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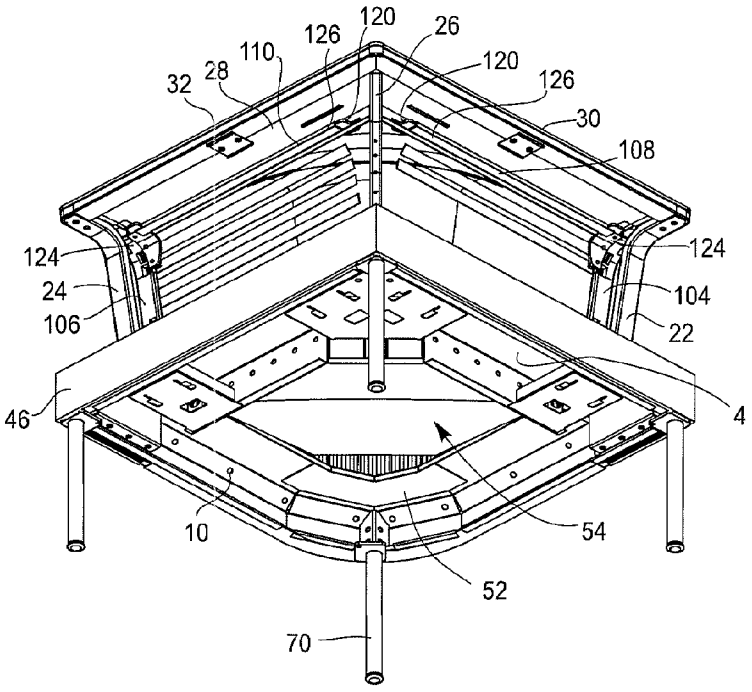
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(54) Title: SUSPENSION CHAIR AND MODULAR FURNITURE KIT

Fig. 12



(57) Abstract: A suspension chair includes a first and second back support portion having first and second suspension elements extending in first and second substantially perpendicular directions respectively. The first and second suspension elements are tensioned so as to provide first and second normal biasing forces to the first and second body support portions. In one embodiment, the chair includes a fixed support defining an upper portion and a pivotable side support. A fabric layer covers at least a portion of the fixed support and a front surface of the side support. Various furniture arrangements and modular furniture kits incorporating one or more chairs, desks and/or tables are provided.

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UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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— *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))*

(88) Date of publication of the international search report:
4 December 2014

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US14/28029

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A47C 1/02, 1/032, 7/00 (2014.01)
USPC - 297/68, 85M, 330; CPC Classification(s): A47C1/00, 02, 024
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)
IPC(8) Classification(s): A47C 1/02, 1/024, 1/031, 1/032, 7/00 (2014.01)
USPC Classification(s): 297/68, 85M, 330; CPC Classification(s): A47C1/00, 02, 024

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
MicroPatent (US Granted, US Applications, EP-A, EP-B, WO, JP, DE-G, DE-A, DE-T, DE-U, GB-A, FR-A); Google.com,scholar.google.com; DialogPro (Derwent, INSPEC, NTIS, PASCAL, Current Contents Search, Dissertation Abstracts Online, Inside Conferences); KEYWORDS: corner chair, suspension, tension, force, spring, pivot, recline, sectional, couch, sofa, concave, suppo

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,064,244 A (SPROULE J) November 12, 1991; figures 1, 2, 4; column 3, lines 15-25	1-6
A	US 6,923,505 B2 (SIMINOVITCH MJ et al.) August 2, 2005; entire document	1-14
A	US 5,314,234 A (ENGLAND ME) May 24, 1994; entire document	1-14
A	US 5,326,153 A (MUFFI JV) July 5, 1994; entire document	1-14
A	US 6,135,554 A (TSUN TS et al.) October 24, 2000; entire document	1-14
A	US 7,276,018 B2 (STUDDARD SB) October 2, 2007; entire document	1-14
A	US 7,373,677 B2 (BARTHELT H) May 20, 2008; entire document	1-14
A	US 2009/0091174 A1 (DIFFRIENT N) April 9, 2009; entire document	1-14
A	US 2009/0127905 A1 (SCHMITZ JB et al.) May 21, 2009; entire document	1-14
A	US 3,231,904 A (SHULKIN I) February 1, 1966; entire document	1-14

☐ Further documents are listed in the continuation of Box C. ☐

* 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	Date of mailing of the international search report
22 September 2014 (22.09.2014)	10 OCT 2014
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: Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US14/28029

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.:
1-14

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.

