

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
9 April 2009 (09.04.2009)

PCT

(10) International Publication Number  
**WO 2009/045247 A1**

(51) International Patent Classification:  
A47F 5/08 (2006.01)

(74) Agent: SANCHELIMA, Jesus; 235 S.W. Le Jeune Road,  
Miami, FL 33134 (US).

(21) International Application Number:  
PCT/US2008/008973

(22) International Filing Date: 24 July 2008 (24.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
11/868,218 5 October 2007 (05.10.2007) US

(63) Related by continuation (CON) or continuation-in-part  
(CIP) to earlier application:  
US 11/868,214 (CIP)  
Filed on 5 October 2008 (05.10.2008)

(71) Applicant (for all designated States except US): **BLUE-  
GATE, INC.** [US/US]; 12725 N.W. 7th Avenue, Miami,  
FL 33168 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **HAGHAYEGH,  
Alireza** [US/US]; 12725 N.W. 7th Avenue, Miami, FL  
33168 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE,  
EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID,  
IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK,  
LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW,  
MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT,  
RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN,  
ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,  
NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG,  
CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:  
— with international search report

(54) Title: CORNER SHELF SYSTEM

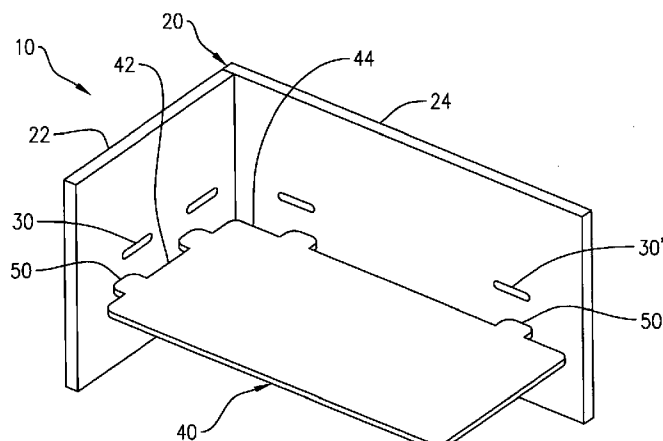


Fig. 1

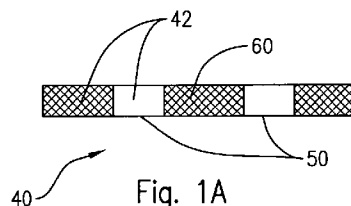


Fig. 1A

(57) Abstract: A shelf system for corner walls where the shelf members are supported against two perpendicularly disposed walls without showing any mounting elements. The shelf member includes at least two contiguous sides defining edges of a predetermined thickness and perpendicular to each other. Tongue members extend for the sides and are receivable within cooperative wall cavities for a snug mechanical engagement. Adhesive is applied to the sides to immobilize the shelf member and thus enhance the structured integrity of the system.

WO 2009/045247 A1

## **I. TITLE: CORNER SHELF SYSTEM**

## **II. TECHNICAL FIELD**

The present invention relates to a corner shelf system, and more particularly, to such a system that conceals its supporting members.

## **III. BACKGROUND ART**

Several designs for a corner shelf system have been designed in the past. None of them, however, includes a shelf member with a peripheral edge including tongues that penetrates the corner surfaces to which the shelf member is mounted.

Applicant believes that the closest reference corresponds to U.S. Patent No. 6,591,762 issued to the inventor on July 15, 2003 for a corner shelf assembly. However, it differs from the present invention because it requires the use of casing members and the tongue members need to be slid horizontally. The present invention, on the other hand, secures the shelf member in place by using a strong adhesive that binds the peripheral edge to the corner walls' surfaces, preventing its movement, which the tongue members snugly fit within cooperating openings in the walls' surfaces to support most of the vertical load.

Other patents describing the closest subject matter provide for a number of more or less complicated features that fail to solve the problem in an efficient and economical way. None of these patents or any other references known to applicant suggest the novel features of the present invention.

