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(57) **ABSTRACT**

Related U.S. Application Data

The present invention provides devices for aligning doors and windows during installation, and methods of use thereof. In particular, the present invention provides devices for properly aligning a door and/or window with the interior surface of a wall during installation.

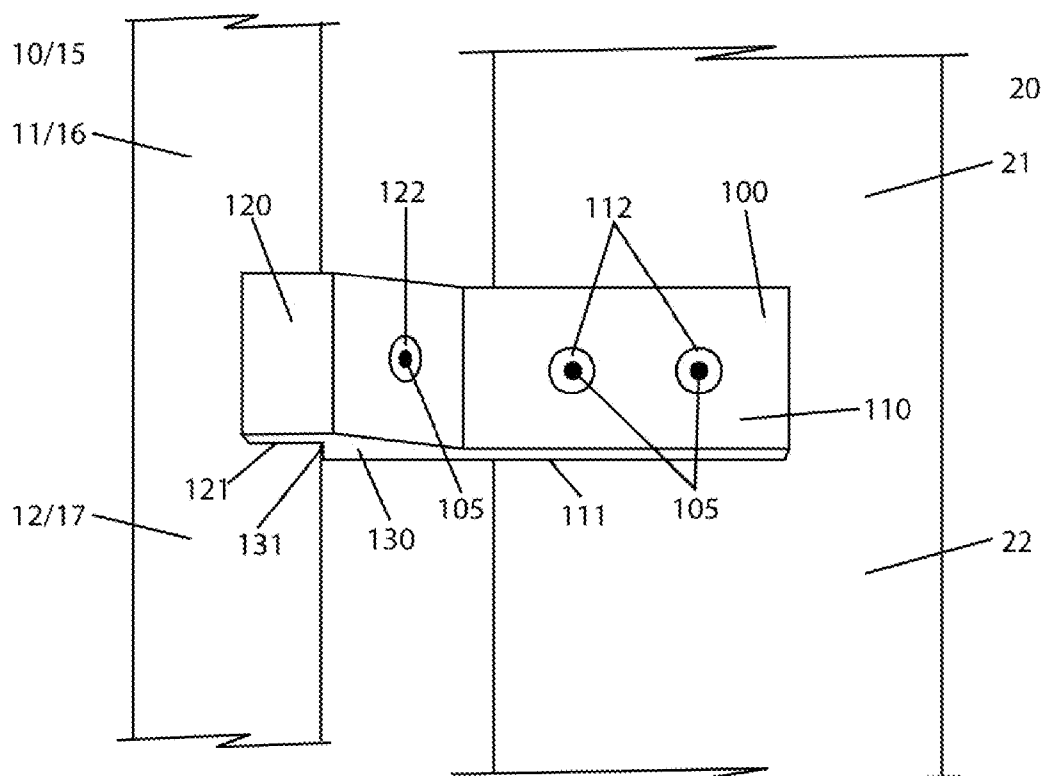
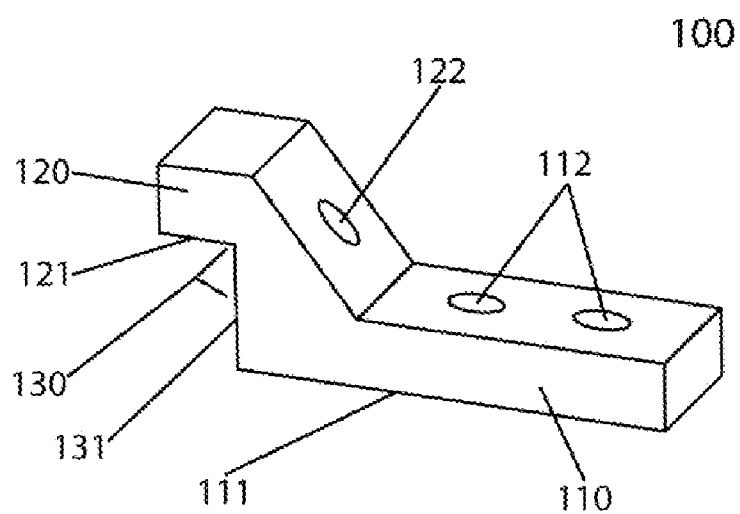


