May 28, 1963 G. G. LA PORTE 3,091,056

SHELTER

Filed March 11, 1959

FIG. 1.

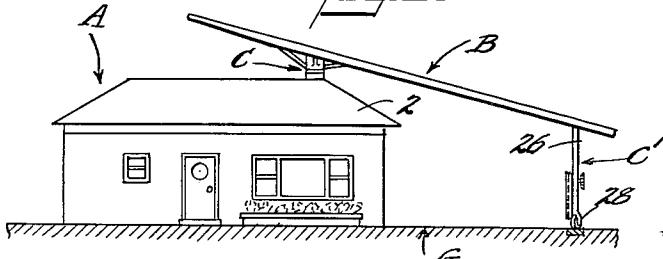


FIG. 2.

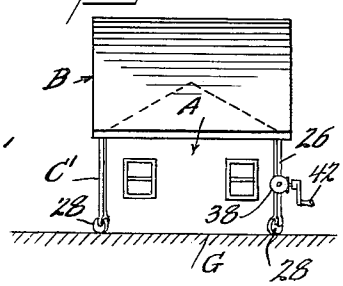


FIG. 3.

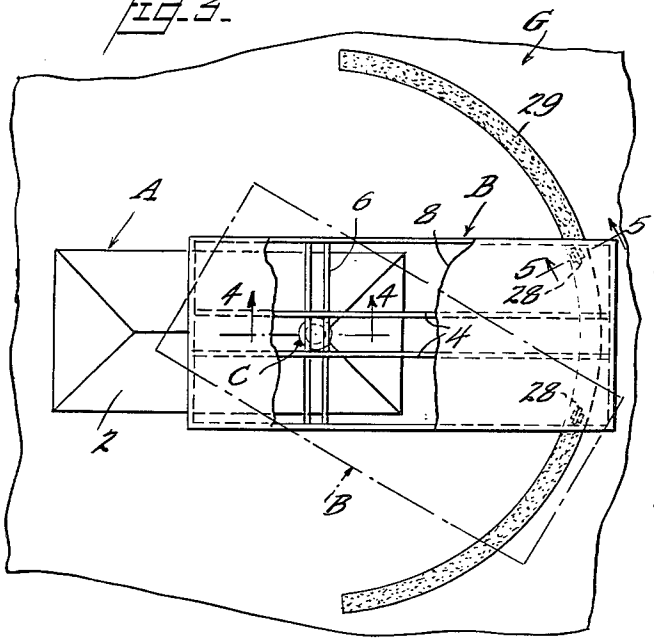


FIG. 6.

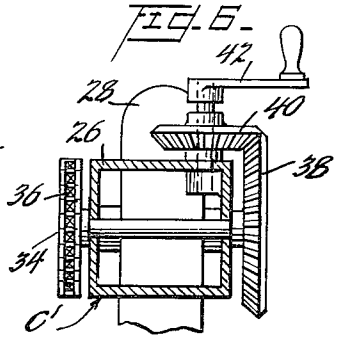


FIG. 5.

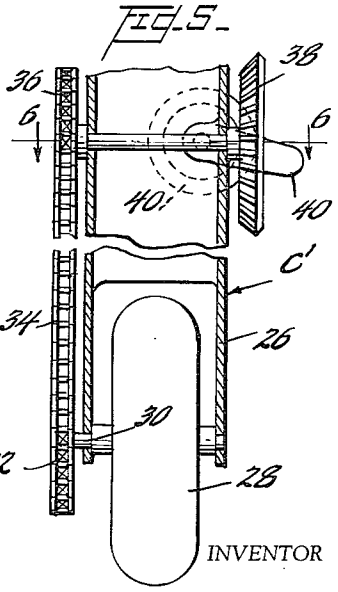
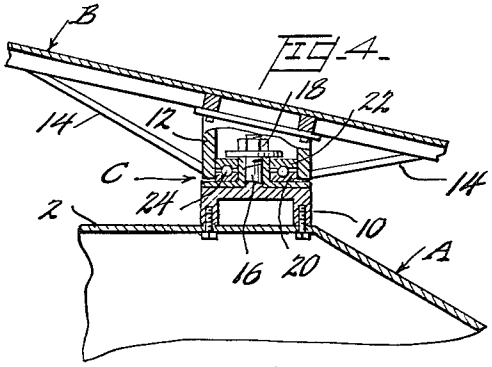


FIG. 4.



