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J. W. WALTERS ETAL

3,284,969

PREFABRICATED IGLOO

Filed Nov. 27, 1963

3 Sheets-Sheet 1

Fig-1

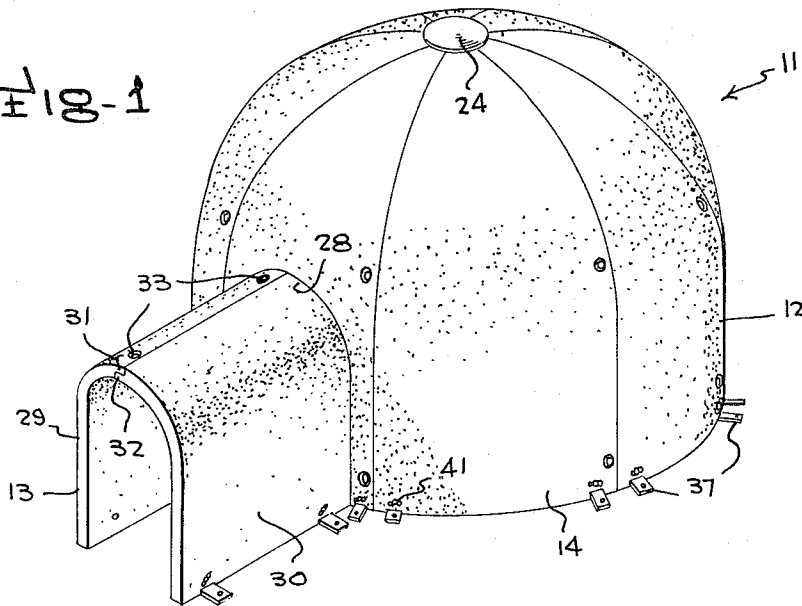
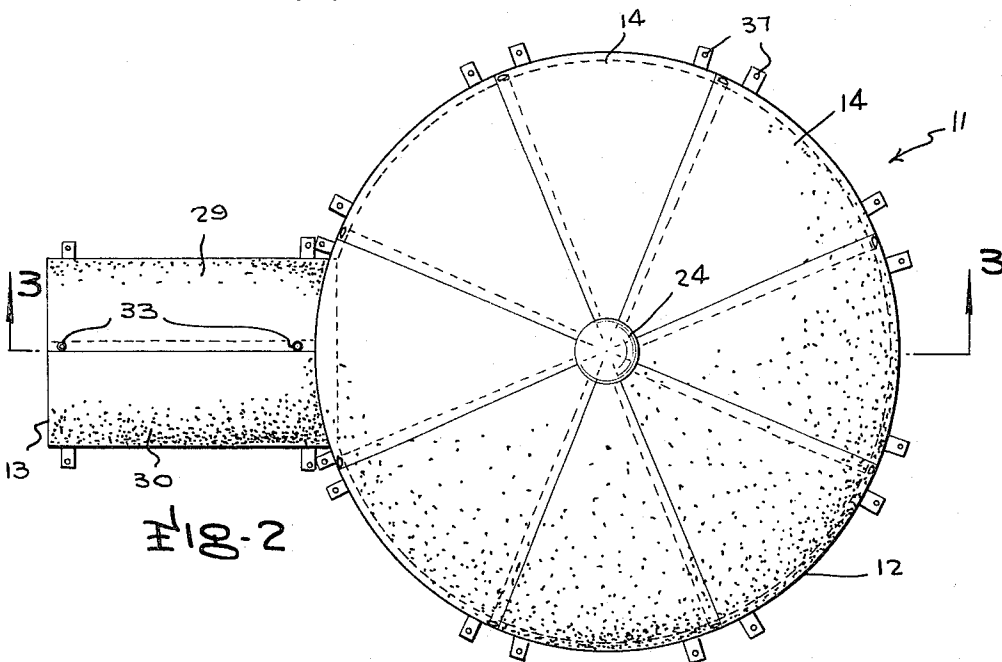