FIGURE 1

A)



B)

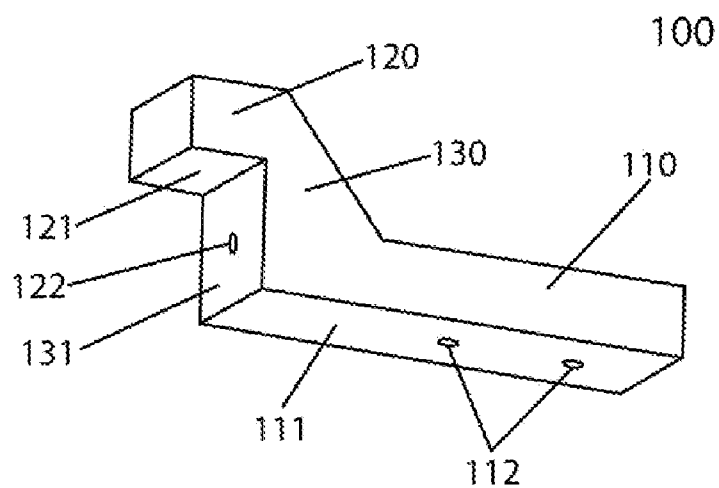
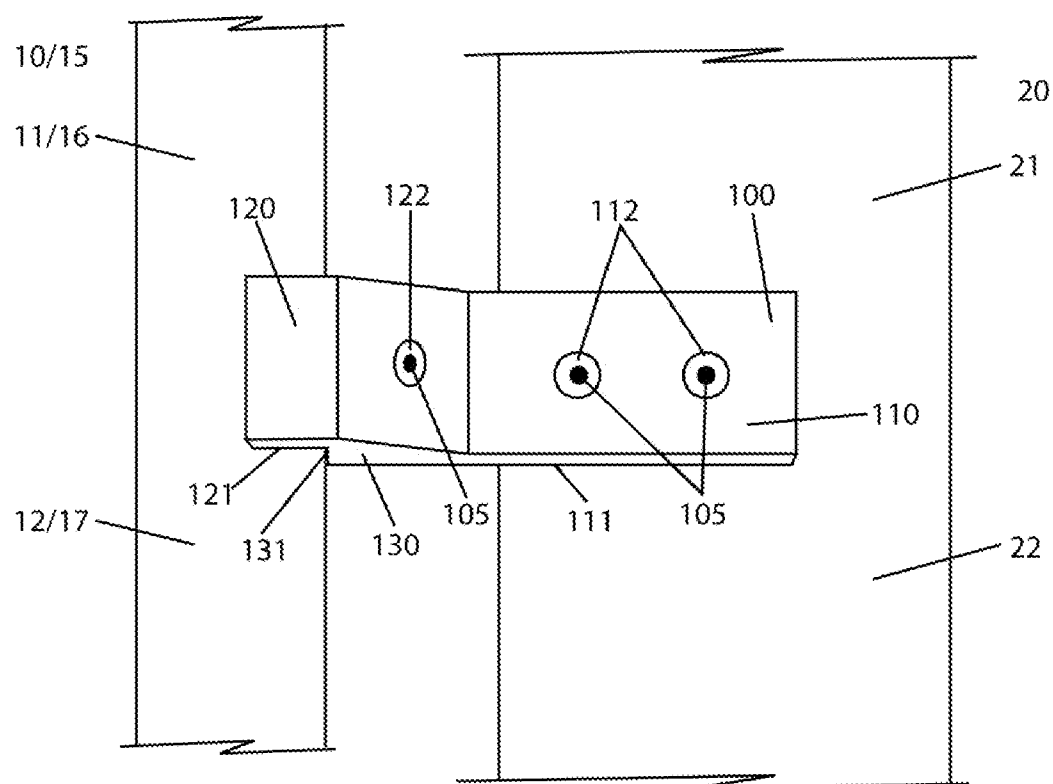


FIGURE 2



DEVICES AND METHODS FOR WINDOW INSTALLATION

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to pending U.S. Provisional Patent Application No. 61/294,384, filed Jan. 12, 2010, the contents of which are incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention provides devices for aligning doors and windows during installation, and methods of use thereof. In particular, the present invention provides devices for properly aligning a door and/or window with the interior surface of a wall during installation.

