United States Patent

[11] 3,574,981

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[54] **ADJUSTABLE BRACE**
10 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **52/127,**
52/149, 52/741, 52/749, 248/354
[51] **Int. Cl.** **E04g 25/06,**
E04g 21/26
[50] **Field of Search** 52/127,
149, 150, 741, 744, 745, 749; 248/354 (S), 357;
249/18, 19, 51, 188, 207, 210, 219

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ABSTRACT: An adjustable brace for use by carpenters in the erection and plumbing of vertical walls during construction is disclosed. The brace comprises an elongated strut with a hinged wall anchor at one end and a hinged floor anchor at the other. This strut is suitably formed of two tube or pipe members of unequal length in end-to-end alignment and coupled together near the wall anchor end by a turnbuckle. When adjusted to its maximum length by manipulation of the turnbuckle, the strut is between 6 and 11 feet in length; and when adjusted to its minimum length, the strut is between 5 and 9 feet in length. Preferably it is about or approximately 8 feet in length, with its length adjustable over a span of at least 2 inches. At least one of the pivotally hinged anchors of the adjustable brace is characterized by having a lift-lip member under which the claw of a carpenter's hammer is easily inserted to pry the anchor from a temporarily nailed position.

In use, the wall anchor of one or more braces is temporarily nailed to a frame member of a preform structure designed for placement as a vertical wall in a building. Then the wall is placed in an estimated approximately plumb vertical orientation; and the floor anchors are temporarily nailed to the floor of the building. Turnbuckle adjustment is accomplished to place the wall in a true plumb vertical position, in which position the wall is held by the brace (or several braces) until sufficient structural elements have been added to the building to permanently hold the wall in position.