Fig-2



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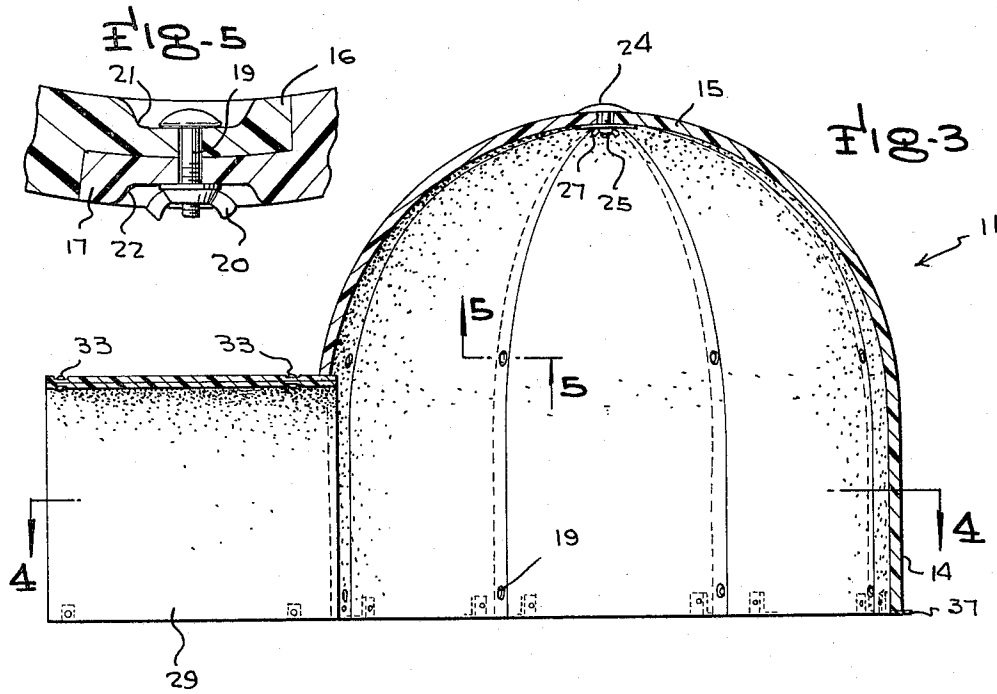
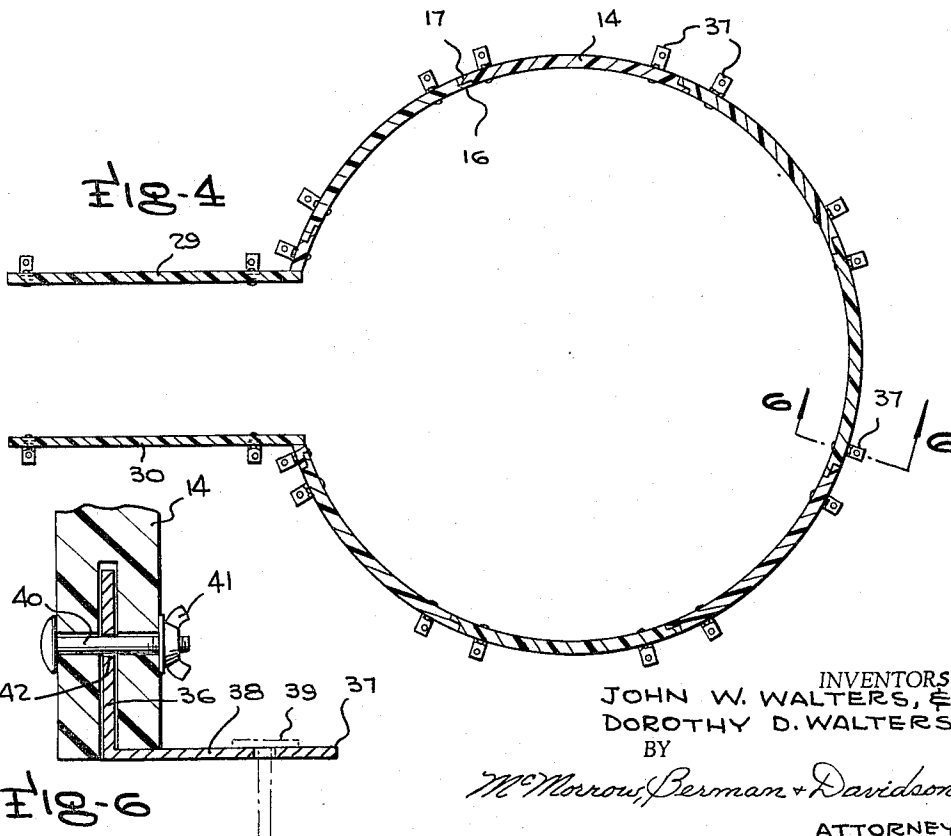
