Nov. 27, 1956 J. G. CALL 2,771,896

COLLAPSIBLE TENT FRAMEWORK

Filed April 19, 1951 3 Sheets-Sheet 1

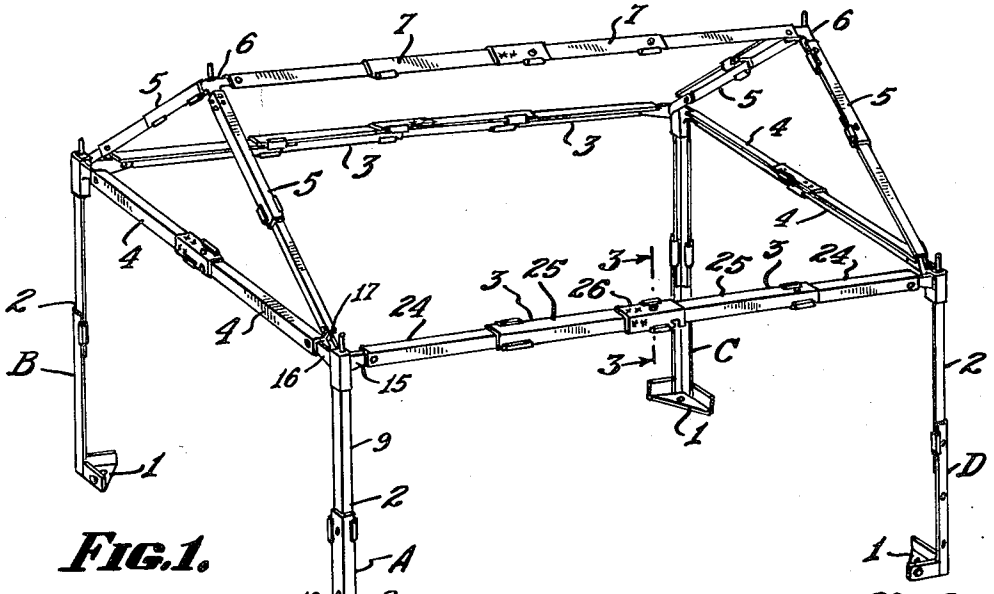


FIG. 1.

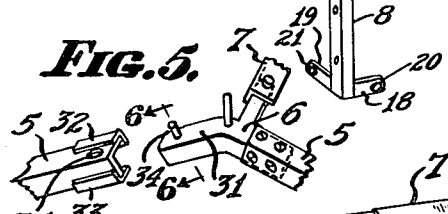


FIG. 5.

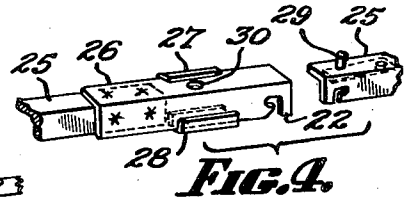


FIG. 4.

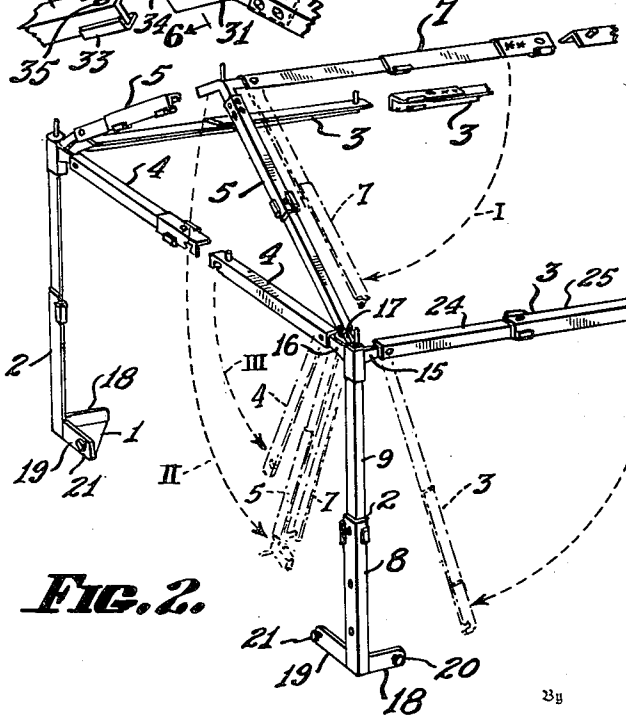


FIG. 2.

