July 4, 1950 C. W. LEMEN 2,513,729

CHAPEL TENT

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FIG. 1

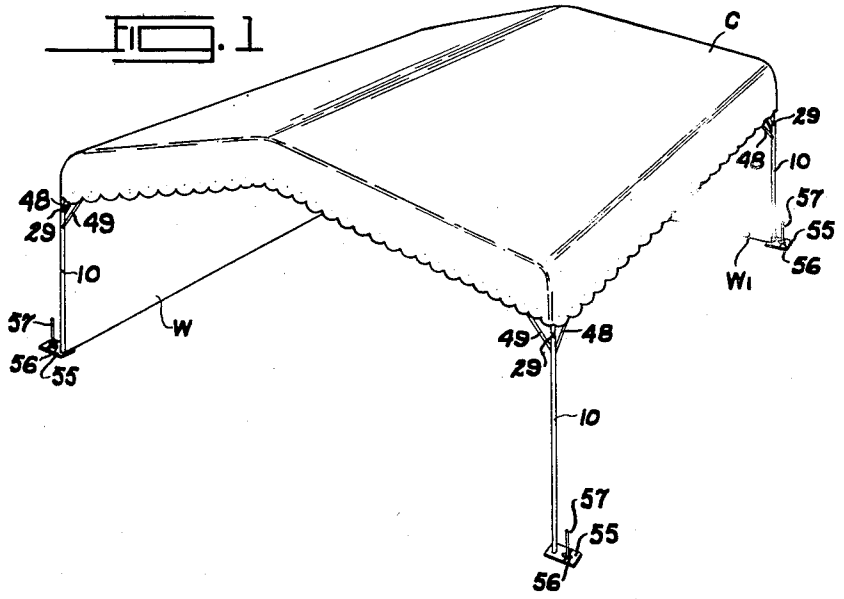
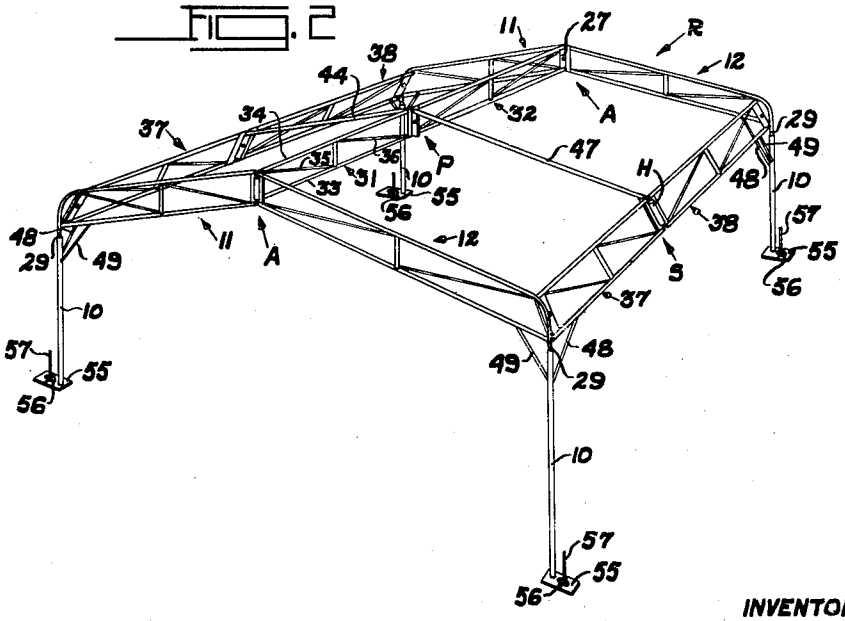


