May 17, 1960 R. L. MARCHFIELD ET AL 2,936,771

COLLAPSIBLE TENT FRAME

Filed July 7, 1958

Fig. 1.

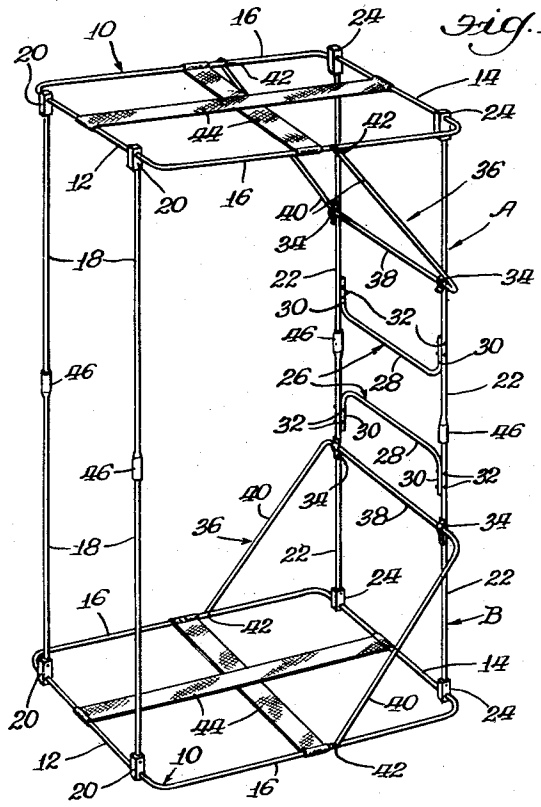


Fig. 3.

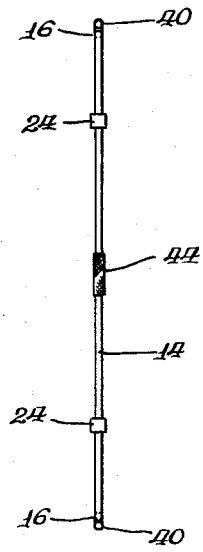


Fig. 2.

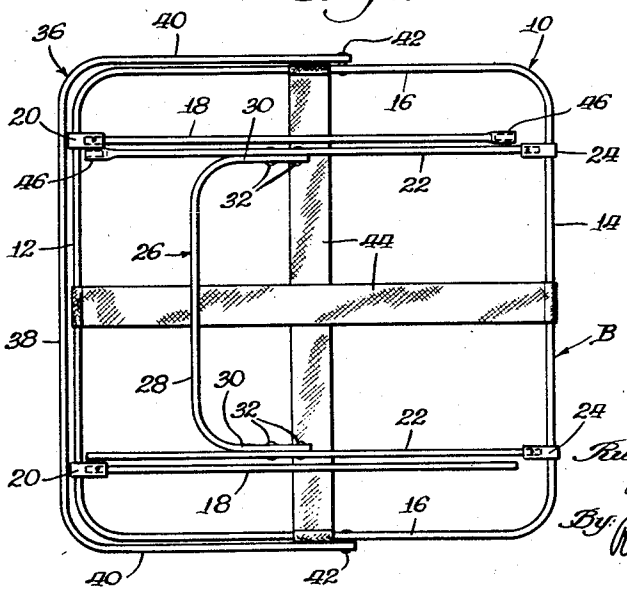
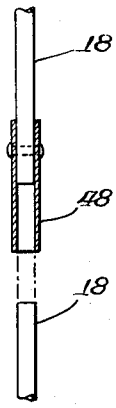


Fig. 4.



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COLLAPSIBLE TENT FRAME

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1 Claim. (Cl. 135—3)

This invention relates to tent frames and more particularly to an improved collapsible tent frame for use in a portable cabana, beach shelter, or shelter for use in ice fishing.

The invention comprehends a light weight frame for supporting a cover formed of canvas, plastic, or other suitable material which can be readily assembled without the use of tools or other equipment and which when not in use can be collapsed or folded into a small compact unit for easy and convenient transportation or storage.

