US 20110219724A1

(19) **United States**

(12) **Patent Application Publication**

Davis

(10) **Pub. No.: US 2011/0219724 A1**

(43) **Pub. Date: Sep. 15, 2011**

(54) **FRAMING GUIDE**

(76) Inventor: **Mark Kevin Davis**, Castle Rock, CO (US)

(21) Appl. No.: **12/723,639**

(22) Filed: **Mar. 13, 2010**

Publication Classification

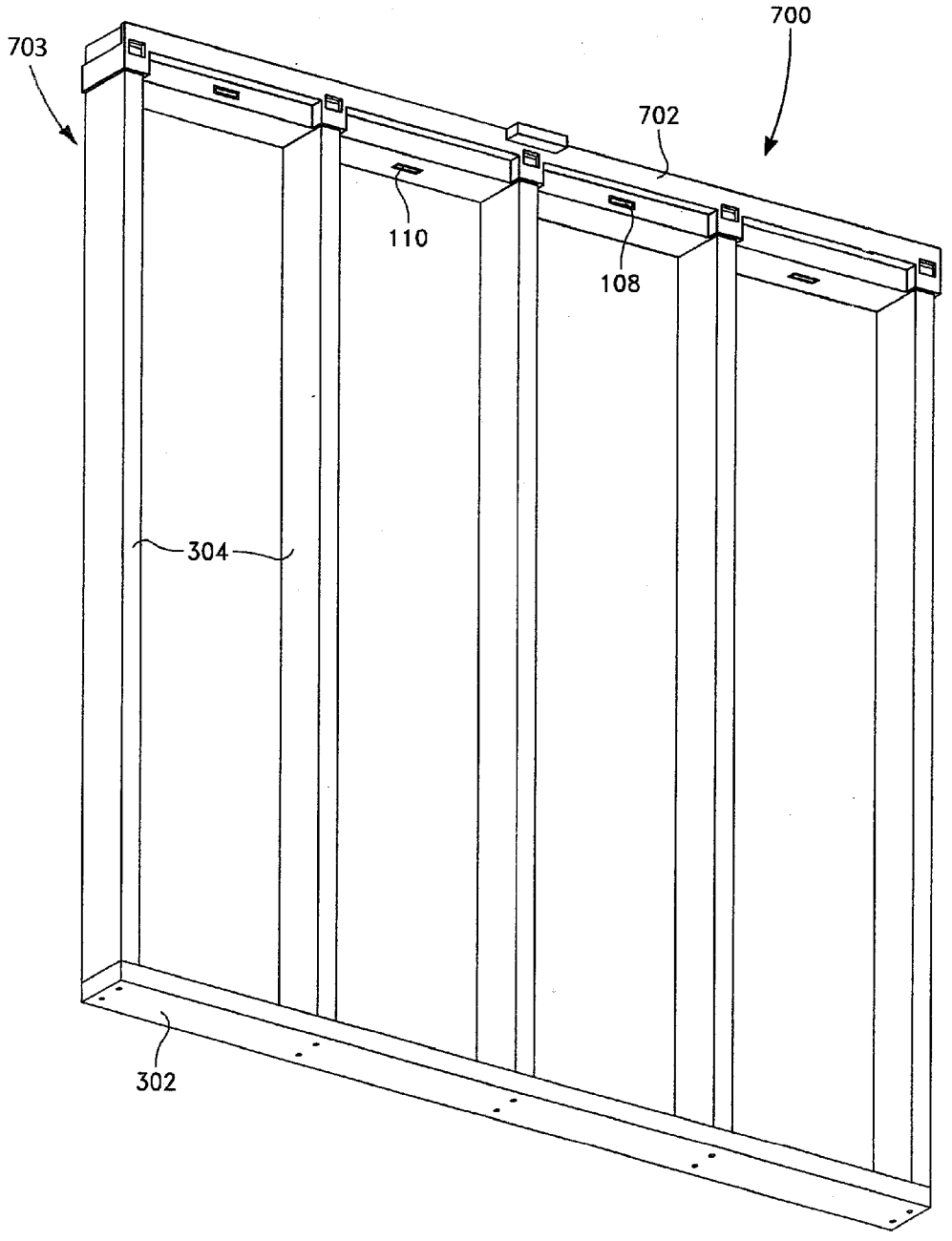
(51) **Int. Cl.**

E04B 2/56	(2006.01)
G01B 1/00	(2006.01)
G01C 9/00	(2006.01)

(52) **U.S. Cl.** **52/745.09**; 33/613; 33/354

(57) **ABSTRACT**

A multi-sided framing guide includes a stud side with stud pockets, a nail side with nailing windows, and an intermediate side adjoining the stud and nail sides.



