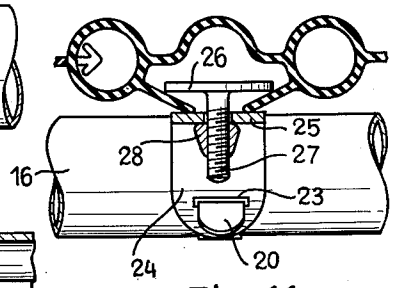


Fig.9

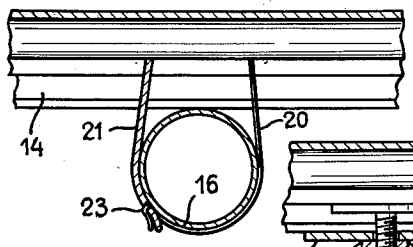


Fig. 11

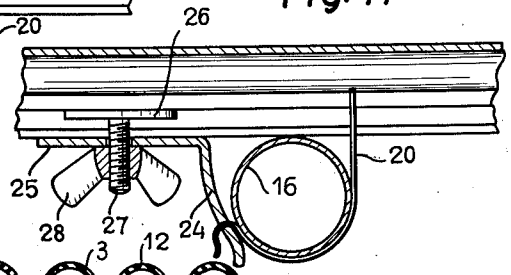
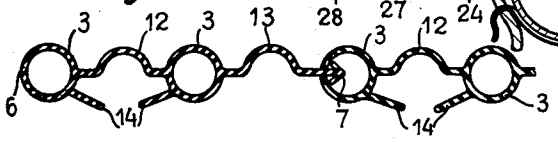


Fig.5



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PLASTIC STRIP FOR ROOF

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Filed Feb. 6, 1958, Ser. No. 713,627
Claims priority, application Italy Feb. 7, 1957
2 Claims. (Cl. 50—268)

This invention relates to a curved roof covering for structures such as garages, store-houses, strand cabins and the like.

It is the object of this invention to carry out curved roof coverings adapted to permit building of said structures in an inexpensive manner.

The improved roof covering comprises a plurality of structural members of plastics interconnected to form an impervious surface. This surface is curved about a carrying structure and is secured at both ends at least to hold it against the carrying structure.

In an embodiment of my improved covering the covering surface is made up of structural members alternately of two types, one of which is formed with tubular sections and flat sections, the other structural member being in the form of a flat strip formed with enlargements for engagement by slots in the tubular sections of the adjacent structural members.

Further characteristic features of this invention will be understood from the appended detailed description with reference to the accompanying drawings which show by way of a non-limiting example embodiments thereof.

FIGURE 1 is a diagrammatical front view of a roof covering for a garage;

FIGURE 2 is a cross sectional view on an enlarged scale of a portion of the roof covering;

FIGURE 3 and 4 show two embodiments of the means for attaching the ends of the roof covering shown in FIGURES 1 and 2;

FIGURE 5 shows a modification of FIGURE 2;

FIGURE 6 is a perspective view of a strand cabin provided with the improved roof covering;

FIGURE 7 is a perspective view of the cabin carrying structure;

FIGURE 8 is a cross-sectional view showing the means for attaching the covering to the components of the carrying structure;

FIGURE 9 is a sectional view on line IX—IX of FIGURE 8 and

FIGURES 10 and 11 show modifications of FIGURES 8 and 9;

FIGURES 1 to 4 show an inexpensive garage comprising a metallic carrying structure and an improved covering of plastics.

The carrying structure comprises arcuated metal beams 1 interconnected by rectilinear longitudinal members 2. The covering comprises a plurality of structural members of plastics interconnected to form a continuous impervious structure. In the embodiment shown in FIGURE 2 the structural members are alternately of two types, comprising tubular sections 3 alternating with flat sections 4, and a flat strip 5 provided with arrow-shaped enlargements 7 on its longitudinal edges and intermediate enlargements 8 near the arrow basis, respectively.

The arrow-shaped enlargements 7 on the flat strips are engaged by slots 7 cut in the tubular edge portions of the adjacent structural members thereby effecting interconnection of the structural members and forming a continuous surface.

The continuous covering surface formed in the above described manner is fitted about the metallic carrying structure by resilient deformation (see FIGURE 1), its ends being attached to the base of the carrying framework so as to hold the covering against the framework.

In the embodiment shown in FIGURE 3, the ends of the covering surface have fitted thereon transverse structural members 9 of substantially U-shaped cross-section provided with a top bead 9*a* adapted to become engaged by transverse cooperating notches cut in the tubular sections 3, and moreover provided with a horizontal bent-over portion 9*b* adapted to be juxtaposed to the bottom supporting cross-members 2 and be attached thereto by means of bolts 10.

In the modification shown in FIGURE 4, the ends of the covering surface have fitted thereto two structural members 9 of U-shaped cross-section formed with a bead 9*a* as in the previous construction adapted to be attached to the bottom cross-member 2 of the supporting framework by means of transverse bolts 11.

The curved roof covering described above is relatively inexpensive and can be easily dismantled and transported, whereby garages, store-houses and the like can be erected at any desired place.

According to the modification shown in FIGURE 5 the roof covering is carried out by means of structural members of plastics of one type only comprising two tubular sections 3 interconnected by a section 12 of substantially semicircular cross sectional shape. Laterally of one of the tubular sections 3 a section 13 is provided, which is similar in shape to section 12 and ends by an arrow-shaped enlargement 7. The arrow-shaped enlargement is adapted to snap through slots 6 cut in the tubular edge section 3 of the adjacent structural member. The tubular sections 3 are moreover formed with oblique downwardly extending wings 14 serving for attachment of the structural members of the roof covering to the components of the carrying structure.

