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3,404,496

HINGED ROOF STRUCTURE

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2 Sheets-Sheet 1

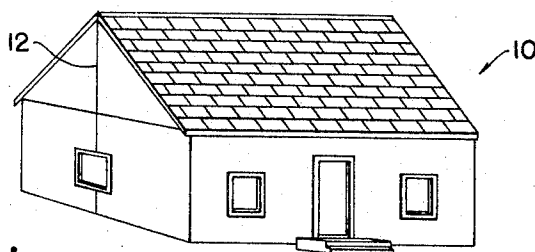


FIG. 1

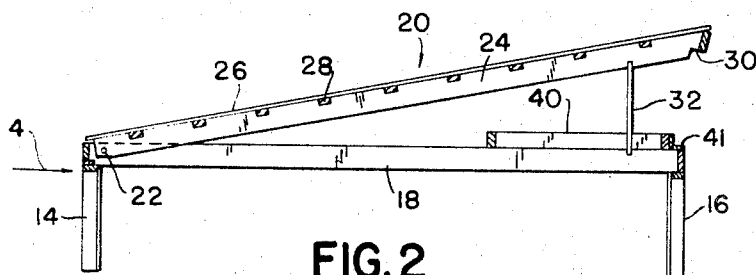


FIG. 2

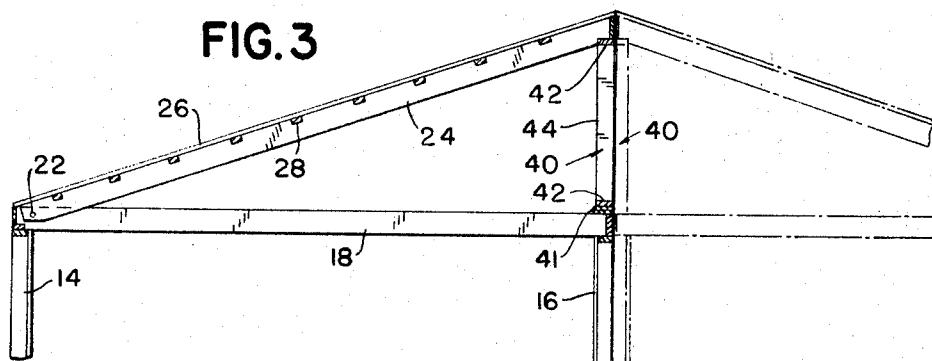


FIG. 3

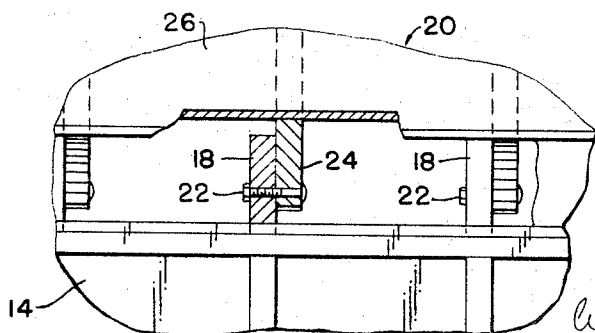


FIG. 4

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2 Sheets-Sheet 2

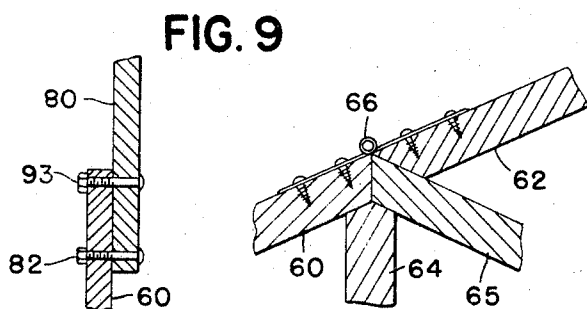
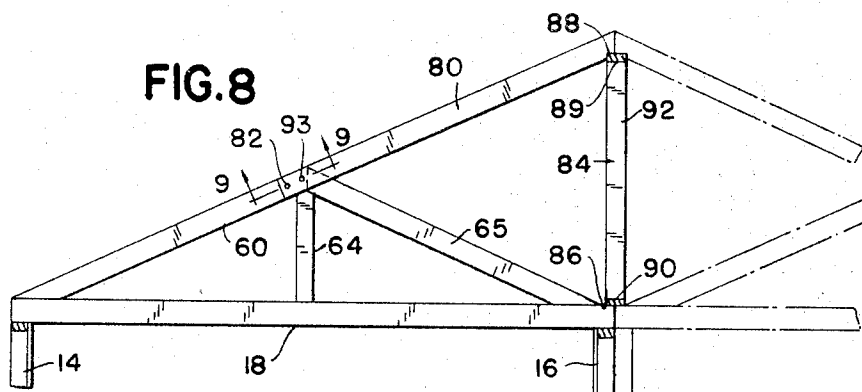
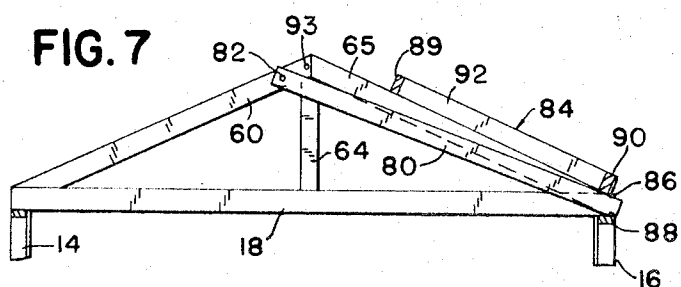
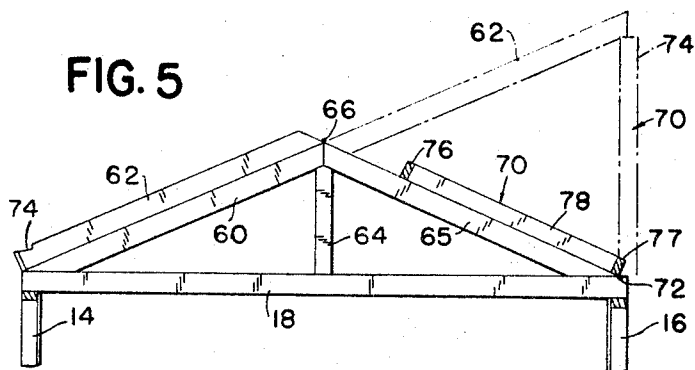


FIG. 6

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ABSTRACT OF THE DISCLOSURE

A hinged roof structure for a dwelling or portion thereof adapted to be factory built and transported to the site of its permanent location, having means for supporting the roof structure at the final desired pitch for use and at less than the final desired pitch for transport.

This invention relates generally to a building of the mobile home type and refers more particularly to a roof construction therefor.

Mobile homes are substantially factory built and are then put on a permanent foundation at the ultimate site far away from the factory. The industry desires to build mobile homes with a roof pitch as steep as is standard for homes constructed by conventional methods on the site, but this presents a transportation problem because the peak of the roof must be low enough to pass under bridges and the like when transported by truck. It is therefore an essential object of the invention to provide a mobile home which overcomes this transportation problem and yet which has a standard roof pitch.

Another object of the invention is to provide a mobile home in which at least a portion of the roof may be supported in a temporary position for transit beneath the final desired position.

Another object is to provide a mobile home having a roof section constituting at least a portion of the roof of the structure, means hinging one edge of the roof section for vertical swinging, and means for selectively supporting the roof section at the final desired pitch for use, or in an inoperative position below the final pitch for transit.

Another object is to provide a hinged roof section which may comprise either one-half the entire roof or any portion thereof, with means for supporting the section at the final desired pitch for use, or at less than the final desired pitch for transit.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, illustrating a preferred embodiment of the invention, wherein:

FIGURE 1 is a perspective view of a home of the mobile home type, shown erected on a permanent site.

FIGURE 2 is a fragmentary view with parts in section showing the roof for one-half a mobile home in position for transit.

FIGURE 3 is similar to FIGURE 2 but shows the roof section in the final desired position of use. The phantom lines illustrate the other half of the home.

FIGURE 4 is a fragmentary elevational view with parts in section looking in the direction of the arrow 4 in FIGURE 2.

