

Aug. 7, 1956

B. L. DENN

2,757,677

TENT FRAME

Filed July 22, 1952

2 Sheets-Sheet 1

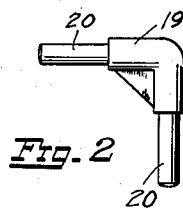
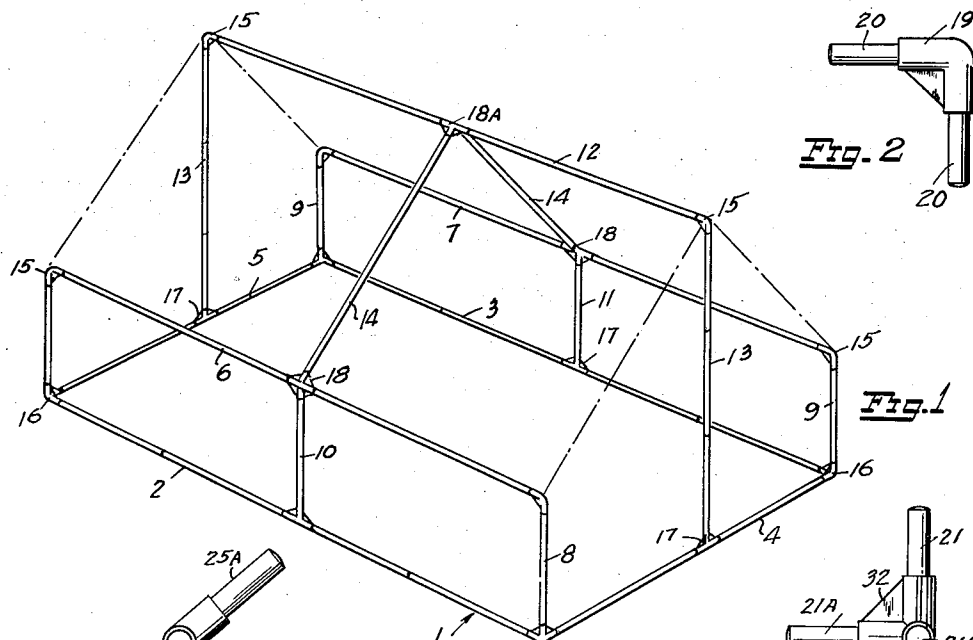


Fig. 2

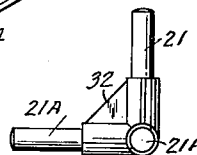


Fig. 3

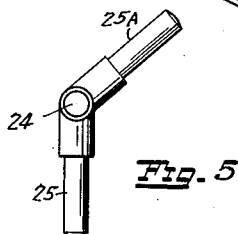


Fig. 5

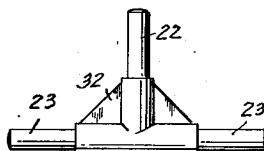


Fig. 4

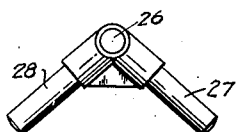


Fig. 6

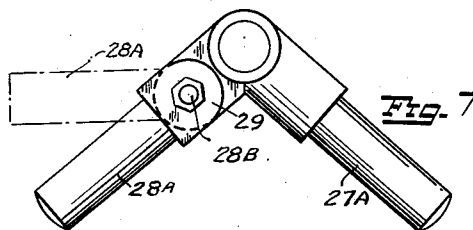


Fig. 7

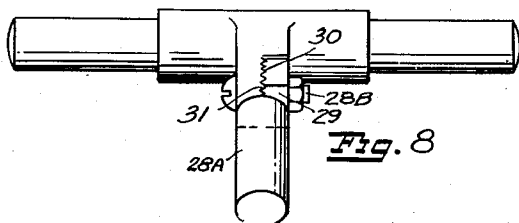


Fig. 8

BERNARD L. DENN
INVENTOR.

