

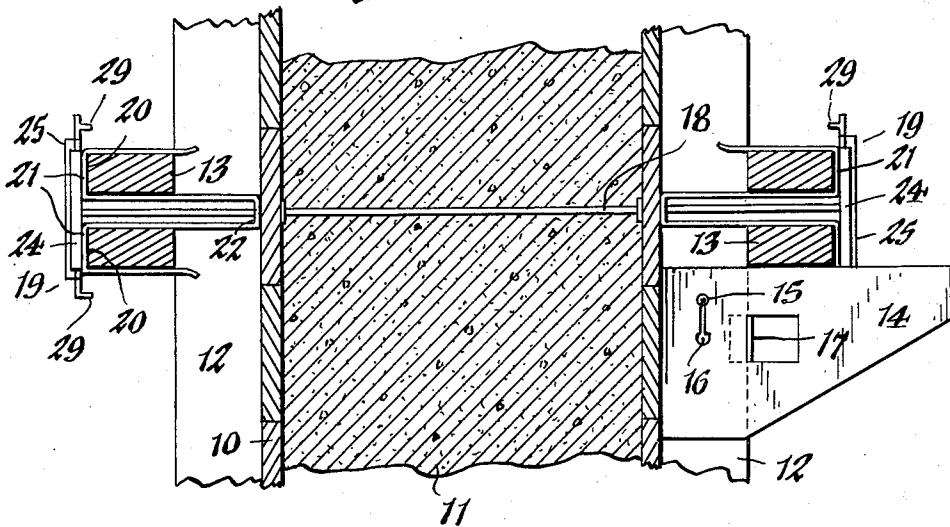
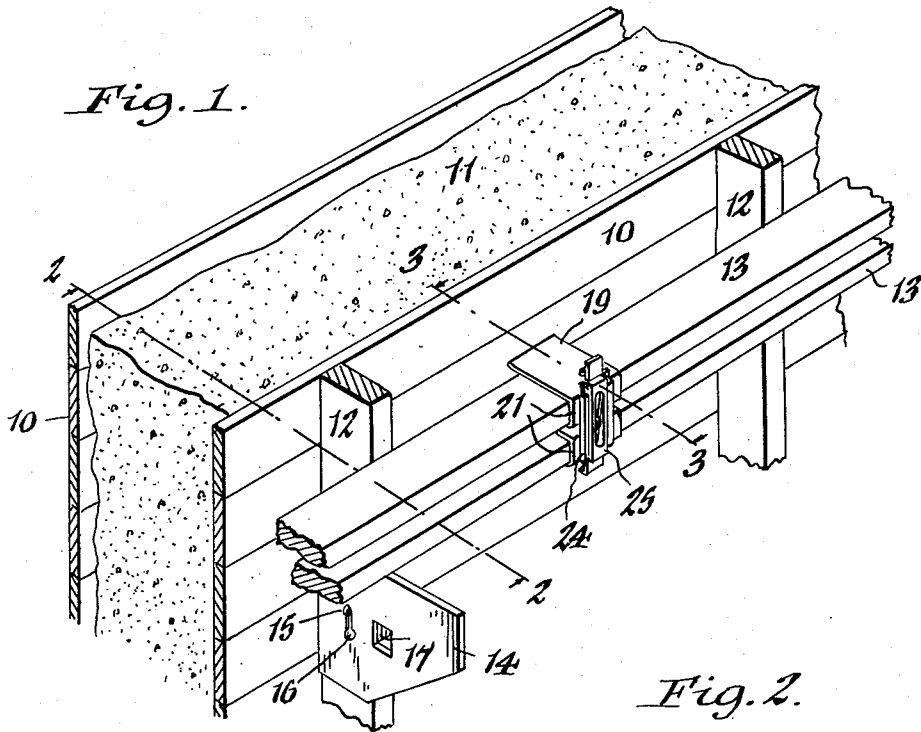
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CONCRETE FORM APPLIANCE

2,902,744

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

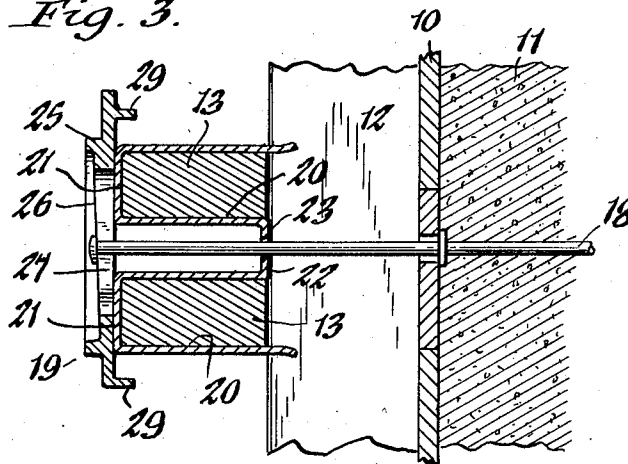


Fig. 4.