FIG. 2



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FIG. 3

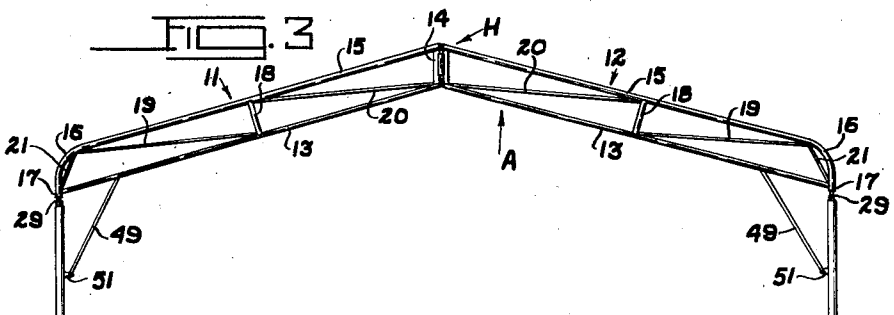


FIG. 4

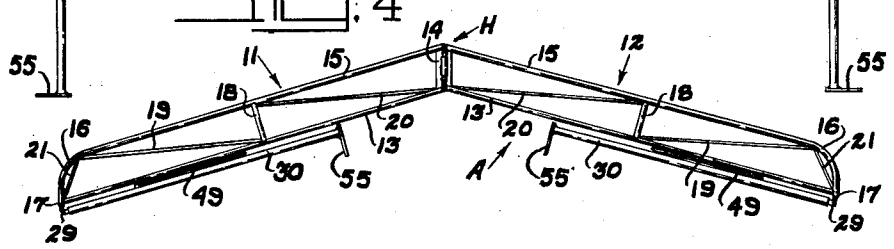


FIG. 5

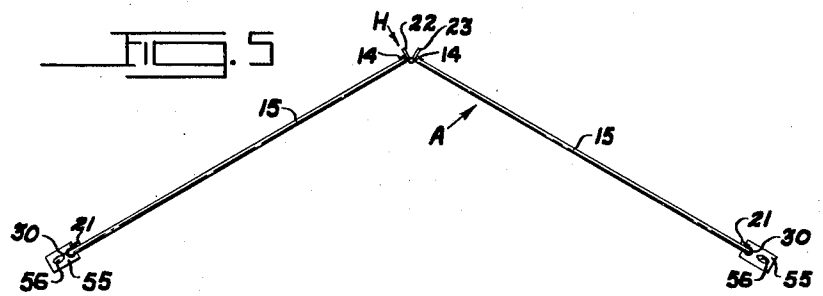
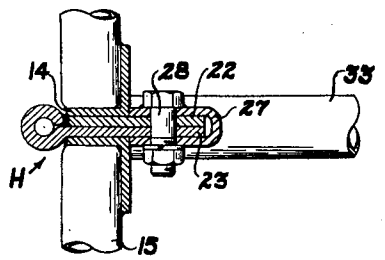