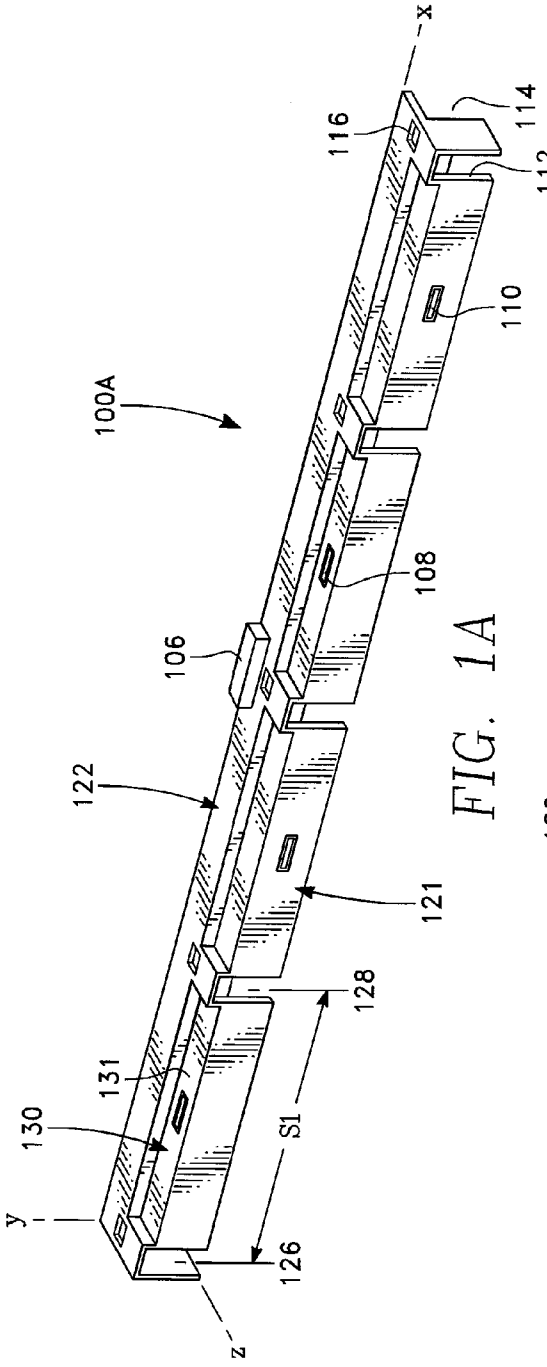

x
116
114
112
110
100A
108
106
122
121
128
131
130
S1
y
126
z

FIG. 1A

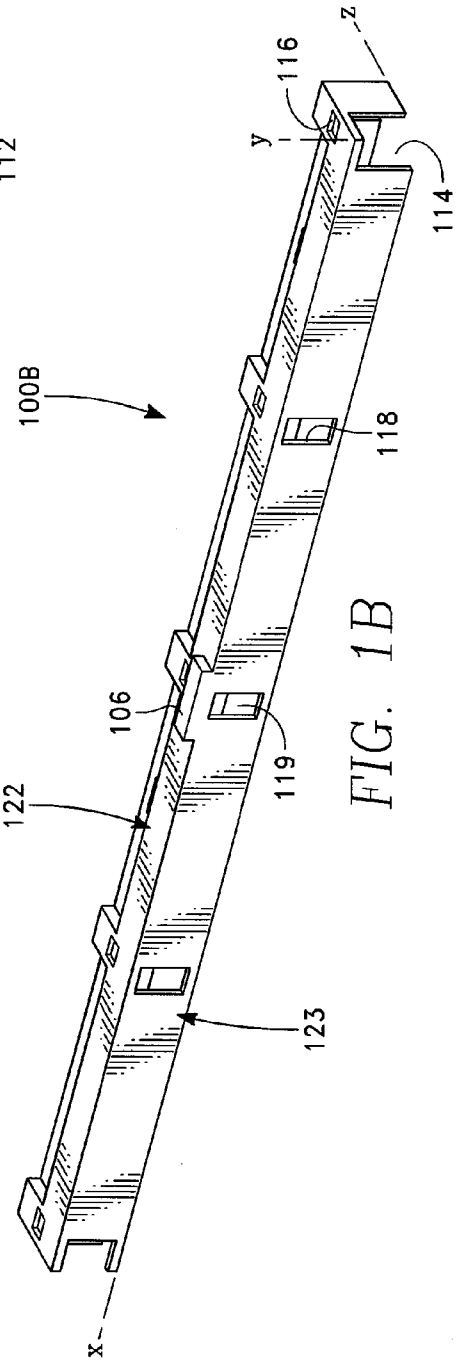

z
116
y
114
100B
118
106
119
122
123
x

FIG. 1B

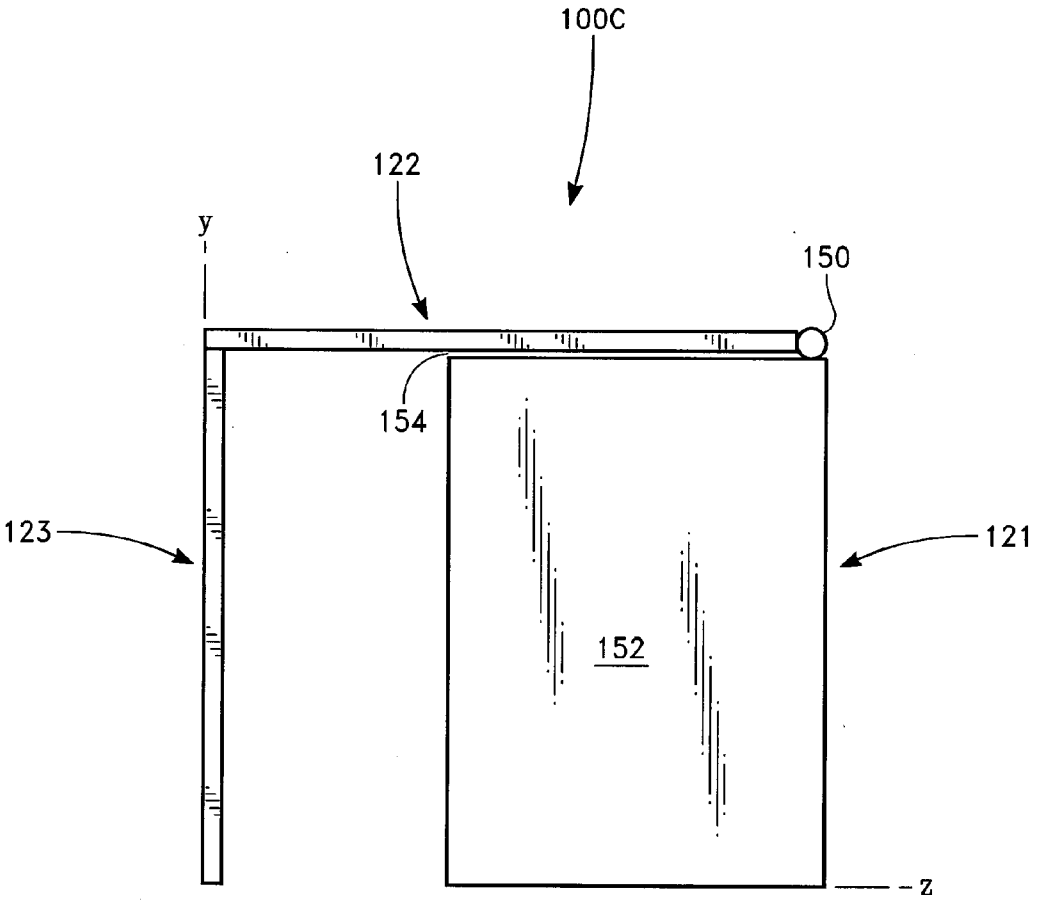


FIG. 1C

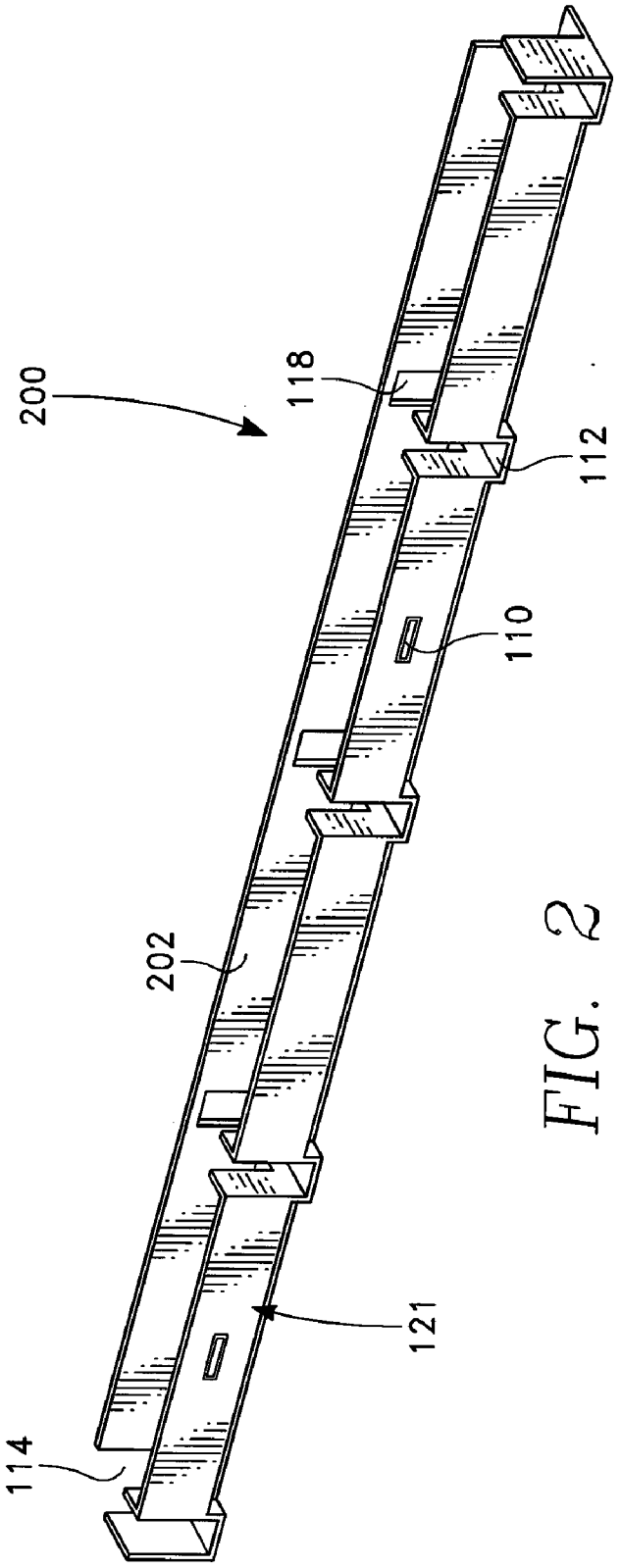


FIG. 2

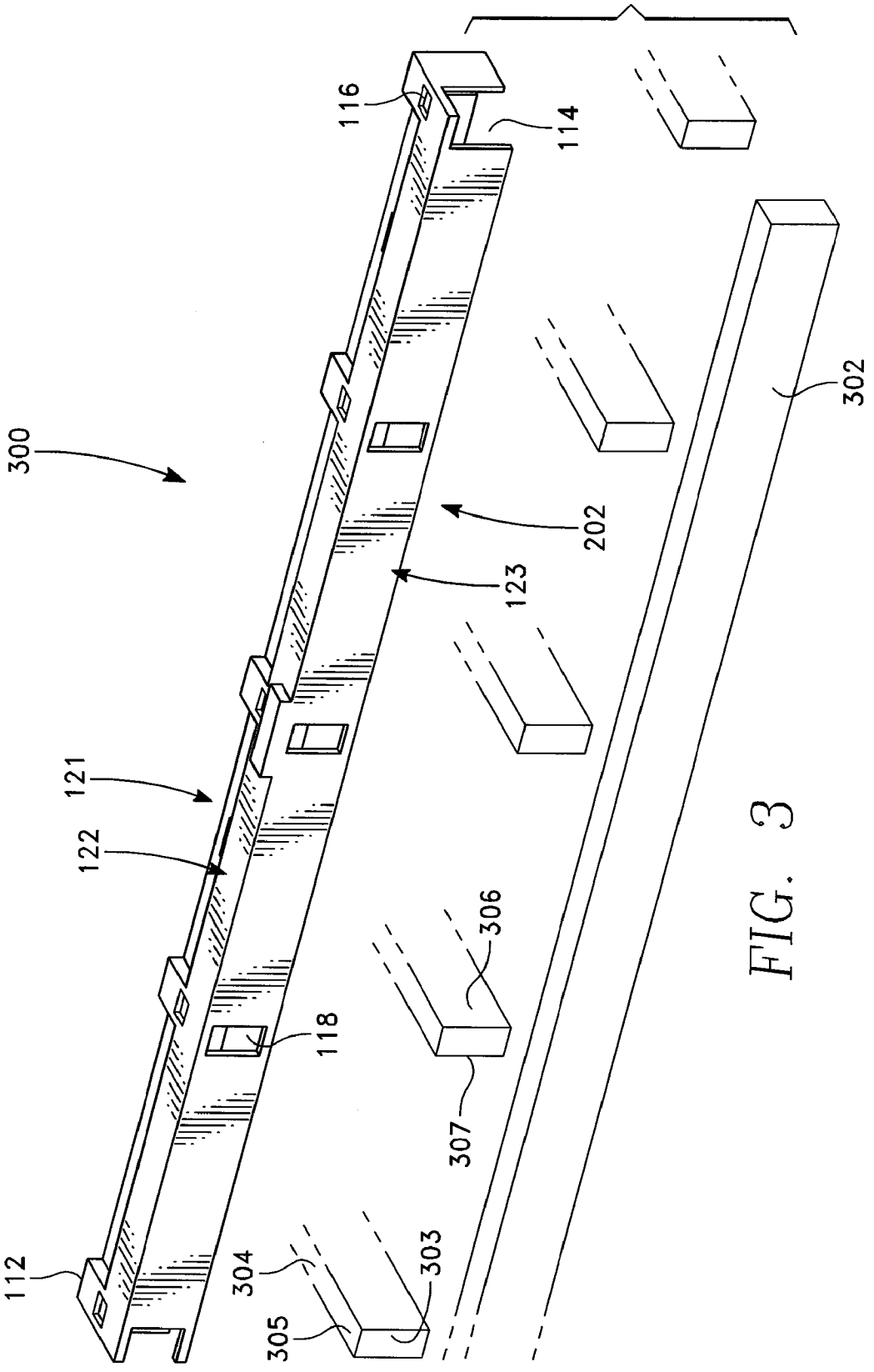


FIG. 3

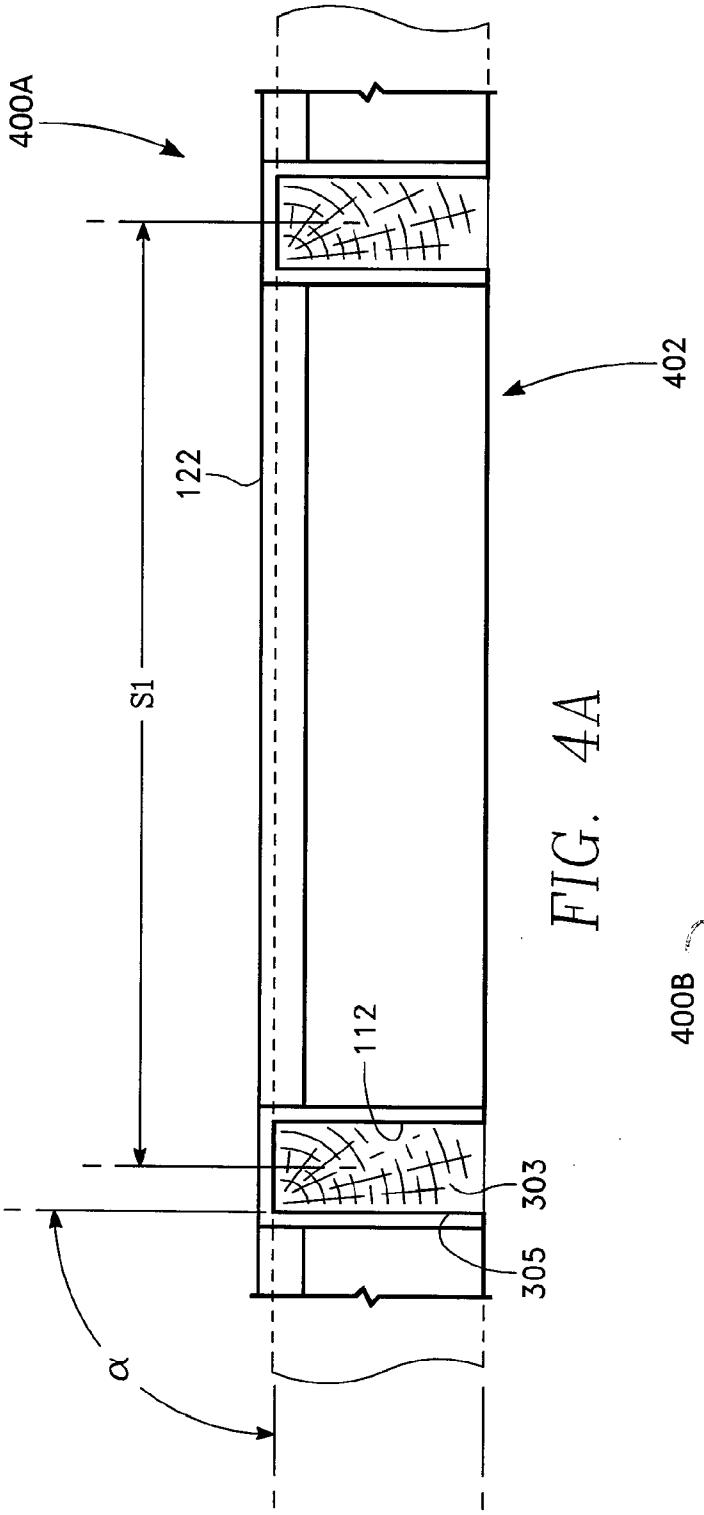


FIG. 4A

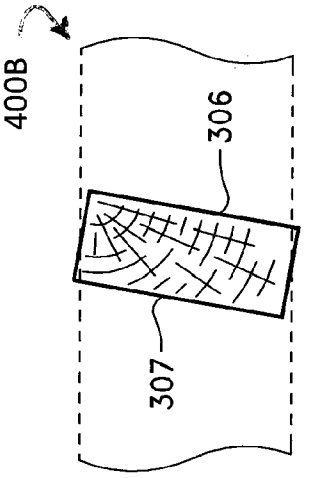


FIG. 4B

