Abstract: A tent pole assembly that includes first and second pole sections, first and second inserts, and a projection member. Each of the pole sections includes an open end. The first and second inserts are positionable into the open ends of the first and second pole sections, respectively. The projection member is insertable into the first and second inserts to releasably connect the first and second pole sections together.
Published: 1 March 2012

— with international search report (Art. 21(3))

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
### A. CLASSIFICATION OF SUBJECT MATTER

**IPC(8) -** E04H 15/60 (2011.01)
**USPC -** 135/114

According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
**USPC:** 135/114

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
**USPC:** 135/87, 121 —— see search terms below ——

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST (US Pre-Grant Pub Full-Text, US Patents Full-Text, EPO Abstracts, JPO Abstracts); Google Patents (All); Google Web (All)—search terms: tent pole, snap fit, interference, compression, insert, connection, connector, projection, joint, collapsible, coupling, coupler, resilient, assembly, side-by-side, pa

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 4,063,830 A (BAN) 20 December 1977 (20.12.1977) see entire document, particularly FIGS. 1-4; col 1, In 8-16; col 2; In 4-52.</td>
<td>1-5, 9, 12, 13, 15-23, 36-41, 43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6-8, 10, 11, 14, 42</td>
</tr>
<tr>
<td>Y</td>
<td>US 2006/0233599 A1 (LAH) 19 October 2006 (19.10.2006) see entire document particularly par a [0032].</td>
<td>6</td>
</tr>
<tr>
<td>Y</td>
<td>US 4,132,408 A (SABAT) 2 January 1979 (02.01.1979) see entire document particularly FIG. 2; col 3, In 38-48.</td>
<td>7, 14</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,811,347 B1 (HSIEH) 2 November 2004 (02.11.2004) see entire document particularly FIG. 1; col 2, In 36-50</td>
<td>8, 10, 42</td>
</tr>
<tr>
<td>A</td>
<td>US 5,683,199 A (TEHAN) 4 November 1997 (04.11.1997) see entire document</td>
<td>1-23, 36-43</td>
</tr>
<tr>
<td>A</td>
<td>US 5,201,598 A (TEHAN) 13 April 1993 (13.04.1993) see entire document</td>
<td>1-23, 36-43</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.

- **"A"** Special categories of cited documents:
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent but published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
  - "P" document published prior to the international filing date but later than the priority date claimed

- **"T"** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

- **"X"** document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

- **"Y"** document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

- **"&"** document member of the same patent family

### Date of the actual completion of the international search

20 December 2011 (20.12.2011)

### Date of mailing of the international search report

**06 JAN 2012**

### Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

### Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774
**Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
   Group I: Claims 1-23 and 38-43

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: Claims 1-23, 36-43; directed to systems and methods for assembly of a tent pole, comprising a projection member.
Group II: Claims 24-26; directed to a system for assembly of a tent pole, comprising a tent pole union being completely separable from the first tent pole section and the second tent pole section during operation of the tent pole assembly.
Group III: Claims 27-29; directed to a system for assembly of a tent pole, comprising a compression fitting union.
Group IV: Claims 30-32; directed to a system for assembly of a tent pole, comprising a connection assembly extending along only a partial length of each of the first and second tent pole sections.
Group V: Claims 33-35; directed to a system for assembly of a tent pole, comprising a tent pole connection system being maintained entirely within the outer profiles of the first and second tent pole sections.

The inventions listed as Groups I - V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of Group I is a projection member, which is not present in Groups II-V. The special technical feature of Group II is a tent pole union being completely separable from the first tent pole section and the second tent pole section during operation of the tent pole assembly, which is not present in Groups I or III-V. The special technical feature of Group III is a compression fitting union, which is not present in Groups I, II, IV or V. The special technical feature of Group IV is a connection assembly extending along only a partial length of each of the first and second tent pole sections, which is not present in Groups I-III or V. The special technical feature of Group V is a tent pole connection system being maintained entirely within the outer profiles of the first and second tent pole sections, which is not present in Groups I-IV.

The sole element of commonality between groups I-V is that of first and second tent pole sections, which is known in the prior art (ref. US 3,833,012 A to McAllister; Fig. 1; Abstract--"This invention relates to an adjustable multi-section tent pole").

The sole element of commonality between groups I, III, IV, and V is that of an assembly configured to provide a releasable connection between the first and second tent pole sections, which is known in the prior art (ref. US 3,833,012 A to McAllister; Fig. 1-3; col 2, In 55 to col 3, In 2--"The next section 14 is plain at the bottom but is closed at the top by a female plug 28F having an axial socket 30 therein. This plug is sized to fit tightly into the upper end of the tube with its degree of penetration therein being limited by a downwardly-facing shoulder 32 separating the main body thereof from annular flange 34 that has the same outside diameter as the tube itself. The third section 16 has its upper end as the plain open ended tube, whereas its lower end is closed by a male plug 28M of similar design to plug 28F except that instead of socket 30, it includes an axially-projecting pin 36 that is sized to enter the latter with a free-sliding fit and thus cooperate therewith to define a pin-and-socket connector subassembly").

Accordingly, unity of invention is lacking under PCT Rule 13.1.