

April 12, 1960

J. E. VOEGE ET AL

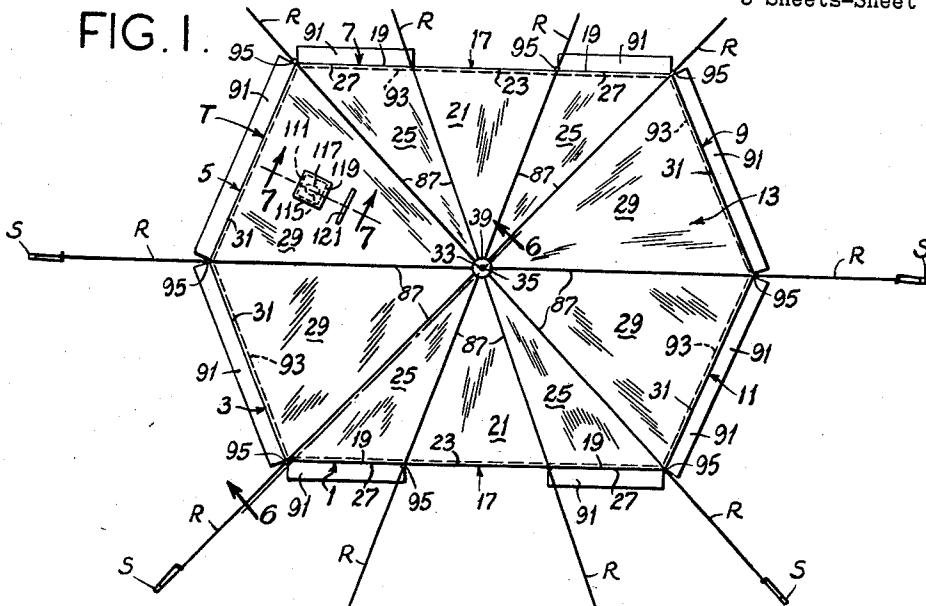
2,932,304

TENT

Filed Nov. 26, 1956

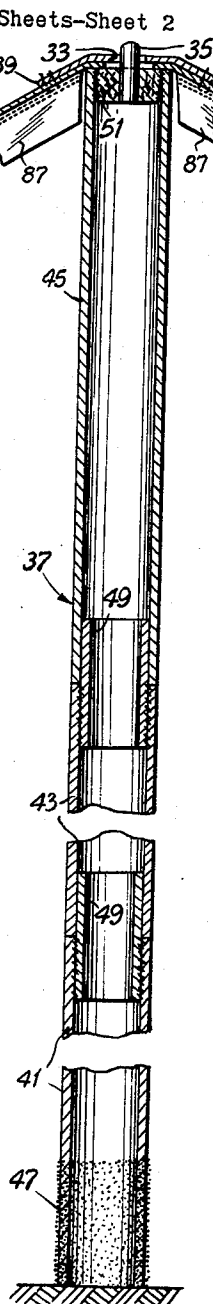
3 Sheets-Sheet 1

FIG. 1.



2,932,304

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3 Sheets-Sheet 3

FIG. 9.

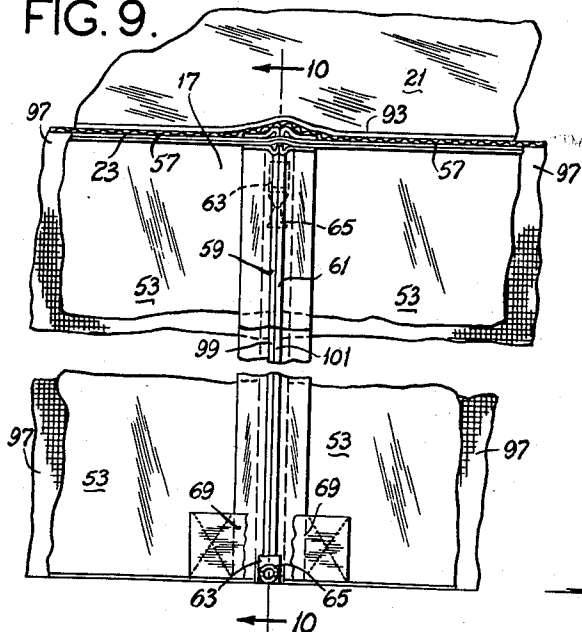


FIG. 10.