FIGURE 5 is similar to FIGURE 2 in that it is a fragmentary view of the roof section of one-half a mobile home, but illustrates a modification in which the parts are shown in the condition for transit in solid lines and in the condition for use in phantom lines.

FIGURE 6 is an enlarged sectional view of a portion of FIGURE 5.

FIGURE 7 is similar to FIGURE 5 but illustrates a further modification in which the parts are shown in condition for transit.

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FIGURE 8 is a view of the structure of FIGURE 7 with the parts in condition for use, and showing also a portion of the other half of the structure in phantom lines.

FIGURE 9 is a sectional view taken on the line 9-9 of FIGURE 7.

Referring now more particularly to the drawings, and especially to FIGURES 1-4, the mobile home or dwelling structure is shown in its entirety in FIGURE 1 and is generally designated 10. The home in FIGURE 1 is of the mobile home type and may be considered to have been factory built and delivered in two half-sections by truck to the permanent site of erection. The front portion of the house illustrated in FIGURE 1, that is, the portion forward of the vertical line 12, is normally transported to the site separately from the remaining rear portion of the dwelling structure, which latter is itself separately transported to the site. The two complementary half home sections are then completely united and assembled into the condition shown in FIGURE 1 at the time of erection on the building site. The purpose of shipping the mobile home in two halves is for convenience and to comply with State highway regulations restricting the overall width of a vehicle and its load. The average width of one-half a mobile home, that is, the dimension measured from the front wall of the building in FIGURE 1 to the vertical line 12, may be on the order of twelve (12) feet, although this may vary within the scope of the invention.

The fragmentary showing in FIGURE 2 is of a portion of one-half only of a mobile home. In other words, the portion shown in FIGURE 2 may be either the front half of the home in FIGURE 1 or it may be the rear half. It will be understood, therefore, that the roof construction described with respect to the half of the dwelling structure shown in FIGURE 2 will be the same for the complementary half of the structure.

The showing in FIGURE 2 is a transverse section of either the front half or the rear half of the home shown in FIGURE 1. The structure shown in FIGURE 2 has a support wall 14 which is an outside vertical wall of the dwelling. An additional vertical support wall 16 is provided which will be disposed along the center line of the ultimate dwelling structure. The horizontal ceiling joists are designated 18.

The roof section 20 is hinged for vertical swinging movement at the lower edge as indicated at 22, where the roof meets the vertical wall 14. The roof section 20 is a complete roof section for the half of the dwelling structure fragmentarily shown in FIGURE 2. In other words, the roof section 20 covers completely one half of the dwelling structure. The roof section may be completely factory built and will be seen to comprise the rafters 24 and the sheathing or shingles 26. The rafters are parallel members spaced conveniently from one another, and extending between the rafters are the transverse roofing members 28. The swinging edge of the roof section is notched as indicated at 30, and the hinged edge is mounted for swinging movement on the axis 22 by aligned pins extending through each of the rafters at their hinged ends.

The roof section 20 is shown in FIGURE 2 in its position for transit in which it is supported in a position beneath the position it would normally assume when the structure is fully erected. The roof section 20 is supported in this position for transit by the vertical brace member 32. Actually a plurality of brace members or struts 32 may be employed and they may, if desired, be secured in position by any suitable means such as nails or bolts to connect them at the top to the rafters 24 and at the bottom to the ceiling joists 18.

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FIGURE 3 illustrates the roof section 20 elevated to the desired pitch which will be the pitch of the roof in the final condition of the home. The other half of the building structure completing the mobile home unit is shown in phantom lines in FIGURE 3. The swinging edge portion of the roof section 20 is supported in its final desired position of use, or at the desired pitch, by the ridge wall 40. The ridge wall 40 may be composed of horizontal upper and lower members 42 which extend along the length of the roof section 20. These upper and lower members 42 are connected at spaced intervals by the vertical members 44 to complete the ridge wall. The ridge wall is in its upright position of use shown in FIGURE 3, and it will be noted that in FIGURE 3 a second ridge wall is provided for the complementary half section of the dwelling. Of course, the notch 30 accommodates the upper edge of the ridge wall and rests thereon.

