

Aug. 11, 1959

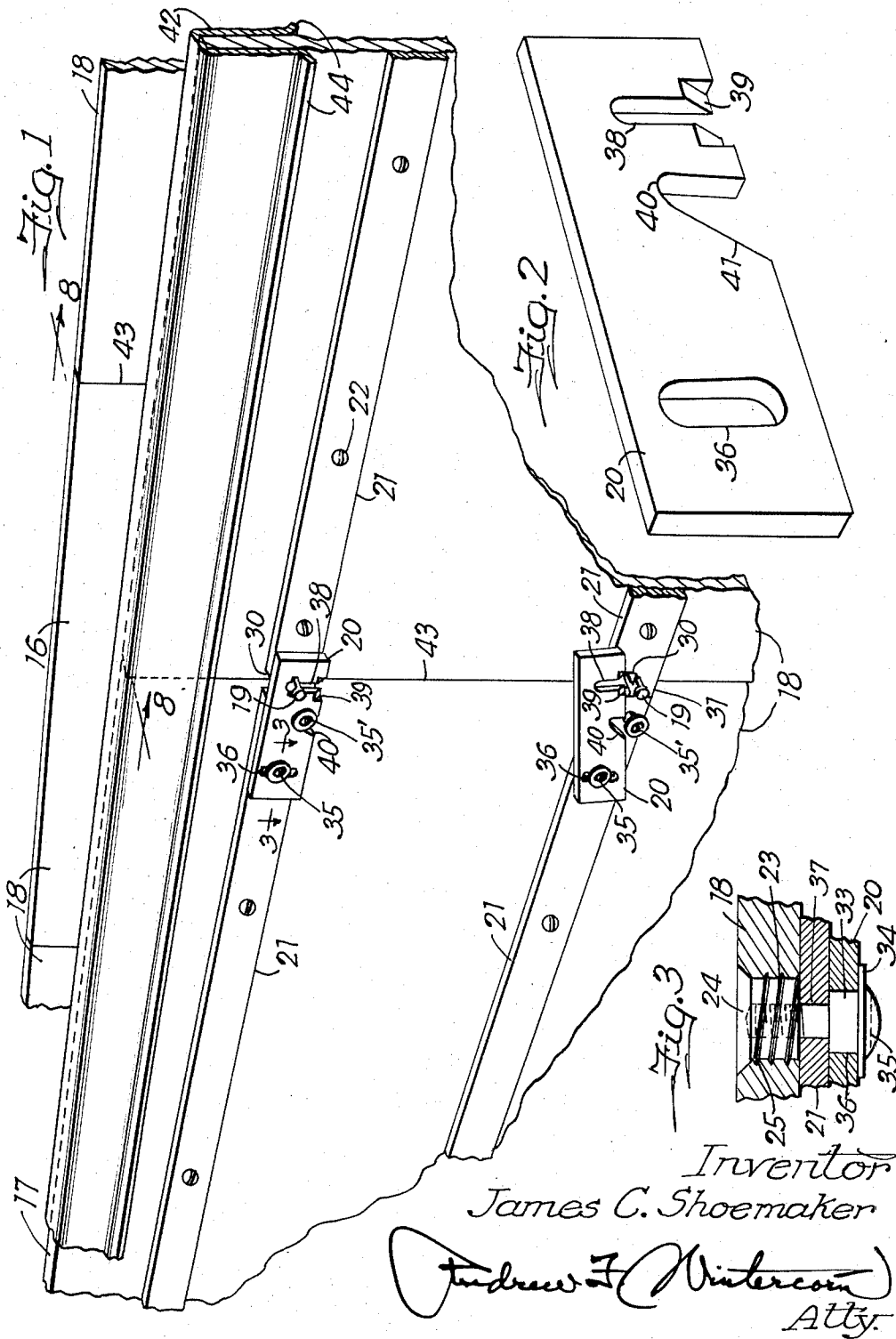
J. C. SHOEMAKER

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CONCRETE FORM LOCKING MEANS

Filed Sept. 9, 1955

3 Sheets-Sheet 1