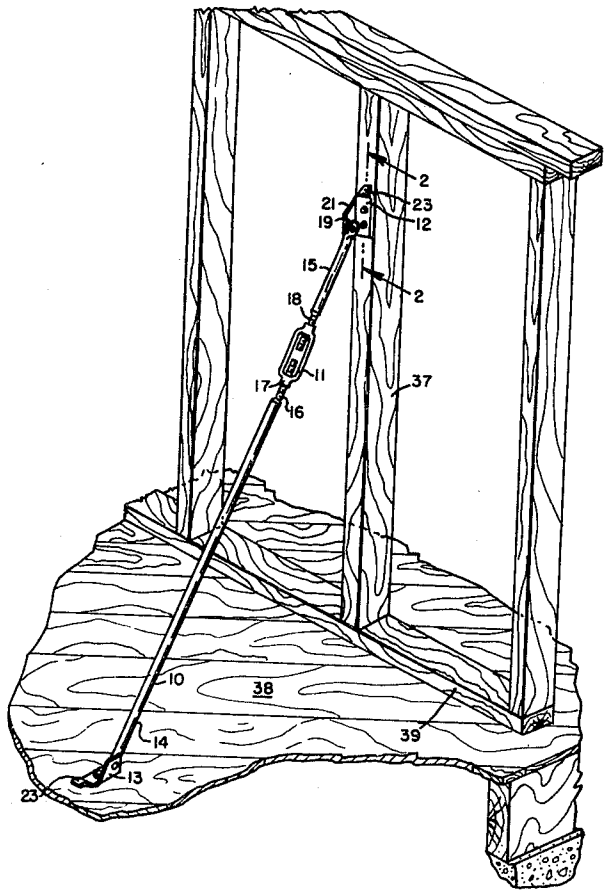


FIG. 1

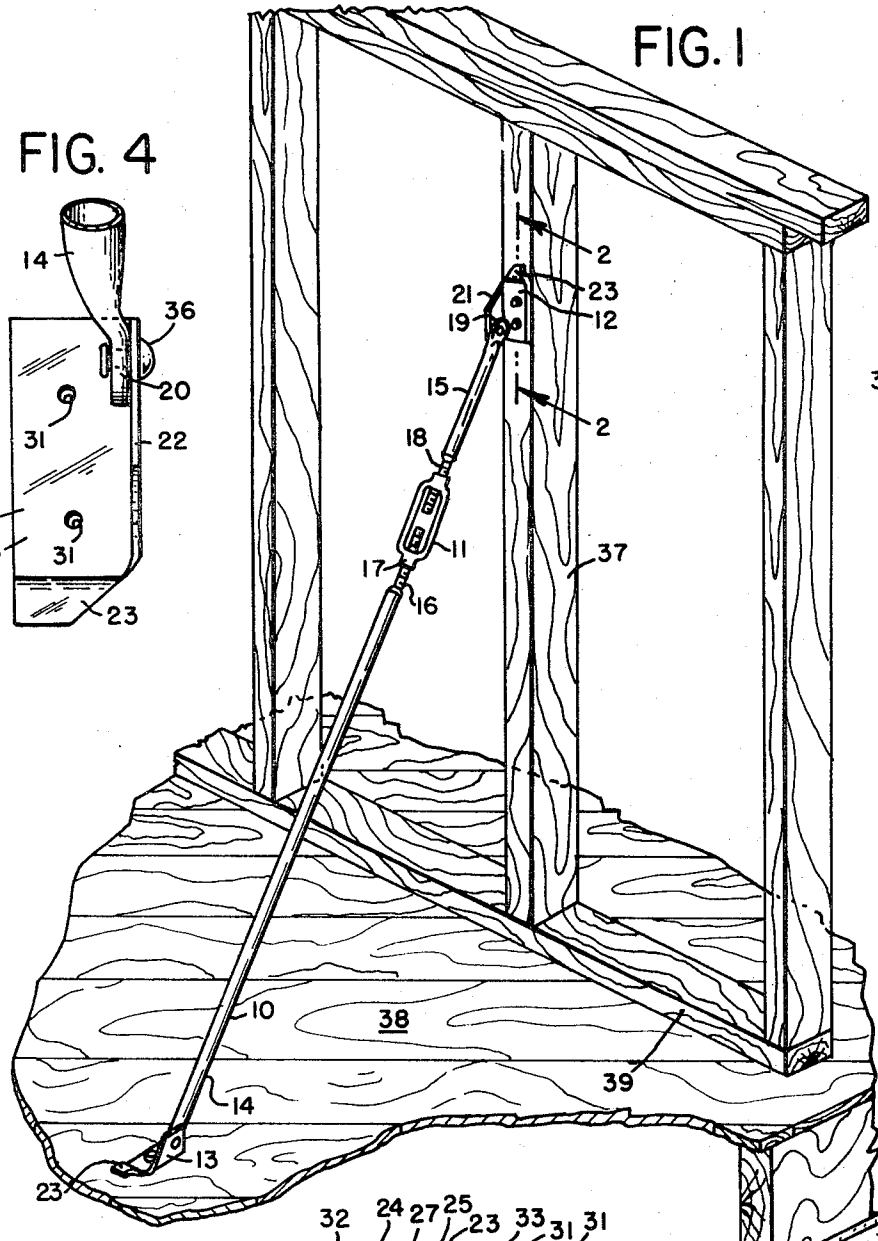


FIG. 3

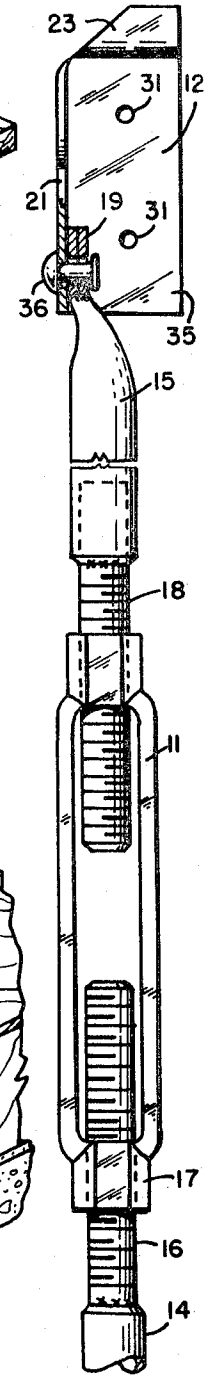


FIG. 4

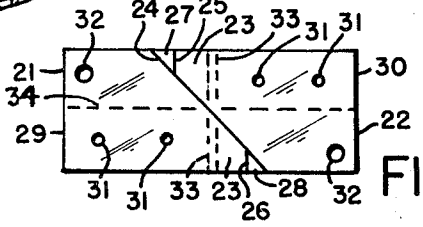
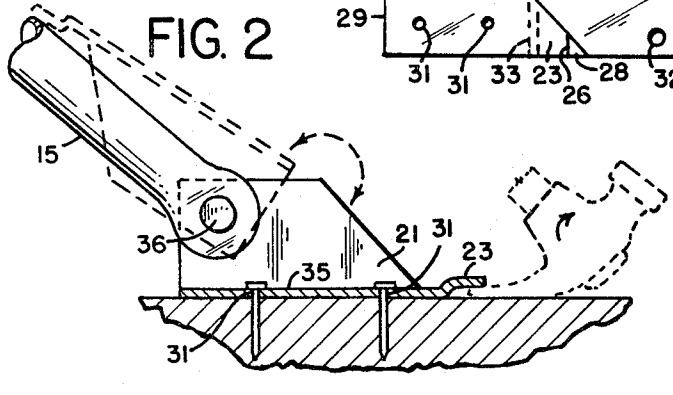


FIG. 5

FIG. 2



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ADJUSTABLE BRACE

This invention relates to an adjustable brace especially designed for use by a carpenter to place and hold vertical wall elements for a building in plumb during construction or erection of the building. The invention is directed both to the brace itself and to the method of using it.

During the erection or construction of buildings, particularly those having a base skeleton structure of wood (such as houses and the like), it has customarily required three or four men to hoist, hold, plumb and temporarily brace a roughed out preformed frame of a vertical wall. Conventional past practice has been to employ several wooden braces (e.g., 2×4's) temporarily nailed to the vertical wall and to floor elements or the like to hold the vertical wall in plumb position while additional elements of structure are permanently added to the base frame of the vertical wall in the construction process. More than one man is usually needed to push and hold the wall structure during plumbing; and the fixing of the temporary wooden braces in position usually cannot be accomplished by the man handling the level or other plumbing operation. Further, if adjustment of plumb is necessary at the start of a days work, at least one carpenter or helper is needed to hold the wall in plumb after a temporary wood bracing is loosened and another carpenter is needed for the operation of loosening and reaffixing the temporary bracing. In some cases, extensive special scaffolding has also been required essentially solely for the plumbing operation.

This invention simplifies the procedure by which rough vertical walls are placed in a true plumb position during the construction process. By following the teachings herein, the extensive scaffolding heretofore sometimes necessary for the plumbing operation is obviated or greatly reduced. Temporary bracing using discardable crude wooden elements is no longer necessary. The invention makes it possible for a single carpenter, working alone with the tools ordinarily immediately available to him or even carried on his person, to adjust vertical walls into a true vertical plumb position. The assistance of one or two other persons at the time of hoisting a vertical wall in estimated vertical plumb position is desirable even when using the teachings herein; but such