Jan. 10, 1956 F. F. LARSEN 2,730,209

SILL CONSTRUCTION

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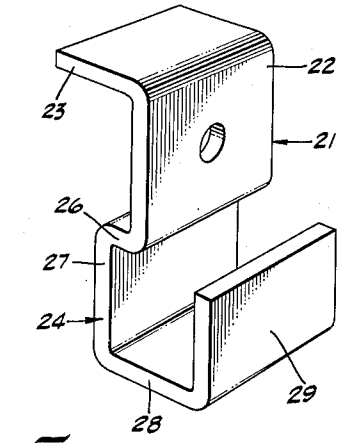


FIG. 2.

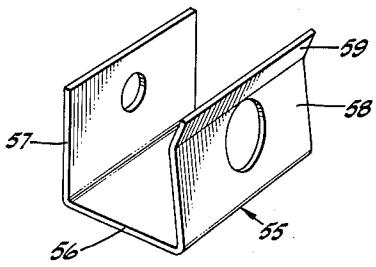


FIG. 3.

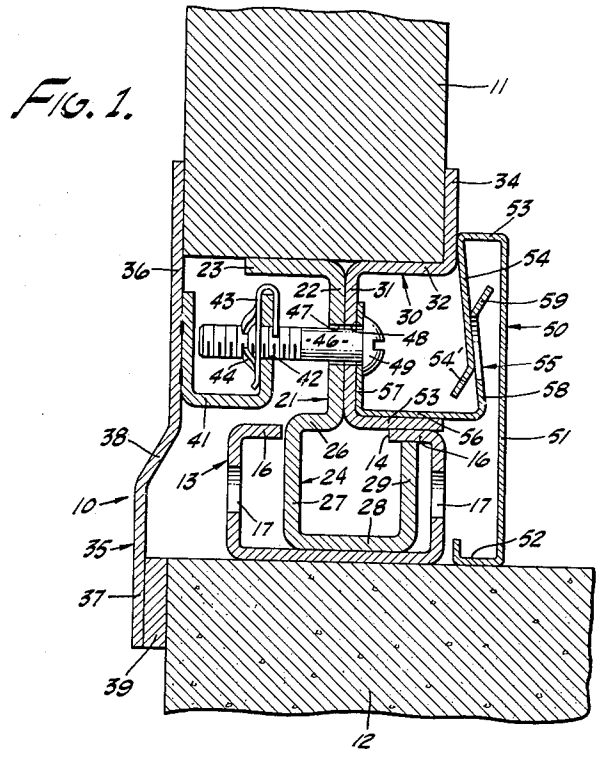


FIG. 1.

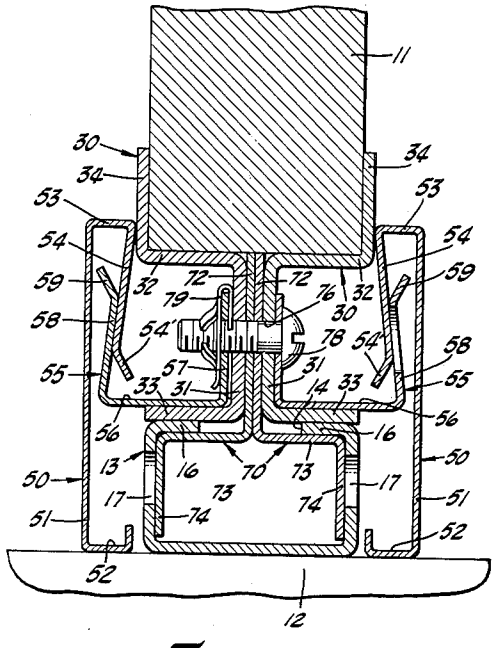


FIG. 4.