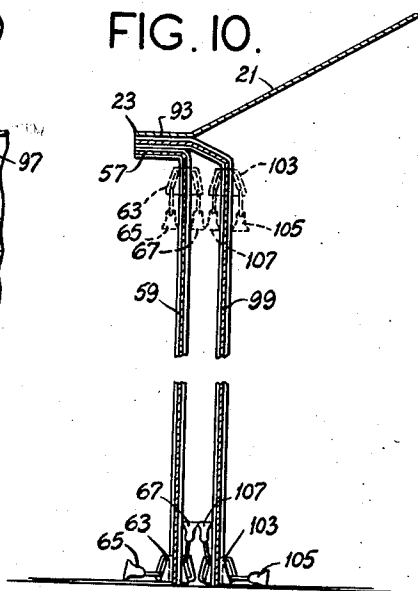


FIG. 12.

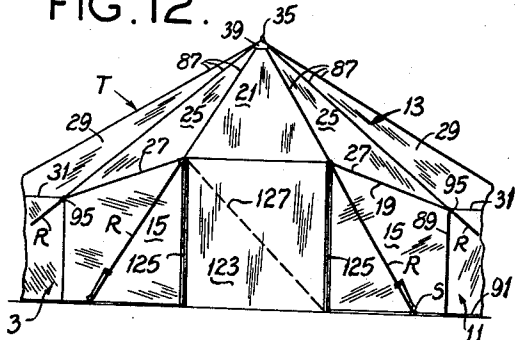


FIG. 11.

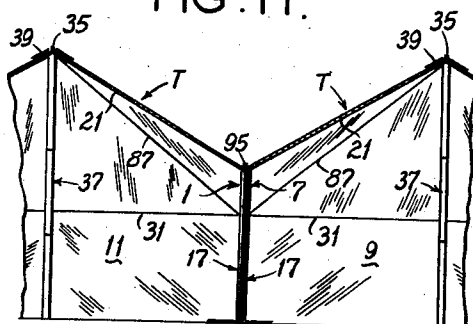


FIG. 13.

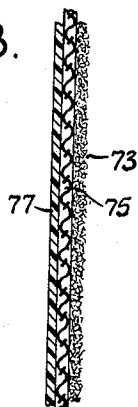


FIG. 14.

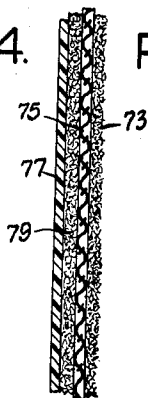
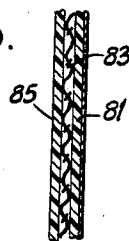


FIG. 15.



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1

2,932,304

TENT

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2 Claims. (Cl. 135—1)

This invention relates to tents, and more particularly to a low-cost expendable tent, for military or other purposes.

Among the several objects of the invention may be noted the provision of a tent of the class described which is of light weight for its size (for example, a tent providing floor space of approximately two hundred square feet and a height of approximately eight feet six inches, sufficient for three men to don and doff clothing simultaneously while standing, weighs less than twenty pounds); the provision of a tent of this class which is simple to erect and capable of withstanding gusts of wind up to forty miles per hour; the provision of a tent of this class which is so shaped that visibility of the tent in a horizontal plane from any angle is minimized, as is important for camouflage; the provision of a tent of this class which has insulating value so that it is capable of maintaining a reasonably comfortable inside temperature (40° F., for example) when the outside temperature is very low (—65° F., for example) with winds of forty miles per hour when conventional heating devices are utilized in the tent; the provision of a tent of this class which has positive closures providing protection from entry of wind, drifting snow and moisture; the provision of a tent of this class which has means for ventilation other than doorways and for use of standard heating devices; the provision of a tent of this class which provides reasonable protection from insects; and the provision of a tent of this class which has entrance closures which can be easily operated either from the inside or outside, which has two doorways, and which is of such construction as to allow for a series of tents to be fastened together in tandem with access from one tent to another. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which several of various possible embodiments of the invention are illustrated,

Fig. 1 is a plan view of a tent of this invention;

Fig. 2 is a front elevation of the tent;

Fig. 3 is an end elevation of the tent as viewed from the right of Fig. 1;

Fig. 4 is a fragment of Fig. 2 illustrating certain door panels in open position, certain screen panels being shown in closed position;