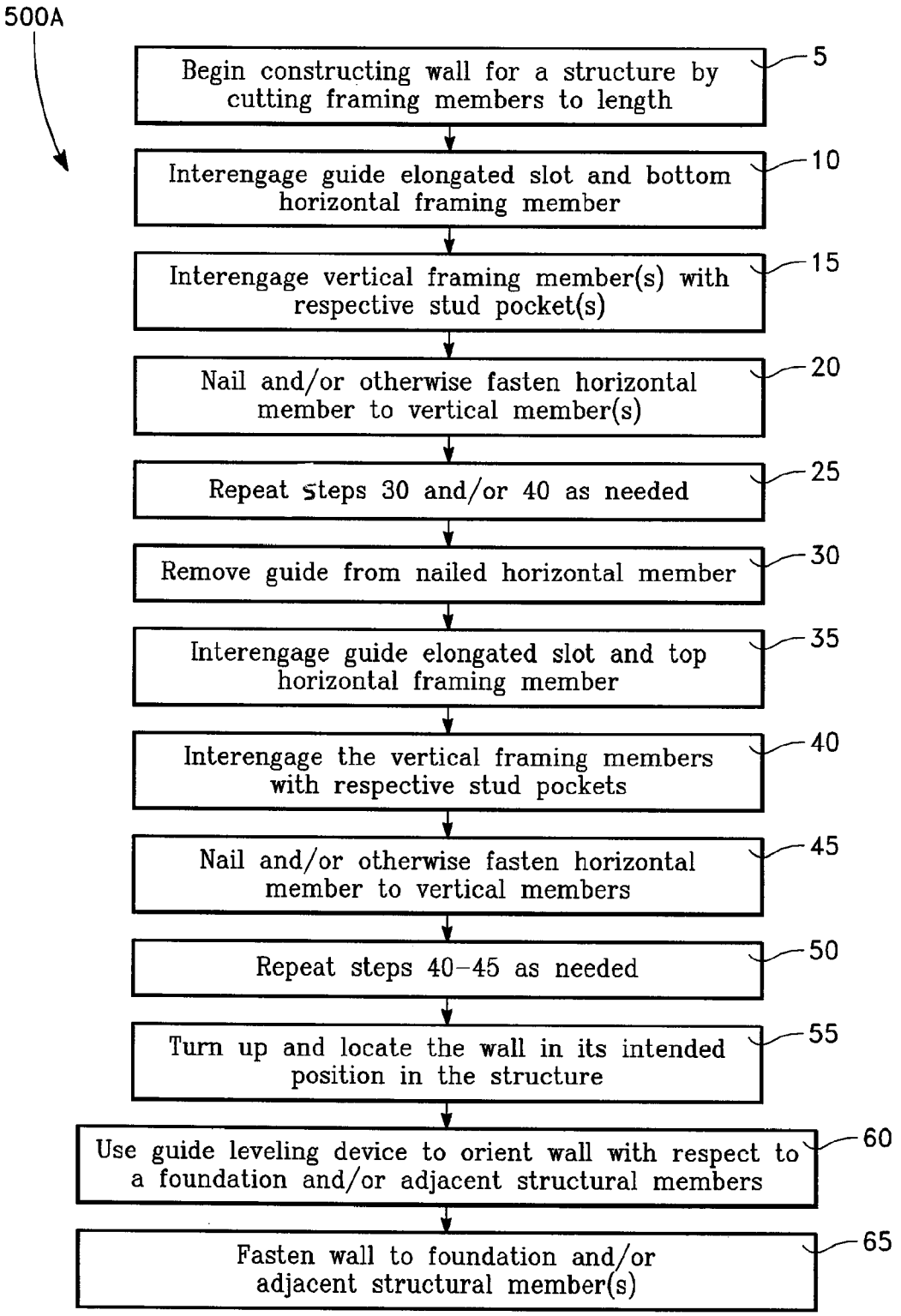

500A
Begin constructing wall for a structure by cutting framing members to length
5
Interengage guide elongated slot and bottom horizontal framing member
10
Interengage vertical framing member(s) with respective stud pocket(s)
15
Nail and/or otherwise fasten horizontal member to vertical member(s)
20
Repeat steps 30 and/or 40 as needed
25
Remove guide from nailed horizontal member
30
Interengage guide elongated slot and top horizontal framing member
35
Interengage the vertical framing members with respective stud pockets
40
Nail and/or otherwise fasten horizontal member to vertical members
45
Repeat steps 40–45 as needed
50
Turn up and locate the wall in its intended position in the structure
55
Use guide leveling device to orient wall with respect to a foundation and/or adjacent structural members
60
Fasten wall to foundation and/or adjacent structural member(s)
65