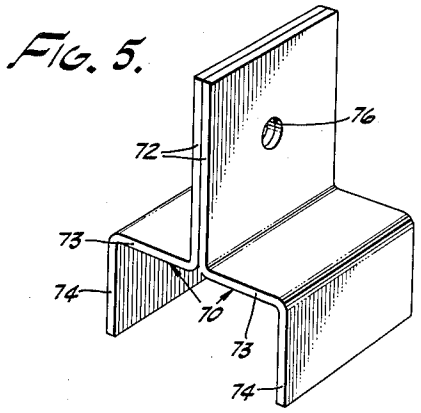


FIG. 5.

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SILL CONSTRUCTION

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12 Claims. (Cl. 189—34)

The present invention relates to constructional elements in general and more particularly to a combination sill construction useful in the rapid erection of wall and panel units. More specifically the invention comprises a combination metal sill unit designed for rapid assembly and disassembly.

New designs having as their primary purpose the reduction of building costs are of importance in view of the high cost of labor. Designs more easily and rapidly assembled are particularly desirable for they reduce cost. In the erection of buildings including homes, the positioning and mounting of walls is, of course, an ever present factor. Walls may vary in width, length, and may be either interior or exterior walls. The present invention is directed to a mounting unit or sill combination capable of carrying walls of varying thicknesses and lengths, and whether positioned interiorly of the building or as an exterior wall.

With an appreciation of the problems present in the fabrication of buildings, and particularly in the erection of wall structures, it is a purpose of the present invention to provide a new and improved wall-supporting unit by which the wall is fixed upon the supporting floor or surface.

It is another object of the invention to provide a fabricated sill unit by which walls of varying thickness are fixedly but removably supported upon a supporting floor.

A still further object of the invention is to provide a sill unit in which a supported wall is clamped in position relative to a fixed floor-supporting runner, and in which decorative appearance faces are frictionally held in place.

These and other more specific objects will appear upon reading the following specification and claims and upon considering in connection therewith the attached drawing to which they relate.

Referring now to the drawing:

Figure 1 is a vertical section through a wall-mounting sill unit constructed in accordance with the present invention and of the type adapted to support an exterior wall;

Figure 2 is a view in perspective of the exterior sill tie down clip;

Figure 3 is a view in perspective of the base tension clip embodied in the unit of Figure 1;

Figure 4 is a vertical section similar to Figure 1 showing a modified construction supporting an interior wall; and

Figure 5 is an interior sill tie down clip.

Referring again to the drawing, a wall-supporting sill unit constructed in accordance with the present invention is indicated generally by the reference character **10** and is illustrated in Figure 1 supporting a wall **11** upon a floor **12**. The construction includes an elongated floor runner **13** secured fixedly to floor **12** by suitable means, such as unshown bolts, and which is itself generally U-shaped in section with a top opening **14** between inwardly extending overhanging flanges or partial walls **16**. For purposes of lightness in weight and saving of metal runner **13** may be formed at spaced intervals with cutout apertures **17**. Seated in runner **13** is the sill tie down clip **21** illustrated in perspective in Figure 2. Clip **21** includes a central

vertical run **22** at the upper edge of which is positioned an outwardly extending flange or shelf **23** and at the lower end of which is positioned a substantially square-sectioned box configuration indicated generally by the reference character **24**.

Box or section **24** is seen to include a relatively narrow horizontal or transverse run **26** extended from central run **22** and which forms a partial top wall. From run **26** extends downwardly a run **27** which is parallel to central run **22** and sufficiently high as to abut the inner edge of partial wall **16** of the runner **13** when the bottom run **28** of the box **24** rests upon the bottom wall of the runner. The box structure is completed by a run **29** extended parallel to run **27** but of a height sufficiently less than the height of run **27** as to enable it to extend into contact with the underside of a partial wall **16**, as clearly illustrated in Figure 2. The arrangement of runs **26**, **27**, **28** and **29** is such that an opening is formed between run **29** and run **26** so that the clip can be inserted into the runner **13** by hooking the run **29** below the right-hand partial wall **16** of the runner, as viewed in Figure 1, and then pivoting the clip, counterclockwise as viewed in Figure 1, until it assumes the vertical position there illustrated. Run **27** then contacts the edge of one partial wall **16** while run **29** extends under the other. With the clip so positioned it is clear that further pivotal movement in a counterclockwise direction, as viewed in Figure 1, is prevented by the abutment of the run **29** with the wall **16**. With the clip **21** in position as illustrated in Figure 1, it is also clear that flange **23** at the upper end of vertical run **22** provides a supporting surface or shelf for the panel or wall **11**.

