United States Patent [19]

Lynch

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[54] **COLLAPSIBLE CANOPY FRAMEWORK HAVING CAPTURED SCISSOR ENDS WITH NON-COMPRESSIVE PIVOTS**

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[*] Notice: The portion of the term of this patent subsequent to Sep. 14, 2010 has been disclaimed.

[21] Appl. No.: **121,298**

[22] Filed: **Sep. 14, 1993**

Related U.S. Application Data

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[51] Int. Cl.⁶ **F04H 15/50**

[52] U.S. Cl. **135/145**; 135/151; 403/172; 403/175; 411/338

[58] Field of Search 135/103, 106, 107, 108, 135/109, 110, 111, 112, 113, 97, 25.2, 25.3, 25.31; 403/172, 175, 176, 178, 218; 52/640, 641, 645, 646; 411/338, 368, 424

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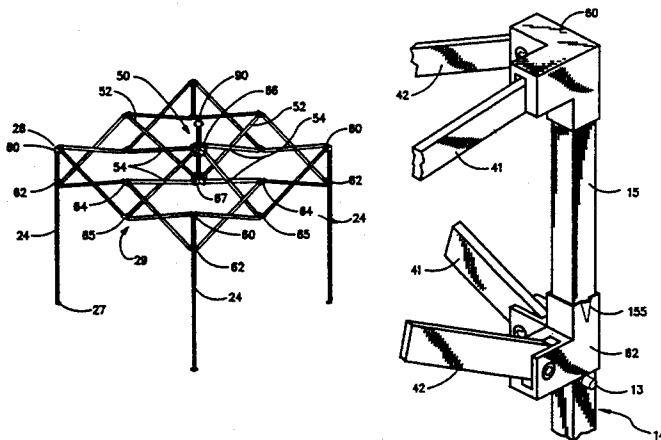
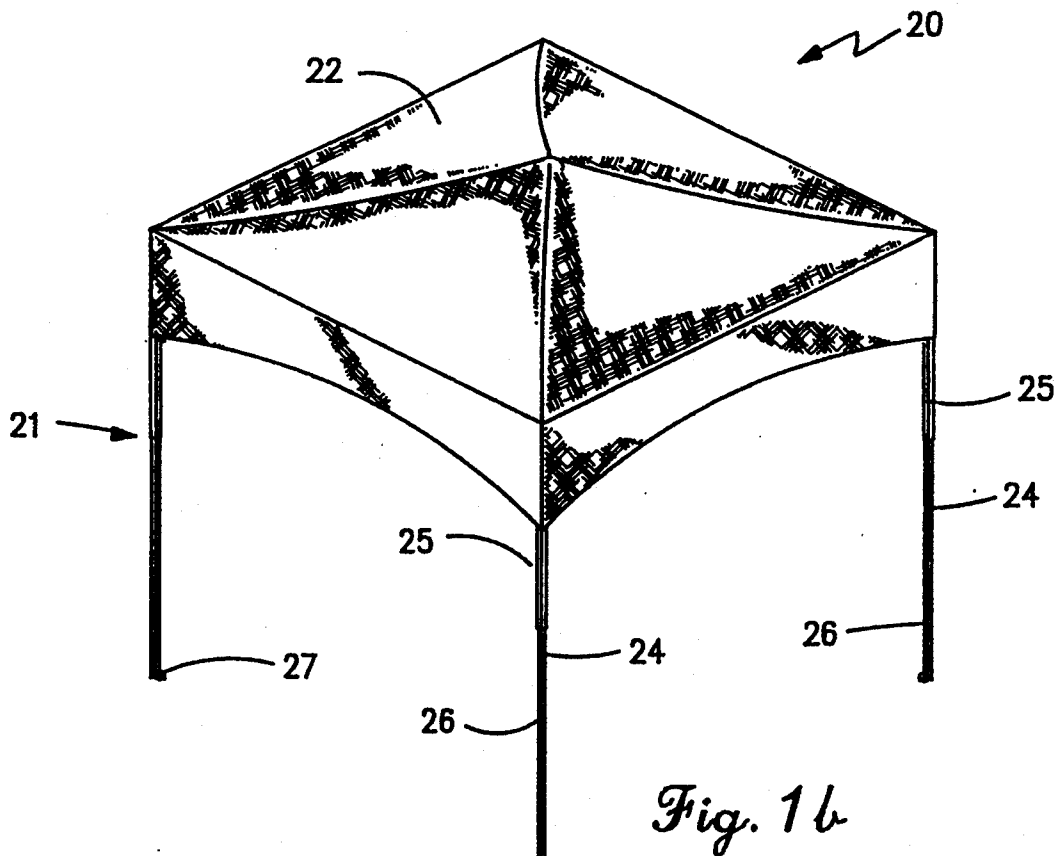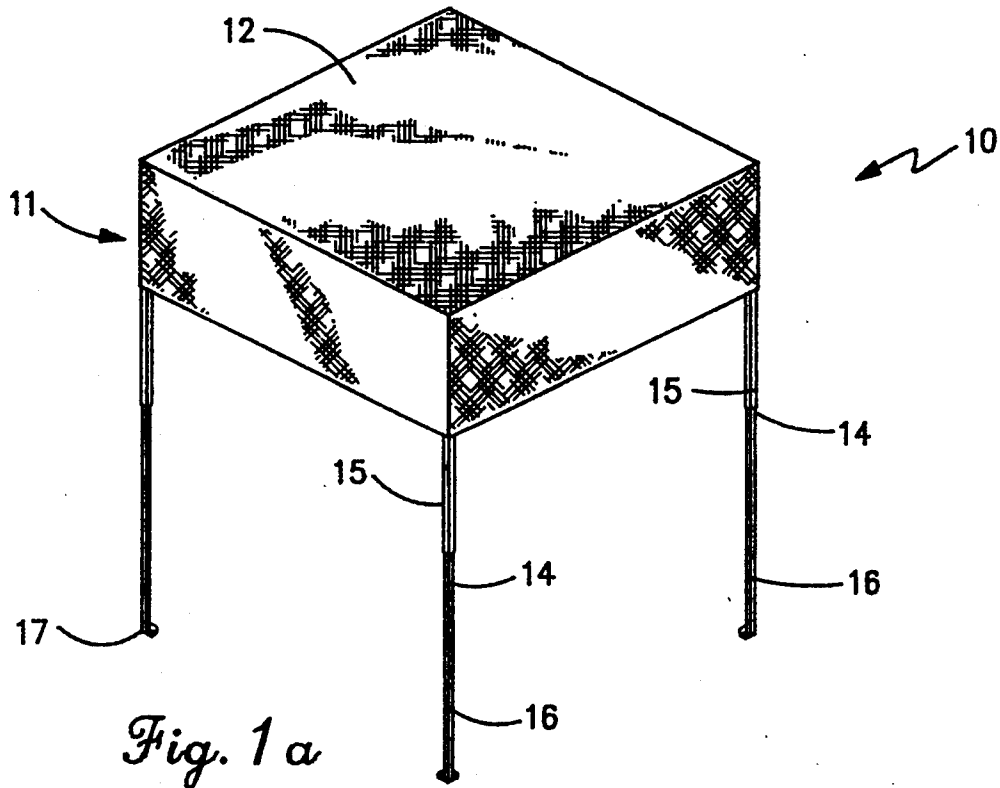|		
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[57] **ABSTRACT**