FIG. 5A

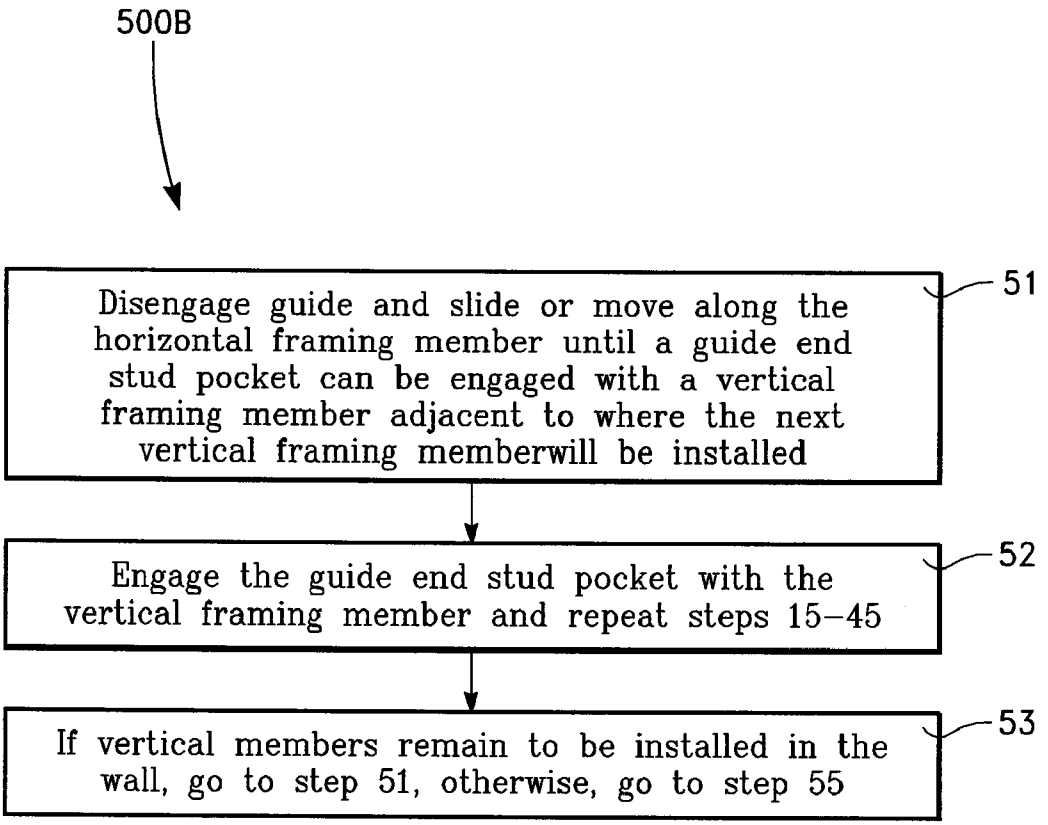

500B
Disengage guide and slide or move along the horizontal framing member until a guide end stud pocket can be engaged with a vertical framing member adjacent to where the next vertical framing memberwill be installed
51
Engage the guide end stud pocket with the vertical framing member and repeat steps 15–45
52
If vertical members remain to be installed in the wall, go to step 51, otherwise, go to step 55
53

