



US005275188A

United States Patent [19]

[11] Patent Number: **5,275,188**

Tsai

[45] Date of Patent: **Jan. 4, 1994**

[54] MODIFIED FOLDING TENT

[76] Inventor: **Ming L. Tsai**, 4th Fl., 8-3 Fuchin St., Taipei, Taiwan

[21] Appl. No.: **910,752**

[22] Filed: **Jul. 8, 1992**

[30] Foreign Application Priority Data

Aug. 9, 1991 [CN] China 91105446.4

[51] Int. Cl.⁵ **E04H 15/18**

[52] U.S. Cl. **135/97; 135/110; 135/109; 52/109**

[58] Field of Search 135/110, 119, 115, 114, 135/99, 103, 106, 109, 107, 108, 112, 97; 52/109

[56] References Cited

U.S. PATENT DOCUMENTS

1,853,367	4/1932	Mace	.....	135/110
3,161,990	12/1964	Morris, Jr.	.....	135/99 X
4,607,656	8/1986	Carter	.....	135/110
4,641,676	2/1987	Lynch	.....	135/110
4,779,635	10/1988	Lynch	.....	135/97
4,884,589	12/1989	Simpson	.....	135/119 X
4,885,891	12/1989	Lynch	.....	135/110 X
4,947,884	8/1990	Lynch	.....	135/97

FOREIGN PATENT DOCUMENTS

0053860	2/1967	German Democratic Rep.	135/99
0093983	4/1991	Japan	135/99
0074788	5/1954	Netherlands	135/99

Primary Examiner—Carl D. Friedman

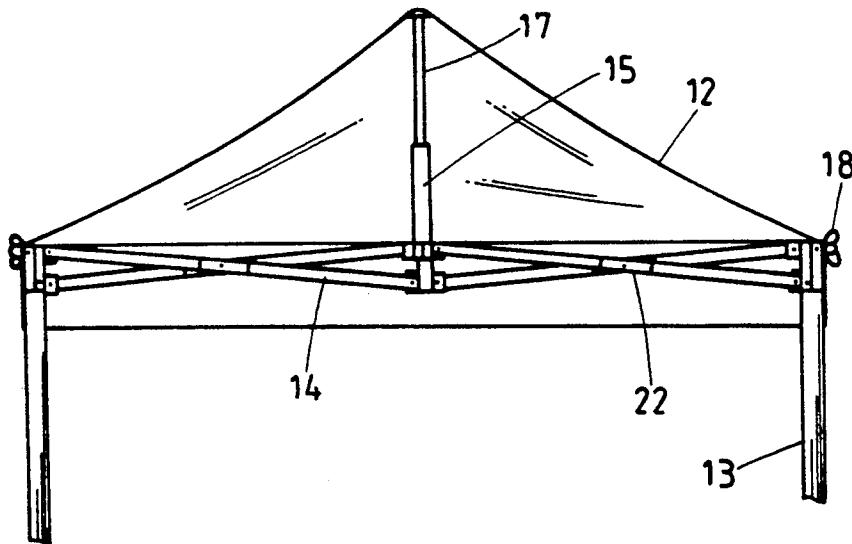
Assistant Examiner—Lan M. Mai

Attorney, Agent, or Firm—Morton J. Rosenberg; David I. Klein

[57] ABSTRACT

A modified folding tent is provided. The tent comprises a plurality of main supportors and supporting structures, and a topmost supporter, to form a frame which is covered by an awning. Each main supporter has an inner supporter and a slide. Each supporting structure is provided with a pair of U-shaped covers to provide a sturdy connection. The awning and main supportors are coupled together by studs passing through holes in the awning and wing nuts tightened on the studs. The topmost supporter has a resilient inner supporter, to make the awning look smooth and good-looking. The modified structure ensures high strength of the tent and proper stability thereof, when it is opened.