Although the basic concept of employing collapsible frames for tents is not new, many of the prior art arrangements of this type involve the use of complex or intricate devices which are not only difficult for one without some mechanical ability to assemble or disassemble, but also which are heavy or bulky in shape even when collapsed so as to be awkward or inconvenient to carry or store.

It is, therefore, a primary object of this invention to provide a relatively lightweight tent frame of simple design and construction that can be easily and quickly assembled or disassembled without the use of tools or other equipment by anyone of average intelligence.

Another object of the invention is the provision of a tent frame that is rigid when assembled, but which when collapsed occupies a minimal amount of space.

A more specific object of the invention is to provide a two-piece tent frame with telescoping sections, each of which can be collapsed into a rectangular unit or package which is no thicker in size than any one element thereof.

These and other objects of the invention will be apparent from an examination of the following description and drawings, wherein:

Figure 1 is a perspective view of a tent frame structure embodying features of the invention, with the frame being shown in the assembled position;

Figure 2 is a plan view of one section of the structure illustrated in Figure 1, with the section shown in a collapsed position;

Figure 3 is a fragmentary side elevational view of the structure illustrated in Figure 2 as seen from the right; and

Figure 4 is a detail view showing a pair of mating legs similar to those illustrated in Figure 1, but embodying a modified form of the invention.

It will be understood that certain elements have been intentionally omitted from certain views where they are illustrated to better advantage in other views.

Referring now to the drawings for a better understanding of the invention, it will be seen that the tent frame structure embodying features of the invention comprises a pair of substantially identical upper and lower frame sections designated generally at A and B, respectively. The sections are each collapsible, as seen in Figures 2 and 3, and are adapted to be telescopically interconnected when in assembled position, as seen in Figure 1, to provide a box like framework generally rhombohedral in

shape for supporting a covering such as a tent, not shown.

The sections A and B may be identical to each other, and are preferably formed of a lightweight material such as aluminum tubing. Each section comprises a generally rectangular base preferably rounded at the corners having spaced parallel front and rear elements **12** and **14**, respectively, which are interconnected by a pair of integral spaced parallel side elements **16**.

A pair of preferably straight front legs **18** are permanently pivotally connected as at **20** to front element **12** of the base. The pivotal connections are located inwardly adjacent the respective side elements of the base and allow the pivotal movement of the legs relative to the base about pivotal axes which are parallel to the front and rear elements of the base. As best seen in Figure 2, front legs **18** are of a slightly lesser length than side elements **16** of the base to permit the front legs to be folded into the enclosed portion of the base, when the frame section is collapsed, with the front legs then being co-planar with all the elements of the base.

A pair of preferably straight spaced parallel rear legs **22** are permanently pivotally connected as at **24** to rear element **14** of the base. Pivotal connections **24** are preferably located inwardly adjacent the respective side elements of the base and also inwardly of front legs **18** and their respective pivotal connections **20** and, like pivotal connections **20**, allow the pivotal movement of the rear legs relative to the base about pivotal axes which are parallel to the front and rear elements of the base.

As best seen in Figure 2, rear legs **22** are of slightly lesser length than side elements **16** of the base to permit them to be folded into the enclosed portion of the base between the front legs, when the frame section is collapsed with the rear legs then being co-planar with the front legs and with all the elements of the base. If desired, the front legs of each section may be made slightly greater in length than the rear legs to provide a sloping surface on the top section when the device is in assembled position as seen in Figure 1.

To add rigidity to the structure, if desired, the rear legs may be interconnected by a generally U-shaped bracket **26** comprising a cross piece **28** with integral arms **30** extending from the ends of the cross piece and rigidly secured at their free ends to the respective rear legs **22** as as **32**. Additionally, the rear legs may each be provided with a resilient clip **34**, the function of which is described hereinafter.