Cooperating with the tie down clip **21** in the support of the wall **11**, and also cooperating with the run **29** to prevent pivotal movement of the clip, is a clamping element indicated generally by the reference character **30**. Element **30** includes a central vertical run **31** extended parallel to and abutting the central run **22** of clip **21** and from the upper and lower extremities of which extend transverse runs **32** and **33**, respectively. Run **33** rests on the top of partial wall **16** under which the vertical run **29** of box **24** extends while the horizontal run **32** has its upper surface extended in the same plane as the upper surface of flange **23** of the clip and cooperates therewith in supporting the wall **11** as illustrated. From the outside of horizontal run **32** of clamping element **30** extends a vertical run **34** which abuts the side of wall **11** near its base and prevents displacement to the right as viewed in Figure 1.

To retain wall **11** upon the supporting surfaces provided by shelves **23** and **32** there is provided an exterior closure plate, indicated generally by the reference character **35**, which extends longitudinally parallel to runner **13** and has a height such that it extends from adjacent the wall **11** in a run **36** downwardly to a position adjacent the supporting base **22** in a run **37**. The runs **36** and **37** may, if preferred, be joined by an inclined central run **38** and an abutment block **39** is provided between the run **37** and the floor **12** which may be of varying thickness depending upon the lateral extension of the wall **11** relative to the left-hand side of the floor **12**. A U-sectioned bracket **41** is fixedly secured, as by welding, to the run **36** of plate **35** and on its inner side is formed with an aperture **42**. A thread-forming element **43** is seated upon the bracket **41**, its flexible bolt-seating fingers **44** receiving threads of a bolt **46** the shank of which extends through apertures **47** and **48** in the runs **22** and **31**, respectively, of the tie down clip **21** and the clamping element **30**. The head **49** of the bolt **46** is slotted as to receive a screw driver and is positioned in abutting relationship to the run **31**. Tightening of the bolt **46** effects the drawing of the U-bracket **41**

inwardly and the closure plate **35** against the wall **11** and the base **12**, as illustrated.

Closure plate **35** protects the outer side of the sill construction and provides a pleasing appearance surface. The interior surface also requires a closure and this is provided by a snap-on base, indicated generally by the reference character **50**, which includes a vertical side or run **51** of a height sufficient to extend from the floor **12** to a point adjacent the lower end of wall **11**. Base **50** is provided at its lower end with a turned-under supporting flange **52** and at its upper end with an inwardly extending run **53** from the inner side of which extends a downwardly and outwardly inclined run **54** terminating in an inwardly flared narrow run **54'**. Base **50** is clamped in position by a base tension clip indicated generally by the reference character **55** which is U-sectioned and includes a base run **56** seated upon the run **33** of clamping element **30**, an inner side or run **57** which is apertured and through which the shank of bolt **46** extends and which is clamped to the run **31** by the head **49** of the bolt, and an apertured outer side or run **58** sloped upwardly and inwardly and ending in an outwardly extending flange or run **59**. Clip **55** is, as the name tension clip indicates, resiliently flexible at outer run **58** which is adapted to exert a retaining force upon being flexed slightly to the right as viewed in Figure 1. The relationship is such that base **50** may be forced downwardly with its inner inclined run **54** sliding inside of the inclined run **58** of tension clip **55**. The latter cams the base to the left, as viewed in Figure 1, and against the lower extremity of wall **11** and more specifically against the run **34** of the clamping element **30**, the supporting flange **52** at the bottom of the base finally moving into contact with the floor **12**.