FIG. 6



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FIG. 7

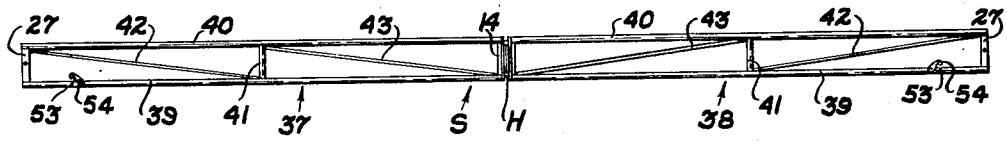


FIG. 8

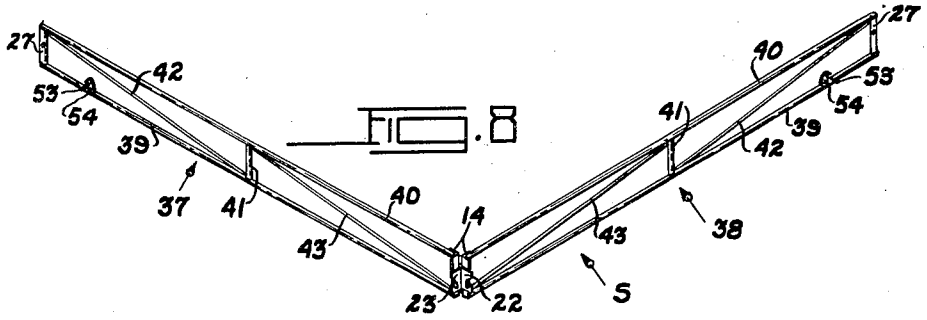


FIG. 9

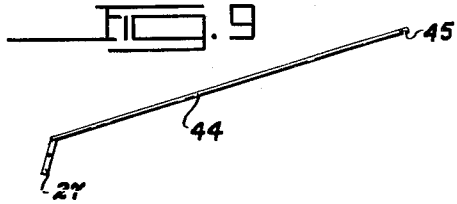


FIG. 10

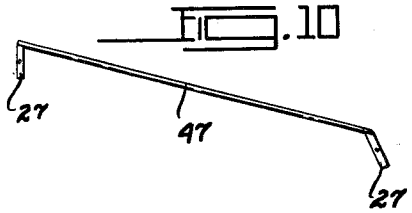


FIG. 11

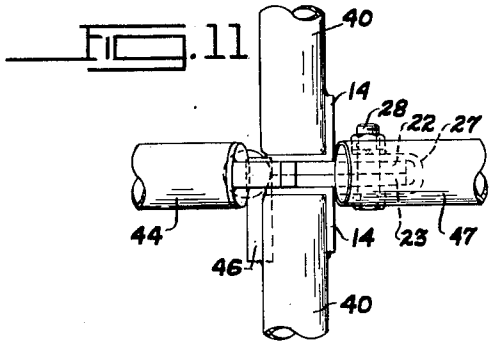
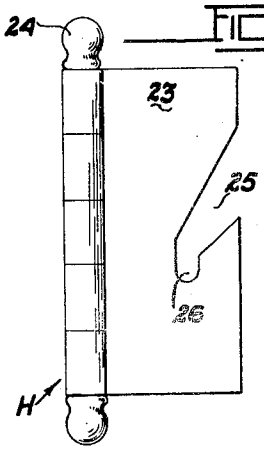


FIG. 12



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CHAPEL TENT

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FIG. 13

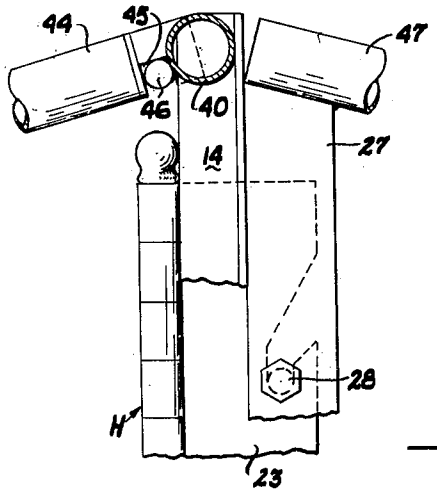


FIG. 14

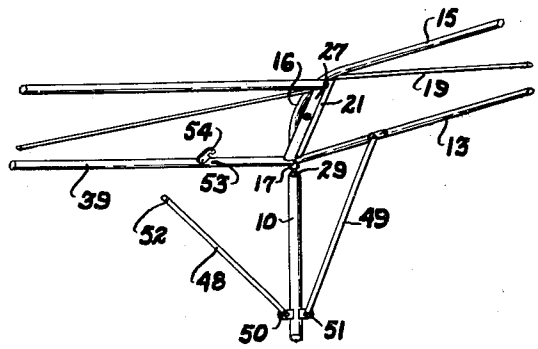


FIG. 17

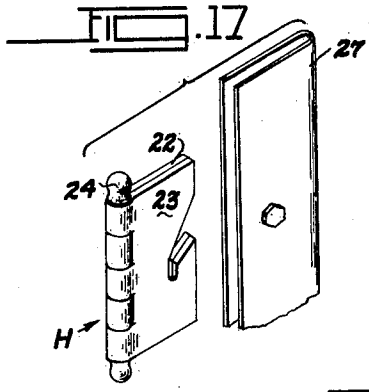


FIG. 15

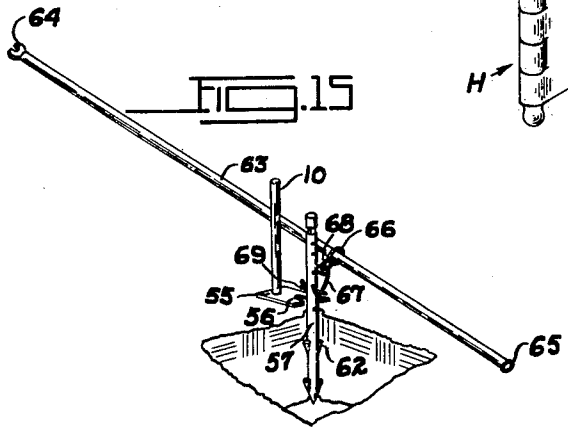
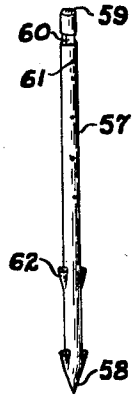


FIG. 16



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UNITED STATES PATENT OFFICE

2,513,729

CHAPEL TENT

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Application August 20, 1948, Serial No. 45,344

4 Claims. (Cl. 135—4)

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The present invention has to do with chapel tents such as are employed for the purpose of sheltering a grave and the area immediately therearound during burial services, and is concerned primarily with a chapel tent having novel structural characteristics affording decidedly advantageous results.