BY *James L. Livan*
ATT'Y

Aug. 7, 1956

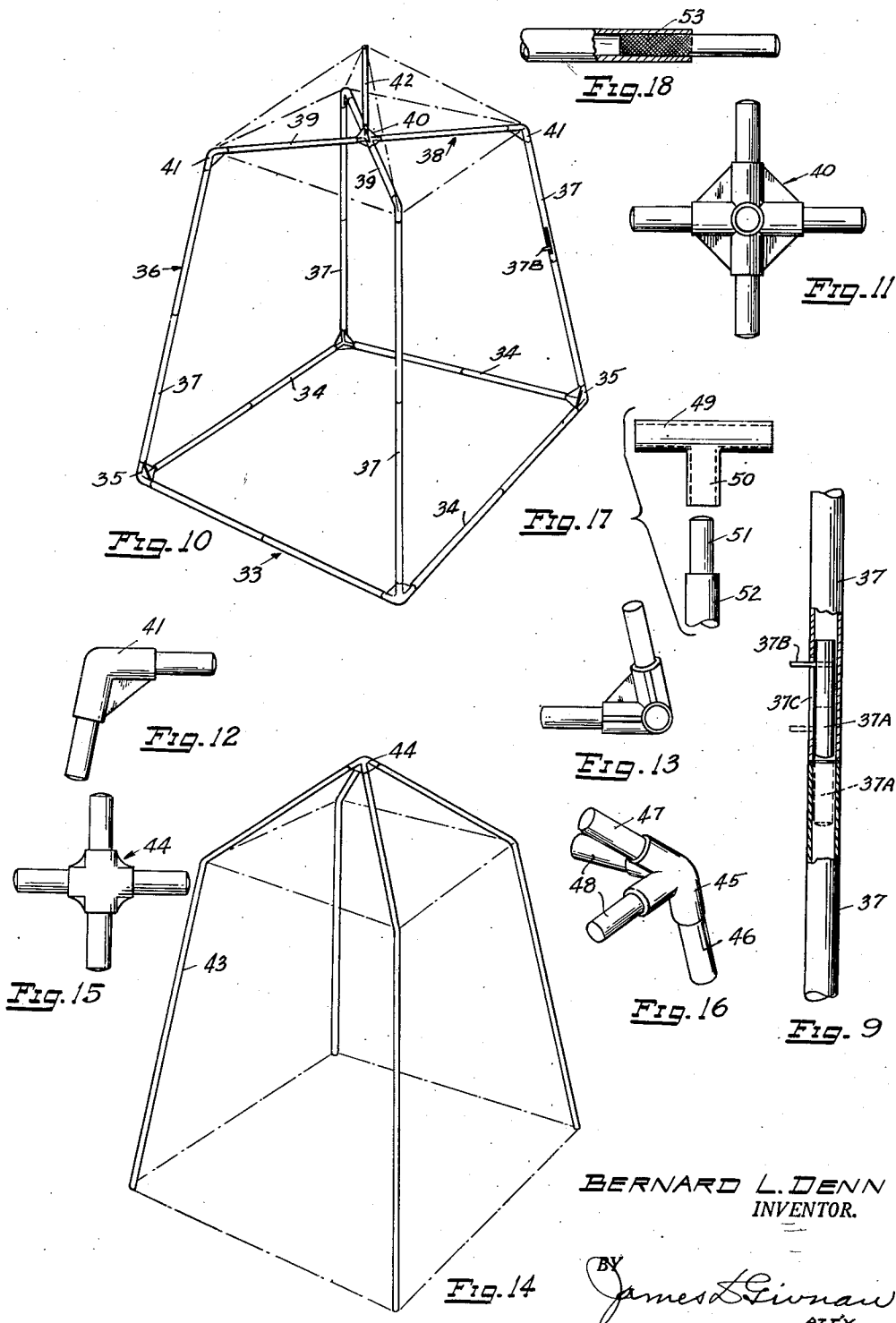
B. L. DENN

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TENT FRAME

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2 Sheets-Sheet 2



BERNARD L. DENN
INVENTOR.

BY *James L. Givnan*
ATTY

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2,757,677

TENT FRAME

Bernard L. Denn, Portland, Oreg.

Application July 22, 1952, Serial No. 300,190

1 Claim. (Cl. 135—3)

This invention relates to improvements in tent frames of the type shown and described in my United States Patent 2,488,809, dated November 22, 1949. As therein pointed out it is one of the objects of the invention to provide a frame of this character made of light weight tubing capable of being quickly and conveniently assembled or disassembled, and which when in disassembled form can be conveniently packed in a small bundle for storage or transportation. It is one of the principal objects of the present invention to provide a tent frame wherein its structural tubular elements are all of uniform length which eliminates the necessity of sorting out said elements when erecting the frame.

Another object is the provision of a maximum number of identical fittings for uniting said tubular elements to also minimize sorting out. A still further object of the invention is the provision of an adjustable fitting which will readily accommodate itself to various angles of said tubular elements.