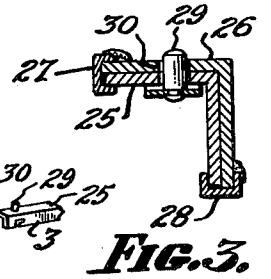


FIG. 3.

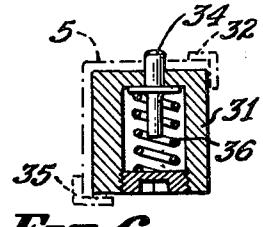


FIG. 6.

Inventor
JOHN G. CALL,
By Allen & Allen
Attorneys.

Nov. 27, 1956 J. G. CALL 2,771,896

COLLAPSIBLE TENT FRAMEWORK

Filed April 19, 1951 3 Sheets-Sheet 2

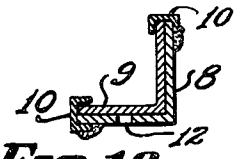


FIG. 12.

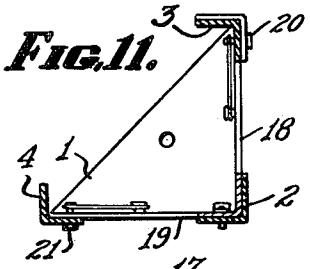


FIG. 11.

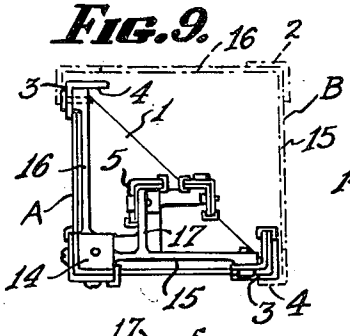


FIG. 9.

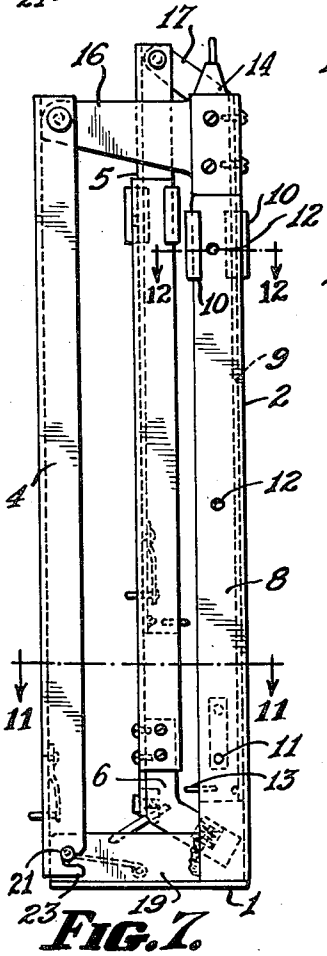


FIG. 7.

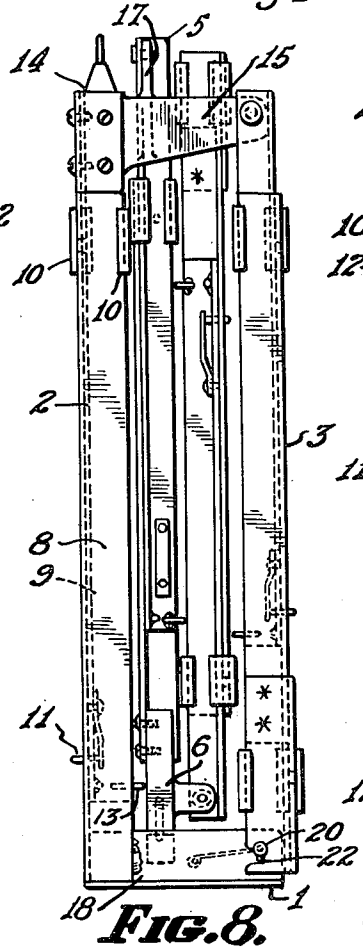


FIG. 8.