assistance is not always critically necessary. The important benefit afforded by this invention is that of making it possible for a single carpenter to adjust a vertical wall into true plumb position at the start of a days work or at any time during the construction process. For example, just before roof trusses or ceiling joists are permanently secured, final adjustments to place a vertical wall braced as taught herein can be accomplished by a single workman, thus saving hours of manpower in constructing the usual building.

It is the specialized adjustable brace of this invention that makes the foregoing possible. This adjustable brace includes an elongated strut which exhibits structural rigidity whether under tension or compression. It includes means for positively adjusting the effective length of that strut, either to incrementally increase or shorten that length, over a span of at least about 2 inches (5 cm.) while simultaneously and continuously maintaining structural rigidity in the brace. At one end of the strut is pivotally hinged a wall anchor; and this wall anchor is capable of being temporarily nail secured to an element of the roughed vertical wall structure for a building while the wall structure is in a horizontal position prior to being raised into an estimated approximately-vertical plumb position. At the other end of the strut is a floor anchor which is pivotally hinged to the strut and is capable of being temporarily nail secured to the floor of the building. At least one of these anchors (and preferably both) is equipped with a lift-lip member integral with it and under which the claw of a carpenter's hammer is easily or readily inserted to pry it from a temporarily nail secured position after the vertical wall is permanently secured to other elements of the building and thereby held in plumb as an integral part of the building.

The overall length of the strut of this adjustable brace is between 6 and 10 or possibly 11 feet when it is adjusted to its maximum length by the adjustment means, and between 5 and 9 feet when the strut is adjusted to its minimum length. An important characteristic of the brace is that, within about 3 feet from the wall anchor end of the brace is located a means which is operable for actuating the positive adjustment of the effective length of the brace. This arrangement permits a single carpenter, while holding a level or other instrument for plumbing a vertical wall, to reach and operate the means for actuating the positive length adjustment means, and thereby alter the position of the vertical wall into true vertical plumb position.