-***-Continued from Box No. III: Observations where unity of invention is lacking-***-

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 1-14 are directed toward a suspension chair comprising a third back support portion.

Group II: Claims 15-26 are directed toward a furniture arrangement comprising two chairs with a fabric layer.

Group III: Claims 27-32 are directed toward a furniture arrangement with a work surface in a U-shaped occupancy space.

Group IV: Claims 33-42 are directed toward a modular furniture kit with at least four chairs and planar armrests in a T-shape.

The inventions listed as Groups I-IV 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 features of Group I include a third back support portion comprising an outwardly facing concave surface transitioning between said first and second back support portions; wherein said first and second back support portions comprise first and second suspension elements extending in said first and second directions respectively, wherein said first and second suspension elements are tensioned so as to provide first and second normal biasing forces to said first and second body support portions (which is not present in Groups II-IV).

The special technical features of Group II include wherein said first side surface is defined in part by a first fixed support defining an upper portion of a first back and a first side support pivotable about a horizontal axis, said first side support having an upper portion moveable toward and away from said upper portion of said first fixed support; wherein said second side surface is defined in part by a second fixed support defining an upper portion of a second back and a second side support pivotable about said horizontal axis, said second side support having an upper portion moveable toward and away from said upper portion of said second fixed support; wherein said first and second chairs are positioned such that said first and second sides are adjacent; and a fabric layer covering at least a portion of said fixed support and a front surface of said side support (which is not present in Groups I, III, IV).

The special technical features of Group III include a work surface having a side edge and opposite front and rear edges, said work surface vertically spaced so as to define leg space beneath each of said front and rear edges; and a chair positioned adjacent said rear edge; and wherein said first back support portion has an end positioned adjacent said rear edge such that said second back support portion is spaced from said rear edge and defines an ingress and egress opening between said second back support portion and said rear edge, and wherein said first and second back support portions and said rear edge define a U-shaped occupancy space in plan view (which is not present in Groups I, II, IV).

The special technical features of Group IV include wherein an upper surface of each of said first and second back supports comprises a planar armrest surface, wherein said at least four chairs are capable of being arranged in each of at least a first and second configuration; wherein said first configuration comprises a pair of said chairs arranged with said rear surfaces lying adjacent such that said planar armrests define a T-shape in plan view; and wherein said second configuration comprises four of said chairs arranged with said rear surfaces lying adjacent such that said planar armrests define a X-shape in plan view (which is not present in Groups I-III).

The common technical features of Groups I-IV include a first back support portion having a first linear support surface extending along a first direction; a second back support portion having a second linear support surface extending along a second direction, said second direction being substantially perpendicular to said first direction.

These common technical features are disclosed by US 5,064,244 A (SPROULE): a first back support portion having a first linear support surface extending along a first direction (sofa arrangement (suspension chair) has reclining seat 12 (first back support portion) with seat back 28 (first linear support surface) shown extending in a first direction; figure 1; column 2, lines 35-55); a second back support portion having a second linear support surface extending along a second direction, said second direction being substantially perpendicular to said first direction (double sofa section 18 (second back support portion) shown with a seat back (second linear support surface) similar to seat back 28, and shown extending in a second direction which is substantially perpendicular to the first direction; figure 1; column 2, lines 35-55).

Because the common technical features are disclosed by Sproule, the inventions are not so linked as to form a single general inventive concept. Therefore, Groups I-IV lack unity.