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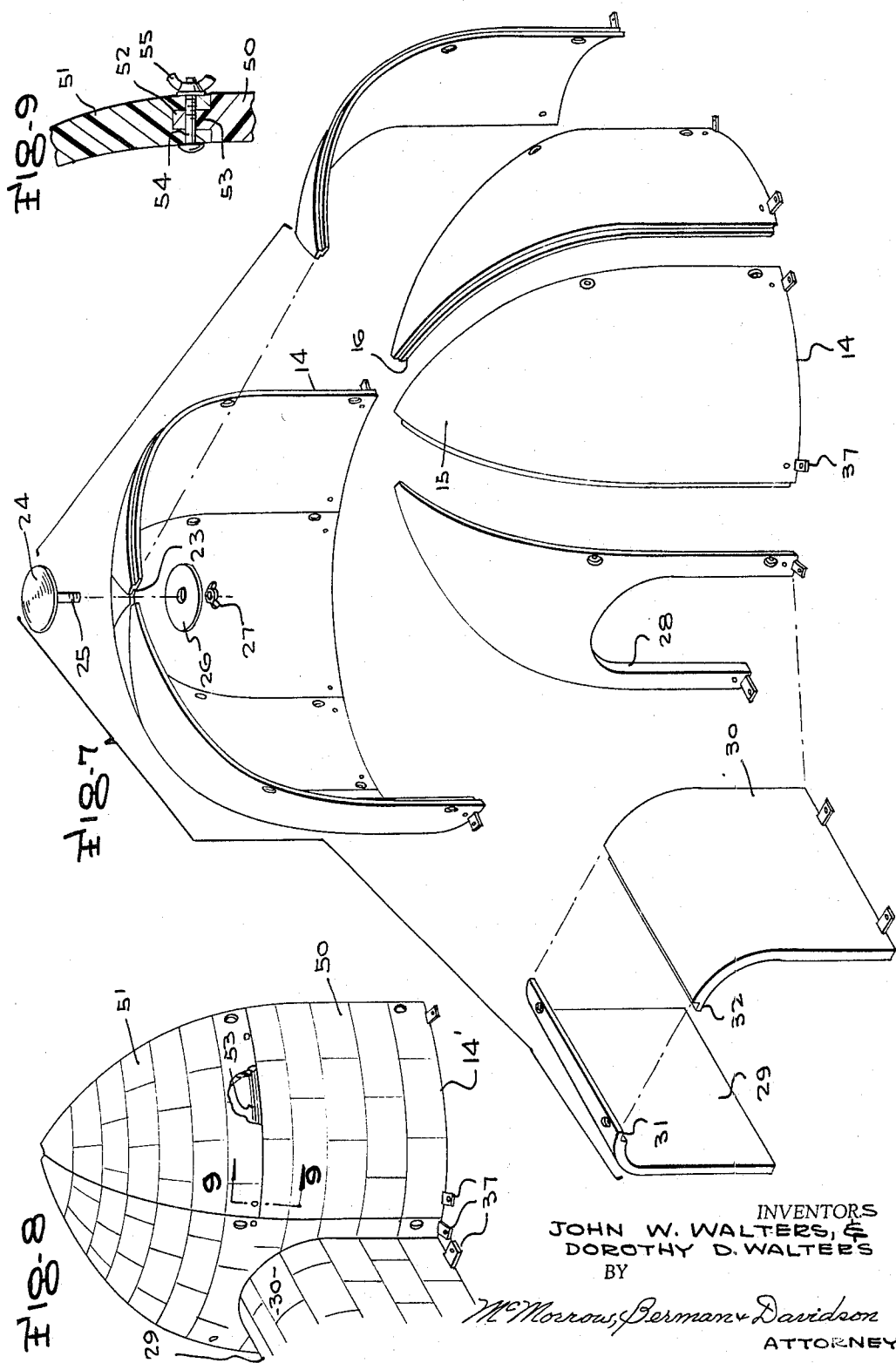
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3,284,969