In use, the wall anchors of one or more adjustable braces are first temporarily nailed to a basic part of the roughed vertical wall structure, and then the vertical wall structure is placed in an estimated approximately plumb vertical orientation at the location on the floor elements of the building where the vertical wall is desired, and the floor anchors are then temporarily nailed to floor elements of the building. The means for actuating the positive adjustment of the effective length of the braces is then manipulated by a carpenter until the wall is adjusted to a true plumb vertical position; and additional structural elements, which are designed to become a permanent part of the building, are affixed to the plumbed wall and other structural parts of the building so as to hold the vertical wall in permanent plumb orientation even after removal of the braces. Once this is accomplished, the anchors of the braces are pried loose; and the braces are removed from the wall and floor so as to be ready or available anew for use in erecting and plumbing other vertical walls,

Adjustable braces have heretofore been known, as for example illustrated in the following U.S. Letters Pat. Nos. 1,762,740 to Rains; 2,662,391 to Neil; 2,858,031 to Garmon; and 3,300,943 to Owens. However, the adjustable braces of these patents lack one or more of the features critically necessary for the adjustable brace of this invention. Some lack any means for positively adjusting the length of the strut of the brace either to incrementally increase or shorten that length while simultaneously and continuously maintaining structural rigidity for the strut. Structural rigidity in terms of both tension or compression is extremely critical for the brace of this invention while it is being adjusted in length. A pin or detent adjustability for the length of a strut, as suggested in some of these patents, prevents the maintenance of that continuous structural rigidity during the adjustment process. Anchors which are not hinged to the end of the strut for flexible movement, as also suggested in some of these patents, tend to work loose as adjustments are made from time to time to bring a roughed vertical wall into true plumb position during a prolonged construction process; thus such anchors are useless in an adjustable brace having the purposes and functions described herein. Anchors having no lift-lip member integral therewith, under which the claw of the carpenter's hammer may readily be inserted to pry the anchor loose, likewise are unsatisfactory inasmuch as they are so difficult to remove from a temporarily nail secured position that danger is introduced that the plumbed vertical wall will be drawn out of vertical plumb or otherwise damaged during the process of removing the anchor.

The invention will further be described by reference to a drawing made a part hereof wherein:

FIG. 1 is a perspective view, partially broken away, of a roughed vertical wall and floor of a building, with one adjustable brace according to the invention temporarily nailed to each in a relationship which permits a single carpenter to adjust the vertical wall into true vertical plumb;

FIG. 2 is a side view taken on line 2–2 of the wall anchor end of the adjustable brace of the invention, with dotted lines illustrating the folded position of the hinged anchor during shipment or storage of the brace;

FIG. 3 is an enlarged top plan view of the wall anchor end of the adjustable brace, with parts broken away at the hinge between the anchor and end of the strut;

FIG. 4 is an enlarged top plan view of the floor anchor end of the adjustable brace; and

FIG. 5 is a plan view of a blank from which preferred anchor members according to the invention are formed.

Referring to the drawing, the adjustable brace itself will first be described. It comprises an elongated strut **10**, means **11** to adjust the effective length of that strut, a wall anchor **12**, and a floor anchor **13**.

The strut **10** is characterized as one which exhibits structural rigidity whether under tension or compression. It is preferably formed of two unequal elongate sections **14** and **15** in end-to-end alignment with a structural coupling **11** between those two sections. The nature of the connection between the structural coupling **11** and at least one of the sections **14** or **15** is such that a means is provided for positively adjusting the length of the strut, either to incrementally increase or to shorten that length, over a span of at least 2 inches while simultaneously and continuously maintaining the structural rigidity aforenoted. This positive adjustment is suitably gained by cooperatively threaded elements; and illustratively, a threaded end **16** for section **14** of the strut cooperates with internal threads at the end **17** of the structural coupling or turnbuckle **11**. In the usual case, the structurally coupled ends **16** and **18** of sections **14** and **15** of the strut are both threaded, but in opposite directions, with the turnbuckle **11** cooperatively threaded upon each to provide a compact arrangement having the necessary structural rigidity whether under tension or compression, as well as to provide effective means for positive adjustment of the length of the strut while maintaining that structural rigidity. As aforenoted, the length of the strut is adjustable over a span of at least 2 inches (5 centimeters). Usually, however, it should be adjustable over a span of much greater length, such as at least 5 inches (12 cm.). It may be adjustable over a span of 1 or even 2 feet (30 or even 60 cm.). Preferably, the span of adjustment is at least about 6 inches (15 cm.), or approximately 8 inches.