1 Claim, 3 Drawing Sheets



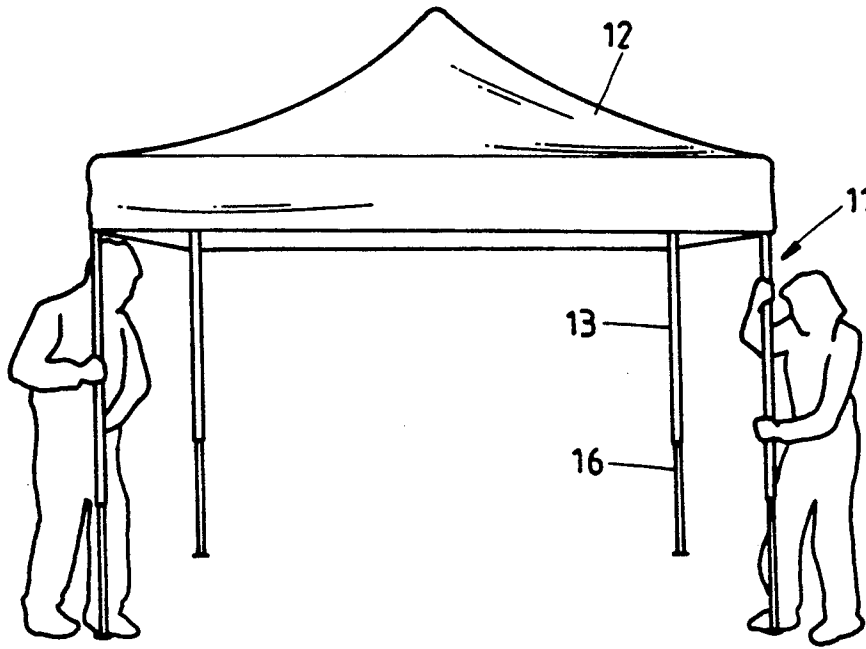


FIG. 1

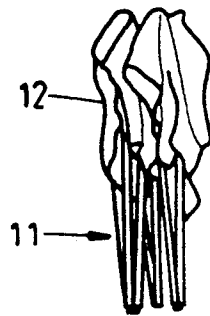


FIG. 2

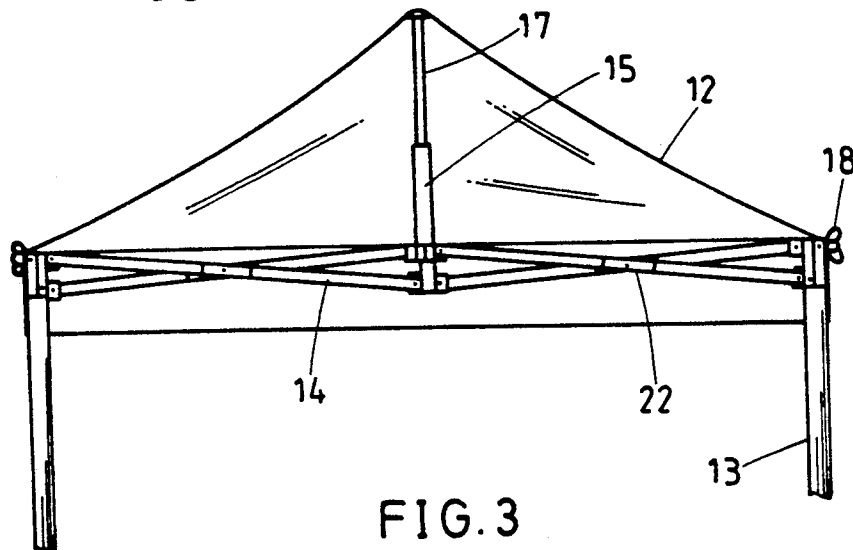


FIG. 3

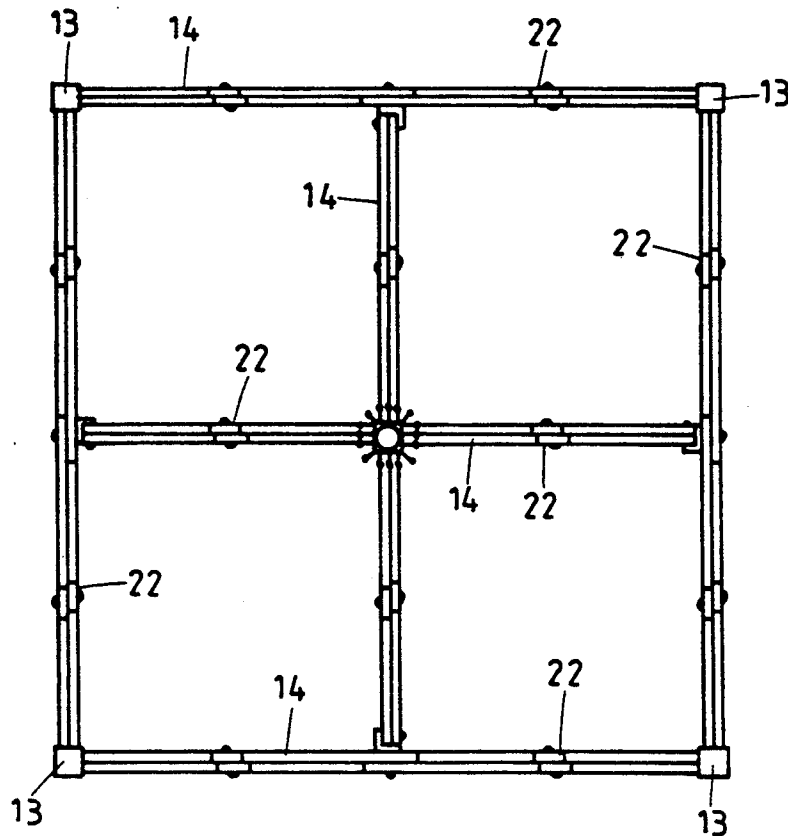


FIG. 4

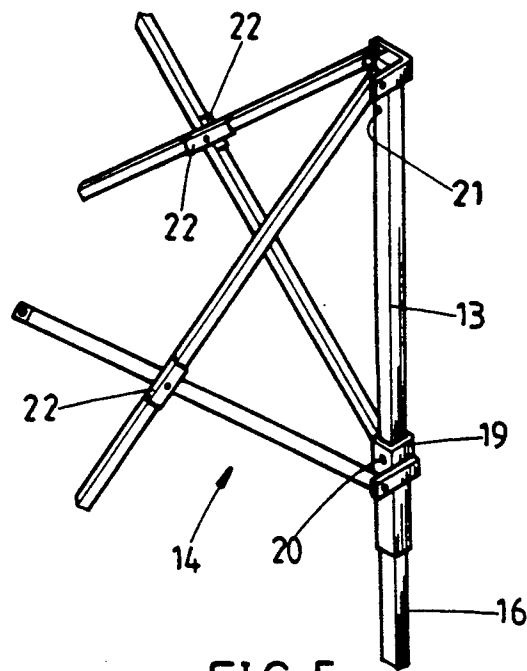


FIG. 5

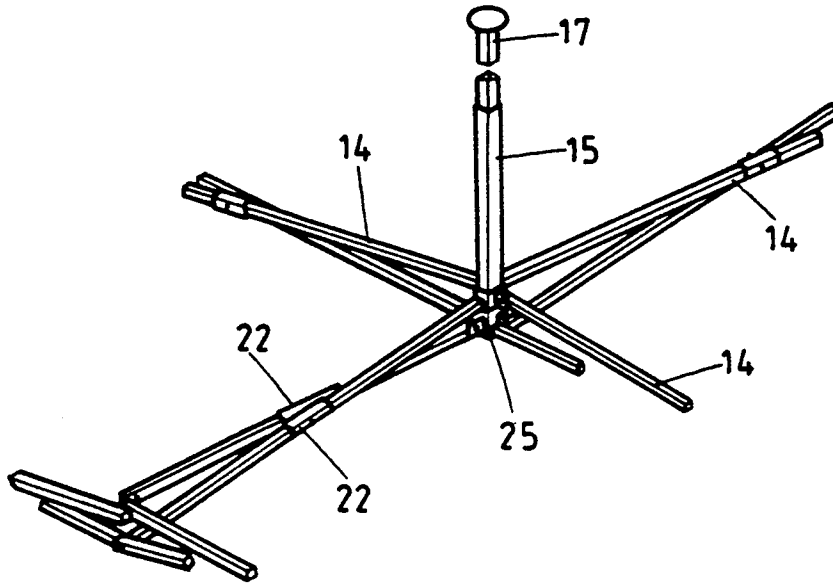


FIG. 6

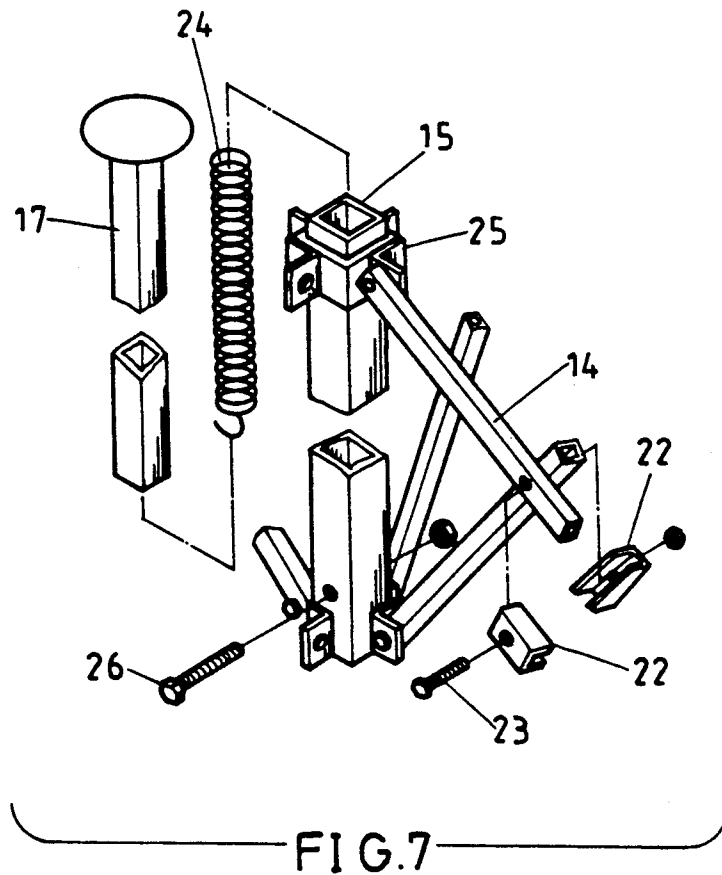


FIG. 7

MODIFIED FOLDING TENT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a folding tent. Particularly, this invention relates to a modified folding tent with a more stable structure, and a more smooth and good-looking appearance when the tent is in an unfolded position.

2. Prior Art

Folding tents are used in outdoor activities, such as camping, picnicking, outdoor cooking, for fairs or other outdoor relaxation activities. A folding tent is greatly popular with users because of its wonderful practicality. Folding tents are easily opened and propped up to cover a wide area with the awning. They can be folded quickly to a small size, to be stored and carried conveniently.

With traditional folding tents, their elementary parts have proved to have shortcomings in their structure. For example, the bond between the awning and the support assembly is not very strong, and the tent will be deformed by a burst of strong wind. Additionally, when the supporting structure of a regular folding tent is frequently opened and closed, the joining screws and the supporting structure is easily damaged, due to the repeated interlocking and telescopic movements.