These and other objects will appear as my invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawings and finally pointed out in the appended claim.

In the drawings:

Figure 1 is a perspective view of a tent frame made and assembled in accordance with my invention.

Figure 2 is a side elevation of a typical fitting for the corner hip joints and the ridge pole of the frame.

Figure 3 is a side elevation of a typical fitting for the bottom four corners of the frame.

Figure 4 is a side elevation of a typical fitting for attaching the bottom ends of the center uprights and the bottom ends of the king posts to the side and end members, respectively, of the base frame.

Figure 5 is a side elevation of one of a pair of fittings for attaching center uprights to the eave poles and the eave poles to tubular elements which are connected to the ridge pole by the type of fitting illustrated in end elevation in Figure 6.

Figure 7 is an end view of a modified form of fitting.

Figure 8 is a front view of Figure 7.

Figure 9 is an enlarged fragmentary detail view of a locking mechanism for interconnecting certain of the tubes.

Figure 10 is a perspective view of an "umbrella" tent frame erected in accordance with the invention.

Figure 11 is a top plan view of a central fitting for the top of the umbrella tent frame.

Figure 12 is a side elevation of a typical top corner fitting and Figure 13 is a side elevation of a typical bottom corner fitting.

Figure 14 is a perspective view of a modified form of umbrella tent frame.

Figure 15 is a top plan view of a fitting for the apex of the form of frame shown in Figure 14.

Figure 16 is a perspective view of a modified form of fitting for the form of tent frame shown in Figure 14

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when it is desired to include eave poles in assembling said frame.

Figure 17 is a composite view, illustrating a further modified form of fitting adaptable for use in all forms of the tent frames.

Figure 18 is a fragmentary detail view of one form of means for uniting a dowel with the end of a tubular member.

Referring now more particularly to the drawings:

The tent frame illustrated in Figure 1 includes an elongated rectangular base, generally indicated at 1, made of parallel tubular side members 2 and 3 and tubular end members 4 and 5. Tubular eave poles 6 and 7 are attached in vertical spaced relation to the side members 2 and 3 by corner posts 8 and 9, respectively, and by center posts 10 and 11, respectively. A ridge pole 12 is attached at its ends to king posts 13 which are attached to the end portions 4 and 5. The center of the ridge pole 12 is attached to the eave poles 6 and 7 by rafter posts 14.

The ends of the ridge pole are connected to said king posts by fittings 15 which are identical with those used to attach the ends of the eave poles to the tops of said corner posts. The ends of the side members and the ends of the end members are united by fittings 16 to which the corner posts are also attached.

The bottom ends of the side posts are secured to the side members 2 and 3 and the bottom of the king posts are attached to the end members 4 and 5 by identical fittings indicated at 17.

The bottom ends of the rafter poles 14 are attached to the eave poles by identical fittings indicated at 18 and at their upper ends to the ridge pole by a single fitting 18A.

The fittings 15, 16, 17, and 18 are best illustrated, respectively, in Figures 2, 3, 4, and 5, and the fitting 18A in Figure 6. The fitting 15 comprises a cast or molded elbow portion 19 formed integral with outwardly extending studs or dowels 20 of an outside diameter equal to the inside diameter of the tubular sections to which it is applied to insure a tight coupling by a forced fit. The fitting 16 is similarly constructed and is formed with a vertical dowel 21 and two horizontal dowels 21A at right angles to each other in a horizontal plane. The fitting 17 is cast in inverted T formation with a vertical dowel 22 and horizontally aligned dowels 23. The fitting 18 is formed with dowels 24 aligned horizontally and diverging dowels 25 and 25A. The form of fitting shown in Figure 6 comprises horizontally disposed dowels 26 and diverging dowels 27 and 28 and is used for uniting the upper ends of the rafter poles 14 with the ridge pole 12. The form of fitting shown in Figure 7 is a modification of the fitting 18A and includes a fixed dowel 27A and a movable dowel 28A which is rendered adjustable through its pivotal mounting by means of a bolt 28B extending through an enlarged head portion 29 whose underside is formed with

radiating serrations 30 cooperating with matching serrations 31 formed in a correspondingly flattened portion of the fitting. By this arrangement this modified form of fitting may be conveniently locked in any adjusted position to accommodate tubes on various angles presented to it. All these various forms of fittings are preferably provided with reinforced webs or gussets 32, if desired.