The assembly of the wall or panel-supporting sill construction constructed in accordance with this first embodiment of the invention is believed to be clear. The runner **13** is first fixedly secured to the supporting floor and thereafter the tie down clip **24** is positioned in place by being threaded into the runner as described. Clamping element **30** is next positioned as illustrated and the bolt **46** positioned in place with the tension clip **55**. The exterior closure plate **35** is then moved into position and the bolt **46** rotated by means of a screw driver extended through the aperture in the run **58** of base tension clip **55**. Rotation of bolt **46** draws the closure plate **35** into place against the wall **11** and floor **12** and at the same time clamps wall **11** between the closure plate **35** and run **34** of clamping element **30**, the wall resting, as previously described, upon the horizontal flanges or runs **23** and **32** of the tie down clip **24** and clamping element **30**, respectively. Upon bolt **46** being completely tightened snap-on base **50** is then positioned as described and the operation is completed. Disassembly is the reverse operation.

The length of the various parts depends upon the requirements of the particular installation and upon design. The runner **13** may be a continuous element secured at spaced intervals to the supporting floor or, if preferred, it may be formed of spaced units. The tie down clip **21** and the clamping element **30** are relatively short and usually of the same length, a typical form for the tie down clip being illustrated in perspective in Figure 2. The base tension clip **55** is also usually a relatively short element and may be a stamping. The exterior closure plate **35** and the base **50**, however, are continuous elements which in the usual installation extend the full length of the wall **11** while the other units can be relatively short units positioned at intervals along the length of the wall.

Turning now to the second preferred embodiment of the invention, illustrated in Figures 4 and 5, a construction is illustrated which is similar to the first embodiment of the invention but which differs therefrom in certain regards as will be specified. As distinguished from the first embodiment of the invention, which comprised a sill unit adapted for the mounting of an exterior wall, the second embodiment is primarily intended to mount an interior wall. The structure is like the first-described embodiment in that a wall or panel **11** is supported upon a floor **12** which carries the runner **13**.

The single tie down clip **21** of the first embodiment has been replaced by a pair of clips, indicated generally in each instance by the reference character **70**. Each clip **70** comprises a vertical run **72** from the lower end of which extends a horizontal run **73** ending in a downwardly extending run **74** parallel to run **72**. The height of run **74** is such that the clip is adapted to be positioned comfortably within the runner **13** with the run **74** adjacent the side wall or run **17** of the runner. Each horizontal run **73** of each clip has a lateral or horizontal extension such that the two clips **70** can be positioned in a snug side-by-side relationship within the runner **13**, as is illustrated in Figure 4, in which they cooperate to position themselves with the runs **72** extending vertically upwardly midway between the edges of horizontal partial walls **16** of the runner **13**. A pair of clamping elements **30** are used in the present embodiment and are positioned upon opposite sides of the vertical runs **72** of the tie down clips **70**. Clamping elements **30** are identical to the elements **30** of the first embodiment and their lower runs **33** rest in each instance upon the horizontal partial top walls **16** of the runners **13** while their upper horizontal runs **32** function to support the wall **11** between their vertical outer runs **34**.

The vertical runs **31** of the clamping elements **30** and the vertical runs **72** of the tie down clips **70** are formed with apertures which combine to form a transverse bore **76** seating a headed bolt **78** which replaces the bolt **46** of the first embodiment. Bolt **78**, it is to be noted, is much shorter than bolt **46** and its head serves to clamp a base tension clip **55** in place which clip is identical to the clip bearing the same reference character in the first embodiment. The threaded shank of bolt **78** extends through the inner vertical run **57** of a second clip **55** and is seated in the thread-forming element **79** carried by that run. In this second embodiment of the invention, snap-on bases **50** are positioned upon both sides of the sill unit and each is retained in place by a base tension clip **55** which cooperates with the base in the manner of the first embodiment.