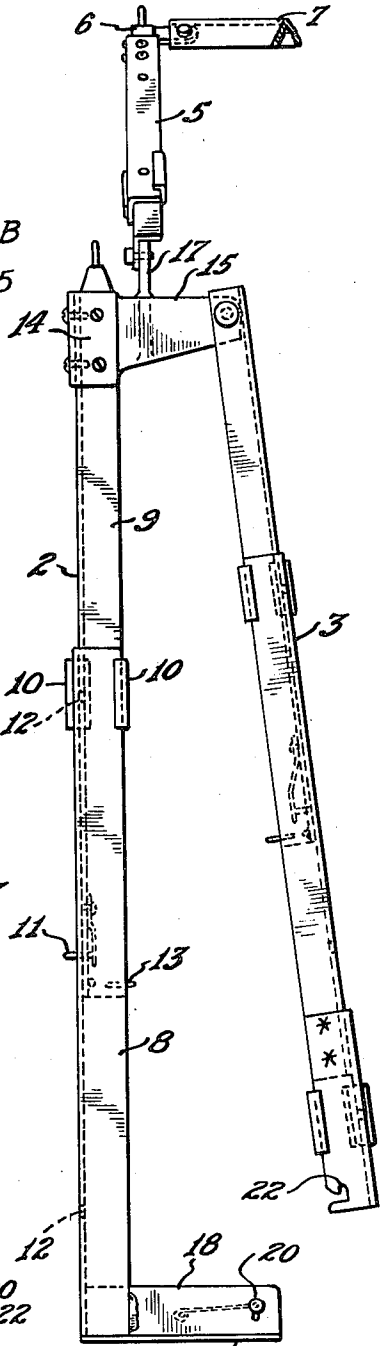


FIG. 10.

Inventor
JOHN G. CALL,
By Allen & Allen
Attorneys.

Nov. 27, 1956 J. G. CALL 2,771,896

COLLAPSIBLE TENT FRAMEWORK

Filed April 19, 1951 3 Sheets-Sheet 3

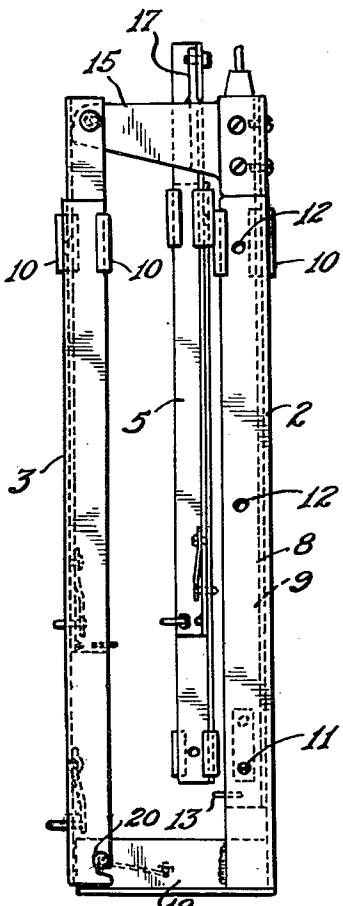


FIG. 13.

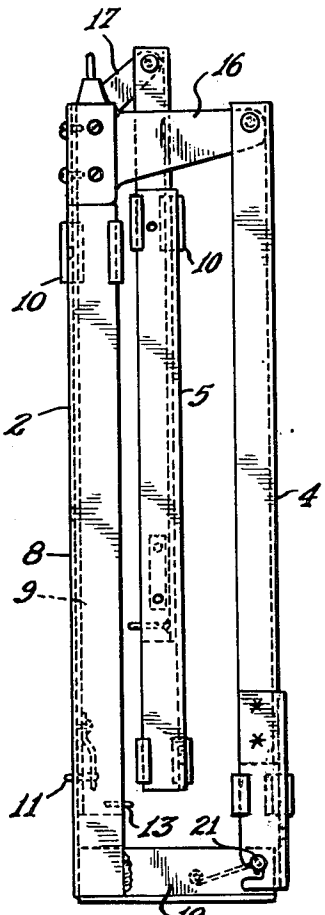


FIG. 14.