Fig. 5 is a view similar to Fig. 4 showing the screen panels in open position;

Fig. 6 is a greatly enlarged vertical section taken on line 6—6 of Fig. 1, with parts broken away;

Fig. 7 is a greatly enlarged vertical section taken on line 7—7 of Fig. 1;

Fig. 8 is a plan view showing two of the Fig. 1 tents assembled together in tandem;

Fig. 9 is a greatly enlarged fragment of Fig. 2, with parts (including tie tapes) broken away;

2

Fig. 10 is a vertical section taken on line 10—10 of Fig. 9;

Fig. 11 is a vertical section taken on line 11—11 of Fig. 8;

Fig. 12 is a view similar to Fig. 2 illustrating a modification; and,

Figs. 13—15 are enlarged cross sections of three different materials from which a tent of this invention may be made.

Corresponding reference character indicate corresponding parts throughout the several views of the drawings.

Referring to Figs. 1—3 of the drawings, a tent T constructed in accordance with this invention is shown to be of the center-pole type. As erected, it is of hexagonal shape in plan, having six substantially vertical walls 1, 3, 5, 7, 9 and 11 and a pyramidal roof 13. Walls 1 and 7 are parallel to one another, and are referred to as front and back walls. Walls 3 and 5 are angled to form a triangular bay at one end of the tent; walls 9 and 11 are angled to form a triangular bay at the other end of the tent. Walls 3, 5, 9 and 11 are identical, walls 3 and 9 being parallel and walls 5 and 11 being parallel. As shown herein, the length of the front and back walls 1 and 7 (these walls being identical) corresponds approximately to the front-to-back dimension of the tent, and walls 1 and 7 are longer than each of walls 3, 5, 9 and 11.

Each of the front and back walls comprises two wall panels 15 on opposite sides of a rectangular center access section 17. The top margins 19 of the panels 15 are angled downward toward the outer ends of the front and back walls. Each of the end walls 3, 5, 9 and 11 comprises a rectangular panel having a height corresponding to the height of the outer end edges of the panels 15 of the front and back walls. The pyramidal roof 13 comprises two triangular panels each designated 21 centered at the apex of the roof and having outer margins 23 coincident with the top of the access section 17, four triangular panels each designated 25 centered at the apex of the roof and having outer margins 27 coincident with the angled top margins 19 of the respective panels 15 of the front and back walls, and four triangular panels each designated 29 centered at the apex of the roof and having outer margins 31 coincident with the top margins of the respective end walls 3, 5, 9 and 11.

At the apex of the roof is a center hole 33 (see Fig. 6) for receiving a pin 35 on the upper end of a pole 37. An apertured roof center reinforcement is indicated at 39. The pole 37 is shown as being a sectional type of pole, consisting of a lower section 41, an intermediate section 43 and an upper section 45. Each of these sections comprises a fibre (compressed paper) tube. The lower end of the lower tube 41 is impregnated with a waterproofing material indicated at 47 such as wax or creosote. Glued in and projecting from the upper end of each of the lower and intermediate sections 41 and 43 is a short length of fibre tube 49. The intermediate section 43 is telescoped at its lower end on the tube 49 of the lower section 41. The upper section 45 is telescoped at its lower end on the tube 49 of the intermediate section 43. Glued in the upper end of the upper section is a wood plug 51. The pin 35 is constituted by a hardwood dowel glued in a center hole in the plug 51.

Referring to Figs. 2, 9 and 10, the central section 17 of each of the front and back walls is shown to be provided with two rectangular door panels 53. These door panels are seamed at 55 along their outer vertical margins to the inner vertical margins of the wall panels 15 and seamed at 57 along their top margins to the outer margins 23 of the roof panels 21. Each door panel has a width corresponding to half the width of the central section 17,

and the inner vertical meeting edges of the door panels are provided with slide fastener elements 59 and 61 and a slide 63 for securing them together to hold the door panels closed. It is preferred that the slide fastener elements be plastic elements of a type such as shown in U.S. Patent 2,613,421. The slide 63 has two large pull tabs 65 and 67, one on the outside and the other on the inside for easy operation from either the outside or inside of the tent. By pulling the slide up to the top of the door panels as indicated in dotted lines in Figs. 9 and 10, they are released one from the other so that they may be folded back from the closed position in which they are shown in Figs. 2 and 9 to the open position shown in Fig. 4 and secured in open position as by tie tapes 69 and 71, one on the door panel and the other on the outside of the tent wall.