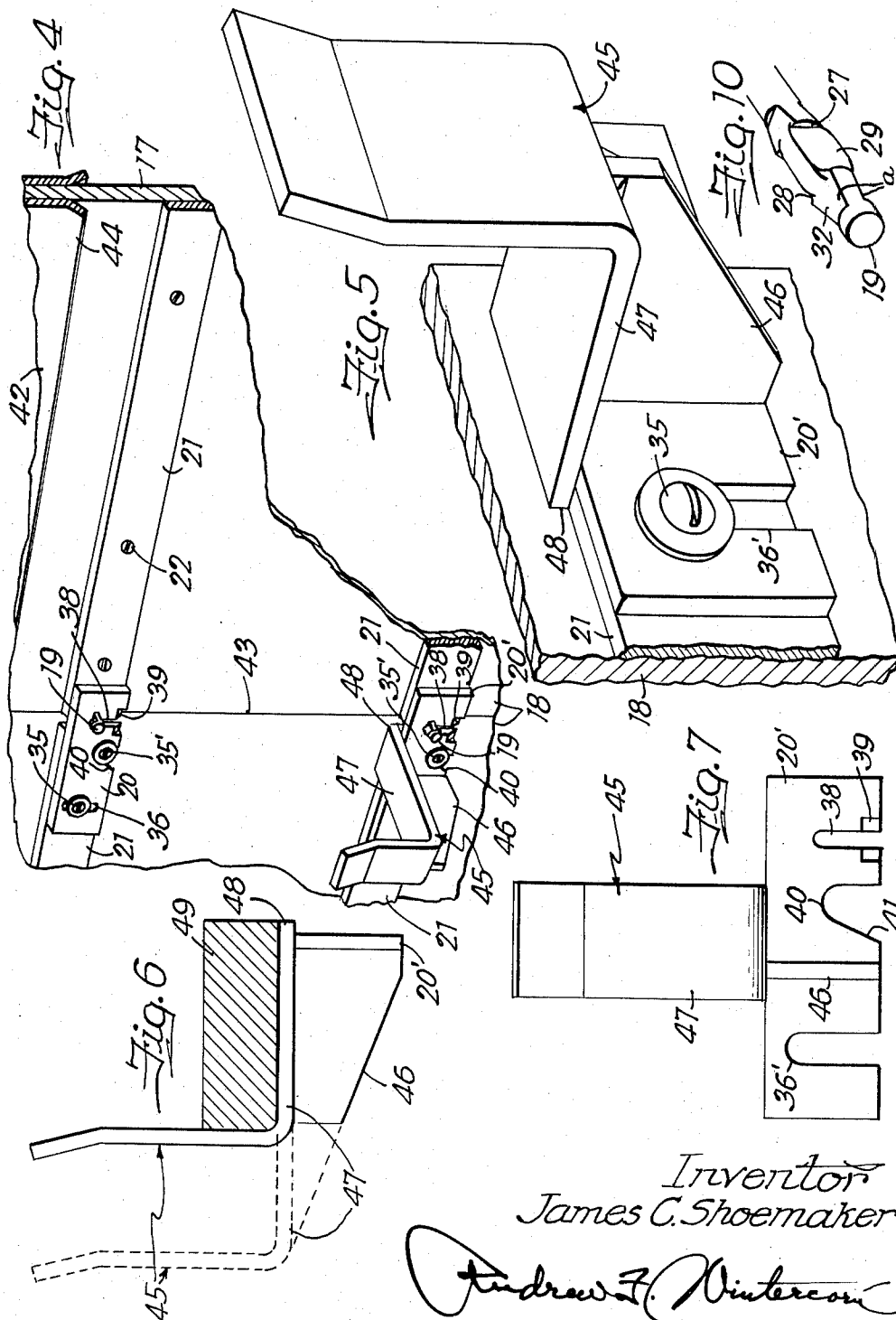
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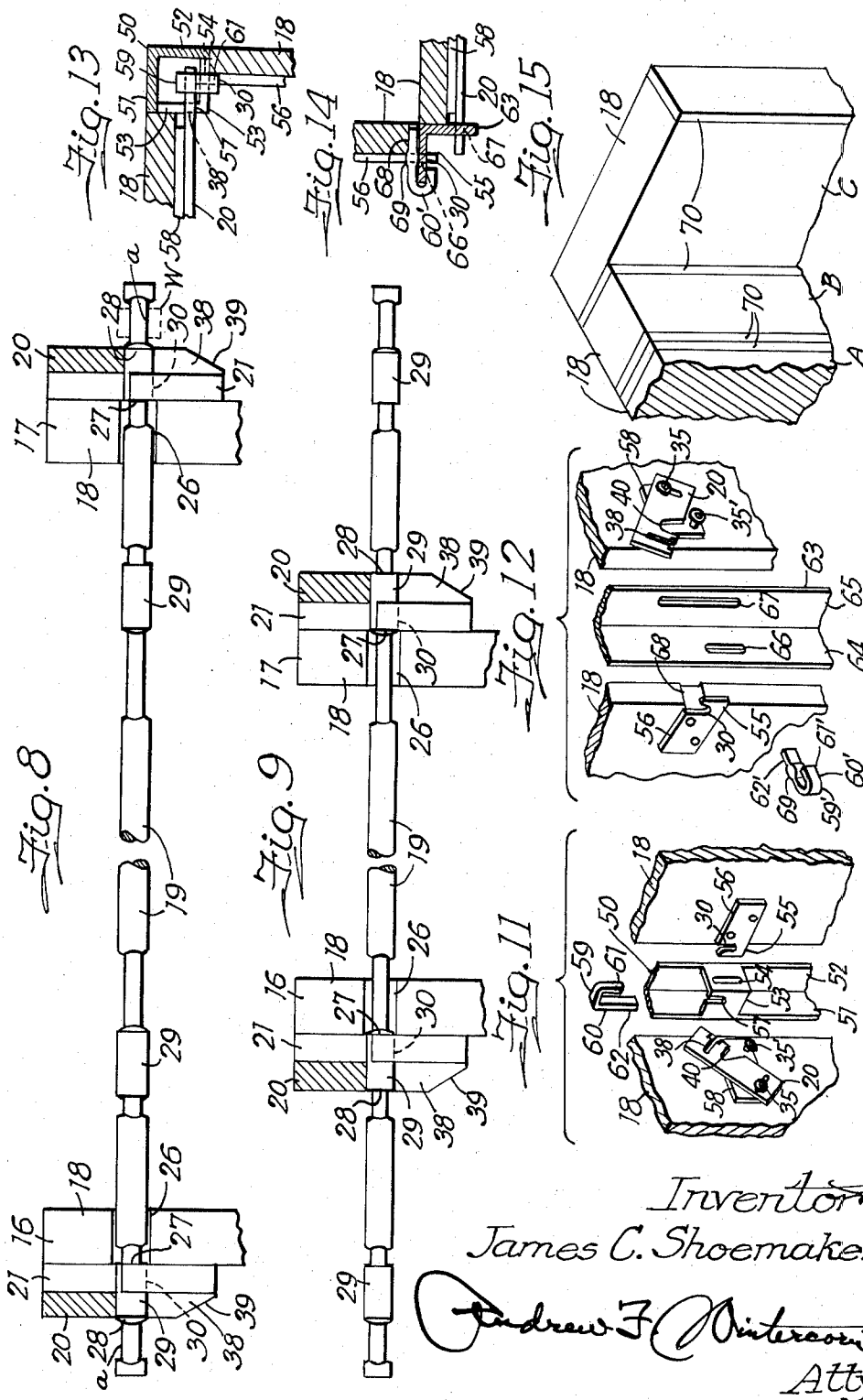
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1