#### IV. SUMMARY OF THE INVENTION

It is one of the main objects of the present invention to provide a corner shelf system that conceals its supporting mechanisms.

It is another object of this invention to provide a corner shelf system that is strong enough to support objects.

It is still another object of the present invention to provide a corner shelf system that can be readily mounted to and in the walls of a corner.

It is yet another object of this invention to provide such a system that is inexpensive to manufacture and maintain while retaining its effectiveness.

Further objects of the invention will be brought out in the following part of the specification, wherein detailed description is for the purpose of fully disclosing the invention without placing limitations thereon.

#### V. BRIEF DESCRIPTION OF THE DRAWINGS

With the above and other related objects in view, the invention consists in the details of construction and combination of parts as will be more fully understood from the following description, when read in conjunction with the accompanying drawings in which:

**Figure 1** represents an isometric view of a shelf system incorporating the present invention, as the shelf is being installed.

**Figure 1A** is an elevational view showing the application of adhesive **60** along the edge of shelf member **40**.

**Figure 2** shows an isometric view of the shelf system installed.

**Figure 2A** shows the relationship between the width "a" and length "b".

**Figure 3** is a representation of an elevation cross-section of a tongue member inserted inside a cavity.

**Figure 4** is a representation of an elevational cross-section of a tongue member, with a step, inserted inside a cavity.

**Figure 4A** is a detail elevational view of step **28** shown in figure 4.

## **VI. DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring now to the drawings, where the present invention is generally referred to with numeral **10**, it can be observed that it basically includes corner wall **20** with cavities **30, 30'**, shelf member **40** with tongue members **50, 50'** snugly insertable inside cavities **30, 30'**, and adhesive **60** applied to edges **42** and **44** of member **40**, as it can be seen in figures 1 and 2.

Figure 1 shows shelf member **40** as it is being mounted, with tongue members **50** being lined up with cavities **30**. Cavities **30** on wall **22** may be slightly longer than cavities **30'** in wall **24** so that tongue member **50** can be first inserted inside cavity **30**. Subsequently, tongue members **50'** will be pushed through openings **32** and into cavities **30'** for a snug fit. Either cavity

**30** or cavity **30'**, or both, need to be slightly longer than the width of tongue member **50** and/or **50'**. Figure 2A shows the relationship between the width "a" and length "b" of tongue member **50** or **50'** (or both) and cavities **30** or **30'** (or both).

As seen in figures 3 and 4, tongue member **50** penetrates through opening **32** into cavity **30** on one side of wall **22** for a snug fit. Adhesive **60** is applied to the edges of shelf member **40** that are brought in contact with wall **22** and **24**. Adhesive **60** can be an acrylic adhesive caulking or equivalent that immobilizes shelf member **40** counteracting any shear forces; vertically (from the load) and horizontally (to prevent lateral movements that would disengage tongue member **50**).

Shelf member **40** has, in the preferred embodiment, a substantial uniform thickness. Tongue members **50** and **50'**, in another preferred embodiment, may have a slightly smaller thickness so that step **28** is defined. Step **28** can be defined with the upper side and/or underside. Figure 4 shows step **28** on the upper side. The object is to position step **28** so that it covers the upper portion of opening **32** of cavity **30** as seen in figure 4A.

The foregoing description conveys the best understanding of the objectives and advantages of the present invention. Different embodiments may be made of the inventive concept of this invention. It is to be understood that all matter disclosed herein is to be interpreted merely as illustrative, and not in a limiting sense.

## **VII. INDUSTRIAL APPLICABILITY**

It is apparent from the previous paragraphs that an improvement of the type for such a corner shelf system is quite desirable for its ability to conceal its supporting members.