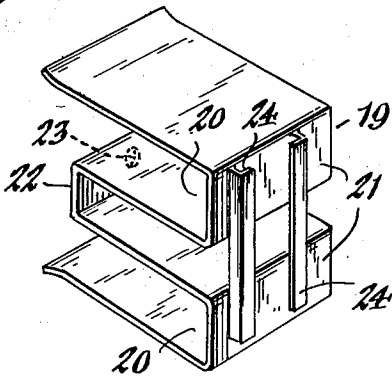


Fig. 5.

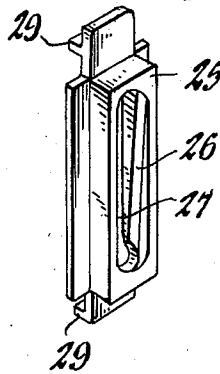
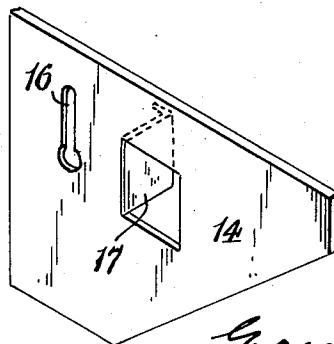


Fig. 6.



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CONCRETE FORM APPLIANCE

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4 Claims. (Cl. 25—131)

This invention relates to certain new and useful improvements in devices or clamp accessories for use in the forms required for the making of concrete building walls and the like.

It has for one of its objects to provide a concrete form device of this character which is not only simple and inexpensive in construction but which facilitates the ready assemblage and retention of the concrete form in a firm and true position and which does not damage the wood elements employed upon removal or disassembling of the form after the wall has set.

Another object of the invention is to provide a novel self-contained clamp assembly for effectually supporting and retaining the customary wale elements of the form assembly against the wall studs.

Other features of the invention reside in the construction and arrangement of parts hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawing:

Figure 1 is a fragmentary perspective view of a concrete form assembly embodying our improvements, certain parts being shown in section.

Figure 2 is a fragmentary cross section taken on line 2—2, Figure 1.

Figure 3 is an enlarged cross section taken on line 3—3, Figure 1.

Figures 4 and 5 are detached perspective views of the clamp and the clamping bar, respectively.

Figure 6 is a perspective view of one of the brackets.

Similar characters of reference indicate corresponding parts throughout the several views.

In the substantial types of concrete building and like wall construction, to which our invention is directed, form boards or sheathing 10 are disposed in lateral spaced relation for the pouring of the concrete wall 11 therebetween and these form boards are secured to vertical studs 12 disposed in spaced relation lengthwise of the form. Disposed edgewise against studs are horizontal boards or wales 13, which we dispose in pairs in spaced parallel relation with the joints thereof preferably in broken or staggered relation. It is our purpose to so connect these form elements in a firm, even and true manner without resorting to nails and like fasteners for so doing and avoid injury or damage to the lumber when removing the form assembly from the concrete wall.

For the purpose of supporting the lower wale 13 of a pair at suitably spaced points in proper relation to the studs 12, brackets 14 are provided, each bracket being shaped from metal and detachably secured to the side face of an adjoining stud through the medium of a nail or like fastener 15 engaging a keyhole-shaped slot 16 in the bracket-wall, the rear edge of the bracket abutting the opposing outer face of the form boards 10. Extending laterally from each bracket at right angles thereto is a flange 17 which is adapted to overlie the front edge of the adjoining stud to not only square the bracket in position but, jointly with the fastener 15, properly retain the bracket against displacement. By this construction,

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these brackets may be applied to and removed from the studs in a minimum of time and with a minimum of effort. These brackets may be of a supporting length to receive two sets of wales in side by side relation where the construction of the wall may warrant it.

In order to maintain the form boards 10 in their proper position and retain the wales in detachable clamped relation against the studs, we provide a plurality of tie rods 18 which transversely span the complete form assembly and companion end clamps 19 correlated therewith and with the wales. These clamps are so constructed that they provide superposed retaining supports for the pairs of parallel wales, they being the sole support for the upper wales of each pair while the lower wales are supported as well on the brackets 14. By preference, each of these clamps is substantially S-shaped in elevation to provide inwardly-opening upper and lower horizontal recesses 20 in which the companion wales are received and supported in spaced relation with the closed front ends 21 of such recesses constituting abutment walls which bear snugly against the outer edges of the wales to effectually align and retain them against the studs. The web portion 22 at the inner end of the intermediate or outwardly-opening recess of the clamp between its wale-receiving recesses has a horizontal opening 23 therein through which the companion tie rod 18 extends. Applied to the front face of the clamp are upright guide-flanges 24 in which a vertically-displaceable clamping bar 25 is guided for correlation with the head of the companion tie bolt 18 to draw the form assembly together and resist its expansion during the pouring of the concrete into the same. For this purpose this bar has a downwardly tapering wedge-shaped facial portion 26 having an upright tie rod receiving slot 27 centrally thereof terminating at its lower end in an enlargement or escape opening for registration with the tie rod head in the raised or released portion of the wedge-like clamping bar. The latter is provided at its upper and lower ends with inwardly-extending flanges 29 which constitute retaining stops in overhanging relation to the companion ends of the clamp 19 for limiting the displacement of this bar relative to the clamp and whereby the same forms a unitary or self-contained part of the clamp and is always tied thereto ready for use.