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CONCRETE FORM LOCKING MEANS

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Application September 9, 1955, Serial No. 533,329

8 Claims. (Cl. 25—131)

This invention relates to improvements in concrete form locking means of the kind disclosed in my copending application, Serial No. 376,423, filed August 25, 1953, which resulted in Patent No. 2,825,956, issued March 11, 1958.

In the copending application I disclosed a concrete form structure in which there are horizontally extending metal strips secured to the outer side of the abutting vertical form sections, the end portions of these strips on abutting sections being approximately in alignment and adapted to be interconnected so as to interconnect the sections, one of the end portions having a bayonet slot provided therein adapted to receive the protruding end portion of a tie-wire disposed at right angles to and protruding between the abutting ends of the form sections, so that when an elongated lever pivoted at one end on the other of the end portions and having a slot provided in its other end extending from one longitudinal edge is swung downwardly to receive the outer end of the tie-wire in the open end slot the forms are fastened together, and the wire is at the same time tightened in the bayonet slot by tight abutment of one shoulder on the wire with the lever and tight abutment of another shoulder on the wire with the strip. In accordance with the present invention, the locking lever is provided with another slot intermediate its ends opening from the same longitudinal edge as the first mentioned slot in the end portion, and this additional slot receives a bolt or stud projecting from the end portion of the same strip in which the lever is pivoted, whereby to insure more accurate alignment of the ends of the strips and accordingly improve the smoothness of the foundation at the joints between abutting form sections, and at the same time make for greater rigidity of the form structure as a whole by virtue of the more rigid connections between the adjoining ends of the metal strips. With a view to still further insuring closer accuracy of alignment of abutting form sections I also provide channel section lineup rails or stringers which are slipped down over the top edges of the form sections above the level at which the cement is poured so that there is nothing to interfere with removal of the rails afterward just before the forms are stripped from the foundation.

Another object of my invention is to provide scaffold brackets integrally attached to the aforementioned elongated form locking levers, so that levers which carry these brackets may be substituted for the levers otherwise employed at the appropriate elevation on the form structure and boards may be placed on these brackets for support to provide a cat-walk around the outer and inner sides of the form structure for the use of workmen in the pouring of cement. The slotted levers equipped with these brackets will, of course, serve the same locking purpose as the other levers, so that the levers carrying these brackets serve a double purpose. The scaffold boards resting on the brackets have tight abutment with the outer side of the abutting form sections and serve to hold the same in alignment and they therefore serve a double purpose too.