As in the case of the first embodiment, it is believed the assembly of this form is obvious from its construction. The length of the parts may vary as described in connection with the first embodiment but a difference is present in the positioning of the tie down clips **70**. In this embodiment the clips **70** will first be positioned at spaced points in the runner **13** and will then be displaced longitudinally into side-by-side cooperating abutment as illustrated. The positioning of the clamping elements **30** in the positions shown and the securing of the parts in their assembled relationship by the tightening of the bolt **78** by inserting a screw driver through an aperture in the right-hand clip **55** follows the alignment of clips **70** as well as the positioning of a snap-on base **50** upon each side of the wall rather than upon one side is as in the first embodiment.

While the particular apparatus herein shown and described in detail is fully capable of attaining the objects and providing the advantages hereinbefore stated, it is to be understood that it is merely illustrative of the presently preferred embodiments of the invention and that no limitations are intended to the details of construction or design herein shown other than as defined in the appended claims.

I claim:

1. A combination sill construction for supporting a wall comprising a runner fixedly secured to a supporting floor, a tie down clip interlocked with said runner and extended

upwardly therefrom and provided with a supporting shelf to support said wall, a clamping element resting upon said runner and extended upwardly adjacent said clip and provided at its upper end with a supporting shelf for said wall and with a vertical clamping run adapted to abut the side of said wall, securing means to secure said clamping element to said tie down clip, and clamping means, including a run adapted to abut the side of said wall spaced from said clamping run of said clamping element, to position said wall on said supporting shelves.

2. A sill construction adapted to support a wall upon a supporting surface comprising a hollow runner fixedly secured to said surface and formed at its top with inwardly extending partial walls, a tie down clip resting in said runner and extended under one of said partial walls to prevent pivotal movement in one direction, said clip extended upwardly from said runner in a vertical run having a horizontal wall-supporting shelf at its upper end, a clamping element having a vertical run extended adjacent the vertical run of said clip, a lower horizontal run resting upon said runner, an upper horizontal run cooperating with the shelf of said clip to support a wall, and an upper vertical run extended adjacent said wall in abutting contact with the side thereof, means to secure said vertical run of said clamping element and said vertical run of said tie down clip in adjacency and in contact, said clamping element cooperating to prevent the pivotal movement of said tie down clip in said runner in one direction, and clamping means, including a run adapted to abut the side of said wall spaced from said clamping run of said clamping element, to position said wall on said supporting shelves.

3. The construction recited in claim 2 characterized in that said clamping means comprises an exterior closure plate which extends between an outer edge of said supporting base and the side of said wall and opposite the vertical run of said tie down clip, said closure plate carrying a U-shaped bracket with a threaded seat, and in that said means securing the vertical run of said clamping element to the vertical run of said tie down clip comprises a threaded bolt which extends through said runs and seats in said U-bracket carried by said closure plate.

4. The construction recited in claim 2 characterized in that a tension clip including a vertical run extended adjacent the vertical run of said clamping element and an upwardly and inwardly inclined outer run spaced therefrom is fixedly secured to said clamping element, and in that an appearance base extends between the upper vertical run of said clamping element and said floor and includes an inwardly positioned vertical inclined run extended inside the outer run of said tension clip to be retained in position thereby.

5. In a wall-supporting sill construction, a generally U-shaped runner fixedly secured to a supporting floor and formed in its open top side with inwardly extending horizontal partial walls, a tie down clip positioned in said runner and including a vertical run from the upper end of which extends a horizontal wall-supporting flange and at the lower end of which is positioned a generally box-like hollow construction, square in section, and including one vertical side which extends under and in abutting relationship to the underside of one of said partial walls of said runner to prevent said tie down clip from tilting in one direction, a clamping element including a vertical run extended adjacent and in abutting contact with the vertical run of said tie down clip and formed at its upper and lower ends with horizontal runs the lower of which rests upon one of said partial walls of said runner and the upper of which cooperates with the horizontal wall-supporting flange of said tie down clip to provide a supporting surface for said wall, said clamping element also including an outer vertical run at the outer edge of said horizontal upper run positioned as to contact the side of a supported wall, an exterior closure plate extended between the outer side of said floor and the