In the position of the parts for transit shown in FIGURE 2, the ridge wall 40 simply lays over on the ceiling joists and any suitable means may be provided to hold it in place. The ridge wall 40 may if desired be hinged to the joists so that it can swing from the FIGURE 2 position to the FIGURE 3 position. A hinge is shown at 41. The hinge, if desired, can be omitted and the ridge wall may be a separate member until secured in place, as by nails or bolts, on the building site. Even when hinged, the upper edge of the ridge wall is preferably nailed or bolted to the rafters.

During the time that the half section of the mobile home unit is being transported to the ultimate site of erection, the roof section 20 will be supported in the FIGURE 2 position by the temporary strut or struts 32, and the ridge wall 40 will lay down in the position shown. Then, at the building site, the struts 32 will be removed, the half section of the mobile home will be united with a complementary half section and the roof sections of both parts of the house will be elevated and supported in permanent condition by the ridge walls 40 which can be nailed or bolted in place. In its final condition, the roof pitch is comparable to the standard roof pitch of any home constructed by conventional methods, although during transit the roof is supported at a lower elevation so that it will clear any bridges or overpasses encountered during the transportation of the mobile home section by truck to the ultimate building site.

Referring now to FIGURES 5 and 6, a modification of the invention is illustrated. The outside wall 14, center wall 16 and joists 18 are the same as in the first embodiment described. It will be understood that the FIGURE 5 showing is of one-half a mobile home, similar to FIGURE 2. It will be further understood that the section shown in FIGURE 5 will be united and assembled with a similar or complementary section on the building site.

The rafters 60 are permanently constructed and assembled with the rest of the framework in the factory and will be seen to be disposed at the standard pitch for a home. It will be understood that a plurality of such rafters 60 in laterally spaced parallel relation will be employed. These rafters 60, however, provide cover for only approximately one-half the building structure shown in FIGURE 5, which itself is only one-half a mobile home unit. The rest of the roof is provided by the hinged rafters 62 which are themselves arranged in laterally spaced parallel relation, the same as the rafters 60.

Also included in the permanent structure of the roof are the fixed vertical and inclined supports 64 and 65 which may be nailed or bolted permanently in position as shown.

The hinge 66 for one of the rafters 62 is shown in FIGURE 6, and it will be understood that similar hinges will be provided for the other rafters, in alignment with one another. As shown, the leaves of the hinge 66 are

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respectively secured to the fixed rafters 60 and to the hinged rafters 62.

In the position of the hinged rafters 62 for transit, they are turned counter-clockwise to the FIGURE 5 position in which they overlie and rest upon the fixed rafters 60. They may be secured in this position if desired. In this condition, of course, the overall height of the mobile home section is reduced so that it can more conveniently pass under bridges and the like when being moved by truck to the building site. In use, the rafters 62 are pivoted clockwise to the position shown in phantom lines in FIGURE 5, and in that position are supported by a hinged support 70. The hinged ends of the rafters 62 are beveled to lie flush with supports 65 in the erected position. The support 70 is hinged at its lower end as indicated at 72 to the joists 18. The hinged support during transit is pivoted to the solid line position shown in FIGURE 5 in which it overlies and rests upon the fixed supports 65. It may be secured in this position if desired. The upper end of the hinged support 70 is adapted to fit into notches 74 formed in the swinging edges of the rafters 62. The hinged support may be nailed or bolted or otherwise permanently secured to the swinging ends of the rafters 62 when the building is finally assembled and erected on the site. The hinged support 70 is shown as having upper and lower longitudinal members 76 and 77 connected by vertical members 78.

In the position of use, the rafters 62 of course extend in straight line continuation of the rafters 60 so as to provide a flat and continuous appearance to the roof, at the desired pitch angle.

Both sets of rafters 60 and 62 may, if desired, be covered with a suitable roofing material such as shingles or other sheathing to complete the weathering of the roof. This may be done in the factory. Hence the outer surface of the rafters may have the same appearance as the rafters shown in the first embodiment, covered with a sheathing as therein illustrated. On the other hand, the shingling may be left until the final erection on the building site.