Another object is to provide improved inside and out-

2

side corner locking means for the form structure, in each of which slots are provided to receive the bayonet slotted end of a strip on one side of the corner and the slotted end of the locking lever on the adjoining side of the corner, and clips of improved form are provided to tie the parts together in the assembled relationship, so that it takes very little time and effort to complete the assembly and later disassemble it when the forms are to be stripped from the foundation.

The invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of a concrete form structure incorporating locking means made in accordance with my invention and also showing the use of a lineup rail on the outer wall of the form structure;

Fig. 2 is a perspective view of one of the locking levers;

Fig. 3 is a sectional detail on the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 1 showing the use at the next to the top level of scaffold brackets provided in accordance with my invention in lieu of locking levers;

Fig. 5 is a perspective view of one these brackets seen from the other side;

Figs. 6 and 7 are a side view and front view, respectively, of one of these brackets, Fig. 6 indicating in dotted lines how these brackets may be lengthened to provide for support of a wider walk;

Figs. 8 and 9 are sections on the line 8—8 of Fig. 1 showing my improved tie-wires and indicating how the same tie-wires may be used for different thicknesses of foundations;

Fig. 10 is a perspective view of one end portion of a tie-wire shown substantially full size to give a better idea of how the shoulders are formed by the two-way squeezing of the wire at each of the four points in longitudinally spaced relation;

Figs. 11 and 12 are perspective views of my improved inside and outside corner constructions;

Figs. 13 and 14 are plan views of the parts in Figs. 11 and 12 assembled, and

Fig. 15 is a perspective view of a corner portion of one wall of a form structure illustrating the use in accordance with my invention of a resilient cushioning and sealing means at the joints between abutting sections.

The same reference numerals are applied to corresponding parts throughout the views.

Referring to the drawings and first mainly to Figs. 1 to 3 and 8 to 10, the reference numerals 16 and 17 designate the inner and outer walls, respectively, of a concrete form structure made in accordance with my invention. Each of these walls is made up of a number of fairly small and light rectangular sections 18. Each section may, for example, be about two feet wide and about eight feet long, the length being equivalent to the depth of the basement whose walls are to be made from poured concrete. The sections 18 are disposed in edge to edge abutting relation and secured together by spacer pins or tie wires 19 and locking bars or levers 20, with the inner and outer walls 16 and 17 held in uniformly spaced relation and the sections 18 in each of these walls secured together firmly in coplanar relationship and tight abutment. Each section 18 is preferably of wooden construction for lightness and cheapness and preferably comprises a wall forming plywood panel of suitable thickness having horizontally extending flat metal strips 21 secured to the outer side thereof, usually at three levels, namely, at the top, middle and bottom portions of the form sections, although more strips may be employed in the case of form sections for a deeper basement. Screws 22 are used in the fastening of the strips and are preferably entered in sleeve nuts 23, the heads 24 of which come flush with the inner side of the panels, similarly as shown in the section, Fig. 3. The sleeve nuts 24 are driven

3

nearly all the way home in their holes in the panels 18 and have fairly coarse spiral threads 25 thereon which in the final tightening of the screws 22 and the resulting slight turning of the sleeve nuts 23 cause the nuts to work their way all the way home in the holes. In the construction of each of the walls 16 and 17 the panels 18 are disposed in edge to edge abutment, excepting at the corners of the structure, where certain variations in this arrangement become necessary, as will soon appear. The tie-wires 19, which serve as spacer pins between walls 16 and 17, extend through notches 26 provided in one end of each panel and have near each end inner and outer shoulders 27 and 28 defined at opposite ends of a vertically flattened portion 29 that is adapted to be entered freely in a bayonet slot 30 in the projecting end portion 31 of a strip 21, whereby loosely to space a form section 18 of the inner wall 16 a predetermined distance from a form section 18 of the outer wall 17 preliminary to the final lockup and rigid fastening together of sections in walls 16 and 17 by means of the locking bars or levers 20. The spacer pins or tie wires 19 are positively connected to the form sections in the slots 30 well enough to serve as coupling pins to be connected to by levers 20 for positively pulling neighboring form sections in walls 16 and 17 into tight abutment. The spacer pins or tie-wires 19, which are preferably of semi-hard wire, are first flattened in a horizontal plane throughout a greater length of the wire than is necessary for the spacing of shoulders 27 and 28, as best appears in Fig. 10, after which the wire is subjected to a second squeeze or flattening throughout a shorter length at the same location in a vertical plane to define the shoulders 27 and 28 at opposite ends of the vertically flattened portion 29. Four such formations are provided on each tie-wire 19, two in spaced relation at each end, as clearly appears in Figs. 8 and 9, the two inner pairs of shoulders 27 and 28 being used when forms are set up for the pouring of a thinner wall, as shown in Fig. 9, and the two outer pairs of shoulders 27 and 28 being used when forms are set up for a wall of greater thickness, as in Fig. 8. A third arrangement provides for a wall of intermediate thickness. In that case only one of the flattened portions used in Fig. 9 is used; the other being one of those used in Fig. 8. After the concrete has set and the forms are to be stripped from the wall, a wrench W (Fig. 8) can be applied to the flats *a* on the end portions of the tie-wires 19 left protruding and these extremities can be twisted off at shoulders 28, thereby loosening the levers 20 so that they can be disconnected easily from the tie-wires. The tie-wires are held by the levers against turning so that the twisting off described is possible.