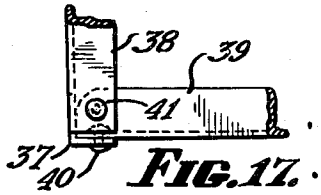


FIG. 17.

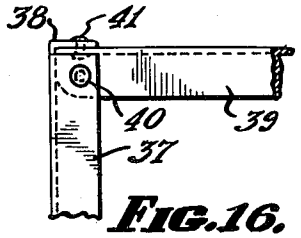


FIG. 16.

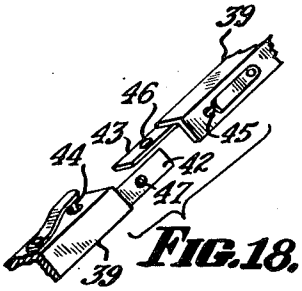


FIG. 18.

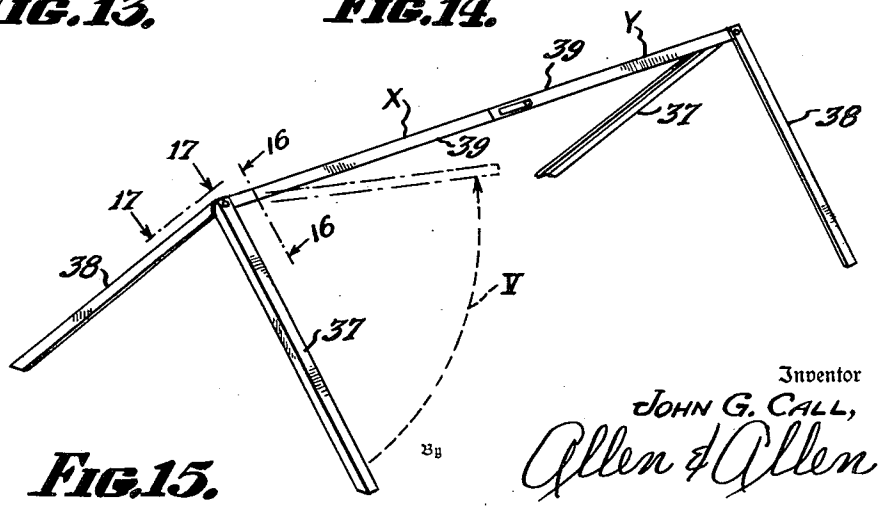


FIG. 15.

Inventor
JOHN G. CALL,
Allen & Allen
Attorneys.

United States Patent Office 2,771,896 Patented Nov. 27, 1956

2,771,896

COLLAPSIBLE TENT FRAMEWORK

John G. Call, Pikeville, Ky., assignor to The Telatent Company, Inc., Pikeville, Ky., a corporation of Kentucky

Application April 19, 1951, Serial No. 221,755

4 Claims. (Cl. 135—4)

My invention has to do with tent framework and relates particularly to the provision of a collapsible and adjustable tent framework which may be collapsed and folded into compact bundles or units which are adapted to be associated together to form compact carrying cases by means of which the structure may be conveniently transported from place to place.

In my copending application Serial No. 194,452, filed November 7, 1950 and entitled Tent Framework, now Patent No. 2,723,673, dated November 15, 1955, I have taught a collapsible and adjustable tent framework made up of a plurality of corner assemblies or units which when set up and coupled together form the supporting structure or framework over which the canvas tent cover is placed. Each of the corner post units includes a generally triangular box-like frame formed of right angle stock.

In an assembled tent structure formed from the units just described, the box-like frame members do not constitute parts of the tent framework as such. Consequently, I have now developed a tent framework in which the separate box-like frames are eliminated and the structural parts of the framework, such as the members which define the eaves of the tent, themselves form the parts of the box-like frame when collapsed to the elimination of the channel bars referred to in describing the structures of my copending application. Thus I now provide corner units which comprise a lesser number of parts and hence are of less bulk and weight.