At the present time the use of chapel tents in cemeteries throughout the country is widespread. Such a tent is a structure that is essentially temporary in character. It is ordinarily placed over a grave after the latter has been dug and is designed not only to shelter the minister or other party conducting the burial services, but also the people attending such services. The tents are usually removed a short time subsequent to the lowering of the coffin.

As above explained, there are now chapel tents of this character in use. However, as such a tent must have a fairly large expanse, it has been necessary to employ more than four corner stanchions in supporting the roof of the tent.

In the case of a tent of rectangular formation with a longitudinal dimension greater than the width of the tent, it is generally necessary to employ an intermediate stanchion or support along each side between the corners.

Under practical conditions this is a decided disadvantage because very often the cemetery will include shrubbery or bushes around the side of the grave which will interfere with proper positioning of the stanchions.

With this condition in mind the present invention has in view as its foremost objective the provision of a chapel tent of the type indicated, which includes a roof structure which is sufficiently rigid and strong so that it may be adequately supported by only a stanchion located at each corner.

Another primary object of the invention is the provision of a chapel tent of the type indicated which includes a roof structure of substantial construction which is readily adapted to being assembled and dismantled as occasion demands, and which may be folded into a compact formation.

Yet another object of the invention is the provision of a chapel tent of the type noted which has a roof structure of an arched formation so as to give the effect of increased height and spaciousness at each end and which also affords the pitch which is necessary for drainage purposes.

In carrying out the above noted ideas in a practical embodiment, a roof structure is provided which consists essentially of a truss in the form

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of an arch at each end and each of which trusses comprises two sections hingedly connected together. The midpoints of these end arch trusses are joined by a central peak truss that extends longitudinally of the structure and which also consists of two parts hingedly connected.

In addition there is a truss at each side, each end of which is connected to the respective end of the arch truss, and each of these side trusses is of two sections hingedly joined together.

A highly important object of the present invention is the provision of a new and improved type of detachable connection between one end of the central truss and the hinged joint of the arch truss to which it is connected. This connection is tied up with the hinged connection between the sections of the arch truss, so that when it is established the sections of the arch truss are relatively rigid and held against movement with respect to each other.

Another object of the invention is to provide, in a chapel tent structure of the character aforesaid, reenforcing elements which are called stretchers and which extend between the hinged connection of each side truss and the hinged connection of the peak truss, respectively.

These stretchers carry means at their respective ends which are effective to cooperate with the respective hinged connections so as to render the hinges inoperative and impart rigidity to each truss to which it is connected.

It is evident the roof structure must be supported at an appropriate height from the stanchions and, as above explained, the entire structure must be susceptible of being folded into a collapsed formation.

Thus, another object of the invention is to provide a roof structure of the type indicated which includes a pivotal connection for a stanchion at each corner.

Another correlated objective is to provide detachable means for bracing each stanchion in its erected position.

Under clement weather conditions there is no particular problem in anchoring the foot of each stanchion in position in the ground. However, the very purpose of a chapel tent is to provide shelter during inclement weather, and at such times very high winds often develop, and it has in the past been necessary to employ guy ropes, stays, and other devices for bracing and supporting the tent in position.

In accordance with the present invention new and improved means is employed to provide a firm anchorage between the base of each stan-

chion and the ground. Thus, a further object is to provide, in a chapel tent of the type indicated, a stanchion which includes a foot which outstands from the bottom end thereof and which takes the form of a plate formed with an opening.

A stake is driven through each opening and this stake carries at spaced points webs which outstand diametrically therefrom.

After the stake is driven a wrench is employed to rotate it substantially 90 degrees, whereupon the webs will no longer have access to the channels in the ground formed by their being driven.

This stake is also formed with a series of spaced openings and a pin is passed through an opening so as to engage the top face of the plate that is attached to the stanchion, thereby a firm anchorage for each of the stanchions is provided.