The most practical overall length of the strut is approximately 8 feet (or about 2.5 meters), with adjustability as aforenoted over a span up to about a foot each way from 8 feet. This overall length permits convenient handling when transporting the braces from one location to another on a construction site as well as for shipment of the braces from one construction site to another using an ordinary pickup truck as conventionally employed by construction contractors. The parameters of length for the strut are such that is must be at least about 6 feet (e.g., 1.8 meters) and no more than about 10 or possibly 11 feet (3 or 3.3 meters) when it is adjusted to its maximum length. When adjusted to its minimum length, it should not be in excess of about 9 feet nor less than about 5 feet. Preferably, the possible lengths are between about 7 and 9 feet when at the maximum length adjustment, and between about 6 and 8 feet when at the minimum length adjustment. Struts within the noted range of possible lengths are, of course, adjustable in length over the span or distance as aforenoted.

An important feature of the brace is that, within about 2 or 3 feet (0.5 or 1.0 meters) from the wall anchor end of the strut member is located some means for actuating the positive adjustment means to change or alter the length of the strut. When a turnbuckle is employed as illustrated in the drawing, the turnbuckle itself furnishes both the means for actuating the positive adjustment means to alter length, as well as the threaded means for effective positive adjustment of length. Thus, a turnbuckle is placed so that it can be reached or is accessible to a carpenter within this limited end portion of the strut from the wall anchor. But this does not mean that the turnbuckle in its entirety must be located within 3 feet from the wall anchor. Only a sufficient portion of the turnbuckle must be in that limited stretch next to the wall anchor so that a carpenter handling a plumbing level on the wall elements is able to reach the turnbuckle and turn it (as, for example, by inserting the claw of his hammer in the space between frame elements of the turnbuckle itself and applying leverage on the hammer to rotate the turnbuckle). Where other means for adjustment of length is employed, or where a modified turnbuckle is employed (e.g., one threaded at only one end with a simple rotatable socket coupling at the other), it is conceivable that the means for actuating the positive adjustment of the length of the strut **10** (e.g., an element having a slot in it into which the claw of a hammer may be inserted to gain leverage for turning) may be located within 2 or 3 feet of the wall anchor end; and the means per se for accomplishing positive adjustment of the length of the strut (e.g., coupled cooperatively threaded parts) may be located near the floor anchor end of the strut.

For lightness in weight, as well as for convenient handling, while also maintaining structural strength without sagging problems, the sections **14** and **15** of the strut are preferably formed of sturdy hollow tubular or pipe material. Metals such as steel, aluminum or magnesium, as well as reinforced plastics having the necessary rigidity, are useful. Where lighter metals or plastic compositions are employed, it is suitable, although not preferred, to form the sections **14** and **15** out of solid or substantially solid rodlike material. Useful strut cross sections should be at least equivalent to about one-half inch (at least one centimeter) in outer diameter, and may reach a size up to about 1 inch (2.5 centimeters) in outer diameter. The walls of tubular struts are sufficiently thick to prevent any significant sagging in the strut as it is employed in use applications, walls of about one thirty-second to one-eighth inch thick (e.g., 1 to 4 millimeters thick) being quite satisfactory. Illustratively, steel pipe having an outer diameter of thirteen-sixteenth's inch and an inner diameter of five-eighth inch exhibits the necessary combination of properties.

Threaded metal studs or shafts for cooperation with a forged metal coupler **11** suitably are welded into the ends of metal pipe sections **14** and **15** of a strut; but alternately, the material or pipe of sections **14** and **15** may itself be threaded at the coupled ends for cooperation with a turnbuckle coupler.