BACKGROUND

[0003] When installing a window or door, the jamb is generally designed to protrude into the interior of the structure to be flush with the interior surface (e.g. drywall, paneling, etc.) of the wall in which it is to be installed. Aligning the window or door with the interior surface of the wall presents a challenge to installers. Installation often requires one person to hold the window or door in proper alignment while a second person nails it in place. The requirement for a second installer is inefficient and economically wasteful.

[0004] A nailing flange is often used to secure windows. These flanges are typically flexible and allow the window to move in or out with respect to the interior wall during installation, and even after installation is complete. Movement of the window at the nailing flange throws the jambs out of alignment with the surface of the interior wall. Movement at the nailing flange can be exacerbated by application of insulation around and behind the frame. Insulation, particularly foam insulation, pushes on the door or window causing a properly aligned door or window to fall out of alignment. The use of fiberglass insulation reduces the force applied to the window, but does not completely alleviate it, and does not address the other challenges of achieving proper alignment.

[0005] Installers often attempt to align windows and doors without any aid to set the distance into the room. A technique for achieving proper alignment involves shimming the jambs with wood shims to hold the jambs away from the rough framing. Nails are then driven through the jamb and into the framing. The process is not efficient because it results in holes being driven into the finished jambs, and requires assistance from a second person to hold the door or window at the proper alignment while the shims are put in place. The process is also time-consuming because a lot of shims are generally required. Further, the window or door may still experience movement if spray foam insulation is used, resulting in pressure on the window or door, making it hard to open.

[0006] If a window or door is misaligned, the jamb must be planed down or the surface of the wall must be trimmed. If the jamb and the wall surface are not properly aligned, the trim will not sit flat across the junction of the two.

[0007] The field currently lacks suitable techniques for accurate alignment of windows and doors during installation. Such methods would significantly increase the efficiency and

precision of window and door installation, resulting in cost savings and superior end results.

SUMMARY OF THE INVENTION

[0008] The present invention provides devices for aligning doors and windows during installation, and methods of use thereof. In particular, the present invention provides devices for properly aligning a door and/or window with the interior surface of a wall during installation.

[0009] In some embodiments, the present invention provides a device for aligning a jamb with a wall comprising: (a) a first tab comprising a first contacting surface; (b) a second tab comprising a second contacting surface, wherein the second contacting surface is parallel to the first contacting surface, wherein the second contacting surface and the first contacting surface face the same side of the device, and wherein the second tab comprises one or more holes running through the second tab and exiting through the second contacting surface; and (c) an intertab element comprising a third contacting surface perpendicular to the first contacting surface and the second contacting surface, wherein the intertab element connects the first tab to the second tab and offsets the first contacting surface and the second contacting surface by a distance, and wherein the intertab element comprises one or more holes running through the intertab element and exiting through the third contacting surface; wherein the first contacting surface and the third contacting surface are configured to contact perpendicular faces of a jamb, wherein the second contacting surface is configured to contact the face of the wall, wherein the one or more holes through the intertab element are configured to receive securing elements through the device into the jamb, and wherein the one or more holes through the second tab are configured to receive securing elements through the device into the wall. In some embodiments, the second tab contacts the wall on the framing for a window or door. In some embodiments, the distance between the first and second contacting surfaces comprises the combined thickness of the second tab and the length of the intertab element. In some embodiments, the distance comprises the thickness of the surface material of the wall. In some embodiments, the surface material comprises dry wall. In some embodiments, the securing element comprises screws. In some embodiments, the jamb comprises a jamb on a door or window. In some embodiments, the jamb comprises a jamb on a window.