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5 Claims. (Cl. 50—48)

This invention relates to structures providing shelter from the elements, particularly those of a type used for human habitation. Such a structure, whether fixed or mobile, is commonly provided with a roof member or canopy extending out from one side to provide a sheltered area which may be used as a carport, porch, patio or living area. This roof structure also shields the structure itself on that side from the elements. Particularly in warmer sections of the country or during hot weather, such a shaded area is highly desirable.

However, a fixed structure has the advantage that it may only shield the house and area in one direction and since the sun in summer travels more than 180° from east to west, a fixed shelter has its maximum effect for only a short time.

The present invention has for its object to provide the maximum effect of a shelter by the construction of a movable roof member connected to the house in such a manner that it may be moved to different positions to shield the structure and an adjacent area in different directions. Thus in use in a hot climate, the movable roof may face to the east in the morning to provide shade in that direction for the building and a patio, while it may be moved about the building to the south and west as the sun moves. Also, advantage may be taken of breezes by moving the shelter to a position where the wind is most effective.

Another and more specific object is to provide such a movable shelter member which is normally connected to the building to extend over a drive to form a carport, but which may be moved around to another side of the house to provide a sheltered area for other use, such as a patio or living area.

FIG. 1 is a front elevation of a structure embodying the invention.

FIG. 2 is a side elevation of the structure of FIG. 1, looking from the right of FIG. 1.

FIG. 3 is a top plan view of FIG. 1, showing different positions of the movable roof member.

FIG. 4 is a detail view, partially broken away and in section, of the means for supporting the movable member on the house.

FIG. 5 is a vertical section of the driving means for the movable member.

FIG. 6 is a transverse section on line 6—6 of FIG. 5.

As an illustration of a preferred embodiment of the invention, there is shown the house A supported on the ground G having attached a movable roof member or canopy B supported on the house by support C and on the ground by supplemental support means C'. In this instance, it is designed particularly for a house facing to the west.

The roof member B is constructed of a frame composed of longitudinal members 4 and transverse members 6 rigidly connected together and covered with sheet material 8, such as a light weight metal or fibre glass panel. The frame members may be either wood or light weight metal structural members.

The member B is supported on the fixed roof 2 of the house by the support means C, which consists of a base member 10 mounted on the fixed roof 2 and member 12 fixed to the roof member B inwardly from one end, and having braces 14 connected to the frame members 4 and 6. Base member 10 is formed with a threaded vertical stud 16 which projects through an opening of member 12 and is secured thereto by the nut 18. The member 12 is

pivotally supported on base member 10 by an antifriction bearing consisting of races 20, 22 having bearings 24 between them. Member 12 is partially open so that nut 18 may be applied in assembly. Any necessary reinforcements or supports for roof A to support member 10 may be provided according to the particular building construction involved.

The roof member B extends horizontally beyond one side of the house to provide a shelter for an area adjacent said side, and also slopes downwardly from its support on the roof for better protection of that area and side of the house, as well as to shed water in case of rain. As the span of this projecting portion of roof member B may be too great to be supported solely on the fixed roof by means C, additional supporting means C' is provided. This means consists of vertically extending posts 26 fixed at their upper ends to the movable roof member B in any suitable manner. The supporting means C' consisting of the two posts 26 and the supporting means C on the house constitute a three-point support for the movable roof member B.

Each post 26 is square in cross-section and has a ground engaging wheel 28 fixed on an axle 30 mounted on the lower end of the post. As shown in FIG. 3, the posts are positioned with the axles on radii of the center of rotation of roof member B, which is the axis of stud 16. The ground G must provide a bearing for the wheels 28, and for this purpose, if the surface is not suitable, an arcuate concrete strip 29 is laid with the axis of stud 16 as the center and the radius equal to the radial distance of wheels 28 from stud 16.