It is a principal object of my invention to provide a novel tent framework of light weight construction which may be collapsed and folded into a plurality of units which when joined together form of themselves a handy container or case for the transportation of the entire structure to a desired tent site.

Another object of my invention is the provision of a framework for supporting a tent cover, formed of angle stock and including means for both lateral and vertical expansion of the frame member from compact, collapsed bundles into a complete and rigid tent structure.

Yet another object of my invention is the provision of a collapsible tent structure the parts of which may be adjusted during erection to provide tent structures of varying sizes depending upon the needs of the user.

Still another object of my invention is the provision of a tent structure formed from a plurality of collapsible units, the frame members of the units when erected being adapted to be readily connected together to provide the completed framework. The tent structure of the instant invention is such that it may be completely assembled and erected by one person without tools or special equipment, the structure having no loose pins, loose pieces, and nothing to lose or misplace, it being necessary only to couple together the frame members of the several corner units.

These and other objects of my invention which will appear hereinafter or will be apparent to one skilled in the art upon reading these specifications, I attain by those structures and those arrangements of parts of which I shall now describe certain exemplary embodiments.

Reference is made to the accompanying drawings wherein:

Figure 1 is a perspective view illustrating a preferred embodiment of my invention, in erected and assembled condition,

Figure 2 is a partial perspective view of two tent framework units with parts separated and fragments of a third and a fourth framework unit, the manner in which one of the units collapses being illustrated in dotted lines,

Figure 3 is a sectional view taken along the line 3—3 of Figure 1,

Figure 4 is a detailed view of the locking means for maintaining the frame members in assembled relation,

Figure 5 is also a detailed view illustrating the manner in which a frame member is locked to a three-way joint, as at the ridge of the tent structure,

Figure 6 is a sectional view taken along the line 6—6 of Figure 5,

Figure 7 is a front elevational view of one of the corner units in collapsed condition, certain of the frame members being locked to the base plate to form a triangular box-like frame,

Figure 8 is a side elevation of the structure illustrated in Figure 7,

Figure 9 is a top plan view of the structure of Figure 8,

Figure 10 is a side elevation of the corner unit of Figure 8 in partially extended condition,

Figure 11 is a sectional view, with parts removed, taken along line 11—11 of Figure 7,

Figure 12 is a sectional view taken along the line 12—12 of Figure 7,

Figure 13 is a side elevational view of a complementary corner unit for use in combination with the corner unit illustrated in Figure 7,

Figure 14 is a front elevational view of the corner unit of Figure 13,

Figure 15 is a perspective view of a modified tent framework particularly adapted for pup tent use,

Figure 16 is a detailed view taken along the line 16—16 of Figure 15,

Figure 17 is a detailed view taken along the line 17—17 of Figure 15, and

Figure 18 is a detailed perspective view of an alternative locking means suitable for joining angular frame members together.

In the embodiment of my invention illustrated in Figures 1–14, my improved tent framework is readily erected by setting up and coupling together four corner assemblies or units indicated as A, B, C and D in Figure 1. Units A and C are identical excepting as will be pointed out hereinafter and units B and D are identical in all respects. Furthermore, units A and C, and B and D are basically the same excepting that units A and C carry a three-way joint or fitting at the end of their rafter members with ridge-pole forming members connected to the joints.

The units each comprise frame members formed of right angle stock telescopically fitted together and pivoted at certain joints so that each unit is collapsible and foldable into a compact bundle, for purpose of transportation. While the telescoping members illustrated are formed of angle stock, it will be readily apparent that tubular telescoping members, such as those disclosed in my said copending application, may be employed to good advantage, it being my purpose here to illustrate how angle stock may be successfully utilized in telescoping relationship to provide a collapsible tent framework.