PREFABRICATED IGLOO

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4 Claims. (Cl. 52-80)

This invention relates to prefabricated shelters, and more particularly to a shelter formed of prefabricated components which may be assembled to provide a structure in the shape of an igloo.

A main object of the invention is to provide a novel and improved prefabricated shelter which is easy to assemble, which is composed of simple parts which are relatively light in weight so that they may be easily transported, and which provides a shelter having high heat-insulation properties so that it may be employed as a warm shelter in cold weather, or as a shelter insulated from the sun's heat in hot weather.

A further object of the invention is to provide an improved prefabricated shelter in the form of an igloo, the shelter comprising easily manufacturable and relatively inexpensive components, being arranged so that it may be quickly assembled with a minimum amount of labor and requiring substantially no tools, and providing a sturdy and rigid enclosure able to withstand a wide range of different weather conditions.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

FIGURE 1 is a perspective view of an improved shelter constructed in accordance with the present invention, shown in assembled condition.

FIGURE 2 is a top plan view of the shelter of FIGURE 1.

FIGURE 3 is a vertical cross sectional view taken substantially on the line 3-3 of FIGURE 2.

FIGURE 4 is a horizontal cross sectional view taken substantially on the line 4-4 of FIGURE 3.

FIGURE 5 is an enlarged cross sectional detail view taken substantially on the line 5-5 of FIGURE 3.

FIGURE 6 is an enlarged cross sectional detail view taken substantially on the line 6-6 of FIGURE 4.

FIGURE 7 is a perspective view showing the components of the shelter of FIGURES 1 to 6 in separated positions.

FIGURE 8 is a fragmentary perspective view showing a modification of a prefabricated shelter constructed in accordance with the present invention.

FIGURE 9 is an enlarged vertical cross sectional view taken substantially on the line 9-9 of FIGURE 8.

Referring to the drawings, and more particularly to FIGURES 1 to 7, 11 generally designates an improved prefabricated shelter constructed in accordance with the present invention. As is readily apparent, the shelter 11 is in the form of an igloo, namely comprises a main generally dome-shaped enclosure 12 provided with an entrance tunnel 13.

The enclosure 12 comprises a plurality of arcuately curved rigid wall segments 14 which are provide at their upper portions with spherical segments 15, the lower portions of the wall segments being generally cylindrically curved. Thus, the upper portions of the segments converge in a manner whereby a plurality of segments may be joined together with their side edges in contact with each other whereby to define the dome-shaped enclosure 12, wherein the lower portion is generally cylindrical and the upper portion is hemispherical.

The segments are provided with reduced side marginal edge portions 16 and 17 of half thickness, offset so that the reduced edge portions 16 and 17 of a pair of adjacent

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segments 14 can interfit in overlapping relation in the manner shown in FIGURES 6 and 7. The overlapping reduced side edge portions 16 and 17 are fastened together by fastening bolts 19 provided at their outer end portions with wing nuts 20, the heads of the bolts 19 and the wing nuts 20 being received in respective recesses 21 and 22 provided therefor in the overlapping wall segment edge portions 16 and 17. As shown in FIGURE 3, two spaced bolts 19 may be employed to secure each joint. Thus, the wall segments are fastened together with their top portions converging toward a common vertex, but terminating short of said vertex to define a central aperture 23 at the top of the dome. A circular cover cap 24 is provided, said cover cap having a depending threaded stem 25 which is adapted to extend through the aperture 23 and to receive thereon a clamping washer 26 which is clamped against the underside of the convergent top end portions of the wall segments by a wing nut 27 threaded on the stem 25. The aperture 23 is thus completely covered and sealed by the cover cap 24, and the top ends of the walls segments are clamped together between the circular cap 24 and the circular washer 26.

One of the wall segments is formed with a doorway opening 28 adapted to slidably receive the tunnel structure 13. The tunnel structure 13 comprises a pair of rigid tunnel segments 29 and 30 provided with arcuately curved top portions having reduced overlapping edges 31 and 32 which are fastened together in interfitting relationship by spaced fastening bolts 33, 33. The assembled tunnel structure 13 is shaped to closely and slidably engage in the doorway opening 28.

The bottom edges of the wall segments 14 and the tunnel segments 29 and 30 are formed with vertically extending spaced recesses 35, suitable located, for example, adjacent the opposite ends of said bottom edges. Engaged in said vertical recesses 35 are the upstanding vertical flanges 36 of respective right angle brackets 37, said brackets 37 being provided with outwardly extending apertured horizontal flanges 38 adapted to receive headed anchoring pegs 39, shown in dotted view in FIGURE 6. The anchoring pegs 39 are adapted to be driven into the ground to secure the brackets 37 in fixed positions. The upstanding flanges 36 are secured to the bottom marginal portions of the wall segments by transversely extending bolts 40 which are provided on their outer ends with wing nuts 41, the bolts 40 extending through apertures 42 formed in the upstanding vertical flanges 36.

The wall segments and tunnel segments are formed of light rigid moulded material, for example, of moulded rigid plastic foam material such as Styro Foam. This material has excellent durability and heat-insulating properties, and is very light in weight, so that it can be easily handled.

The wall and tunnel segments can be suitably painted or otherwise decorated, for example, may be decorated to resemble blocks, so that the completed igloo resembles one actually formed of snow or ice blocks.

In the modification illustrated in FIGURES 8 and 9, the wall segments, designated at 14' comprise lower portions 50 of generally cylindrical contour and upper portions 51 of spherical contour, the upper portions 51 being formed with grooves 52 at their bottom edges which receive upstanding tongues 53 provided on the top edges of the segments 50, the interfitting tongues and grooves being securely fastened by the provision of transversely extending fastening bolts 54 provided at their outer ends with wing nuts 55, as shown in FIGURE 9. The bolts 54 extend through the side walls of the grooves 52 and through the tongues 53, thus securely fastening the tongues in the grooves. The segments 50 and 51 are thus rigidly secured together so that they may be handled in the same

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manner as the segments 14 in the form of the invention illustrated in FIGURES 1 to 7.