The panels 15 of the front and back walls 1 and 7, the walls 3, 5, 9 and 11, the roof panels 21, 25 and 27, and the door panels 53 may be made of a special reinforced laminated material such as shown in Fig. 13 comprising an inner ply 73 of a nonwoven fabric having heat insulating properties, an intermediate ply 75 of open-mesh fabric, and an outer ply 77 of sheet plastic. Or it may be made of a material such as shown in Fig. 14 similar to that of Fig. 13 with the addition of a ply of nonwoven fabric 79 between the outer plastic ply 77 and the open-mesh fabric ply 75. Or it may be made of a material such as shown in Fig. 15 comprising an inner ply 81 of sheet plastic which is metalized to have heat insulation properties, an intermediate ply 83 of open-mesh fabric, and an outer ply 85 of clear sheet plastic.

The nonwoven fabric 73 is preferably a fabric comprising a random distribution of nylon and rayon fibers in a synthetic latex binder such as is sold by Wellington Sears Company of New York, N.Y. under the name Lantuck. In the three-ply material shown in Fig. 13, the nonwoven fabric used at 73 may be one having an average weight of about 3.00 oz. per square yard. In the case of the four-ply material shown in Fig. 14, the nonwoven fabric used for layers 73 may be one having an average weight of about 2.25 oz. per square yard. The open-mesh fabric may be the same for each of the materials shown in Figs. 13-15, namely, a leno-weave fabric woven of natural color paper yarns, having a one-half inch by one-half inch mesh, and a weight of ninety-four pounds per thousand yards. The plastic layer 77 in Fig. 13 may be 2-mil polyethylene, and in Fig. 14 may be .0015 mil polyethylene. The plastic layer 81 in Fig. 15 is preferably .0015 mil aluminized polyethylene terephthalate sold by E. I. du Pont de Nemours and Co. of Wilmington, Del., under the name Mylar, and the plastic layer 85 is preferably .0015 mil Mylar. In each case the laminant may be an emulsion type adhesive, such as polyvinyl emulsion, or any other suitable adhesive.

The triangular roof panels are secured together along their side margins by flat sewn seams (double-stitched seams, for example) such as indicated at 87 in Fig. 6, where there is shown a seam 87 for a roof panel 25 and a roof panel 27. The front and back wall panels 15 are secured to the end walls 3, 5, 9 and 11, and end walls 3, 5, and 9, 11 are secured together by flat sewn seams (double-stitched seams, for example) such as indicated at 89 in Fig. 6, where there is shown a seam 89 for the left panel 15 of the front wall and end wall 3. The seams 87 and 89 (also seams 55) are directed inward. The seams 89 joining the panels 15 to the end walls 3, 5, 9 and 11, the seams 55 joining panels 15 to the door panels 53, and the seams 89 joining end walls 3, 5, 9 and 11 terminate somewhat short of the lower edges of these panels and end walls so that each of these panels and the end walls has a bottom flap such as indicated at 91 which may be utilized as a sod cloth. The roof panels are secured at their outer margins to the upper edges of the panels 15, the end walls 3, 5, 9 and 11 and the door panels 53 by flat sewn seams (double-stitched seams, for example) such as indicated at 93 in Fig. 6, where there

is shown a seam 93 for a roof panel 25 and a panel 15. The seams 93 are directed outward and form an overhang all around the tent. A guy rope loop 95 is sewn to the seams 93 in line with each of the roof panel seams 87, as shown best in Fig. 6, with the sides of the loop on opposite sides of the seams 93. The loops 95 may consist of strips of the same material as the tent walls, roof and doors.

In addition to the door panels 53, the central section 17 of each of the front and back walls is provided, on the inside of the door panels, with screen panels 97. These are seamed at 55 along with the door panels to the wall panels 15, and have their top margins caught in the seam 57 between the roof panel 21 and the door panels (see Fig. 10). Each screen panel, which may consist of nylon net, has a width corresponding to half the width of the doorway, and the inner vertical meeting edges of the screen panels, like the door panels, are provided with slide fastener elements 99 and 101 and a slide 103 having two large pull tabs 105 and 107, one on the inside and the other on the outside. By pulling the slide for the screen panels up to the top thereof, they are released from one another and may be folded over on the outside of the door panels as shown in Fig. 5, and tied open by tie tapes 109.