Referring now to Figures 1 and 2, each of the four corner assemblies or units includes a triangular base plate 1. Each of these plates 1 has fixed thereto, as will be later described in detail, other appurtenances in-

cluding a vertically disposed telescoping corner post or pole **2**. Pivotally attached by a suitable joint to the upper end of each of the four corner posts are three other telescoping members **3**, **4** and **5**. Two of these members **3** and **4** are mounted to be horizontally disposed at right angles to each other while the third member **5** is arranged to be inclined with respect to the horizontal members. In addition, the corner units A and C have joints or fittings **6** on the free ends of the inclined members **5**, the joints having ridge-pole forming members **7** extending therefrom at right angles to the members **5** and parallel to the members **3**.

As will now be apparent, the joining together of the four units A, B, C and D, results in the tent frame structure of Figure 1. The inclined members **5** constitute the rafters of the roof structure; the horizontal members **3** define what may be termed the eaves of the roof; the horizontal members **4** serve as joists to rigidify the structure and to connect together the corner units A and B, and C and D; the members **7**, as already indicated, define the ridge-pole of the structure; and the four corner posts serve to support the entire structure.

As will be readily understood, the roof and side walls of the tent structure will be provided with a cover of canvas or the like (not shown) which cover is formed to fit over the framework and in itself forms no part of the present invention.

Referring now to Figures 7 through 12, the corner posts **2** of units A and C, which units include the joints **6** and ridge forming members **7**, each comprises a lower section **8**, fixed to the base plate **1**, and an upper section **9** slidably fitted within the lower section. As can be clearly seen in Figure 12, the upper section **9** is slidably fitted within the lower section **8** by means of the U-shaped channel members **10** secured to the lower section **8** in the manner illustrated.

The channel members **10** are of a length sufficient to prevent undesirable side-wise movement of the telescoping members relative to each other and yet they do not inhibit axial movement of the members. While I have illustrated a pair of channel members positioned near the upper end of the lower section **8**, it will be understood that additional pairs of channel members may be employed, if so desired, or the proportionate lengths of a single pair of channel members increased or decreased for posts of various sizes.

As will be seen in Figures 7, 8 and 10, the upper section **9** of the corner post includes a spring pressed latch pin **11**, which pin, as the two sections are drawn to their extended relation, snaps into one of the perforations **12** in the lower section **8** to lock and retain the sections in various extended positions, thereby enabling the user to vary the overall height of the corner posts as determined by the number and spacing of the perforations **12** in the lower section **8**.

The upper section **9** carries near its lower end a stop **13** in the form of a pin which will engage beneath the lowermost end of one of the channel members **10** when the sections **8** and **9** are fully extended. By means of this arrangement, the sections cannot be extended beyond their operative limits to become accidentally disengaged.

The channel members **10**, the latch pin **11**, the locking perforations **12**, and the stop pin **13**, as described above, comprise a typical sliding and locking arrangement which may be employed with all other pairs of telescoping sections throughout the structure, and the others will not be described in detail herein.

The upper end of the corner post section **9** has fixed thereto a joint or fitting **14** having angularly disposed arms **15**, **16** and **17** to which are pivoted the members **3**, **4** and **5**, respectively. The arms **15** and **16** are substantially horizontally disposed and parallel adjacent side edges of the base plate **1**, being at right angles to each other. The arm **17** is parallel to but inwardly disposed

with respect to the arm **16** and inclined upwardly at substantially the angle of the rafters of the erected structure. If desired, the arm **17** may be secured to the arm **15** in the manner illustrated in Figures 9 and 10, the purpose being to space the arm **17** from the arm **16** a distance sufficient to permit clearance of the members **4** and **5** when the corner unit is collapsed.

The base plate **1** of each of the corner post units has vertically disposed side members **18** and **19** corresponding in length and position to the arms **15** and **16**. The side members **18** and **19** of the base plates have latch pins **20** and **21** respectively, adapted to receive the L-shaped notches **22** and **23** on the free ends of the members **3** and **4** respectively. The latch pins and the notches serve to detachably secure the ends of the members **3** and **4** to the base plate, and thus, when collapsed, define the generally triangular frame which forms a part of a carrying case.