An expandable framework structure can be folded for storage and expanded for use, especially as a canopy when a covering is placed on top of the framework. The framework includes a plurality of upright supports and a plurality of edge scissor assemblies that interconnect adjacent ones of the upright supports. Mounts are disposed on the upright supports to fasten outer, rectangular end portions of the edge scissor assemblies. The mounts have sockets which have facing, parallel sidewall portions to receive the rectangular end portions in close-fitted engagement along planar contact surfaces to resist lateral and torsional deflections of the edge scissor assemblies. A non-compressive fastening pin pivotally secures the outer end of each edge scissor assemblies in its respective socket. The mounts on each upright support are relatively movable to allow expansion and contraction of the framework; one mount is preferably a stationary mount and the other a slide mount. A roof support assembly may be used to support a canopy covering, and several embodiments of the roof support assembly are described. Each edge scissor assembly may be formed of a pair of scissor units interconnected by floating mounts that are provided with sockets and planar contact surfaces to resist lateral and torsional deflection of the scissor units. Non-compressive fastening pins are associated with each mount, and non-compressive elements interconnect the scissor bars of each scissor unit.
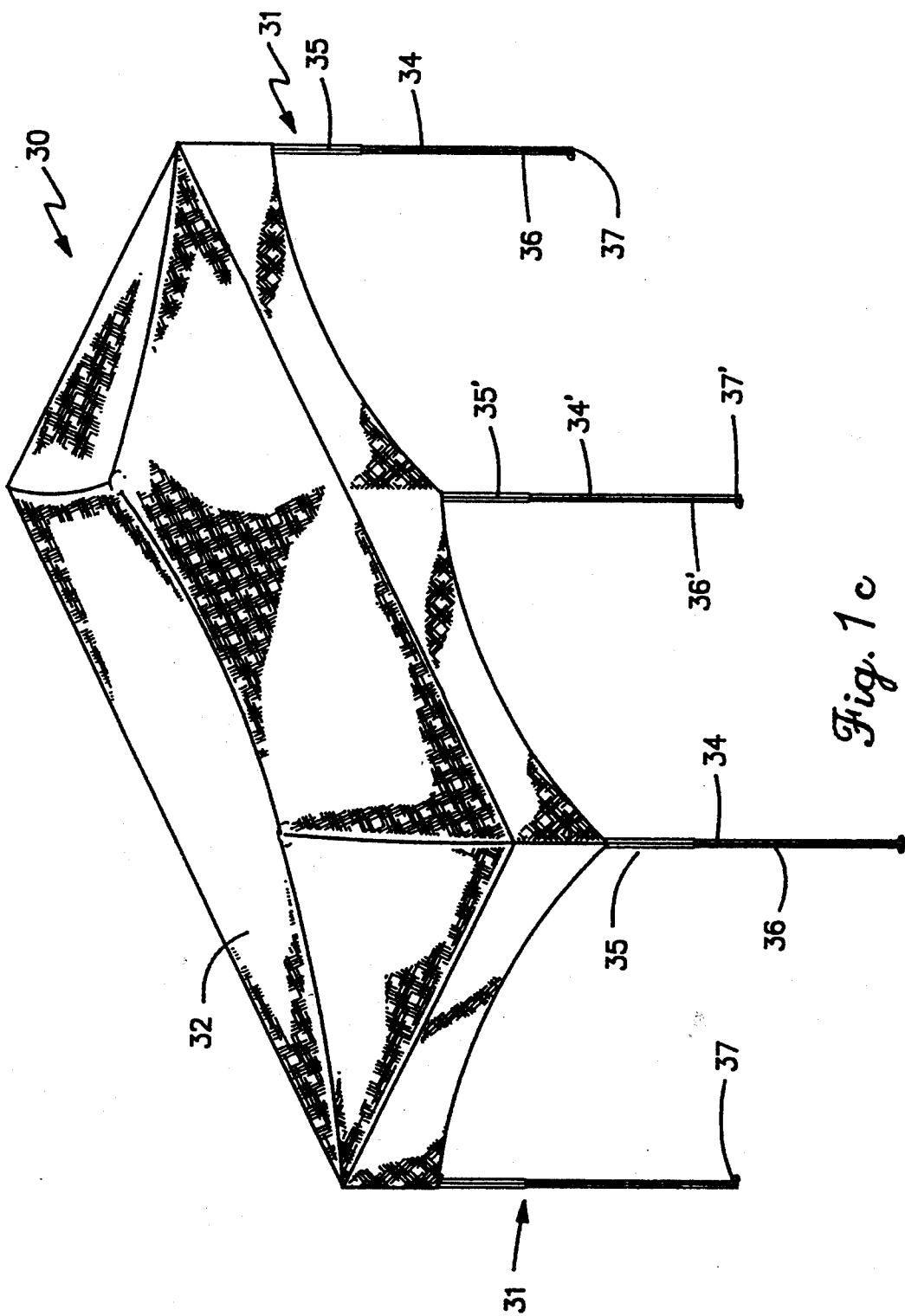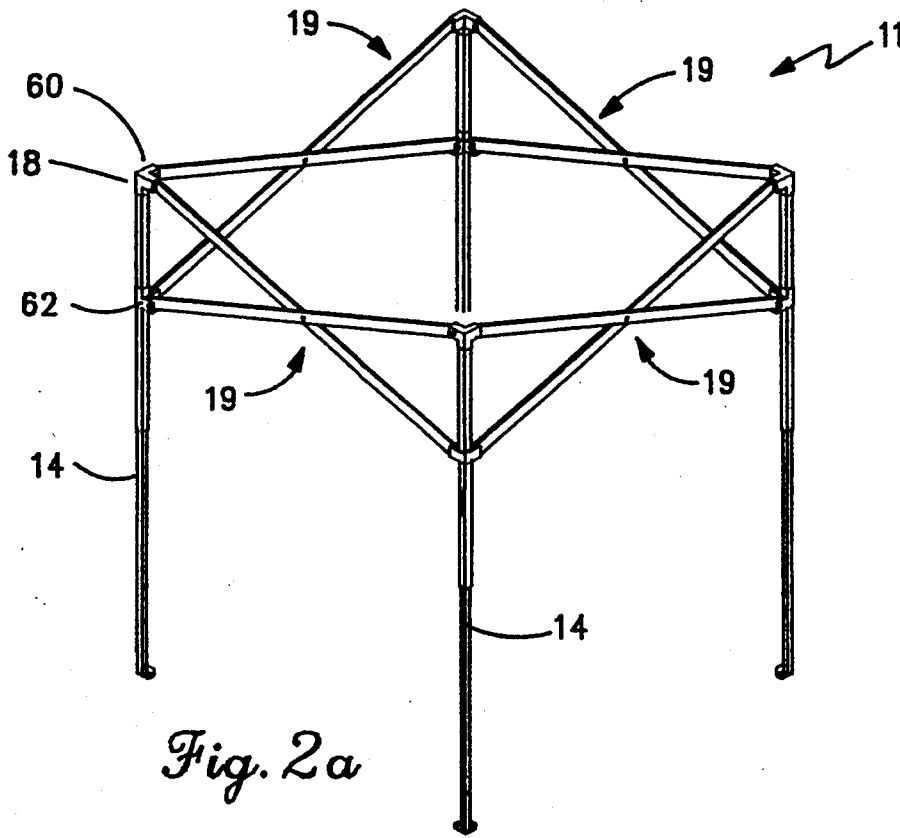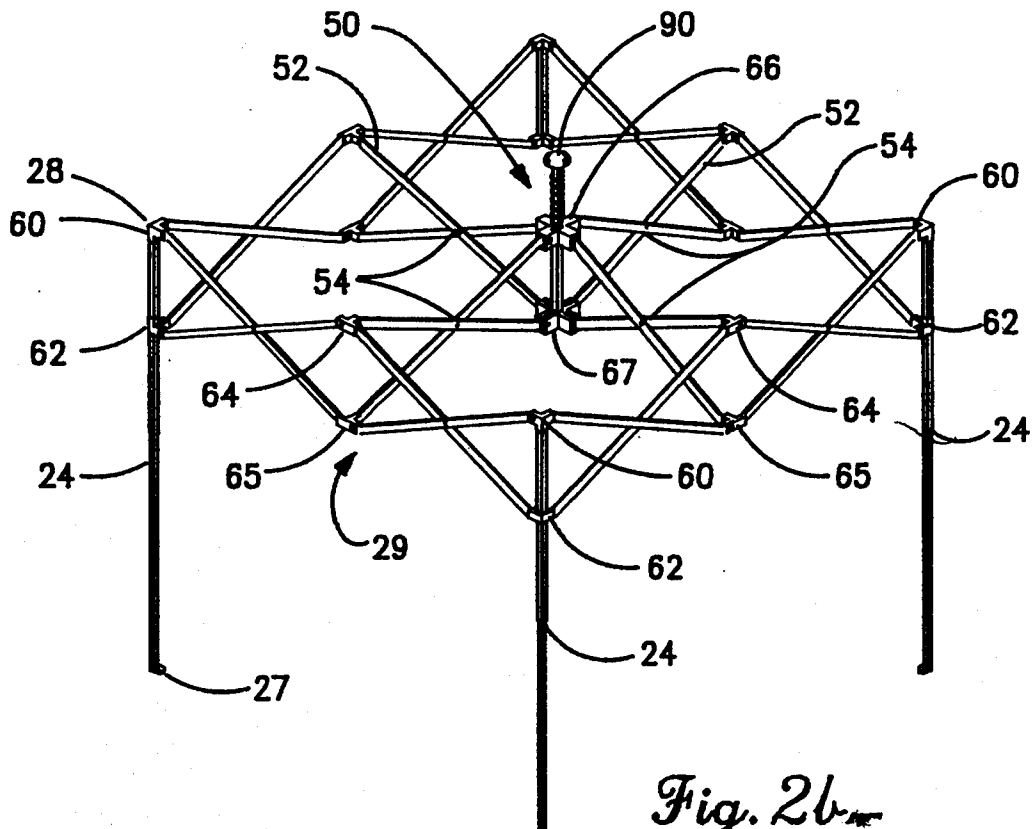
18 Claims, 15 Drawing Sheets