One of the roof panels (specifically one of the panels 29) is shown as having a hole 111 therein. On the inside of the roof panel is stitched a panel 113 of glass fibre, or other suitable heat-resistant material, having an opening 115 sized to fit a stove pipe and smaller than the hole 111 so that the stove pipe does not contact the tent material. For covering the hole 111 there is provided a flap 117, which may be made of the same material as the tent, stitched as indicated at 119 on the outside of the roof. A strap 121 may be provided for holding the flap 117 folded back away from the stove pipe. Holes 111 and 115 may also be used for ventilation, instead of for a stove pipe.

The tent T is easily erected simply by setting it up on the center pole 37, then pulling taut guy ropes R fastened to loops 95 and securing the ropes to stakes S in such manner that the ropes are substantially aligned with the respective roof panel seams 87 and at an angle to the ground corresponding substantially to the pitch of the respective seams 87. This stretches seams 87 and also seams 57 and 93 taut so that the roof and walls are held up in erected position. The roof seams 87, in effect, act as roof supports in extension of the guy ropes to the center pole, and the seams 57 and 93, in effect, act as supports for the tent walls between adjacent guy ropes. No poles are necessary at the corners of the tent where walls 1, 3, 5, 7, 9 and 11 meet. As erected, the tent is of hexagonal shape, which minimizes visibility of the tent in a horizontal plane from any angle.

As shown in Figs. 8 and 11, two tents T may be erected and joined together in tandem, with wall 7 of one tent against wall 1 of the other tent. In this case the tie rope loops along the abutting walls 7 and 1 are tied together. Access from one tent to the other is via the doorways in the abutting walls 7 and 1.

Fig. 12 illustrates an alternate type of door for the central section 17, consisting of a single door panel 123 having a width corresponding to the width of the central section. The panel 123 is seamed along its top margin to the outer margin 23 of roof panel 21. At both side edges thereof are slide fasteners 125 for securing the panel at its sides to the inner vertical margins of the wall panels 15. Both slide fasteners 125 may be released and the panel rolled up for a complete opening of section 17; or one slide fastener may be released and the door panel folded in half on a diagonal such as indicated at 127 for a smaller doorway opening. Suitable tie tapes (not shown) may be provided for holding the door panel rolled up or folded back and for fastening together the section 17 of two tandem tents.

5

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

We claim:

1. A center-pole tent having substantially vertical front and back walls, each of said front and back walls having a central rectangular access section, a first vertical panel on one side of each of said central rectangular access sections and a second vertical panel on the other side of each of said central rectangular access sections, each of said first vertical panels having a top margin which angles downward away from the respective central rectangular access section toward one end of the respective wall, each of said second vertical panels having a top margin which angles downward away from the respective central rectangular access section toward the other end of the respective wall, said tent further having first and second substantially vertical end walls angled to form a first triangular bay at one end of the tent, said first and second end walls being joined together along a line forming a corner of said first bay, said first and second end walls being joined to said first panels of said front and back walls along lines forming first front and rear corners, third and fourth substantially vertical end walls angled to form a second triangular bay at the other end of the tent, said third and fourth end walls being joined together along a line forming a corner of said second bay, said third and fourth end walls being joined to said second panels of said front and back walls along lines form-

6

ing second front and rear corners, and a pyramidal roof comprising two inclined triangular panels centered at the apex of the roof and having outer margins coincident with the tops of the said central rectangular access sections of the front and back walls, four inclined triangular panels also centered at the apex of the roof and having outer margins coincident with the angled top margins of the said first and second vertical panels of the front and back walls, and four inclined triangular panels also centered at the apex of the roof and having outer margins coincident with the top margins of the said end walls.

2. A center-pole tent as set forth in claim 1 wherein the triangular roof panels are joined together by roof seams which radiate from the apex of the pyramidal roof to the ends of the top margins of the said first and second vertical panels of the front and back walls and to the ends of the top margins of the said vertical end walls, said triangular roof panels being joined to the front, back and end walls by outwardly directed stitched seams, and wherein a loop for attachment of a guy rope is provided at the outer end of each of said roof seams, said loops straddling and being caught by the stitching of said outwardly directed stitched seams.

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