FIG. 5B

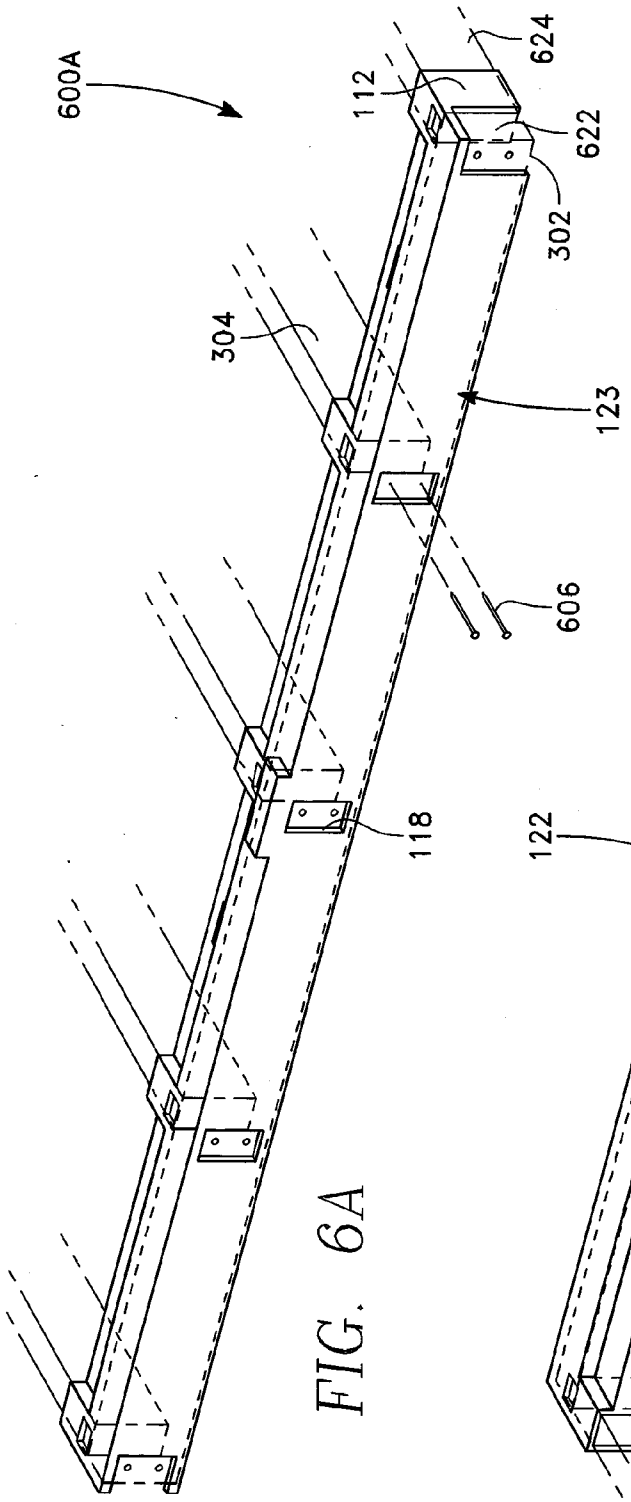

600A
112
624
622
302
304
123
606
118

FIG. 6A

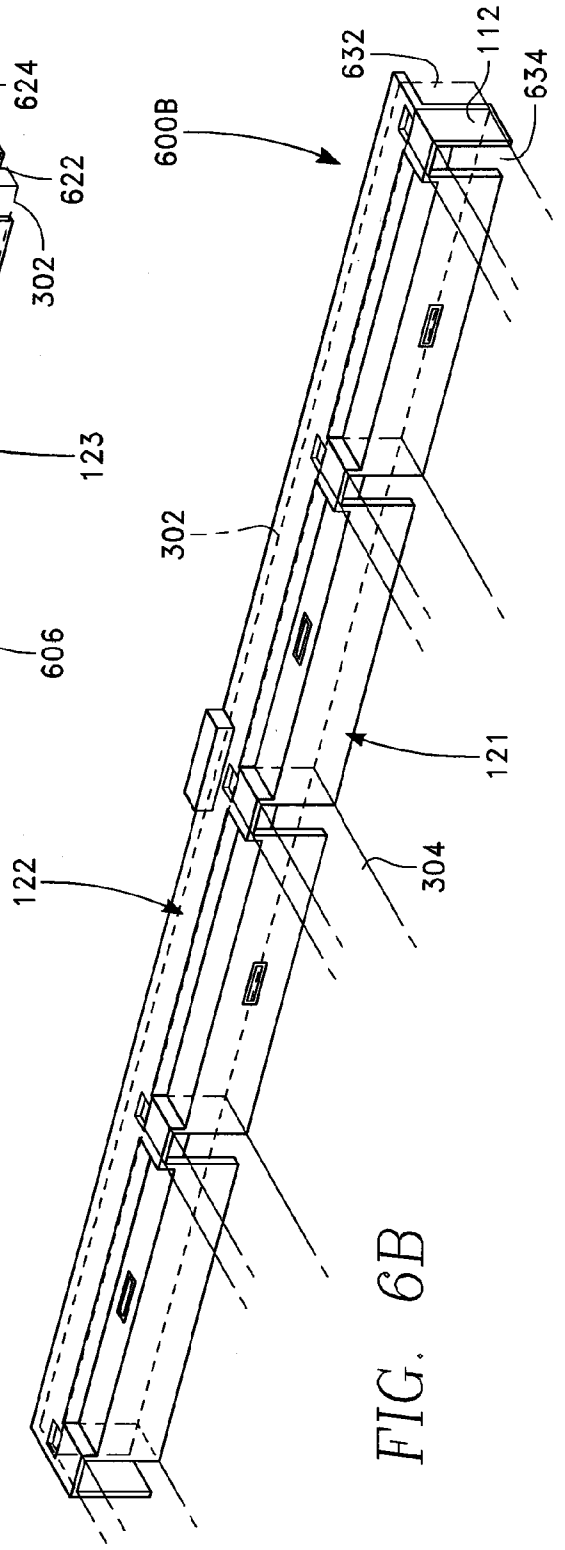

600B
632
112
634
302
121
122
304

FIG. 6B

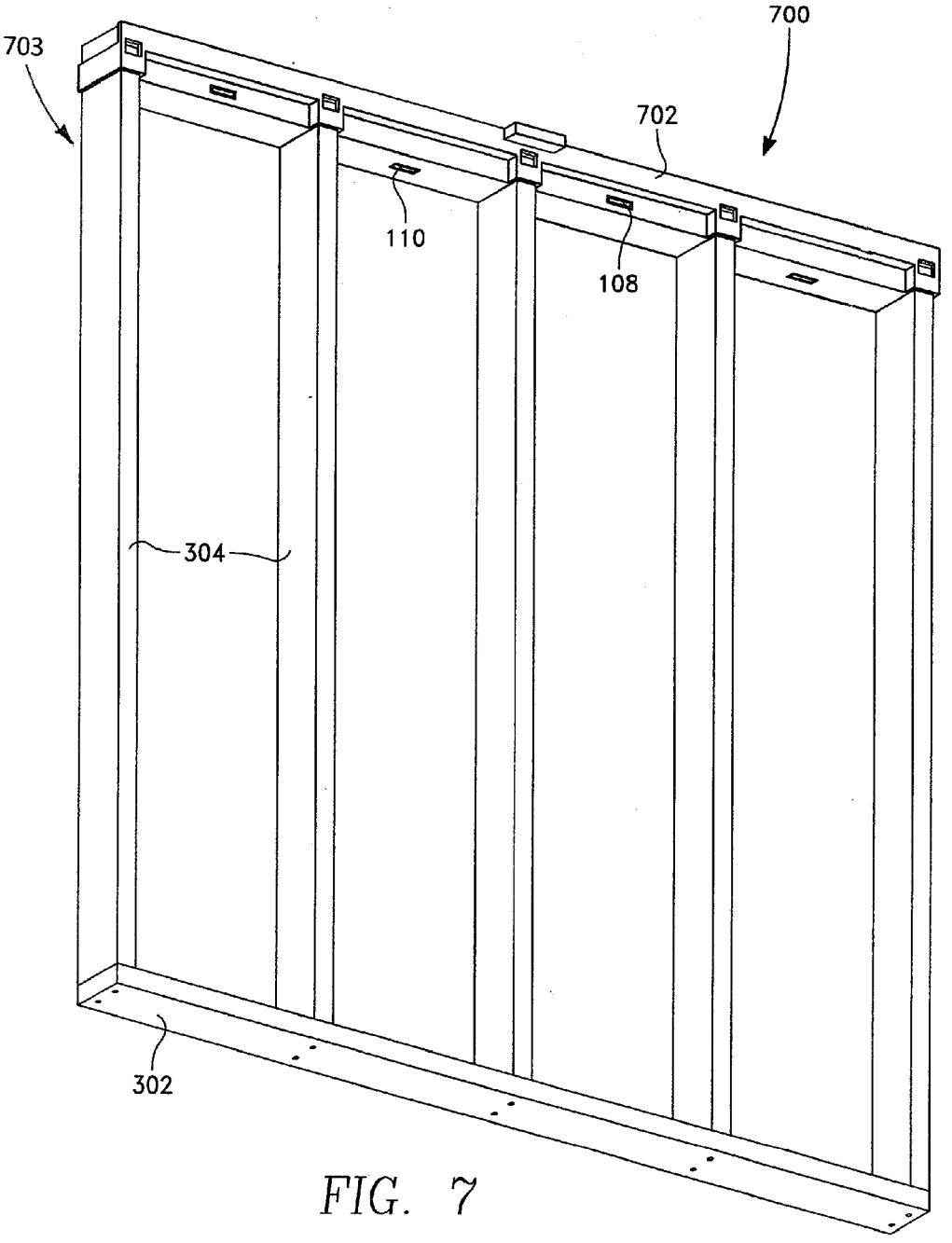


FIG. 7

FRAMING GUIDE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a construction tool. In particular, a framing guide provides a means for improved construction, including improved wall construction.

[0003] 2. Discussion of the Related Art

[0004] Construction using framing members is an old art. Over hundreds of years, the tools, materials, and methods used for framing structures have improved. Despite these improvements, framing tools used today are little changed from those used hundreds of years ago. The most significant improvements relate primarily to mechanizing a well known tool, such as substituting a nail gun for a hammer and nail.

SUMMARY OF THE INVENTION

[0005] A framing tool comprises a guide used to align a horizontal framing member with a vertical framing member and to facilitate fastening the members together while maintaining the desired relative alignment.

[0006] In an embodiment, an elongated framing guide has a stud side coupled to an opposed nail side by an intermediate side. The stud side, intermediate side, and nail side form a substantially "n" shaped guide cross section with an elongated slot. The elongated slot is for receiving a horizontal framing member.

[0007] The stud side includes a plurality of pockets for receiving respective ends of vertical framing members and each pocket has three sides formed to position opposing major sides of the vertical framing member about perpendicular to the intermediate side. A leveling device is located between each pair of adjacent pockets and is arranged to indicate a level of the guide.

[0008] The nail side includes a plurality of nailing windows and each nailing window is generally opposed to a respective stud side pocket.