Yet another is the provision of a new and improved tool designed for use in positioning the stake and pulling the same from the ground. This tool carries a wrench at one end and a ring slidable therealong, the ring carrying hook elements designed to engage the pin in the stake so that pressure may be applied to withdraw the stake under conditions of varying mechanical advantage.

Various other more detailed objects and advantages of the invention such as arise in carrying out the above noted ideas in a practical embodiment will in part become apparent and in part be hereinafter stated as the description of the invention proceeds.

The invention, therefore, comprises a chapel tent which includes a roof structure consisting of sectional end arch trusses, sectional peak and side trusses, and central stretchers, there being a hinged connection between the sectional parts of each element and an interlock with this hinged connection and an element joined thereto so as to prevent movement of the hinge and thus impart rigidity to the structure.

A stanchion is employed at each of the four corners only and is pivotally connected at its upper end to the roof structure, with provision being made to brace the stanchion in erected position. New and improved means for anchoring each corner of the stanchion to the ground is provided in the form of a novel stake and associated devices.

For a full and more complete understanding of the invention reference may be had to the following description and accompanying drawings wherein:

Figure 1 is a perspective view of a chapel tent which is designed in accordance with the precepts of this invention and which shows the canopy covering the roof structure in position and two side walls of canvas applied in position;

Figure 2 is another perspective with the canopy and side wall structure removed;

Figure 3 is a view in end elevation showing one of the end trusses and the stanchions which support it in position;

Figure 4 is another end elevation showing the stanchions in collapsed position;

Figure 5 is a top plan view of one of the arch trusses as partially collapsed;

Figure 6 is an enlarged detail view partly in section and partly in elevation looking from the top and showing the connection between one end of the central peak truss and the hinged joint of an end arch truss;

Figure 7 is a view in side elevation of one of the side trusses;

Figure 8 is a perspective showing the side truss of Figure 7 in a partially folded condition;

Figure 9 is a side elevation of one of the stretchers;

Figure 10 is a similar view of the other stretcher;

Figure 11 is a top plan view on an enlarged scale of the joint at the middle of the peak truss between the stretchers at each side thereof.

Figure 12 is an enlarged view in side elevation of one of the hinges;

Figure 13 is a side view with parts broken away and shown in section and other parts in dotted lines of the connection shown in Figure 11;

Figure 14 is a detailed perspective of a corner bringing out the manner in which each stanchion is braced;

Figure 15 is a detailed perspective showing the manner in which the stake removing tool is employed to withdraw a stake;

Figure 16 is a detailed perspective of one of the stakes; and

Figure 17 is a detailed perspective showing one hinge and U-shaped plate that cooperates therewith in exploded relation.

Referring now to the drawings wherein like reference characters denote corresponding parts, and first more particularly to Figures 1 and 2, a chapel tent, such as is designed in accordance with the teachings of this invention, is therein illustrated and is shown as comprising essentially a roof structure which is identified in its entirety by the reference character R, and over which is positioned a canopy designated C.

This roof structure R is supported in its erected position by four stanchions 10, there being one stanchion located at each corner. In addition to the canopy C one or more of the side walls may be covered by a fabric wall. As shown in Figure 1 two of the wall spaces are covered by the walls W and W1, this being a common practice in the use of chapel tents, and these walls are provided on the proper sides to protect the occupants against the wind coming from that direction. Obviously, these walls could be entirely eliminated, or may be applied to all four of the wall spaces.

The roof structure is made up of certain truss elements which are detachably joined together and each of which is adapted to be folded into a compact formation. These elements will now be described.

Referring more particularly to Figures 3, 4, and 5, an end arch truss is therein depicted and is referred to in its entirety by the reference character A. The truss A comprises two sections 11 and 12 which are substantial duplicates. Hence, the construction of only one of these sections will be described in detail for the purposes of this specification.

Each of these sections 11 and 12 is shown as comprising a bottom rod 13 which has connected thereto at one end an angle iron 14 (see Figure 6), the connection being effected in any preferred manner, such as by welding.

The angle between the angle iron 14 and rod 13 is somewhat greater than 90 degrees, so that with the angle iron assuming a vertical position, the bottom rod 13 will be inclined with respect to the horizontal as shown in the drawings.