outer side of said supported wall and including an inwardly extending U-sectioned bracket formed upon its inner side with a seat for a threaded bolt, a threaded bolt extended through the vertical runs of said tie down clip and said clamping element with its threaded shank seated in the inner side of said U-bracket of said exterior closure plate and functioning to draw said clamping element against said tie down clip and said exterior closure plate against the sides of said floor and of said wall, a base tension clip secured to the vertical run of said clamping element and extended away from said exterior closure plate and formed at its outer side with a slightly resilient upwardly extending camming wall, and an appearance closure base extended between said floor and the lower edge of said wall and including an inner downwardly extending slightly inclined run seated adjacent the clamping wall of said clip and retained in place thereby.

6. A sill construction adapted to support a wall upon a supporting floor and including a rigid hollow runner the open top of which is partially closed along the sides by inwardly extending horizontal partial walls, a pair of tie down clips seated within said runner and each including a vertical run extended centrally upwardly from said runner and in abutting contact with the corresponding run of the other tie down clip, said clips also including horizontally extending runs extended under the partial walls of said runner to prevent the displacement upwardly of said tie down clips with respect to said runner, clamping elements positioned upon the opposite sides of said vertical extensions of said tie down clips, each of said clamping elements including a vertical run in abutment with a vertical run of one of said tie down clips, said clamping elements also including a horizontal run in contact with the upper surface of one of said partial walls, an upper horizontal run forming a supporting flange for the bottom of a wall to be supported, and an outer vertical wall adapted to abut the side of a supported wall, appearance closure bases extended upon opposite sides of said runner and between the lower extremity of a supported wall and said floor, each of said bases being formed with an inner downwardly extending run, and base tension clips secured upon opposite sides of the vertical runs of said tie down clips and each including an upwardly extending outer run extended along the outer side of the inner downwardly extending run of said base and drawing said base inwardly against the side of a supported wall with the bottom of said base in contact with a supporting surface.

7. In a combination sill construction for supporting a wall comprising a runner fixedly secured to a supporting floor, a tie down clip interlocked with said runner and extended upwardly therefrom, a clamping element resting upon said runner and extended upwardly adjacent said clip and provided at its upper end with a supporting shelf for said wall and with a vertical clamping run adapted to abut the side of said wall, means including a run abutting the opposite side of said wall from said clamping run of said clamping element to retain said wall on said supporting shelf and against said clamping run, and screw means to draw said clamping element against said clip and the run of said means including a run against the wall.

8. In a combination sill construction for supporting a wall comprising a runner fixedly secured to a supporting floor, a tie down clip interlocked with said runner and comprising a horizontal run and a vertical run extended inside said runner and a vertical run above said runner, a clamping element resting upon said runner and extended vertically upwardly adjacent the vertical run of said clip and provided at its upper end with a supporting shelf for said wall and with a vertical clamping run adapted to abut the side of said wall, means including a run abutting the opposite side of said wall from said clamping run of said clamping element to retain said wall on said supporting shelf and against said clamping run, and screw means to draw said clamping element against said clip

and the run of said means including a run against the wall.

9. The construction recited in claim 8 characterized in that said means to retain said wall on said supporting shelf and against said clamping run comprises a clamping element identical to said clamping element of said claim.

10. The construction recited in claim 8 characterized in that said means to retain said wall on said supporting shelf and against said clamping run also includes a run adapted to abut the edge of said floor supporting said runner.

11. The construction recited in claim 8 characterized in that a base tension clip is clamped relative to said tie down clip and in that an appearance base is resiliently

drawn against said wall by said base tension clip and extends between said wall and said floor.

12. The construction recited in claim 11 characterized in that a pair of said tension clips are provided one upon each side of the vertical run of said tie down clip and in that an appearance base is held against both sides of said wall by said tension clips.

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