Furthermore, the topmost supporter located at the highest position of the support assembly, of a traditional tent, is a fixed structure, which will result in wrinkling of the awning when the supporter is propped up. Moreover, the awning will be fatigued and deformed, and cannot maintain a smooth and aesthetic appearance, because of water absorption on rainy days.

In view of the above-mentioned numerous shortcomings of regular folding tents, the present invention provides an improved folding tent. The present invention is designed to include a locating device disposed within each main supporter, a resilient topmost supporter and U-shaped covers for the supporting structures, to promote the stability and strengthen the structure of the folding tent.

SUMMARY OF THE INVENTION

The tent according to the present invention comprises a telescopic folding support assembly and an awning spread thereon. The assembly comprises at least four main supporters, twelve supporting structures, which together appear to look like a window with a cross in it. The assembly further includes a topmost supporter located in the center of the supporting structure. Each main supporter is provided with a telescopic inner supporter, and the topmost supporter is provided with a resilient inner supporter. Each supporting structure consists of two interlocking bars, and U-shaped covers, with hinge screws being provided at the interlocking points. Each of the main supporters are provided with a protruding stud, and the awning is also provided with holes corresponding to the studs for the latter to pass through, the awning being secured thereto by wing nuts. Each main supporter is provided with a slide for joining the connecting supporting structures, and each slide has a positioning hole. Further, at the top of the main supporter, there is provided an elastic pin for engagement within the positioning hole when the slide moves to the top of said main supporter and the supporting structures are fully opened. The topmost

supporter comprises a resilient supporting device, formed by a spring and an inner supporter. The topmost supporter is located in the center of the structure and is connected to the supporting structures in four directions by means of a slide. The spring of the resilient supporting device is fixed within the hollow of the topmost supporter by a screw which passes through the bottom thereof. The inner supporter is coupled to the top of the spring.

The main object of the present invention is to provide a folding tent, having a support assembly comprising a plurality of main supporters, each being provided with an inner supporter, as a locating device, to facilitate quick opening and fixing of the position of the tent, as well as facilitating the taking apart of the support assembly.

A secondary object of the present invention is to provide an improved folding tent, which includes U-shaped covers at the interlocking point of each supporting structure, so as to secure the strength against damage and prolong the life of use.

Another object of the present invention is to provide an improved folding tent, which uses wing nuts to secure the awning to the support assembly, so that the tent can be taken apart or assembled more conveniently and quickly.

A fourth object of the present invention is to provide an improved folding tent, where the topmost supporter is provided with a resilient inner supporter, propping up the awning to keep it smooth and aesthetic in appearance.

The present invention will now be described in detail, referring to the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates the open position of the tent according to the present invention;

FIG. 2 illustrates the closed position of the tent according to the present invention;

FIG. 3 is an illustration of the structure of the support assembly and the awning of the present invention;

FIG. 4 is a top view of a supporting structure which looks like a window with a cross inside;

FIG. 5 is an illustration of a main supporter and connected supporting structures of the present invention;

FIG. 6 is an illustration of the topmost supporter and connected supporting structures of the present invention; and,

FIG. 7 is an illustration of a topmost supporter and an elastic inner supporter of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As illustrated in FIG. 1, the tent comprises a telescopic folding support assembly 11, and an awning 12 which covers the support assembly 11. The side view of the support assembly 11 is illustrated in FIG. 3. The assembly includes at least four main supporters 13, twelve supporting structures 14, which together form a top view which looks like a window with a cross in it (as in FIG. 4), and a topmost supporter 15 located in the center. Each main supporter 13 has a telescopic inner supporter 16, and the central topmost supporter 15 has a resilient inner supporter 17. Each supporting structure 14 is composed of two interlocking bars, and is equipped with a hinging screw to form a pivot point. In this manner, each main supporter 13 can extend and

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.