When the bars or levers 20 are applied to the spacer pins or tie-wires 19 serving in their dual capacity both as spacer pins and as coupling pins, as will next be described, the inner and outer walls 16 and 17 are tied together in rigidly spaced relationship, and at the same time the neighboring form sections 18 in each of said walls are tied together in coplanar relationship and tight abutment. The locking bars or levers 20, as disclosed in my copending application, are permanently pivotally secured near one end of each form section 18 on the reduced smooth cylindrical shank portions 33 provided behind the heads 34 of bolts 35, each of these bolts being entered through a vertical slot 36 in one of the locking bars 20 and through a registering hole 37 in strips 21 and into a sleeve nut 23, similarly as screws 22. Thus, the locking bars 20 may be swung about the bolts 35 as pivots and also may be adjusted bodily up or down in planes parallel to the outer faces of the form sections at right angles to the ends of the tie-wires 19, each of the bars being arranged to engage the flattened portions 29 of these wires in a slot 38 provided in the free ends of the locking bars. This accomplishes a double tieup or lockup action, namely, the tying together in rigidly spaced relation of the inner and outer walls 16 and 17 and at

4

the same time the tying together in coplanar relationship and tight abutment of the neighboring form sections of these inner and outer walls. As indicated at 39, the lower edge portion of each locking bar 20 is bevelled on opposite sides of the slot 38 on the outer side, to facilitate the interlocking engagement of the ends of the tie-wires 19 in the slots 38 so that the form sections 18 may be wedged into their final assembled positions as the bars 20 are forced downwardly into tying position. The elongation vertically of the slots 36 has a two-fold advantage, namely, it enables shifting the bars 20 bodily upwardly or downwardly, as may be necessary to compensate for run-out of the strips 21 from coplanar disposition of the adjoining ends that are to be coupled together on neighboring form sections, and it also enables easier coupling where the ends of the strips 21 to be coupled together do not happen to be in abutment or close to abutment, in which case the sliding of the bar 20 downwardly in relation to the bolt 35 gives a slightly longer radius than is usually needed to permit engagement of the projecting end of the tie-wire 19 in the slot 38, after which it is a simple matter to jog the bar 20 upwardly to locate the bolt 35 nearer the middle of the slot 36, thereby drawing together the ends of the neighboring form sections by cam action much more tightly than would otherwise be possible. To obtain greater rigidity of the form structure as a whole and at the same time secure more accurate alignment of the ends of the strips 21 and panels 18 and accordingly improve the smoothness of the foundation at the joints between abutting form sections I provide, in accordance with the present invention, another bolt 35' in spaced relation to the bolt 35, nearer the end of the strip 21 and at a slightly lower elevation than the bolt 35, as clearly appears in Fig. 1, the bolt 35' being secured to the panel 18 and strip 21 by means of a sleeve nut 23 in the same way as the bolt 35, and I provide an additional slot 40 intermediate the ends of the bar 20 opening from the same longitudinal edge as the slot 38, and this additional slot receives the head end of the bolt 35', as shown in the upper level in Fig. 1, when the bar 20 is swung down to locking position. That side of the slot 40 nearest the bolt 35 is cut away, as indicated at 41, so that the slot is actually V-shaped and is wide enough at the lower end to receive the reduced shank portion 33 on the head 34 of the bolt 35' regardless of which end of the slot 36 is used in the pivoting of the bar 20 with respect to bolt 35. Inasmuch as the bar 20 is held by bolt 35' against even such slight deflection with respect to the strip 21 as might otherwise be permitted if only the bolt 35 was relied upon, it follows that when the bar 20 is moved home to locking position there is bound to be more accurate alignment of the ends of the strips 21 and accordingly also of the panels 18, and the connection between the strips is bound to be far more rigid and the rigidity of the form structure as a whole is increased, and, due to the fact that the form sections are maintained in more accurate alignment, the resulting foundation is smoother at the joints between the abutting form sections than would otherwise be true. However, to still further insure closer accuracy of alignment of the abutting form sections I may also provide, as shown in Fig. 1, lineup rails or stringers 42 of channel shaped cross-section to fit down over the upper edge portions of the panels 18 and spanning the joints 43 between the abutting sections. These lineup rails are sufficiently above the level to which the concrete is usually poured in the form structure so that there will be nothing to interfere with easy removal of these rails when the forms are to be stripped from the foundation. The lower edge portions 44 in these rails are flared outwardly to facilitate entering the upper edge portions of the panels 18 therein. The lineup rails will, of course, be used on both the inner and outer walls 16 and 17 of the form structure although one is shown in Fig. 1 applied only to the outer wall 17.