The outermost ends of strut **10**, to which the anchors **12** and **13** are pivotally hinged, are preferably flattened into a strut flat, as illustrated at **19** in FIGS. **1** and **3** for the wall anchor end, and at **20** in FIG. **4** for the floor anchor end. This strut flat is in longitudinal alignment with the strut itself. The outer flat surface of the strut flat (e.g., the surface immediately adjacent the flange **21** of anchor **12** as shown in FIG. **3** and the surface immediately adjacent the flange **22** of the anchor **13** in FIG. **4**) preferably lies if essentially the same plane as a plane directly along one longitudinal side of the strut itself in the portion of the strut immediately contiguous to the strut flat. In other words, the strut flat is displaced to one side instead of being medially located as a central projection in alignment with the strut member. This feature is particularly important from the standpoint of providing a foldable overlap feature for the hinged anchors **12** and **13**, as will be discussed.

Preferably, both anchors for the adjustable brace are formed and have the general overall shape and features as illustrated in the drawing; and in any event, at least one of the anchors **12** or **13** must be provided with a lift-lip member such as illustrated at numeral **23**. The lift-lip **23** is integral with the anchor itself and is located in a plane elevated above the surface of the flat or leaf section **35** of the anchor, which latter is equipped with nail holes **31** (or equipped with other means such as a slot to receive nails for temporarily fixing the flat section to a flat substrate). As illustrated in FIG. **2** by the dotted hammer head location, the claw of a carpenters hammer is readily and easily inserted under the lift-lip structure to pry an anchor from a temporarily nailed position. Where only one such lift-lip member is employed, it is preferable that it be integral with the wall anchor member of the adjustable brace assembly. This permits the wall anchor to be removed in a careful manner; and the floor anchor may thereafter, if desired, be torn from position by back and forth movements. Much preferred, however, is the practice of employing lift-lip members on each of the anchors of the adjustable brace, as illustrated.

While variation in the overall physical appearance of anchors is permissible, especially effective and reliable and conveniently handled anchor member are formed out of a flat sheet or blank of metal as illustrated in FIG. 5. Such a blank is suitably about 3 inches by 7 inches in size. It is cut along diagonal line 24 and optionally along perpendicular lines 25 and 26. Triangular pieces 27 and 28 are discarded; and the cutting results in the formation of two blanks 29 and 30. At the time cut 24 is made, nail holes 31 (or openings through which nails may be hammered) and pivot pin holes 32 may be stamped or formed in the blanks. Alternately, the holes 31 and 32 may be stamped at the same time the lift-lip members 23 are elevated (at double dash line 33 in FIG. 5) by a pressing technique after the cut along diagonal line 24 is made. Either just prior to or just after forming the lift-lips 23, perpendicular upturned flanges 21 and 22 are formed by bending the blanks 29 and 30 along single dotted line 34. Upturned flanges 21 and 22 usually are not over about 2 inches in height, and normally will be between about three-fourths of an inch or 1 inch up to about 1 ½ inches in height, In order to achieve compact foldability for the anchors, as will be discussed, the pivot pin holes 32 in the flanges 21 and 22 should be near the end of the flange sections most remote from the lift-lip members 23.

In essence, anchors, formed by the described technique are formed by shaping a flat blank of metal into an article having one edge (21 and 22) upturned as a perpendicular flange united integrally with a flat section 35.

The flat section 35 is preferably relatively narrow (e.g., about ½ to 2 inches in width, with a width of 1 and ⅝ inches being most satisfactory) so as to be easily aligned and affixed to the narrow edge of 2×4 or analogous base frame member. It is equipped with at least two spaced means 31 through which nails may be pounded for temporarily securing it flush to a flat substrate.

While either the outer or the inner surface of the upturned flange 21 or 22 may be placed adjacent the strut flat and united thereto or hinged thereto by a pin in the nature of a pivot member 36, it is preferable to place the inner surface of the upturned flange 21 or 22 adjacent the outer surface of the strut flat as illustrated in the drawing, particularly FIGS. 3 and 4. This arrangement places the forces of tension and compression for the strut 10 generally in line with the flat nailable surface of the anchors. As illustrated by the dotted lines for the anchor in FIG. 2, this arrangement also permits convenient pivotability of the anchor member into a folded compact overlap condition upon the end of the strut during storage or shipment of the brace. In the event the outer surface of the upturned flange 21 or 22 is united to the strut flat 19 or 20, forces of tension and compression are drawn out of line with the nailable flat portion 35 of the anchor members; and the hinged connection is such that the anchor members may rotate completely around the pivot pin 36, which creates the problem of maintaining the anchor member in the most compact overlapped condition upon a strut for storage and transport.