A top rod 15 has one end connected to the angle iron 14 in any preferred manner, such as by welding, and the other end of the top bar 15 is curved to provide a bent portion 16 and a de-

In erected position this roof structure R comprises two of the arch trusses A, two of the side trusses S, and the peak truss P, together with the stretchers 44 and 47.

Each of the trusses A comprises two sections which may be folded together when the roof is disassembled. This is also true of each of the other trusses. The two sections of each truss are joined together by one of the hinges H, and there is a U-shaped plate 27 at every joint where trusses meet or the stretchers are connected thereto.

Referring now more particularly to Figure 14, it will be noted that the upper end of each stanchion 10 is braced by the diagonal braces 48 and 49. The lower end of each brace 48 and 49 is pivotally and permanently secured to the stanchion 10 by the pivotal connections shown at 50 and 51, respectively.

The upper end of the brace 48 is adapted to be detachably secured to the bottom rod 39 of one of the side trusses by a joint comprising a recess 52 formed in the end of the brace 48. This recess 52 receives a pin 53 carried by the bar 39 and a detent 54 is pivotally mounted on this bar 39 and is adapted to be swung in position, preventing withdrawal of the brace from the pin 53. The same type of detachable connection is employed between the free end of the brace 49 and one of the bottom bars 13 of the arch truss A.

With the braces 48 and 49 in effective position, the stanchion 10 can not be swung on its pivot 29. However, with the detachable connections of the braces 48 and 49 broken, these stanchions 10 may be folded up into the position shown in Figure 4.

Referring now more particularly to Figures 15 and 16, the lower end of each stanchion 10 is shown as carrying a foot 55 in the form of a flat plate and each of these feet 55 is provided with an oval opening 56.

A stake is shown at 57 in Figure 16 and this stake has a point at 58 which is to be driven into the ground and a driving end at 59. Spaced from the driving end 59 is a flat portion 60, for a purpose later to be described.

The stake 57 has a plurality of openings 61 formed at spaced intervals therein. The stake 57 also carries two pairs of webs 62 in spaced relation, with the webs of each pair being substantially diametrically opposed.

Referring again for the moment more particularly to Figure 15, a stake tool is designated at 63 and is formed at one end with a wrench 64. The other end carries a bead 65 which prevents withdrawal of a ring 66 that is slidable along the rod which makes up the main body of the tool 63. A hook 67 is pivotally secured to the ring 66 by a loop 68. A pin which is adapted to pass through any of the openings 61 in the stake is shown at 69.

In erecting the chapel tent of this invention in position the roof structure R is first assembled on the ground with the stanchions 10 in the folded position depicted in Figure 4.

The canopy C is then applied thereover and the roof is raised, it generally requiring two men to perform this operation. As the roof is raised the stanchions 10 swing out of into their vertical upright positions about the pivots 29, and after this vertical position has been assumed the feet 55 will rest on the ground.

A stake 57 is now positioned in a recess 55 with the webs 62 assuming a position so that they may be driven through the oval recess. The stake is driven a required distance into the ground, after which the tool 63 is availed of, so that the wrench 64 engages the flat 60 of the stake, and the stake is turned substantially 90 degrees. In this position the openings 61 are transverse of the oval shaped recess 55. One of the pins 69 is now inserted through the opening 61 which is closest to the plate 55 and thereby prevents the foot moving upwardly and securely anchoring it in said position. This operation is repeated for each of the four stanchions.

It is evident that as each stake 57 is driven the web 62 will form channels in the ground. However, after rotation through 90 degrees there will be no channel openings onto the web and improved anchorage effects are provided.

When one of these chapel tents is to be dismantled each of the stakes 57 is first pulled by use of the tool 63. In this operation the hook 67 is placed beneath the ends of the pin 69, as shown in Figure 15, and one end of the tool 63 engages the ground. The tool is now used as a lever to pull the stake, and as the stake is worked loose the tool 63 may be slid through the ring 66 to change the conditions of mechanical advantage and thus permit quick pulling of the stake.

After each stake is pulled the braces 48 and 49 at the top of each stanchion are disconnected from their respective trusses. Each of the stanchions 10 may now be swung up into the position of Figure 4, which action will take place as the roof and canopy are lowered to the ground.