The umbrella tent illustrated in Figure 10 and also assembled in accordance with the invention comprises a square base frame generally indicated at 33 made up of a plurality of tubular sections 34 of equal length connected at their outer ends to corner fittings 35 which are shown in detail in Figure 13. The inner ends of the tubes are interconnected by the type of dowel shown in Figure 18. The corner posts generally indicated at 36 are made up of tubular sections 37 of the same length as the sections 34 of the base frame. The top frame generally indicated at 38 is made up of four tubular elements 39 also equal in

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length to that of the sections 34 and 37 and are interconnected at their inner ends by the central fitting 40 illustrated in Figure 11 and connected at their outer ends to the corner posts by means of the fittings 41 shown in detail in Figure 12. A mast 42 is also attached to the fitting 40. One of the upper sections 37 of one of the corner posts is provided with a sliding dowel 37A operable by a handle 37B extending through a vertical slot 37C formed in the post for forcing the bottom portion of the dowel into the aligned end of the adjacent tube as shown in dotted lines in Figure 9.

In this form of the invention eave poles are dispensed with and the umbrella tent, shown in broken lines, is supported at its top corners by the fittings 41, at its apex by the top of the mast 42, and its bottom edges may be attached to the bottom frame member 33 by any approved means or it may be staked to the ground in the usual manner. If desired the bottom frame along with the bottom corner fittings 35 may be dispensed with and the bottom ends of the corner posts 37 may be driven into the ground for stability.

In the further modified form of umbrella tent frame shown in Figure 14, the corner posts 43 are turned inwardly and upwardly to converge into attachment to a single fitting 44. The bottom ends of the corner posts may also be united with a bottom frame (not shown) as are the legs 36 in Figure 10 or they may be driven into the ground as aforesaid. If it is desired to include eave poles in this form of frame, a corner fitting 45 as illustrated in Figure 16 may be utilized, but in this case, the corner posts would be separate from their converging top portions and attached to the dowel 46 extending downwardly from the fitting, and the separate upwardly converging portions would engage with the upwardly and inwardly extending dowel 47, and the eave poles would engage with the horizontal dowels 48.

The modified form of fitting shown in Figure 17 is of T formation and comprises two or more hollow tubular intersecting portions 49 and 50 adapted to receive by a forced fit a dowel 51 secured to the ends of a typical tubular member 52 in the manner illustrated in Figure 18 wherein about one-half of the dowel is knurled or serrated as at 53 for permanent and secure engagement with the interior of the tube upon being hammered or forced thereto.

While I have shown particular forms of embodiment of my invention, I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention. Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

A tent frame comprising in combination a base frame having sides and ends made up of interconnected tubular

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sections, identical base corner fittings interconnecting the corner sections of the base frame, said base corner fittings consisting of reinforced cast elbow portions having horizontally disposed, rightangularly related integral studs of an external diameter equal to the internal diameter of the tubular sections, said studs being frictionally fitted with the outer ends of tubular sections of the ends and sides, said elbow portions also having integral upstanding, vertical studs, tubular vertical corner posts of an internal diameter equal to the external diameter of the vertical studs and having their lower ends frictionally socketed on the vertical studs, said ends of the base frame including identical intermediate end fittings joining the tubular sections of the ends together, tubular king posts frictionally socketed on said latter fitting, side fittings identical to the intermediate end fittings interconnecting the tubular sections of the sides intermediate their ends, said side fittings including upstanding integral studs, vertical side posts frictionally socketed on the upstanding studs of the side fittings, said corner posts and side posts terminating at their upper ends in the same horizontal plane, right angular reinforced integral studs frictionally socketed in the upper ends of the corner posts, tubular eave pole sections frictionally fitted at their outer ends on the studs of the upper corner fittings, identical connectors connecting the side posts and inner ends of the sections of the eave poles, rafter posts secured at their lower ends to said connectors and an identical connector interconnecting the upper ends of the rafter posts, tubular ridge pole forming sections removably secured at their outer ends to the upper ends of said king posts by right angular reinforced integral studs and secured intermediate such ends to the connector joining the upper ends of the rafter posts, said connectors each consisting of a reinforced body portion having four right angularly spaced dowels, two of said dowels being horizontally aligned and the other two being in vertical offset relation and one of the latter dowels being rotatably attached to the body portion for movement about an axis parallel with the long axes of the horizontally aligned dowels and means for locking said latter dowel in selected positions.

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