In use, the wall anchors of one or more braces of the invention are temporarily nailed on the frame member 37 of a preformed structure designed for placement as the basic part of a vertical wall in a building. Preferably, they are nailed on that preform structure at a point at least about 4 feet from the base or lower edge thereof and no higher than about 1 foot from the top or upper edge thereof. Then this preform structure is placed in an estimated approximately plumb vertical orientation at a location on floor elements of the building where the vertical wall is desired to be placed. Next, the floor anchors of the braces are nailed temporarily to floor elements 38 of the building at a location on the floor element approximately perpendicularly outwardly from the point at which the wall anchor of each brace is nailed on the preformed wall structure. Usually the position of the wall anchor on the wall and floor anchor on the floor will be approximately as illustrated in FIG. 1, with the angle between strut 10 and the wall at about 30° and the angle between strut 10 and the floor at about 60°. The base or lower edge 39 of the preformed wall is then normally tacked or nailed in place; and after that, one carpenter manipulates the means such as coupler 11 for actuating the positive adjustment means (e.g., cooperatively threaded parts 16 and 17) of the strut of the brace until the wall is adjusted into a true plumb vertical orientation. Construction of the building proceeds with materials designed to become a permanent part of the building affixed upon the plumb wall and other structural parts of the building so as to hold the vertical wall in permanent plumb orientation even after removal of the braces. Once this is done, a carpenter pries at least one anchor of the brace from its temporarily nailed position by using the claw of his hammer, and then removes the other anchor of the brace from its temporarily nailed position, usually also by prying it upwardly at its lift-lip section 23.

I claim:

1. An adjustable brace especially designed for use by a carpenter to place and hold vertical wall elements for a building in plumb during construction of the building, consisting essentially of an elongated strut which exhibits structural rigidity whether under tension or compression, means for positively adjusting the length of said strut either to incrementally increase or shorten said length over a span of at least 2 inches while simultaneously and continuously maintaining said structural rigidity, the overall length of said strut being between 6 and 11 feet when adjusted to its maximum length and between 5 and 9 feet when adjusted to its minimum length, a temporarily-nail-securable wall anchor pivotally hinged to one end of said strut, a temporarily-nail-securable floor anchor pivotally hinged to the other end of said strut, at least one of said anchors being characterized by having

i. a flat section equipped with means through which nails may be pounded for temporarily securing said flat section flush to a flat substrate,

ii. a perpendicular flange united integrally with said flat section, said flange being the part of said one anchor through which it is pivotally hinged to said strut, and

iii. a lift-lip member under which the claw of a carpenter's hammer may readily be inserted to pry said anchor from a temporarily-nail-secured position, said lift-lip member being integral with and extending from an edge portion of said flat section and lying in a plane elevated above and substantially parallel to the plane of said flat section, and rotatable means operable within 3 feet of the wall anchor end of said strut for actuating said positive adjustment means, said rotatable means being engageable by a carpenter's hammer, the engagement by said hammer serving to provide a lever for application of force to operate said rotatable means.

2. The brace of claim 1 wherein said strut consists essentially of two elongate sections in end-to-end alignment and a structural coupling between said two sections, the connection between said structural coupling and at least one of said sections being formed of cooperatively threaded elements, wherein said means for positively adjusting the length of said strut comprises said cooperatively threaded elements, and wherein said means for actuating said positive adjustment means comprises said structural coupling.

3. The brace of claim 2 wherein said structural coupling consists essentially of a turnbuckle.

4. The brace of claim 3 wherein the structurally coupled ends of the two sections of the strut are threaded in opposite directions and said turnbuckle is cooperatively threaded upon both of said ends.

5. The brace of claim 2 wherein the two sections of said strut are of unequal length and the longer section comprises a hollow tube member, and wherein the overall length of said strut is between 7 and 9 feet when adjusted to its maximum length and between 6 and 8 feet when adjusted to its minimum length.

6. The brace of claim 1 wherein at least one end of the strut pivotally hinged to an anchor is flattened into a strut flat which

is in longitudinal alignment with said strut, the outer flat surface of said strut flat being in essentially the same plane as a plane directly along one longitudinal side of said strut in the portion of said strut immediately contiguous to said strut flat.