While various means, operated by hand or power, may serve to move the member B to different positions, it is preferable to provide a drive mechanism for this purpose. As illustrative of one form of mechanism to rotate the roof member B, a manually operated drive mechanism is shown driving one of the wheels 28. The axle 30 of the driven wheel 28 carries a sprocket 32 driven by sprocket chain 34 and sprocket 36. Bevel gears 38, 40 are operated by crank 42 to drive the sprocket 36 through a reduced ratio gearing, to provide sufficient power to move roof member B.

As will be seen in FIG. 3, the movable roof member B may be moved through at least 180° and thereby may shade a portion of the house and an area adjacent thereto at any time while the sun moves from east to west. When in the position of FIG. 1, it may serve as a carport to provide shelter for an automobile, and be moved around to the west side of the house in the afternoon if shade is desired for a patio or living area.

The structure shown is merely for the purpose of illustrating one embodiment of this invention. It is obvious that other embodiments may be designed, and that many variations can be adopted in the structure of the roof member, the means to support it and the driving means to operate it without departing from the essential characteristics of the invention, which are defined in the claims below.

I claim:

1. The combination with a structure enclosed by vertically extending sides and a fixed roof extending over the area between said sides, of a movable roof member comprising a substantially horizontally extending panel movable to different positions in each of which one portion overlies said fixed roof and a second portion projects beyond said structure over the adjacent area and beyond one of said vertically extending sides, and supporting means for said panel including pivotal mounting means for mounting said panel on said roof to pivot about a fixed vertical axis with said one portion overlying said roof and said second portion projecting beyond said structure, and vertically extending members having their upper ends fixed to said projecting second portion and having ground

engaging bearing elements to sustain said projecting portion beyond said structure, said supporting means providing for movement of said panel about said vertical axis to position said projecting portion in any direction within the limits of movement of said panel and to provide shelter for said structure and adjacent area in that direction, and also to shield said roof by said overlying portion.

2. The combination claimed in claim 1, and driving means to rotate said panel about said vertical axis.

3. In combination with a structure having a peripheral vertically extending supporting means bordered by a horizontally extending surface and having a fixed roof extending over said supporting means vertically spaced above said surface, of an auxiliary movable roof member extending substantially horizontally from said structure with its inner extremity overlying said fixed roof, and supporting means for said movable roof member including cooperating bearing members on said structure and the inner extremity of said auxiliary movable roof member to support said movable roof member for movement about a fixed vertical axis extending through said fixed roof, said movable roof member being movable about said axis along said peripheral supporting means to extend over said horizontally extending surface in different directions from said structure to shelter different areas of said surface and adjacent portions of said structure, said auxiliary movable roof member being movable through an angle of at least 90° to at least two positions overlying spaced areas of said surface.

4. The combination with a structure bordered by a horizontally extending surface and having vertically extending supporting means forming its periphery and a fixed roof spaced above said surface and extending over and supported by said supporting means, of a movable roof member extending substantially horizontally from said structure and movable laterally about a fixed axis to a

plurality of positions in which its outer extremity is spaced outwardly from said structure and above said surface and overlies spaced areas of said surface and its inner extremity overlies said fixed roof, and supporting means supporting said movable roof member for movement to said different positions, said supporting means including first bearing means between said fixed roof and movable roof member connecting said movable roof member to said structure for movement about a vertical axis fixed relatively to said structure, and second bearing means spaced outwardly beyond said structure and supporting the outer extremity of said movable roof member for movement to said different positions with said outer extremity spaced outwardly from said structure and vertically above said surface so that said movable roof member shelters a different portion of said surface and an adjacent portion of said structure in each of said positions.

5. The structure in claim 4, in which said surface is formed with a track and said second bearing means cooperates with said track to support the outer extremity of said movable roof.

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