5

Figs. 4 to 7 illustrate a modified form of locking bar or lever wherein the lever 20' carries a scaffold bracket 45. This lever, like the previously described lever 20, has the same slots similarly spaced but in this instance a slot 36' corresponding to slot 36 is open at the lower end in order to permit removal and replacement of the levers and brackets 45. In other words, these levers 20' have the bolts 35 entered in the slots 36' and are arranged to be swung about the bolts 35 as centers the same as the locking bars or levers 20 to make connection with the projecting ends of the tie-wires 19 and engage on bolts 35', as shown in Figs. 4 and 5. A right angle brace 46 is welded to the lever 20' between the slots 36' and 40 and is also welded to the bottom of the L-shaped body 47 of the bracket, leaving an end portion 48 of the horizontal leg of the bracket projecting from the back of the lever 20' at the top thereof arranged to rest on the strip 21 which forms a supporting shoulder for the end 48 of the bracket when the lever and scaffold bracket is in assembled position on the form structure, thereby insuring closer accuracy in horizontal alignment of the brackets along the form structure while relieving the bolts 35' and tie-wires 19 of a good portion of the load when boards 49 are laid as stringers on these brackets to form a cat-walk around the form structure on the inner and outer sides thereof. The brackets 45 may be lengthened and the braces 46 therefor also, as indicated in dotted lines in Fig. 6, if a wider walk is desired, and, of course, in that event, wider boards 49 will also be used. With these scaffold brackets providing a firm footing for the cat-walk, workmen can walk about on the form structure in the pouring of cement with perfect safety and a lot of time and effort is saved and there is moreover less danger of injuries, and inasmuch as the levers 20' which carry these brackets serve the same locking purpose as the levers 20, the levers 20' carrying brackets 45 give double duty. The scaffolds 49 are of a length spanning a number of form sections 18 and the tight abutment of these scaffolds with the outer side of the form sections serves to hold them firmly in good alignment so that the scaffolds also serve a double purpose. While the levers 20' carrying brackets 45 could, of course, be used in lieu of the locking levers 20 at the top level of the form structure if desired, they are usually used at the next to the top level, as indicated in Fig. 4.

Referring next to Figs. 11 and 13, which illustrate an inside corner assembly, the reference numeral 50 designates an angle iron filler member, the flanges 51 and 52 of which define the opposite sides of a sharp inside corner in the form structure and have their outer surfaces disposed substantially flush with the adjoining panels 18 that are placed with their edges in abutment with angle iron cleats 53 that are welded to the inner side of the member 50 at the three or more elevations at which the strips 21 and locking levers 20 are provided on the form sections. An elongated vertical slot 54 is provided in one side of each cleat 53 to receive the outwardly projecting end portion 55 of a metal strap 56 that is fastened to the inner side of one of the two adjoining panels 18 and has a bayonet slot 30 therein similar to the slots 30 in the projecting end portions 31 of the strips 21, so that the straps 56 may be formed from the same strip material used for strips 21, using the same punch and die. An open-ended vertical slot 57 is provided on the other side of the cleat 53 arranged to receive the slotted end portion 38 of a locking bar or lever 20 pivoted by means of a screw with respect to a metal strap 58 fastened to the inner side of the other of the two adjoining panels 18, the strap 58 carrying a bolt 35' arranged to be entered in a V-shaped slot 40 in the lever 20, similarly as in the locking together of form sections in Fig. 1. When the end portion 55 is entered loosely in slot 54 with its slot 30 outside the cleat 53, and the slotted end portion 38 of lever 20 is entered in slot 57, the end portion 55 has abutment with the inner side of the end por-

6

tion of lever 20, and hence if the U-shaped upper end portion 59 of a J-shaped clip 60 is placed over these two abutting parts with the short end portion 61 of the U 59 engaged in slot 30, it is evident that the entire corner assembly is firmly locked together. The other leg 62 of the U-shaped clip is preferably long enough to project below the strap 53 and bar 20 connected thereto so that a hammer blow upwardly on this projecting end portion will suffice to dislodge the clip when the corner assembly is to be disassembled in the stripping of the forms from the foundation.