[0009] The intermediate side includes a plurality of insets, each inset located between an adjacent pair of the stud side pockets. Each inset has a surface depressed with respect to the intermediate side and about parallel to the intermediate side and a plurality of the depressed surfaces have respective leveling devices, each leveling device located between an adjacent pair of pockets and arranged to indicate a level of the guide. The intermediate side further includes a plurality of viewing windows, each viewing window for exposing a junction between a vertical framing member and the horizontal framing member.

[0010] The guide is movable along an upper horizontal framing member of arbitrary length for aiding alignment and fixation of vertical framing members with the upper horizontal framing member. In addition, the guide is movable along an associated lower horizontal framing member for aiding alignment and fixation of the vertical framing members with the lower horizontal framing member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The present invention is described with reference to the accompanying figures. These figures, incorporated herein and forming part of the specification, illustrate embodiments of the invention and, together with the description, further serve to explain its principles enabling a person skilled in the relevant art to make and use the invention.

[0012] FIG. **1**A shows a first view of a framing guide in accordance with the present invention.

[0013] FIG. **1**B shows a second view of the framing guide of FIG. **1**A.

[0014] FIG. **1**C shows hinged embodiment of the framing guide of FIG. **1**A.

[0015] FIG. **2** shows another view of the framing guide of FIG. **1**A.

[0016] FIG. **3** shows the framing guide of FIG. **1**A alongside framing members to be assembled using the guide.

[0017] FIG. **4**A shows a cross-section of a first selected portion of the guide of FIG. **1**A.

[0018] FIG. **4**B shows a cross-section of a second selected portion of the guide of FIG. **1**A.

[0019] FIG. **5**A shows a first flowchart depicting an exemplary method of using the guide of FIG. **1**A.

[0020] FIG. **5**B shows a second flowchart depicting an exemplary method of using the guide of FIG. **1**A.

[0021] FIG. **6**A shows a first construction of a wall section using the guide of FIG. **1**A.

[0022] FIG. **6**B shows a second construction of a wall section using the guide of FIG. **1**A.

[0023] FIG. **7** shows placement and leveling of a wall section using the guide of FIG. **1**A.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] The disclosure provided in the following pages describes examples of some embodiments of the invention. The designs, figures, and description are non-limiting examples of the embodiments they disclose. For example, other embodiments of the disclosed device and/or method may or may not include the features described herein. Moreover, disclosed advantages and benefits may apply to only certain embodiments of the invention and should not be used to limit the disclosed invention.

[0025] FIG. **1**A shows a first view of a framing guide in accordance with an embodiment of the present invention **100**A. FIG. **1**B shows a second view of the framing guide **100**B. The first view of the guide shows a guide stud side **121** and a guide intermediate side **122**. A second view of the guide **100**B shows a guide nail side **123** and the guide intermediate side. The guide has a generally "n" shaped cross-section formed by the stud side, intermediate side, and nail side. FIG. **1**C shows a framing guide embodiment having an articulated joint **100**C.

[0026] FIG. **2** shows an axially rotated view of the guide **200**. In the axially rotated view, the open side of the "n" shaped guide **202** is visible.

[0027] FIG. **3** shows the guide and framing members to be joined **300**. The framing members include a horizontal framing member **302** and a plurality of vertical framing members or studs **304**.

[0028] An orthogonal coordinate system with an origin at a lower, back, left corner of the guide as shown in the first view **100**A places the stud side **121** in a plane parallel to the x-y plane, the nail side **123** in a plane parallel to the x-y plane, the intermediate side **122** in a plane parallel to the x-z plane, and the open side **202** in a plane parallel to the x-z plane.

[0029] Stud pockets **112** are arranged along the stud side **121** of the framing guide. In an embodiment, the framing guide has five stud pockets (as shown). Some embodiments utilize less than five stud pockets while other embodiments utilize more than five stud pockets. Each stud pocket has three

sides formed to position opposing major sides of the studs **306**, **307**. Spacing between the stud pocket centerlines **126**, **128** is set to create a desired stud spacing S1 such as 12 inches on center, 18 inches on center, or another desired spacing.

[0030] FIGS. **4**A and **4**B show framing guide cross-sections along a plane parallel to the x-y plane **400**A, **400**B. The stud ends **305** are inserted in the stud pockets **112**. As can be seen in the first view **402**, the framing guide aligns the stud major sides **306**, **307** about perpendicular to the intermediate side **122**. In contrast, assembly without the framing guide often leads to misaligned studs as shown in the second view **400**B.

[0031] In an embodiment, one or more bubble tube type levels **108** are fixed to the intermediate side **122** between adjacent stud pockets **112** (as shown). These levels lie along a line parallel to the x axis and are referred to as x-z levels. In some embodiments, one or more bubble type levels **110** are fixed to the stud side **121** between adjacent stud pockets **112** (as shown). These levels lie along a line parallel to the x axis and are referred to as x-y levels.

[0032] In an embodiment, adjacent stud pockets **112** are separated by insets **130** (as shown). Here, each inset has a surface **131** depressed with respect to the intermediate side **122** and about parallel to the intermediate side. Where the framing guide material is chosen for properties other than strength and rigidity, such as in the choice of a light weight polymeric or plastic material, the use of insets improves the rigidity of the guide.

[0033] Nailing windows **118** are arranged along the nail side **123** of the framing guide. In an embodiment, the framing guide has five nailing windows (as shown). Nailing windows correspond to stud pockets **112** as further described below. Each nailing window provides an opening into the interior of the framing guide **119** that aligns with a respective stud pocket and stud face **303**.

[0034] An elongated slot **114** along the length of the framing guide is for interengaging a horizontal framing member **302**. One side of the slot is bounded by the framing guide's nail side **123** and an adjacent side of the slot is bounded by the framing guide's intermediate side **122**.

[0035] In an embodiment, viewing windows **116** are arranged along the intermediate side of the framing guide. The viewing windows are aligned with the stud pockets **112**. When the framing guide interengages a horizontal framing member **302** and a stud **304**, the corresponding viewing window enables a user to view the junction where the stud meets the horizontal framing member. Visual assessments of these junctions enables a user to assure, among other things, that a stud is fully inserted in a respective stud pocket **112**.

[0036] Some framing guide embodiments provide a handhold means to facilitate handling the guide. In one embodiment, a hand hold **106** extends from the intermediate side **122** about midway between the ends of the framing guide. And, some framing guide embodiments provide a hinge **150** (See FIG. **1**B) coupling the stud and intermediate sides **121**, **122**, rotation of the stud side with respect to the intermediate side being useful for facilitating sliding the guide along a horizontal framing member. In a hinged embodiment, end walls **152** are separated from the intermediate side by a gap **154** enabling rotation of the end walls and stud side with respect to the intermediate side.

[0037] In various embodiments, the framing guide is made of one or more materials that provide the desired combination of strength, rigidity, light weight, manufacturability, and toughness. Non-metal materials include polymers such as plastics, composites such as carbon composites, and fabric with resin composites such as fiberglass. Metals include ferrous and non-ferrous metals such as steel, aluminum, titanium, and alloys of these metals known to persons of ordinary skill in the art.