As best seen in Figure 1, a generally U-shaped support member **36** comprising a center element **38** with spaced parallel integral arms **40** extending from opposite ends thereof may be provided to offer added structural rigidity to each section of the frame. Member **36** is disposed relative to base **10** with arms **40** extending parallel to and outwardly adjacent side elements **16** and with center element **42** extending parallel to and preferably lying outwardly adjacent front element **12** of the base.

The arms **40** are pivotally connected by pivotal connections **42**, at their free ends to the respective side elements **16** of the base. As best seen in Figure 2, arms **40** are only slightly greater in length than the distance between base front element **12** and pivotal connections **42** so that when the frame section is in a collapsed position pivotal connections **42**, which permit pivotal movement of member **36** relative to the base about pivotal axes which are parallel to the base front element and to the pivotal axes of the front and rear legs, will allow the support member to be folded into a common plane with the base and legs to provide a compact unit no greater in thickness than one element thereof.

In order to afford added rigidity for the device, base front and rear elements **12** and **14** and side elements

16 may be interconnected by cross webs or straps 44 formed of any soft material, such as canvas.

In order to assemble the device, each section is opened up with the rear legs 22 extending in a direction normal to the base. Support member 36 is pivoted until center element 38 is resiliently clamped under spring slips 34 of the respective rear legs 22. Front legs 18 are then unfolded until they extend in a direction normal to the base and parallel to the rear legs. Upper section A is then placed on top of lower section B, as seen in Figure 1, with the front and rear legs of the upper section in telescopic engagement with the front and rear legs, respectively, of the lower section. As seen in Figure 1, one front leg and one rear leg of each section may be provided at their free ends with enlarged portions 46 for receiving the corresponding legs of the other section. In this way, each section can be made identical to the other section. However, if desired, the telescoping arrangement can be modified, not shown, with all the legs of one section being received within the corresponding legs of the other section.

Also, instead of providing the certain legs with the enlarged portions 46, they may be provided with collars 48, as seen in Figure 4, to receive the mating legs of the other section.

Thus, it will be seen that the invention provides a relatively lightweight tent frame of simple design and construction that can be readily assembled and that can be collapsed into a compact unit wherein each section is no greater in thickness than any one of its elements and wherein all the elements of all the members and legs of each section lie within a common plane with the base member disposed within the support member and the legs disposed within the base member.

Also, if desired, the upper section can be used by itself to form a one piece frame for a tent. In this case, the base member could be provided with a pair of shorter U-shaped support members (not shown) each of which would connect to one pair of legs.

We claim:

In a collapsible tent frame for use in a portable cabana, a pair of substantially identical tubular upper and lower unitary sections each comprising: a rectangular base member having spaced parallel front and rear elements interconnected by a pair of spaced parallel side elements; a pair of flexible straps disposed at right angles to each other interconnecting the front and rear elements and the side elements, respectively, of the base member; a generally U-shaped support member having a center element extending in a direction parallel to the front and rear elements of the base member and a pair of integral spaced parallel arms extending from the ends of said center element, the arms being parallel to said side elements of the base member and being pivotally connected at their free ends to said side elements outwardly thereof, said arms being slightly greater in length than the distance between the front element and their respective pivotal connections to the side elements; a pair of spaced parallel front legs pivotally connected at corresponding ends to the front element of said base member at points located inwardly adjacent the respective side elements, said legs being of slightly lesser length than said side elements; and a pair of rear legs pivotally connected at corresponding ends to the rear element of said base member at points located inwardly adjacent the respective side elements and the respective front legs, said rear legs being of slightly lesser length than said side elements and said front legs, said rear legs presenting clip means operable to detachably retain the center element of said support member when the frame is in assembled position; all of the pivotal connections being on pivotal axes parallel to said front and rear elements of the base member to allow each section of the frame to be collapsed into a unit which is of no greater thickness than that of any one element thereof; the free ends of the legs of the respective sections being adapted for telescopic engagement with each other to facilitate connection therebetween when the frame is in assembled position.

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