[0010] In some embodiments, the present invention provides a method of aligning jamb with a wall comprising: (a) providing an alignment clip, wherein the alignment clip comprises a surface for contacting the jamb and a surface for contacting the wall, and wherein the surfaces are parallel and offset by a distance; (b) attaching one or more alignment clips to the wall; and (c) attaching the alignment clips to the jamb. In some embodiments, the jamb comprises a door jamb or window jamb. In some embodiments, the jamb is being aligned with the wall to install a door or window. In some embodiments, the alignment clip is attached to the wall on the framing of the door or window. In some embodiments, the parallel surfaces are offset by the thickness of the surface material of the wall. In some embodiments, the surface material comprises dry wall. In some embodiments, the alignment clips are attached to the jamb and the wall by screws or nails. In some embodiments, the alignment clips are attached to the jamb and the wall by screws. In some embodiments, the present invention further provides: (d) attaching the surface

material to the wall. In some embodiments, the jamb and said surface material are properly aligned.

DESCRIPTION OF THE FIGURES

[0011] FIG. 1 shows an illustration of an exemplary alignment clip from (A) above and (B) below.

[0012] FIG. 2 shows an illustration of an exemplary alignment clip attached to a wall and jamb.

DEFINITIONS

[0013] To facilitate an understanding of the present invention, a number of terms and phrases are defined below:

[0014] As used herein, the term “jamb” refers to the structural support of a window and/or door, located inside the framing and along the top and sides of the window and/or door. The terms “door jamb” and “window jamb” refer to “jambs” specific to either a door or a window. “Window jambs” may house tracks or rails used to open and close the window. “Door jambs” may house ridges for receiving a door as it is closed. The term “head jamb” refers to a “jamb” which runs along the top of a window and/or door, and the term “side jamb” refers to a “jamb” which runs along one side of a window and/or door.

DETAILED DESCRIPTION OF THE INVENTION

[0015] The present invention provides devices for aligning doors and windows during installation, and methods of use thereof. In particular, the present invention provides devices for properly aligning a door and/or window with the interior surface of a wall during installation.

[0016] In some embodiments, the present invention provides a device (SEE FIG. 1) which attaches to a window or door and to an adjacent wall to provide proper alignment of the door or window for installation. In some embodiments, a device of the present aligns a door or window during installation such that the face of the jamb will be flush with the interior wall surface upon installation.

Window Alignment

[0017] In some embodiments, a clip 100 attaches to a window jamb 11 and to wall 20 to secure a window 10 in place and provide the proper alignment of the window 10 with the interior wall surface 23 (SEE FIG. 2). In some embodiments, a clip 100 comprises a wall tab 110, a jamb tab 120, and an intertab element 130 (SEE FIG. 1). The wall tab 110 makes contact with the wall 20 and is secured thereto. The jamb tab 120 makes contact with the window jamb 11 and is secured thereto. The inter tab element 130 connects the jamb tab 120 to the wall tab 110 and provides the proper amount of spacing between the two.

[0018] The wall tab 110 comprises a wall contact surface 111 and wall attachment site 112. The wall contact surface 111 of the wall tab 110 rests against the wall 20, and the clip securing element 105 is applied through the wall attachment site 112 to secure the clip 100 to the wall 20. In some embodiments, a wall tab 110 rests against the rough framing 21 of a wall 20 and is secured thereto via one or more clip securing elements 105 applied through one or more wall attachment sites 112. In some embodiments, a wall tab 110 rests against the face 22 of the rough framing 21 and is secured thereto via one or more clip securing elements 105 applied through one or more wall attachment sites 112.

[0019] The jamb tab 120 comprises a jamb contact surface 121 and jamb attachment site 122. The jamb contact surface 121 of the jamb tab 120 rests against the window jamb 11, and a clip securing element 105 is applied through the jamb attachment site 122 to secure the clip 100 to the window jamb 11. In some embodiments, a jamb tab 120 rests against the head jamb 11a of a window 10, and is secured thereto via one or more clip securing elements 105 applied through one or more jamb attachment sites 122. In some embodiments, a jamb tab 120 rests against a side jamb 11b of a window 10, and is secured thereto via one or more clip securing elements 105 applied through one or more jamb attachment sites 122. In some embodiments, the jamb contact surface 121 of a jamb tab 120 rests against the window jamb face 12 and is secured thereto via one or more clip securing elements 105 applied through one or more jamb attachment sites 122.