[0038] In operation, the framing guide is used to align a horizontal framing member **302** with a plurality of vertical framing members **304**, and to facilitate fastening the members together.

[0039] FIGS. **5**A and **5**B show exemplary method flowcharts using the framing guide **500**A, **500**B. The method steps may be in the sequence shown, or in another sequence and fewer than all of the steps may be used in various embodiments. Moreover, other steps may be included as will be understood by a person of ordinary skill in the art.

[0040] FIGS. **6**A, **6**B show the framing guide in use during wall section construction **600**A, **600**B. View **600**A shows fastening of a bottom horizontal member **622** and view **600**B shows fastening of a top horizontal member **632**. FIG. **7** shows the framing guide in use during wall section placement **700**. The framing guide **702** is located atop the wall section **703** and levels **108**, **110** are available for leveling of the wall section.

[0041] In the exemplary sequence of method steps, beginning with step **5**, a wall is constructed using the framing guide **300**. Framing members are selected and cut to length as needed **300**. Continuing with step **10**, the guide elongated slot **114** is interengaged with a bottom horizontal framing member **612**. Continuing with step **15**, vertical framing members are interengaged with respective stud pockets **624**. Continuing with step **20**, fasteners such as nails, screws, staples, or another fastener known to persons of ordinary skill in the art are used to fasten the horizontal member to the vertical members **606** via the nailing windows **118**. Continuing with step **25**, steps **15** and/or **20** are repeated as needed to fasten each vertical framing member to the horizontal framing member.

[0042] Continuing with step **30**, when the studs **304** in the framing guide are fastened to the bottom horizontal member **622**, the framing guide is removed from the fastened framing members and, continuing with step **35**, the framing guide elongated slot is interengaged with a top horizontal framing member. Continuing with step **40**, the opposite ends of the vertical framing members interengaged with respective stud pockets **634**. Continuing with step **45**, fasteners such as nails, screws, staples, or another fastener known to persons of ordinary skill in the art are used to fasten the horizontal member to the vertical members **606** via the nailing windows **118**. Continuing with step **50**, steps **40** and/or **45** are repeated as needed to fasten each vertical framing member to the horizontal framing member.

[0043] Continuing with step **55**, when the studs **304** in the framing guide are fastened to the top horizontal member **632**, the constructed wall **700** is turned up and located in its intended position in a structure. Continuing with step **60**, the leveling devices **108**, **110** are used to orient the wall with respect to a foundation and/or adjacent structural members. Continuing with step **65**, when the wall is positioned and leveled as desired, the wall is fastened to the foundation and/or adjacent structural members.

[0044] In an embodiment, the framing guide is used to construct a wall section incorporating more studs than can be placed in the framing guide at one time. Here, the framing guide is moved along a horizontal framing member to incor-

porate additional studs. An exemplary method incorporates additional steps **51**, **52**, and **53** between steps **50** and **55**.

[0045] After step **45** disengage the guide and slide or move it along the horizontal framing member until a guide end stud pocket can be engaged with a vertical framing member adjacent to where the next framing member will be installed **51**. Engage the guide end stud pocket with the vertical framing member and repeat steps **15-45**. If vertical members remain to be installed in the wall, go to step **51**; otherwise, as directed in step **53**, go to step **55**.

[0046] While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. It will be apparent to those skilled in the art that various changes in the form and details can be made without departing from the spirit and scope of the invention. As such, the breadth and scope of the present invention should not be limited by the above-described exemplary embodiments, but should be defined only in accordance with the following claims and equivalents thereof.

What is claimed is:

1. A framing tool comprising:
- an elongated guide having a stud side coupled to a nail side by an intermediate side;
- the stud side, intermediate side, and nail side forming a substantially "n" shaped guide cross-section with an elongated slot;
- the elongated slot for receiving a horizontal framing member;
- the stud side including a plurality of pockets for receiving respective ends of vertical framing members;
- the nail side including a plurality of nailing windows;
- the guide being movable along an upper horizontal framing member of arbitrary length for aiding alignment and fixation of vertical framing members with the upper horizontal framing member; and,
- the guide being movable along an associated lower horizontal framing member for aiding alignment and fixation of the vertical framing members with the lower horizontal framing member.

2. The framing tool of claim **1** wherein the stud side is opposite the nail side.

3. The framing tool of claim **2** wherein each pocket has three closed sides and an open side formed to position opposing major sides of the vertical framing member about perpendicular to the intermediate side.

4. The framing tool of claim **3** further including a first plurality of leveling devices, a leveling device located between each adjacent pair of pockets in a plane substantially parallel to the stud side, the leveling guide arranged to indicate a level of the guide.

5. The framing tool of claim **4** wherein each nailing window is generally opposed to a respective stud side pocket.

6. The framing tool of claim **5** further including a plurality of insets, an inset located between each adjacent pair of pockets.

7. The framing tool of claim **6** wherein each inset has a surface depressed with respect to the intermediate side and about parallel to the intermediate side.

8. The framing tool of claim **7** further including a second plurality of leveling devices, the leveling devices located in a plane about perpendicular to the plane of the first plurality of leveling devices.

9. The framing tool of claim **7** further including a second plurality of leveling devices, a leveling device fixed to each depressed surface for indicating a level of the guide.

10. The framing tool of claim **9** further including a plurality of viewing windows, each viewing window for exposing a junction between a respective vertical framing member and the horizontal framing member.

11. The framing tool of claim **10** further including a hinge coupling the intermediate side and the stud side, the hinge operable to facilitate sliding of the framing guide along a horizontal framing member.

12. A method of constructing a framed wall, the method comprising the steps of:
- providing a first horizontal framing member and a first plurality of vertical framing members;
- providing a framing guide with a stud side having stud pockets, a nailing side having nailing windows, an intermediate side adjoining the stud and nailing sides, and an open side for accessing an elongated slot between the stud and nailing sides;
- providing a first plurality of leveling devices coupled to the stud side and a second plurality of leveling devices coupled to the intermediate side;
- interengaging the elongated slot and a bottom horizontal framing member;
- interengaging first ends of a plurality of vertical framing members with respective stud pockets;
- fastening the first end of each vertical member to the bottom horizontal member;
- interengaging the elongated slot and a top horizontal framing member;
- interengaging second ends of the plurality of vertical framing members with respective stud pockets;
- fastening the second end of each vertical member to the top horizontal member;
- turning up and locating the wall in its intended position in a structure;
- using guide leveling devices to orient the wall with respect to a foundation;
- using guide leveling devices to orient the wall with respect to an adjacent structural member;
- fastening the wall to the foundation; and,
- fastening the wall to an adjacent structural member.

13. The method of claim **12** further including the steps of:
- relocating the guide on a horizontal framing member when the number of studs exceeds the number of stud pockets;
- interengaging a guide end stud pocket with a vertical framing member adjacent to where the next vertical framing member will be joined;
- interengaging an end of the next vertical framing member with a respective stud pocket; and,
- fastening the end of the next vertical framing member to the horizontal framing member.

14. The method of claim **13** further including the steps of:
- articulating the stud side with respect to the intermediate side; and,
- rotating the stud side with respect to the intermediate side to facilitate sliding the guide along a horizontal framing member.

* * * * *