## VIII. CLAIMS

What is claimed is:

1. A shelf system for corner walls, comprising:
  - A) a substantially flat shelf member having at least two contiguous sides defining first and second edges of a predetermined thickness and perpendicular to each other, said first edge including at least one tongue member that extends outwardly a predetermined distance and said second edge including at least two tongue members that extend outwardly a predetermined distance;
  - B) a corner wall having first and second walls perpendicular to each other and said first and second walls including each a cooperatively located cavity for each of said at least one tongue member, said cavity including an opening through which said at least one tongue member passes and is snugly received within said cavity; and
  - C) adhesive means applied to said first and second edges for rigid affixation of said first and second edge to said first and second walls, respectively, upon contact so that said shelf member is capable of supporting loads of predetermined magnitude without showing detracting supporting elements.
2. The system set forth in claim 1 wherein said at least one tongue member has a slightly smaller thickness than said first and second

edges thereby defining a step between said shelf member and said tongue member, said step curving in abutting contact with the wall adjacent to said cavity thereby concealing the latter.

3. The system set forth in claim 2 wherein said first and second edges include, each, two tongue members.
4. The system set forth in claim 3 wherein said adhesive means is applied to said tongue member.

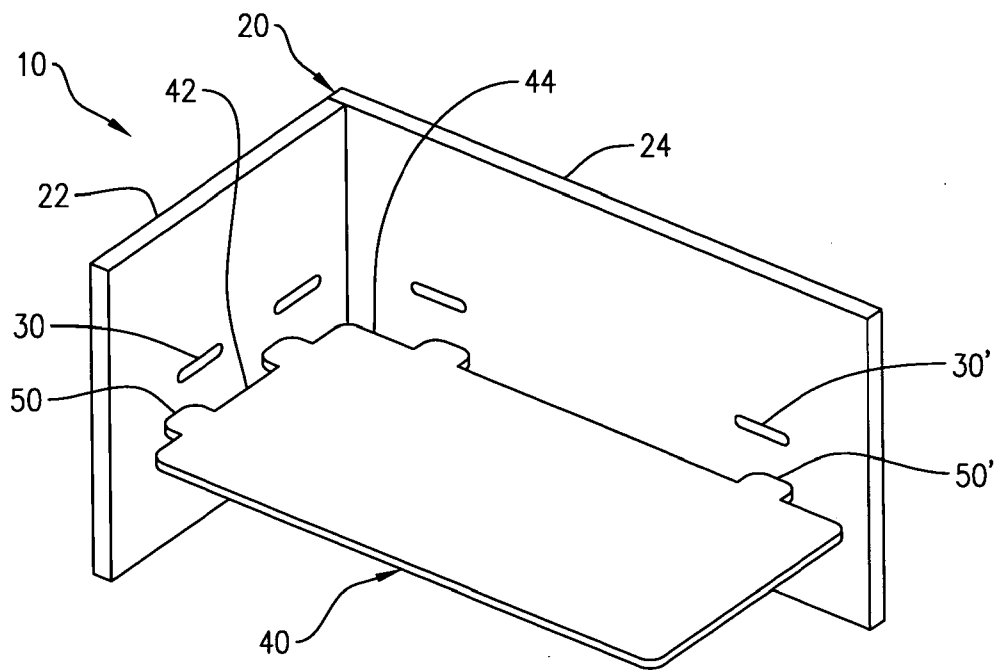


Fig. 1

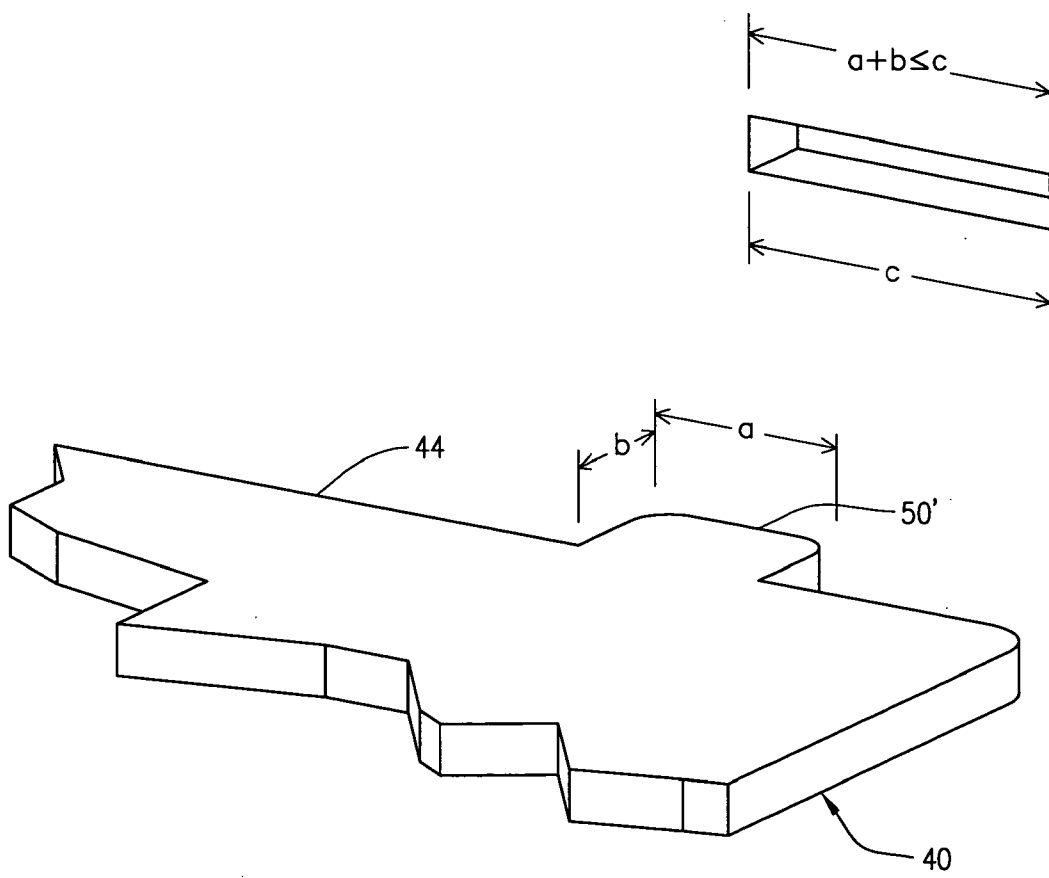
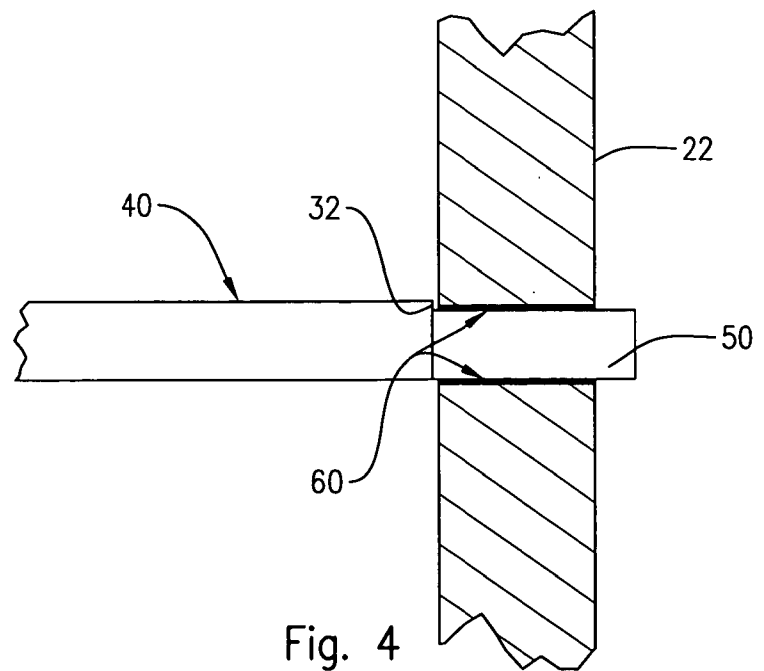
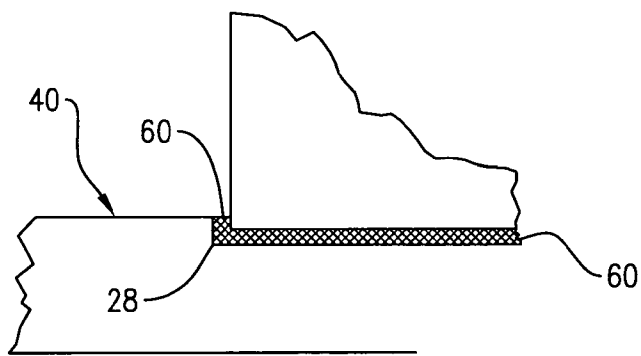
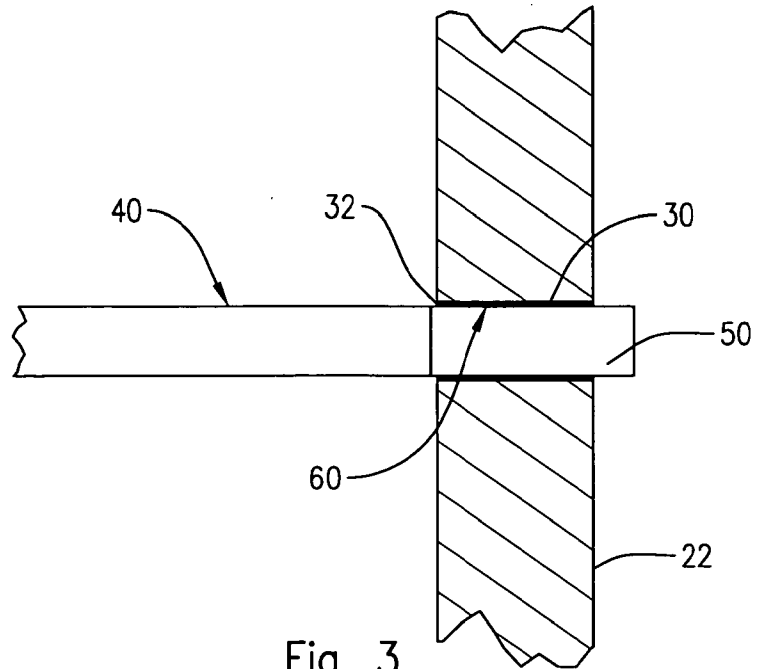