7. The brace of claim 6 wherein said one anchor is hinged to said strut flat and is formed by shaping a flat blank of metal into an article having one edge upturned as said perpendicular flange, the inner surface of said perpendicular flange being oriented adjacent and parallel to said outer flat surface of said strut flat, and a pivot pin through said perpendicular flange and said strut flat, whereby said anchor may be pivoted into a folded compact overlapped condition upon said strut during storage or shipment of said brace.

8. The brace of claim 1 wherein said one anchor consists essentially of a shaped unitary blank of metal.

9. The process of plumbing and holding walls in erecting a building, wherein a reusable brace is employed, said reusable brace being characterized as consisting essentially of an elongates strut which exhibits structural rigidity whether under tension or compression, means for positively adjusting the length of said strut over a span of at least 2 inches, a temporarily-nail-securable wall anchor pivotally hinged to one end of said strut, a temporarily-nail-securable floor anchor pivotally hinged to the other end of said strut, at least one of said anchors having a lift-lip member integral therewith, and means operable within 3 feet of the wall anchor end of said strut for actuating said positive adjustment means, said process including the steps of temporarily nailing the wall anchor of said brace onto a frame member of a preformed structure designed for placement as the basic part of a vertical wall in said building, said wall anchor being nailed on said preformed structure at a point at least about 4 feet from the base thereof and no higher than about 1 foot below the top thereof, placing said preform structure in an estimated approximately plumb vertical orientation at a location on floor elements of said building where said vertical wall is desired, temporarily nailing said floor anchor of said brace to floor elements of said building at a location on said floor elements approximately perpendicularly outwardly from the point at which said wall anchor is nailed on said preformed structure, applying a plumbing test instrument to said frame member while simultaneously manipulating the means for actuating the positive adjustment means of the strut of said brace until said wall is adjusted into a true plumb vertical position, affixing materials designed to become a permanent part of said building upon said plumbed wall and other structural parts of said building so as to hold said vertical wall in permanent plumb orientation even after removal of said brace, then prying said one anchor of said brace from its temporarily nailed position by inserting the claw of a carpenter's hammer under the lift-lip member thereof and applying removal pressure, and removing the other anchor of said brace from its temporarily nailed position, whereby said brace is fully removed from said wall and floor and made available anew for use in plumbing and temporarily holding other vertical walls.

10. An adjustable brace especially designed for use by a carpenter to place and hold vertical wall elements for a building in plumb during construction of the building, consisting essentially of an elongated strut which exhibits structural rigidity whether under tension or compression, means for positively adjusting the length of said strut either to incrementally increase or shorten said length over a span of at least 2 inches while simultaneously and continuously maintaining said structural rigidity, the overall length of said strut being between 6 and 11 feet when adjusted to its maximum length and between 5 and 9 feet when adjusted to its minimum length, a temporarily-nail-securable wall anchor pivotally hinged to one end of said strut, a temporarily-nail-securable floor anchor pivotally hinged to the other end of said strut, at least one of said anchors being characterized by having a lift-lip member integral therewith and under which the claw of a carpenter's hammer may readily be inserted to pry said anchor from a temporarily-nail-secured position,

at least one end of said strut to which an anchor is pivotally hinged being flattened into a strut flat lying in longitudinal alignment with said strut with the outer flat surface of said strut flat in essentially the same plane as a plane directly along one longitudinal side of said strut in the portion of said strut immediately contiguous to said strut flat, said anchor pivotally hinged to said strut flat being formed by shaping a flat blank of metal into an article having one edge upturned as a perpendicular flange united integrally with a flat section, said flat section being equipped with at least two spaced holes through which nails may be pounded for temporarily securing said flat section flush to a flat substrate, the inner surface of said perpendicular flange being oriented adjacent and parallel to said outer flat surface of said strut flat, and a pivot pin through said perpendicular flange and said strut flat, whereby said anchor may be pivoted into a folded compact overlapped condition upon said strut during storage or shipment of said brace;

and rotatable means operable within 3 feet of the wall anchor end of said strut for actuating said positive adjustment means, said rotatable means being engageable by a carpenter's hammer, the engagement by said hammer serving to provide a lever for application of force to operate said rotatable means.