In assembling the wales to the sheathing-studs 12, the brackets 14 are detachably applied to the nails 15 of the companion studs 12 on which such brackets are to be mounted, after which the tie rods 18 are positioned where desired and the S-shaped clamps 19 with their captive clamping bars 25 are engaged with the ends of said rods and the wales 13 placed in supported relation thereto and to the brackets. The clamping bars are then forced down against the headed ends of the tie rods to draw the wales snugly against the studs and retain the form assembly firmly in its aligned position to receive the concrete. Removal of the wales is as readily effected by releasing the clamping bars from their wedged position and removing the clamps from such wales, and the brackets 14 are detached from their stud-nails. In this connection the lumber elements are not injured or wasted in any way and can be used for assembling another form.

It will be noted in Figure 5 that the wedge-face 26 of the clamping bar 25 is recessed or counter sunk and that its outer or front face is substantially straight or upright and serves as an abutment face for the so-called buttons attached to the ends of wire type tie members employed in heavier concrete structures in lieu of tie bolts.

We claim as our invention:

1. A clamp for a concrete form having spaced walls including pairs of parallel wales extending along the outer sides thereof and tie bolts spanning such walls in planes

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 between the wales of a pair, comprising a unitary body comprising a portion shaped to provide parallel spaced upper and lower channels opening to the inner side of said clamp adapted to conformably receive and clamp said wales, and clamping bar guide rail means fixed to and extending between the bases of said channels to rigidize the outer end of said clamp body, and a clamping bar having slide portions adapted to engage interfittingly said rail means to be guided thereby and retained thereon against outward movement, said clamping bar having a wedge portion aligned with said rails and tapered inwardly of said clamp and adapted to engage a head on a companion tie bolt for drawing said clamp inwardly thereon.

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 2. A clamp for a concrete form having spaced walls including pairs of parallel wales extending along the outer sides thereof and tie bolts spanning such walls in planes between the wales of a pair, comprising a unitary body comprising a portion shaped to provide parallel spaced upper and lower channels opening to the inner side of said clamp adapted to conformably receive and clamp said wales, and clamping bar guide rail means fixed to and extending between the bases of said channels to rigidize the outer end of said clamp body, and a clamping bar having slide portions adapted to engage interfittingly said rail means to be guided thereby and retained thereon, said clamping bar having stop elements at its upper and lower ends in overhanging relation to the corresponding ends of the clamp body for limiting its displacement to positions of retained engagement with said rail means and having further a wedge portion aligned with said rails and tapered inwardly of said clamp and adapted to engage a head on a companion tie bolt for drawing said clamp inwardly thereon.

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 3. A clamp for a concrete form having spaced walls including pairs of parallel wales extending along the outer sides thereof and tie bolts spanning such walls in planes between the wales of a pair, comprising a body comprising strap metal shaped to provide parallel spaced upper and lower channels opening to the inner side of said clamp adapted to conformably receive and clamp said wales, each of said channels comprising an upper and lower leg flange and a base web and said channels being interconnected and spaced by a third web at the inner end of said clamp interconnecting the lower leg of the upper channel with the upper leg of the lower channel, and a pair of clamping bar guide rails fixed to and extending between said base webs to rigidize the outer end of said clamp body, and a clamping bar having slide portions engaged interfittingly with said rails to be guided thereby and retained thereon, said clamping bar having stop elements at its upper and lower ends in overhanging relation to the corresponding ends of the clamp body for

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 limiting its displacement to positions of retained engagement with said rails and having further a wedge portion aligned with said rails and tapered inwardly of said clamp and adapted to engage a head on a companion tie bolt for drawing said clamp inwardly thereon.

4. A clamp for a concrete form having spaced walls including pairs of parallel wales extending along the outer sides thereof and tie bolts spanning such walls in planes between the wales of a pair, comprising a body comprising strap metal shaped to provide parallel spaced upper and lower channels opening to the inner side of said clamp adapted to conformably receive and clamp said wales, each of said channels comprising an upper and lower leg flange and a base web and said channels being interconnected and spaced by a third web at the inner end of said clamp interconnecting the lower leg of the upper channel with the upper leg of the lower channel, and a pair of clamping bar guide rails fixed to and extending between said base webs to rigidize the outer end of said clamp body, and a clamping bar having slide portions engaged interfittingly with said rails to be guided thereby and retained thereon, said clamping bar having stop elements at its upper and lower ends in overhanging relation to the corresponding ends of the clamp body for limiting its displacement to positions of retained engagement with said rails and having further a flat outer face part parallel to the outer end of said clamp body, and a recessed wedge portion aligned with said rails and tapered inwardly of said clamp and adapted to engage a head on a companion tie bolt for drawing said clamp inwardly thereon.

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