Fig. 2A



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/08973

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A47F 5/08 (2008.04)

USPC - 108/42

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): A47F 5/08 (2008.04)

USPC: 108/42

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

USPC: 108/158.12, 211/90.01, 211/119.003, 248/235, 248/250

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Electronic Databases Searched: PubWEST(USPT,PGPB,EPAB,JPAB); Google Patents, Google

Search terms used: Corner shelf, shelf, corner wall, adhesive, tongue, step, curving, thickness, perpendicular.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                         | Relevant to claim No. |
|-----------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Y         | US 6,467,636 B1 (Schaefer) 22 October 2002 (22.10.2002)<br>Figs 2 and 3; col 2, ln 11-14, col 4, ln 42-45; col 5, ln 23-29 | 1-4                   |
| Y         | US 5,588,370 A (Longley) 31 December 1996 (31.12.1996)<br>col 2, ln 13-18; col 3, ln 47-56                                 | 1-4                   |
| Y         | US 6,591,762 B1 (Haghighyegh) 15 July 2003 (15.07.2003)<br>Fig 1; col 1, ln 28-34; col 2, ln 40-44                         | 4                     |
| A         | US 2,522,442 A (Garris) 12 Sept 1950 (12.09.1950), entire document                                                         | 1-4                   |

☐ 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

05 October 2008 (05.10.2008)

Date of mailing of the international search report

30 OCT 2008

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