Referring to FIGURES 6 to 9 which show a strand cabin construction, the carrying metallic structure of said cabin (see FIGURE 7) comprises curved beams 15 interconnected by rectilinear horizontal spaced members 16 forming the framework of the rear wall and roof, and forward posts 17 interconnected by cross members 18, forming the framework of the forward flat wall of the cabin, in which a door 19 hinged about one of the posts 17 is provided.

The curved roof covering of plastics comprising, as in the previous case, a plurality of structural members of plastics is placed in contact with the horizontal members 16 interconnecting the beams 15, and is attached at its ends and, if desired, intermediate thereof to the components 16 of the carrying structure.

The means for attachment of the covering of plastics to the metal components 16 of the carrying structure is shown in FIGURES 8 and 9. Said means comprises a metal band made up of two straps 20, 21, each provided at one end with lateral recesses 22 for engagement about the wings 14 on the structural members of plastics. The strap 20 is formed at its opposite end with a tongue adapted to become engaged by a slot 23 in the strap 21 and to be subsequently bent over to hold the structural member of plastics firmly to the metal element 16 of the carrying structure.

In the embodiment shown in FIGURES 10 and 11 the strap 21 of the band described above is replaced by a sheet metal bracket 24 having a slot 23 for engagement of the tongue on the strap 20, and bent over at its opposite end to form a flat portion 25 coming into contact with the end of the wings 14 on the structural member of plastics. The portion 25 is secured to the wings on the structural member by means of a plate 26, screw 27 and winged nut 28.

The forward and side walls and door of the cabin are likewise made up of a plurality of structural members of plastics of the above described type, held at their ends

in seatings formed by the components of the metallic carrying structure.

What I claim is:

1. In a continuous extruded plastic strip for assembly with like strips to form a roof structure for buildings, and the like, a body with two parallel edges, said body comprising a plurality of substantially flat sections arranged in the same plane, a plurality of tubular sections arranged so as to be divided in two halves by said plane and a plurality of arcuate sections of semi-circular shape in cross-section arranged at one side of said plane, said tubular sections alternating with said arcuate sections and separated therefrom by said flat sections, one of said flat sections being arranged adjacent one end of the body and one of said tubular sections being arranged adjacent the other end of the body, a bead at the edge of said one of said flat sections and a slot in said one of said tubular sections, said slot lying in said plane in which said flat sections are arranged, said tubular section being of a size to receive the bead but large enough to permit lateral movement of the bead within it, at least one pair of longitudinal flat wings lying at the side of said plane opposite to that at which said arcuate sections lie and protruding from successive tubular sections and having their free edges facing each other and spaced apart, said wings being of such a dimension that the gap between their free edges faces the concave surface of said arcuate sections.

2. In a continuous extruded plastic strip for assembly with like strips to form a roof structure for buildings, and the like, a body with two parallel edges, said body comprising a plurality of substantially flat sections arranged in the same plane, a plurality of tubular sections disposed so as to be divided in two halves by said plane and a plurality of arcuate sections of semi-circular shape in cross-section arranged at one side of said plane, said tubular sections alternating with said arcuate sections and being separated therefrom by said flat sections, one of said flat sections being disposed adjacent one end of the body and one of said tubular sections being disposed adjacent the other end of the body, a bead at the edge of said one of said flat sections and a slot in said one of said tubular sections, said bead having an arrow-like head,

said slot lying in said plane in which said flat sections lie, said tubular section being of a size to receive the bead but large enough to permit lateral movement of the head of said bead within it but to hold said bead against lateral withdrawal, at least one pair of longitudinal flat wings lying at the side of said plane opposite to that on which said arcuate sections lie and protruding from successive tubular sections and having their free edges facing each other and spaced apart, said wings being of such a dimension that the gap between their free edges faces the concave surface of said arcuate sections.

References Cited in the file of this patent

UNITED STATES PATENTS

395,306	Andre	Jan. 1, 1889
766,185	Harold	Aug. 2, 1904
851,436	Pyle	Apr. 23, 1907
1,042,581	McFarlane	Oct. 29, 1912
1,999,500	Carswell et al.	Apr. 30, 1935
2,013,763	Olsen	Sept. 10, 1935
2,128,428	Murray	Aug. 30, 1938
2,322,819	Brockhurst	June 29, 1943
2,323,417	Pauli	July 6, 1943
2,351,615	James	June 20, 1944
2,354,485	Slaughter	July 25, 1944
2,375,334	Valyi et al.	May 8, 1945
2,388,297	Slaughter	Nov. 6, 1945
2,396,925	Morehouse	Mar. 19, 1946
2,699,128	Johnson	Jan. 11, 1955
2,816,323	Munger	Dec. 17, 1957
2,828,756	Worley	Apr. 1, 1958
2,842,237	Paulssen	July 8, 1958
2,861,277	Hermann	Nov. 25, 1958
3,001,333	Piana	Sept. 26, 1961

FOREIGN PATENTS

204,239	Canada	Sept. 21, 1920
614,150	France	Sept. 13, 1926
524,708	Great Britain	Aug. 13, 1940
498,520	Italy	Sept. 30, 1954