[0020] The inter tab element 130 connects the jamb tab 120 to the wall tab 110 and provides the proper amount of spacing between the two. In some embodiments, the intertab element 130 comprises a jamb abutment surface 131 which sits against the window jamb 11. The jamb contact surface 121 and the jamb abutment surface 131 contact different surfaces of the window jamb 11. The surfaces of the window jamb 11 contacted by the jamb contact surface 121 and the jamb abutment surface 131 are generally perpendicular to each other and form a corner of the window jamb 11. The intertab element 130 provides the appropriate amount of spacing between the jamb face 12 and the rough framing face 22. In some embodiments, the intertab element 130 aligns the wall tab 110 and the jamb tab 120 to provide the thickness of the interior wall surface material 24 between the jamb face 12 and the rough framing face 22. The intertab element 130 aligns the jamb face 12 with respect to the rough framing face 22 such that upon installation of the interior wall surface material 24 to the rough framing face 22, the interior wall surface 23 will be flush with the window jamb face 12.

Door Alignment

[0021] In some embodiments, a clip 100 attaches to a door jamb 16 and to wall 20 to secure a door 15 in place and provide the proper alignment of the door 15 with the interior wall surface 23 (SEE FIG. 2). In some embodiments, a clip 100 comprises a wall tab 110, a jamb tab 120, and an intertab element 130 (SEE FIG. 1). The wall tab 110 makes contact with the wall 20 and is secured thereto. The jamb tab 120 makes contact with the door jamb 16 and is secured thereto. The inter tab element 130 connects the jamb tab 120 to the wall tab 110 and provides the proper amount of spacing between the two.

[0022] The wall tab 110 comprises a wall contact surface 111 and wall attachment site 112. The wall contact surface 111 of the wall tab 110 rests against the wall 20, and the clip securing element 105 is applied through the wall attachment site 112 to secure the clip 100 to the wall 20. In some embodiments, a wall tab 110 rests against the rough framing 21 of a wall 20 and is secured thereto via one or more clip securing elements 105 applied through one or more wall attachment sites 112. In some embodiments, a wall tab 110 rests against the face 22 of the rough framing 21 and is secured thereto via one or more clip securing elements 105 applied through one or more wall attachment sites 112.

[0023] The jamb tab 120 comprises a jamb contact surface 121 and jamb attachment site 122. The jamb contact surface 121 of the jamb tab 120 rests against the door jamb 16, and a

clip securing element **105** is applied through the jamb attachment site **122** to secure the clip **100** to the door jamb **16**. In some embodiments, a jamb tab **120** rests against the head jamb **16a** of a door **15**, and is secured thereto via one or more clip securing elements **105** applied through one or more jamb attachment sites **122**. In some embodiments, a jamb tab **120** rests against a side jamb **16b** of a door **15**, and is secured thereto via one or more clip securing elements **105** applied through one or more jamb attachment sites **122**. In some embodiments, the jamb contact surface **121** of a jamb tab **120** rests against the door jamb face **17** and is secured thereto via one or more clip securing elements **105** applied through one or more jamb attachment sites **122**.

[0024] The inter tab element **130** connects the jamb tab **120** to the wall tab **110** and provides the proper amount of spacing between the two. In some embodiments, the intertab element **130** comprises a jamb abutment surface **131** which sits against the door jamb **16**. The jamb contact surface **121** and the jamb abutment surface **131** contact different surfaces of the door jamb **16**. The surfaces of the door jamb **16** contacted by the jamb contact surface **121** and the jamb abutment surface **131** are generally perpendicular to each other and form a corner of the door jamb **16**. The intertab element **130** provides the appropriate amount of spacing between the jamb face **17** and the rough framing face **22**. In some embodiments, the intertab element **130** aligns the wall tab **110** and the jamb tab **120** to provide the thickness of the interior wall surface material **24** between the jamb face **17** and the rough framing face **22**. The intertab element **130** aligns the jamb face **17** with respect to the rough framing face **22** such that upon installation of the interior wall surface material **24** to the rough framing face **22**, the interior wall surface **23** will be flush with the door jamb face **17**.