The manner in which the corner unit A collapses is illustrated in dotted lines in Figure 2, the numbered arrows indicating the successive steps involved. Thus, the ridge member **7** is first pivoted in the manner indicated by the arrow *i* so that it lies parallel to and adjacent the member **5**. It will be understood that if the members comprise telescoping parts, the parts will be first telescoped together. Next, the rafter member **5** is pivoted downwardly about the arm **17** in the manner illustrated by arrow II. This movement carries the joint **6** and the member **7** along with the member **5**. Next the member **4** is pivoted about the arm **16**, as indicated by arrow III, and the member **3** is then pivoted about the arm **15** as indicated by the arrow IV.

From what has been described thus far, it will be apparent that the arrangement of the corner post units is such that the various frame members of each unit collapse into a compact bundle, the collapsed horizontal framework members and the corner posts together with the base defining a substantially triangularly shaped frame which may be joined with another such frame to form a square, box-like carrying case which may be readily transported from place to place. Two of the triangular frames so formed may be fitted together in the manner diagrammatically illustrated in Figure 9 for carrying purposes. As seen therein, a pair of the corner post units, such as the units A and B, are brought together in opposed relation and interconnected by means of the inturned flanges of the frame members **3** and **4**. It will be understood that the corner post units C and D will be interconnected in like manner; and one of the units of each pair will be slightly larger than the other to permit them to be interlocked in the manner illustrated.

In Figures 13 and 14 I have illustrated a second corner unit which is either the unit B or D, since these are identical in all respects. Since the units B and D are identical in their principal parts with units A and C excepting they do not include the joints **6** and ridge-pole members **7**, like parts have been given like reference numerals to simplify the description.

Reference is now made to Figures 3 and 4 for details of the manner in which the contacting members of units A and D are connected together in the erected structure, it being understood that units B and C will be connected together in like manner. The connections between the members **4** of the units A and B, and C and D will also be made in the same manner, as will be readily apparent from the drawings. In Figure 1 it will be noted that the telescoping members **3** of units A and D each comprise an inner section **24** and an outer section **25**. The outer section **25** of unit A carries a coupling member **26** riveted or otherwise secured thereto, the coupling member **26** also being formed of angle stock. As already indicated, one end of the coupling is secured to the member **25** of unit A with the opposite end extending freely therebeyond and adapted to receive the free end

of member 25 of corner unit D. Channel members 27 and 28 are provided on the coupling 26 to receive the end of member 25 of unit D. Member 25 of unit D carries a spring pin 29 which, when the member 25 of unit D engages the coupling and abuts against the end of member 25 of unit A, passes through opening 30 in the coupling to secure the two members 25 together.

The same type of coupling connects the members 4 of the various corner units, the coupling being carried on the members 4 of the units B and D and the spring pins on the members 4 of the units A and C.

In Figure 5 I have illustrated the joint 6 and the manner in which the member 5 of unit B or D is connected to it. The joint 6 has an arm 31 which is adapted to fit beneath the channel members 32 and 33 secured to member 5 of corner unit B or D. A spring pin 34 carried by the arm 31 engages in the opening 35 in the member 5 to lock the parts together. As will be seen in Figure 6, the arm 31 may be U-shaped and the spring pin 34 fitted into the U and controlled by means of a compression spring 36.

It will now be apparent that the corner units A and C are substantially identical excepting the ridge-pole member 7 of unit A carries a coupling, such as the coupling illustrated in Figure 4, whereas the ridge-pole member of unit C does not have a coupling but rather has a spring pin for engaging the opening in the coupling to lock the two ridge-pole members together.

In Figures 15 through 18 I have illustrated a modification of my invention particularly adapted for use as the framework of a pup tent. This modification is much simplified but nevertheless embodies the principle of collapsing the frame members into compact bundles, the members themselves defining size and shape of the bundle.

Referring to Figure 15, the pup tent framework comprises like units X and Y, each unit comprising frame members 37, 38 and 39. As will be most clearly seen in Figures 16 and 17, the member 37 is pivoted at 40 to the member 39 and the member 38 is pivoted to the member 39 at 41. Thus, when the unit X, for example, is collapsed, the member 37 will collapse along the member 39 in the manner illustrated by the arrow V in Figure 15. The member 38 will collapse in a like manner on the opposite side of member 39 thus forming a collapsed unit which is square in cross section. Unit Y will of course collapse in the same manner.