FIGURES 7-9 show a further modification of the invention. The vertical support walls 14 and 16, the joists 18, the fixed rafters 60, and the fixed supports 64 and 65, are the same as in the embodiment of FIGURE 5, and accordingly those same reference characters are employed in FIGURES 7-9.

As in the previous embodiment, the fixed rafters 60 may, if desired, be covered with a suitable sheathing material such as shingles to complete the weathering thereof, in the factory. However, the hinged rafters in this embodiment cannot be completely weathered and covered with shingles at the factory since they must be separable and free to move to their inoperative positions shown in FIGURE 7.

The hinged rafters 80 are respectively hinged to the fixed rafters 60 by the bolts 82. The rafters 60 as well as the rafters 80 are spaced apart in parallel relation in the position of use, that is in the final assembled position, and the rafters 80 extend upward at the same angle as the fixed rafters 60. This position is shown in FIGURE 8. The rafters are there shown as supported in their final position by hinged support 84. This support is hinged at its lower end as indicated at 86 to the fixed supports 65, and its upper end extends into notches 88 formed in the swinging ends of the rafters 80. The hinged support 84 is shown as having upper and lower longitudinal members 89 and 90 connected by vertical members 92. In order to further secure the hinged rafters 80 rigidly in the position of use as shown in FIGURE 8, additional bolts 93 may be employed which pass through the rafters 80 and also through the fixed rafters 60.

FIGURE 7 shows the hinged rafters 80 in their positions for transit. The bolts 93 have been removed, and the hinged supports 84 have been swung counter-clockwise so as to rest alongside the fixed supports 65 on wall

16. Both the rafters 80 and supports 84 may be nailed down during transit or they may simply rest in position by virtue of their own weight.

FIGURE 8 shows in phantom lines the outline of the complementary half section of the mobile home which is constructed in the same manner as the portion or section shown in solid lines.

In accordance with this embodiment of the invention, the swinging rafters 80 will be covered with roofing material after location on the building site when they have been erected to their final pitch line. In the position for transit, they are disposed beneath the level of the fixed supports 65, and therefore may not be factory shingled.

What I claim as my invention is:

1. In a structure which forms at least a part of a dwelling of the mobile home type, support structure which includes an inclined permanent portion of the roof of said dwelling structure, roof rafters for another portion of the roof, means hinging one end of said rafters to said permanent portion of said roof adjacent the upper edge thereof for vertical swinging, and means for selectively supporting said rafters in an operative position extending upwardly from their hinged ends in continuation of said permanent portion of said roof at a final desired pitch for use which corresponds to the inclination of said permanent portion, and in an inoperative position extending downwardly from said hinged ends, said rafter supporting means comprising a vertical member spaced to one side of said permanent portion of the roof for supporting said rafters near the swinging ends thereof at said final desired pitch, said vertical member being hinged at its lower end and being capable of being swung to an inoperative position.

2. The structure defined in claim 1, wherein said rafters extend to said one side of said permanent portion of said roof when in inoperative position.

3. The structure defined in claim 1, wherein said rafters extend to the opposite side of and rest upon said permanent portion of said roof when in inoperative position.

4. In a transportable structure which forms at least a

part of a dwelling of the type described, support structure, a roof member, means hinging said roof member to said support structure for vertical swinging, first support means including a first vertical member operable when in operative position to support said roof member at the final desired pitch for use, said first vertical member being movable away from its operative position, and second support means including a second vertical member for supporting said roof member at less than the desired pitch for transit when said first vertical member is moved away from its operative position.

5. In a transportable structure which forms at least a part of a dwelling of the type described, support structure, a roof member, means hinging one end of said roof member to said support structure for vertical swinging, first support means including a first vertical member for supporting said roof member at the final desired pitch for use, said first vertical member having its lower end portion hinged to said support structure enabling said support member to swing down to an inoperative position, and second support means including a second vertical member for supporting said roof member at less than the desired pitch for transit when said first vertical member is swung to an inoperative position.

6. The structure described in claim 5, wherein said roof member constitutes a planar section of the roof.

7. The structure defined in claim 5, wherein said roof member is an elongated roof rafter.

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JOHN E. MURTAGH, *Primary Examiner*.