Alignment Clips

[0025] In some embodiments, a clip **100** comprises one or more metals (e.g. aluminum, iron, etc.), alloys (e.g., steel, stainless steel, solder, etc), plastics (e.g. Bakelite, neoprene, nylon, PVC, polystyrene, polyacrylonitrile, PVB, silicone, rubber, polyamide, synthetic rubber, vulcanized rubber, acrylic, polyethylene, polypropylene, polyethylene terephthalate, polytetrafluoroethylene, gore-tex, polycarbonate, etc.), polymers, natural materials (e.g. wood), synthetic materials, recycled materials (e.g. recycled plastic, recycled aluminum, etc.), fabrics, etc. In some embodiments, inexpensive materials are selected to produce disposable clips **100**. In some embodiments, durable materials are selected to produce reusable clips **100**.

[0026] In some embodiments, a clip **100** comprises a single piece. In some embodiments, a clip **100** comprises multiple pieces (e.g. 2, 3, 4, 5, etc.). In some embodiments, a wall tab **110**, a jamb tab **120**, and an intertab element **130** each comprises separate units. In some embodiments, different intertab elements can be inserted between a wall tab **110** and jamb tab **120** to create clips **100** capable of aligning a window **10** or door **15** with interior wall surface materials **24** of different thicknesses. In some embodiments, clips **100** are different sizes to accommodate different thickness interior wall surface materials **24**. In some embodiments, clips **100** are adjustable to accommodate different thickness interior wall surface materials **24**.

[0027] In some embodiments, interior wall surface materials **24** comprise any suitable materials known to those in the art, including but not limited to dry wall, sheet rock, plaster,

wood paneling, wood, fake wood paneling, paneling, etc. In some embodiments, interior wall surface material **24** is of any suitable thickness known to one in the art. In some embodiments, interior wall surface material **24** is at least 1 mm in thickness and not more than 10 cm in thickness (e.g. 1 mm . . . 2 mm . . . 5 mm . . . 1 cm . . . 2 cm . . . 5 cm . . . 10 cm). In some embodiments, interior wall surface material **24** comprises ½-inch or 5/8-inch drywall. In some embodiments, the combined thickness of the intertab element **130** and the wall tab **110** is equal to the thickness of the interior wall surface material **24**.

[0028] In some embodiments, clip securing elements **105** comprise screws, nails, bolts, glue, brads, etc. In a preferred embodiment, screws are used as the clip securing elements **105** to stabilize the clip **100** to resist forces applied by insulation or other forces on the window **10** or door **15**. In some embodiments, a clip securing element **105** comprises a common drywall screw. In some embodiments, clips **100** are attached to the wall **20** and the window jamb **11** or door jamb **16** without driving nails or screws into the portion of the wall **20** or jamb that is visible in the finished door **15** or window **10**.

[0029] In some embodiments, clip securing elements **105** are inserted or driven through jamb attachment sites **122** to secure the clip. In some embodiments, one or more jamb attachment sites **122** (e.g., 1, 2, 3, 4, 5, 6, etc.) are located on the intertab element **130**, jamb tab **120**, and/or wall tab **110**. In some embodiments, the intertab element **130** comprises one or more jamb attachment sites **122** (e.g., 1, 2, 3, 4, 5, 6, etc.). In some embodiments, the jamb tab **120** comprises one or more jamb attachment sites **122** (e.g., 1, 2, 3, 4, 5, 6, etc.). In some embodiments, the wall tab **110** comprises one or more jamb attachment sites **122** (e.g., 1, 2, 3, 4, 5, 6, etc.). In some embodiments, jamb attachment sites **122** are aligned with the intertab element **130**, jamb tab **120**, and/or wall tab **110** in any suitable manner (e.g., perpendicular to a tab, surface, and/or face; at an angle (e.g. 89°, 80°, 70°, 60°, 45°, 30°, 15°, etc.) with respect to a tab, surface, and/or face) to for attachment of a clip.