As will be readily apparent, prefabricated shelters of the type above described may be employed for a wide variety of purposes. Thus, the shelters may be used as play shelters for children, and may be made in correspondingly small sizes so that children can employ same. The number of wall segments required would depend upon the size of the shelter. Thus, for shelters employed as toy igloos, wherein the enclosures 12 are of the order of five or six feet in diameter, eight wall segments may be employed. Larger shelters, for use by adults, or for commercial purposes, would require a greater number of wall segments for ease in transporting and storing the components of the shelters.

As will be readily apparent, due to the rigidity of the material employed, namely, moulded plastic foam material, such as Styro Foam, it is not necessary to use a center pole, particularly in the smaller sizes of the shelters.

While certain specific embodiments of an improved prefabricated shelter in the form of an igloo have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A prefabricated shelter comprising a plurality of arcuately curved sheet-like rigid wall segments having top portions in the form of spherical segments, said wall segments having reduced side marginal edge portions interfitting in overlapping relationship along their length, said edge portions of the top portions converging towards a common vertex, means fastening said side marginal edge portions together in overlapping relationship, a cover cap overlying the common vertex and having a stem portion depending through said vertex, a washer on said stem portion underlying the convergent top portions of the wall segments, a clamping nut on the stem portion below and bearing against said washer, one of the wall segments being formed with a doorway, a pair of rigid tunnel segments having interfitting overlapping top marginal portions, and means securing said top marginal portions together in overlapping relationship to define a tunnel structure, said tunnel structure fitting slidably in said doorway, said wall segments and tunnel segments being formed of rigid moulded plastic foam material.

2. A prefabricated shelter comprising a plurality of arcuately curved sheet-like rigid wall segments having top portions in the form of spherical segments, said wall segments having reduced side marginal edge portions interfitting in overlapping relationship along their length, said edge portions of the top portions converging towards a common vertex, means fastening said side marginal edge portions together in overlapping relationship, a cover cap overlying the common vertex and having a stem portion depending through said vertex, a washer on said stem portion underlying the convergent top portions of the wall segments, a clamping nut on the stem portion below and bearing against said washer, one of the wall segments being formed with a doorway, a pair of rigid tunnel segments having interfitting overlapping top marginal portions, means securing said top marginal portions together means securing said top marginal portions together in overlapping relationship to define a tunnel structure, said tunnel structure fitting slidably in said doorway, and a pair of spaced outwardly projecting apertured horizontal lugs on the bottom edges of each of said wall segments and tunnel segments.

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3. A prefabricated shelter comprising a plurality of arcuately curved sheet-like rigid wall segments having top portions in the form of spherical segments, said wall segments having reduced side marginal edge portions interfitting in overlapping relationship along their length, said edge portions of the top portions converging towards a common vertex, means fastening said side marginal edge portions together in overlapping relationship, a cover cap overlying the common vertex and having a stem portion depending through said vertex, a washer on said stem portion underlying the convergent top portions of the wall segments, a clamping nut on the stem portion below and bearing against said washer, one of the wall segments being formed with a doorway, a pair of rigid tunnel segments having interfitting overlapping top marginal portions, means securing said top marginal portions together in overlapping relationship to define a tunnel structure, said tunnel structure fitting slidably in said doorway, said wall segments and tunnel segments being formed of rigid moulded plastic foam material, the bottom edges of the wall segments and tunnel segments being formed with vertically extending recesses, and right angled brackets having vertical portions secured in said recesses and having outwardly projecting apertured horizontal portions adapted to receive anchoring plates.

4. A prefabricated shelter comprising a plurality of arcuately-curved sheet-like rigid wall segments having top portions in the form of spherical segments, said wall segments having reduced side marginal edge portions interfitting in overlapping relationship along their length, said edge portions of the top portions converging toward a common vertex, means fastening said side marginal edge portions together in overlapping relationship, a cover cap overlying the common vertex and having a stem portion depending through said vertex, adjustable clamping means on said stem portion underlying and bearing upwardly against the convergent top portions of the wall segments, one of the wall segments being formed with a doorway, a pair of rigid tunnel segments having interfitting overlapping top marginal portions, and means securing said top marginal portions together in overlapping relationship to define a tunnel structure, said tunnel structure fitting slidably in said doorway.

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