Referring next to Figs. 12 and 14, the outside corner construction also involves the use of an angle iron filler piece 63 providing flanges 64 and 65 in right angle relationship for abutment with the ends of the adjoining panels 18 so that the panels define a sharp corner in the form structure, the panels being disposed with their inner edges alongside one another by virtue of the spacing of slots 66 and 67 in the flanges 64 and 65, respectively, into which the outwardly projecting slotted end portion 55 of strap 56 and the slotted end portion 38 of lever 20 engage, respectively. In this outside corner construction a slightly differently shaped J-clip 60' is used, it being arranged to have the extremity of its longer leg 62' entered in a notch 68 provided in the edge of one of the two adjoining panels 18 when the U-shaped end 59' straddles the edge of flange 64 and the bulged intermediate portion 69 of leg 62' is wedgingly engaged in the slot 30 in the end portion 55 of strap 56 behind the flange 64 to clamp the slotted portion 30 in slot 66. The slot 67 is made long enough to allow the slotted end 38 of lever 20 to be swung down into locking position in the slot either before or after the other panel has been fastened in place. With this construction, the assembled parts are securely interlocked and remain so until it is time to strip the forms from the foundation, at which time the clip 60' may be easily dislodged with a hammer by forcing it upwardly on flange 64 out of slot 30.

Referring to Fig. 15, it will be understood that the panels 18, as shown at A, B, and C, will be fastened together by any suitable hardware to form an inside or outside corner, as the case may be, and in so far as panels A and B are concerned, which are in coplanar relationship, those panels may be fastened together the same way as shown in Figs. 1 and 4. This view is primarily for the purpose of illustrating the application to the abutting edges at all joints of a resilient sealing medium 70 which, while it may be in the form of strips of any suitable resilient sheet material suitably cemented in place, is preferably a rubber base liquid, like liquid neoprene, that may be painted or sprayed onto these surfaces, such material being now available, which when it dries, has a rubbery consistency and is quite durable. The purpose of this is to make all of the joints tighter and thus secure a smoother concrete wall and at the same time provide a slight amount of give in the form structure to compensate for the slight irregularities in construction that are bound to occur and help to make it easier to fasten the abutting form sections together. The resilient coverings on the edges of the form sections also protects their leading edges from getting battered in handling.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claims have been drawn to cover all legitimate modifications and adaptations.

I claim:

1. In a concrete form structure the combination of a pair of vertical form sections of rectangular form disposed in coplanar relation with their edges in abutment and adapted to be secured together detachably to define a joint between the abutting sections, a spacer pin disposed at right angles to said form sections at the joint and protruding from said joint and having a head on its

7

outer extremity, an elongated lever pivoted at one end with respect to one of said form sections and having two slots provided therein in different longitudinally spaced relation to the pivot extending from one longitudinal edge, one of which slots receives the headed end of said pin therein, a headed projection on one of said form sections engaging in the other of said slots in said lever, said lever having tight abutment with the outer side of both form sections an appreciable fraction of the length thereof on both sides of the joint between said sections and serving to interconnect said form sections detachably when the spacer pin and headed projection are engaged in the aforesaid slots, whereby to hold said sections with their edges in tight abutment and with their inner sides in alignment and coplanar relationship, an outwardly reaching bracket integrally attached to said lever and adapted for detachably supporting thereon an elongated scaffold board of much greater length than said lever in parallel relationship to said lever adjacent the outer side of both form sections on both sides of the joint between said sections, and an elongated substantially horizontal scaffold board resting on said bracket and arranged to engage the form sections in widely spaced relationship to the joint between said sections for better holding of the abutting sections in alignment and coplanar relationship.

2. A structure as set forth in claim 1, including means on the outer side of one of said abutting form sections defining a supporting shoulder thereon, and said bracket having an inner end portion projecting inwardly with respect to said lever for supporting engagement on said shoulder.

3. In a concrete form structure, the combination of a pair of vertical form sections of rectangular form disposed in coplanar relation with their edges in abutment and adapted to be secured together detachably to define a joint between the abutting sections, a spacer pin disposed at right angles to and protruding between the abutting edges of said form sections and having a head on its outer extremity, bayonet slot means on the abutting edge portion of one of said form sections and having the open end of the slot opening at said edge to receive the headed end of said pin whereby said pin is detachably but rigidly connected with said form section and when so connected can assume a side pull outwardly relative to the edge of said form section to serve as a coupling pin to connect the form sections together in tight edge to edge abutment, an elongated lever pivoted at one end on the other of said form sections in spaced relationship to the form abutting edge thereof and having a slot provided in its other end extending from one longitudinal edge and receiving the headed end of said pin therein for a positive coupling connection to fasten the forms together in tight edge to edge abutment, said lever having an elongated slot provided in the pivoted end slidably receiving the pivot substantially parallel to the slot in the other end, whereby to permit adjustment of the pivoted end of said lever transversely to compensate for misalignment of the spacer pin with respect to the pivot and also to enable connection of the lever with the spacer pin when said pin is farther away from said pivot than usual and to draw the form sections together by cam action by transverse movement of the ends of said lever after said lever is connected with said pin, said lever also having another slot provided therein intermediate its ends extending from the same longitudinal edge as the first mentioned slot, and another headed projection rigid with the same form section on which said lever is pivoted and located close to the abutting edge portion of said form section arranged to engage in the last mentioned slot, said last mentioned slot being widened to receive said headed projection in various positions of adjustment of said lever relative thereto, and the head on said projection being enlarged radially so as to overlap the sides of said last mentioned slot in various positions of adjustment of said lever to hold