[0030] In some embodiments, clips **100** reduce the amount of time and/or manpower required for window installation when compared to shimming. In some embodiments, clips **100** provide improved alignment over manual alignment and/or shimming. In some embodiments, clips **100** are left in place following window **10** and/or door **15** installation. In some embodiments, clips **100** are left in place following window **10** and/or door **15** installation if fiberglass insulation is used. In some embodiments, clips **100** are removed and reused following window **10** and/or door **15** installation. In some embodiments, clips **100** are removed and reused following window **10** and/or door **15** installation if foam insulation is used. In some embodiments, clips **100** are covered with trim if left in place following installation.

[0031] In some embodiments, one or more clips **100** (e.g. 1, 2, 3, 4, 5, 6) are placed on a side of a window **10** or door **15** for alignment during installation. In some embodiments, one or more clips **100** (e.g. 1, 2, 3, 4, 5, 6) are placed on each side of a window **10** or door **15** for alignment during installation. In some embodiments, one or more clips **100** (e.g. 1, 2, 3, 4, 5, 6) are placed on the top and/or bottom of a window **10** or door **15** for alignment during installation.

What is claimed is:

1. A device for aligning a jamb with a wall comprising:
 - a) a first tab comprising a first contacting surface;

- b) a second tab comprising a second contacting surface, wherein said second contacting surface is parallel to said first contacting surface, wherein said second contacting surface and said first contacting surface face the same side of said device, and wherein said second tab comprises one or more holes running through said second tab and exiting through said second contacting surface; and
- c) an intertab element comprising a third contacting surface perpendicular to said first contacting surface and said second contacting surface, wherein said intertab element connects said first tab to said second tab and offsets said first contacting surface and said second contacting surface by a distance, and wherein said intertab element comprises one or more holes running through said intertab element and exiting through said third contacting surface;

wherein said first contacting surface and said third contacting surface are configured to contact perpendicular faces of a jamb, wherein said second contacting surface is configured to contact the face of said wall, wherein said one or more holes through said intertab element are configured to receive securing elements through said device into said jamb, and wherein said one or more holes through said second tab are configured to receive securing elements through said device into said wall.

2. The device of claim 1, wherein said second tab contacts said wall on the framing for a window or door.

3. The device of claim 1, wherein said distance comprises the combined thickness of said second tab and the length of the intertab element.

4. The device of claim 3, wherein said distance comprises the thickness of the surface material of said wall.

5. The device of claim 4, wherein said surface material comprises dry wall.

6. The device of claim 1, wherein said securing element comprises screws.

7. The device of claim 1, wherein said jamb comprises a jamb on a door or window.

8. The device of claim 7, wherein said jamb comprises a jamb on a window.

9. A method of aligning jamb with a wall comprising:

- a) providing an alignment clip, wherein said alignment clip comprises a surface for contacting said jamb and a surface for contacting said wall, and wherein said surfaces are parallel and offset by a distance;
- b) attaching one or more of said alignment clips to said wall; and
- c) attaching said alignment clips to said jamb.

10. The method of claim 9, wherein said jamb comprises a door jamb or window jamb.

11. The method of claim 10, wherein said jamb is being aligned with said wall to install a door or window.

12. The method of claim 11, wherein said alignment clip is attached to said wall on the framing of said door or window.

13. The method of claim 9, wherein said parallel surfaces are offset by the thickness of the surface material of said wall.

14. The method of claim 13, wherein said surface material comprises dry wall.

15. The method of claim 9, wherein said alignment clips are attached to said jamb and said wall by screws or nails.

16. The method of claim 15, wherein said alignment clips are attached to said jamb and said wall by screws.

17. The method of claim 13, further comprising:

- d) attaching said surface material to said wall.

18. The method of claim 17, wherein said jamb and said surface material are properly aligned.

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