Fig. 1a

Fig. 1b

Fig. 1c

Fig. 2a

Fig. 2b

Fig. 2c

DOCKET ALARM
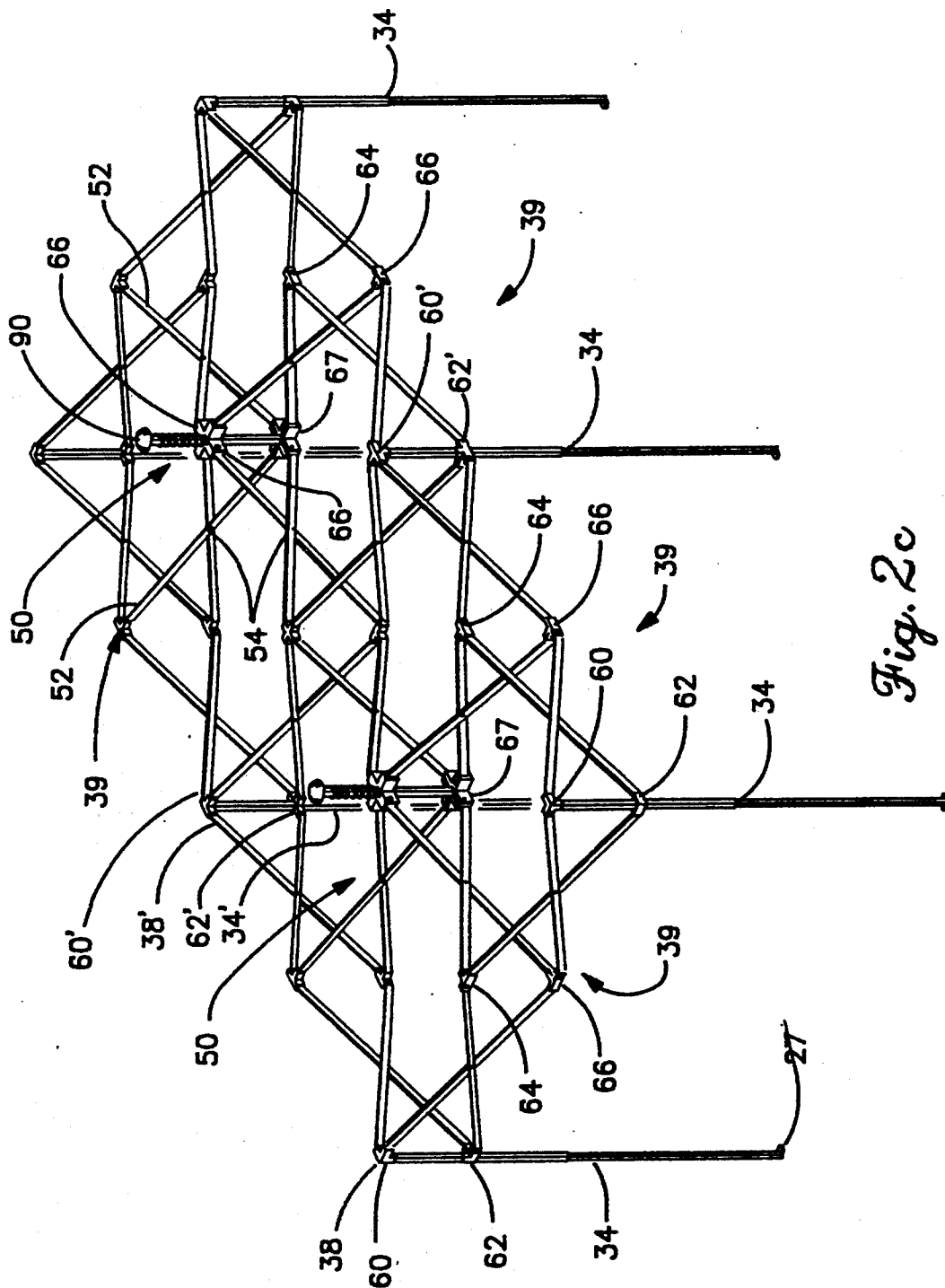
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