The canopy C is now removed, after which the several truss sections are disassembled. This may be accomplished as follows:

The stretcher 44 is removed by disconnecting the notch 45 from the pin 46 at the peak end and raising the U-shaped plate 27 from the other end so that the bolt 28 comes out of the recess 26 through the slot 25. The stretcher 44 is also removed in the same manner by withdrawing the U-shaped plates 27 from the hinges which they encompass.

The central peak truss P may now be broken loose from the arch trusses A at each end by the same type of operation and as there is no longer anything restraining the hinge connection at the mid point thereof, it may be folded into its compact formation. Each of the side trusses S is then withdrawn from the anchoring plate 21 at each end thereof in exactly the same manner. This frees each of the side trusses S, whereupon it may be folded together as shown in Figure 3. The arch trusses A will also be freed and the sections thereof folded together as shown in Figure 5.

All of the various strut elements making up the roof may now be stored together in a compact manner until their use is again required.

In assembling the roof R an operation which is substantially the reverse of that above described will be carried out.

While a preferred specific embodiment of the invention is hereinbefore set forth, it is to be clearly understood that the invention is not to be limited to the exact constructions and devices illustrated and described, because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

I claim:

1. In a sectional chapel tent, the combination of a sectional truss including two sections connected by a hinge joint, including a pair of leaves, a second truss element having a U-shaped plate

pending leg 17 which is joined to the corresponding end of the bottom rod 13.

A cross strut is shown at 18 as connecting the mid points of the rods 13 and 15. One diagonal brace 19 extends from the bend 16 to the lower end of the strut 18, while another diagonal brace 20 extends from the top of the strut 18 to the lower end of the angle bar 14 and the free end of the rod 13. The connections between the several struts and braces may be accomplished in any preferred manner, such as by welding.

Extending across the bend 16, at an angle with respect to the vertical, is an anchoring member 21 which is employed for a purpose to be later described. This anchoring member takes the form of a narrow plate which extends inwardly from one face of the section 11.

All of the structure above described in connection with section 11 is duplicated in section 12. Moreover, each of the angle bars 14 at the inner or peak end of the sections has secured thereto one leaf of a hinge which is designated generally H.

This hinge H comprises leaves 22 and 23 (see Figures 6 and 17) that are connected by a pintle 24 in a well known manner. That portion of the leaf 22 adjacent the pintle is secured to the angle bar 14 of the section 11 as by welding, and the corresponding portion of the leaf 22 is secured to the angle bar 14 of the section 12 as by welding. Thus, the sections 11 and 12 are hingedly connected together.

At this point it is deemed well to describe in detail certain construction of one of the hinges H. These hinges H are employed at various places throughout the roof structure R, and one of such hinges is shown in Figures 12 and 17.

Each of the leaves 22 and 23 is formed with a slot 25 which extends inwardly from the free edge of the plate and which is defined by diverging sides. This slot 25 communicates with a curved recess 26 formed at a point remote from the free edge.

When the leaves 22 and 23 are in meeting engagement the slots 25 and recesses 26 align. In order to hold the leaves and the hinge in this condition a U-shaped plate 27 is employed. This plate 27 has sides which are adapted to snugly embrace the leaves 22 and 23, and extending between these sides is a bolt 28 which is passed through the slot 25 so that it will rest in the recess 26. This bolt, in effect, locks the plate 27 in position so as to prevent its withdrawal from the position in which it holds the leaves 22 and 23 in engagement.

These hinges and the U-shaped plate 27 are used at various places throughout the structure as will become apparent.

It will be noted that the leg 17 is continued down a short distance beyond the free end of the rod 13 and this end carries an ear that is designed to constitute one element of a pivotal connection shown at 29.

A stanchion 30 has an upper end formed with a complemental element of the pivotal connection 29 and is joined to this section 11 by this connection 29. This stanchion 30 is adapted to be swung up into the position shown in Figure 4.

The stanchion 30 is duplicated at the free end of the section 12 and also for the arch truss at the opposite end of the roof structure, there being two of these arch trusses A as shown in Figure 2.

Referring to the latter figure a central peak truss is referred to in its entirety by the reference character P. This truss P comprises two sections

31 and 32, which are of identical construction and which are joined together at their meeting ends by one of the hinges H.

Each of these sections 31 and 32 includes a bottom bar 33, top bar 34, a U-shaped plate 27 at the free end which joins the top and bottom bars, an angle bar 14 which joins the top and bottom bars 33 and 34 at the point where the hinge is connected thereto, and diagonal braces 35 and 36.