8

said lever in tight abutment with the outer side of both form sections and accordingly hold the abutting sections in close alignment and coplanar relationship.

4. In a concrete form structure, the combination of a pair of vertical form sections of rectangular form disposed in coplanar relation with their edges in abutment and adapted to be secured together detachably to define a joint between the abutting sections, a spacer pin disposed at right angles to and protruding between the abutting ends of said form sections and having a head on its outer extremity, means for detachably connecting the pin with the abutting edge portion of one of said form sections, whereby said pin is rigidly connected with said form section and when so connected can assume a side pull outwardly relative to the edge of said form section to serve as a coupling pin to connect the form sections together in tight edge to edge abutment and can also assume a downward thrust thereon in the plane of said form sections, an elongated lever pivoted at one end on the other of said form sections in spaced relationship to the form abutting edge thereof and having a slot provided in its other end extending from one longitudinal edge and receiving the headed end of said pin therein for a positive coupling connection to fasten the forms together in tight edge to edge abutment while said pin in addition provides a support for the slotted end of said lever, said lever having tight abutment with the outer side of both form sections an appreciable fraction of the length thereof on both sides of the joint between said sections, whereby to hold the abutting sections in alignment and coplanar relationship in addition to holding the same in tight edge to edge abutment, an outwardly reaching bracket integrally attached to said lever and adapted for detachably supporting thereon an elongated scaffold board of much greater length than said lever in parallel relationship to said lever adjacent the outer side of both form sections on both sides of the joint between said sections, and an elongated substantially horizontal scaffold board resting on said bracket and arranged to engage the form sections in widely spaced relationship to the joint between said sections for better holding of the abutting sections in alignment and coplanar relationship while the lever holds the abutting sections in tight edge to edge abutment.

5. A structure as set forth in claim 4, including a metal strip fastened to the outer side of one of said abutting form sections, said strip defining a supporting shoulder thereon, and said bracket having an inner end portion arranged for supporting engagement substantially its full width on said shoulder for support whereby to relieve the pivot at one end of the lever and the lever supporting connection with the spacer pin at the other end of the lever of a large portion of the load imposed on the scaffold bracket and said elongated board more or less independently of said lever and spacer pin.

6. Means for interconnecting the adjoining edges of a pair of panels disposed in right angle relationship to one another in abutment with a corner filler member, the corner filler member providing portions in right angle relationship abutting the ends of said panels and each portion having a slot provided therein, said means comprising attaching plates secured to the panels extending through said slots in right angle relationship to one another, one of said plates having its protruding end abutting the side of the protruding end portion of the other plate and having a slot provided therein opening from one longitudinal edge thereof outside said vertical corner member, and a J-shaped fastener clip for securing said plates in place in said slots, said clip being disposed with the hooked end thereof straddling one side of said corner member with the extremity of the J tightly engaged in the slot of said slotted plate to prevent its withdrawal from the associated slot in said corner member and with the leg of the J holding the other plate in tight abutment with the protruding end of the

slotted plate to prevent its withdrawal from its associated slot in said corner member.

7. A connection as set forth in claim 6 wherein the last mentioned plate has a slot provided therein opening from one horizontal edge thereof receiving therein the associated slotted portion of said corner member to prevent withdrawal of said plate from its associated slot independently of said J-shaped clip.

8. Means for connecting the edge of a panel to a filler member disposed in abutting relationship to the edge of the panel, said filler member having an edge portion and a slot provided therein in spaced parallel relationship to said edge portion, said means comprising an attaching plate secured to one side of an edge portion of the panel and having a portion projecting therefrom, said projecting portion having a slot provided therein opening from one longitudinal edge portion thereof substantially parallel to the adjacent edge of said panel, and adapted to be hooked by the slotted portion in the slot in said member, and a J-shaped fastening clip the hooked end of which straddles the aforesaid edge of said slotted member with one portion of the J extending into the slot in said plate to prevent its becoming unhooked and withdrawn from the slot in said slotted member.

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