The units X and Y may be conveniently joined together by means of the arrangement illustrated in Figure 18 wherein the member 39 of unit X has a tongue 42 extending therefrom and the member 39 of unit Y has a complementary tongue 43 extending therefrom. The tongues are adapted to lie at right angles to each other and hence underlie adjacent sides of the angle bars 39. Spring pressed pins 44 and 45 are provided for engagement with the openings 46 and 47 to lock the parts together. Of course, if desired the coupling and channel bars illustrated in Figure 4 may be employed, or conversely the attachment means just described may be employed with the embodiment illustrated in Figures 1 to 14.

It will be understood that modifications may be made in my invention without departing from the spirit of it. Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A corner post unit for a collapsible tent framework comprising a base plate having an adjacent pair of angular related side edges, a corner post secured at one end to said base plate at the apex of said angularly related edges, a fitting on the opposite end of said corner post, said fitting having a pair of arms paralleling the said adjacent side edges of said base plate and an additional, angularly related arm intermediate said first mentioned pair of arms, frame members pivoted to said arms and

adapted to fold about said arms, the frame members pivoted to said first mentioned pair of arms being of a length to contact said base plate, and means for detachably connecting the ends of said last mentioned arms to said base plate to form with said corner post a rigid frame structure which constitutes a part at least of a carrying case for said tent frame, the frame member pivoted to said additional arm being adapted to be folded to lie within the confines of said rigid frame structure.

2. A collapsible tent framework comprising four collapsible corner units which when erected and connected together form said tent framework, each of said units comprising a corner post, a fitting on one end of said corner post, a plurality of frame members pivotally connected to said fitting, said frame members when erected defining the rafters, eaves and cross braces of said tent structure, and when collapsed, a pair at least of said frame members together with said corner post defining a box-like frame which forms a part at least of a carrying case for said tent structure, a pair of said corner units being identical in all respects and a second pair of said corner units including an additional fitting on the free end of one of said frame members, which member is a rafter forming member, and an additional ridge-pole forming frame member pivotally connected to said additional fitting, and coupling means for connecting together corresponding frame members of said units when said units are erected.

3. A corner post unit for a collapsible tent frame comprising a base having an adjacent pair of angularly related sides, a corner post secured at one end to said base at the apex of said angularly related sides, a pair of arms secured to the opposite end of said corner post extending parallel to the said adjacent sides of said base, and an additional arm secured to said corner post intermediate said first mentioned pair of arms, frame members pivoted to said arms and adapted to fold relative thereto, the frame members pivoted to said first mentioned pair of arms being of a length to contact said base, and means for detachably connecting the ends of said last mentioned frame members to the sides of said base to form with said corner post a rigid frame structure constituting a part at least of a carrying case for said tent frame, the frame member pivoted to said additional arm being adapted to be folded to lie within the confines of said rigid frame structure.

4. A corner post unit for a collapsible tent frame comprising a base having an adjacent pair of angularly related sides, a corner post secured at one end to said base at the apex of said angularly related sides, a pair of arms secured to the opposite end of said corner post, said arms extending outwardly from said corner post in parallelism to the sides of said base, frame members pivoted to said arms for pivoting movement relative to said arms from an extended position in which said frame members extend in prolongation of said arms to a collapsed position in which said frame members extend substantially parallel to said corner post, said frame members being of a length to contact said base when in the collapsed position, and means for detachably connecting the ends of said frame members to the sides of said base to form with the corner post a rigid box-like frame structure comprising a part at least of a carrying case for the tent frame.

References Cited in the file of this patent

UNITED STATES PATENTS

27,277	Dodge	Feb. 28, 1860
260,230	Parker	June 27, 1882
1,499,019	Kline	Jan. 24, 1924
1,538,311	Anticknap	May 19, 1925
2,151,908	Gottlieb	Mar. 28, 1939
2,265,479	Goodman	Dec. 9, 1941

FOREIGN PATENTS

308,894	Great Britain	Apr. 4, 1929