As shown in Figure 6 the U-shaped plate 27 at the free end of the section 31 encompasses the leaves 22 and 23 of the hinge H at the central point of the arch truss A, and thus prevents any relative hinging movement between the sections 11 and 12, thereby imparting rigidity to the arch truss A at that end of the roof structure.

In exactly the same manner the free end of the section 32 carries a U-shaped plate 27 which cooperates with the hinge H thereat to hold the sections 11 and 12 of the arch truss A at that end against relative movement.

A side truss is shown in Figures 7 and 8 and designated generally at S. There are two of these side trusses S, one being located at each side of the roof structure R. Each side structure S comprises sections 37 and 38 which are hingedly connected by one of the hinges H.

Each of the sections 37 and 38 comprises a bottom bar 39, top bar 40, a U-shaped plate 27 at its free end and angle bar 14 at the end, which is joined to the hinge H, a cross strut 41 and diagonal braces 42 and 43.

This construction is exactly duplicated in the section 38. It will be noted that in the erected position the U-shaped plate 27 at the free end of each section 37 and 38 cooperates with the anchoring plate 21 thereat to establish the connection. Each of these anchoring plates 21 is formed with a slot 25 and recess 26 which receives the bolt 28 carried by the U-shaped plate 27.

Figure 8 shows one of the side trusses S in partly folded position and illustrates how the hinge joint opens to permit the sections to be folded together.

Referring now more particularly to Figure 9 a stretcher is shown at 44 and takes the form of a rod which is designed to assume the pitch of the arch trusses at each end.

The upper end of the rod 44 is formed with a notch 45 which is designed to receive a pin 46 (see Figure 13) which is carried by an extension at the upper end of one of the angle bars 14 on one of the peak truss sections 31 and 32. The other end of the stretcher 44 carries one of the U-shaped plates 27 which cooperates with the hinge H at the mid point of one of the side trusses S in a manner heretofore described.

Thus, with the stretcher 44 in position the side truss S is rendered rigid as the sections 37 and 38 can not hinge with respect to one another.

Another stretcher is shown at 47 in Figure 10. Each of the stretchers 44 and 47 carries one of the U-shaped plates 27. The U-shaped plate 27 at the upper end cooperates with the hinge H at the central point of the peak truss P, while the U-shaped plate 27 at the lower end cooperates with the hinge H of one of the side trusses S in the manner heretofore described. Thus, with the stretcher 47 in position both the peak truss P and the other of the side trusses S are maintained rigid.

At this point it is deemed advisable to summarize the construction of the roof R and indicate the manner in which it may be collapsed.

snugly encompassing said leaves, and means for establishing an interlock between said U-shaped plate and said leaves.

2. In a sectional chapel tent, the combination of a sectional truss including two sections connected by a hinge joint including a pair of leaves, each of said leaves being formed with a recess and a slot communicating with said recess and the edge of said leaf, the recess and slot in one leaf aligning with the recess and slot in the other leaf when the sections of said truss are in an open position, a second truss, and a U-shaped plate on the end of said second truss encompassing said leaves, and a bolt carried by said U-shaped plate received in said slots and recesses.

3. In a chapel tent having four corner stanchions, means for anchoring the foot of each stanchion to the ground, and a roof structure supported from the upper end of said stanchions, said roof structure comprising a pair of spaced end arch trusses each of the two part sectional construction, a central peak truss of a two part sectional construction, a pair of spaced side trusses each of a two part sectional construction, the sectional parts of each truss being connected by a hinge joint, and U-shaped plates on the ends of certain truss elements which are connected to other truss elements at the hinge joint thereof for closing said hinge joint and preventing hinging action.

4. In a chapel tent construction of the character described, the combination of a peak truss having a central hinge joint defined by a pair of hinge leaves that project from one side thereof and a pin on the other side, a stretcher having a notch receiving said pin, and a second stretcher carrying a U-shaped plate receiving the leaves of said hinge joint.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
177,843	Hunt	May 23, 1876
1,475,857	Neuhaus	Nov. 27, 1923
1,550,276	Nilson	Aug. 18, 1925
1,958,296	Crow	May 8, 1934
2,007,295	Coble	July 9, 1935
2,151,908	Gottlieb	Mar. 28, 1939
2,313,174	Shock	Mar. 9, 1943