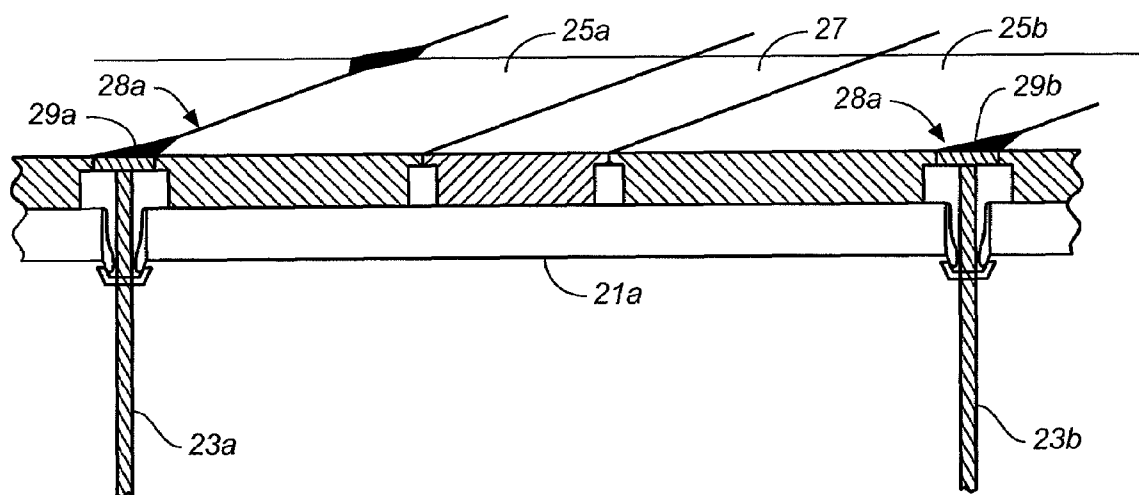


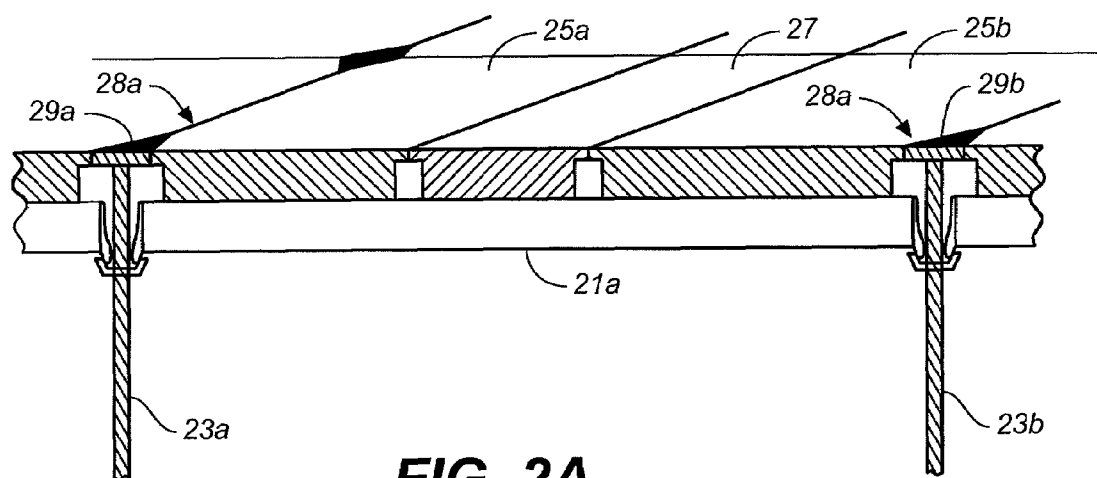
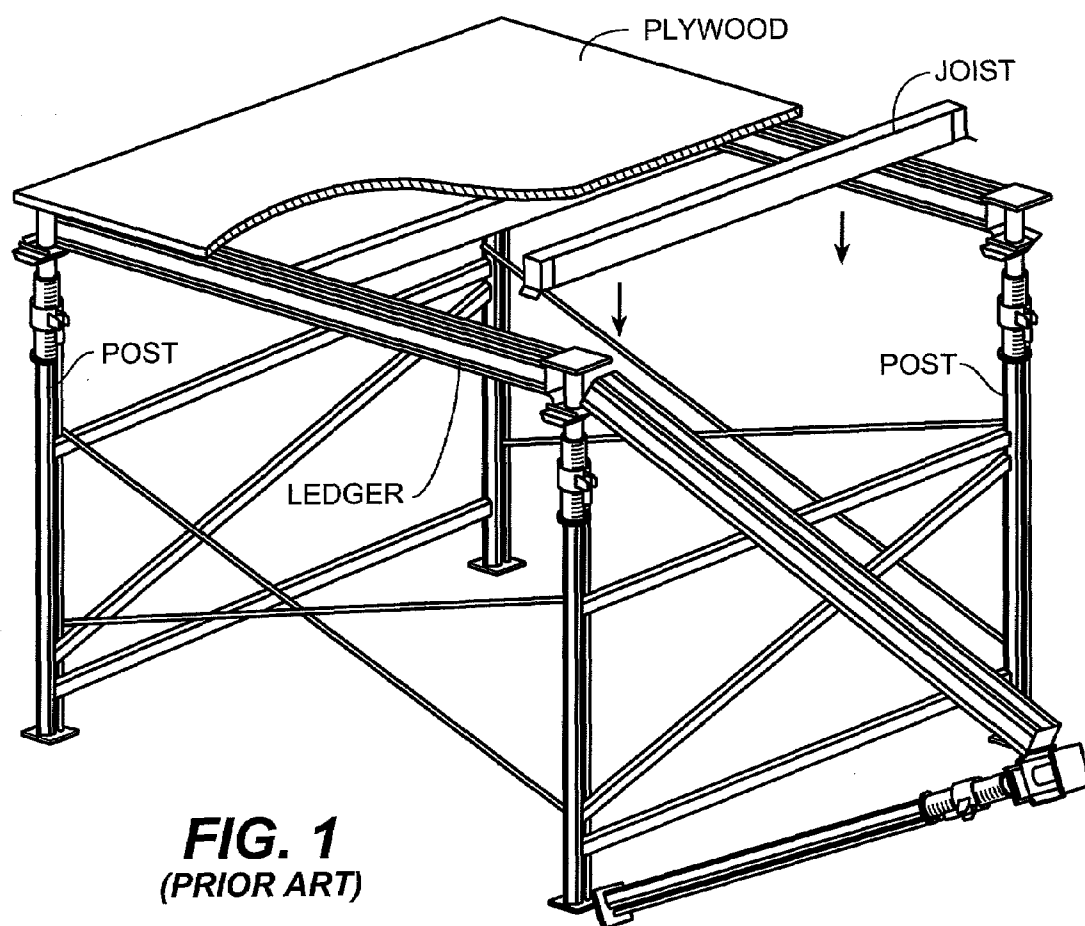


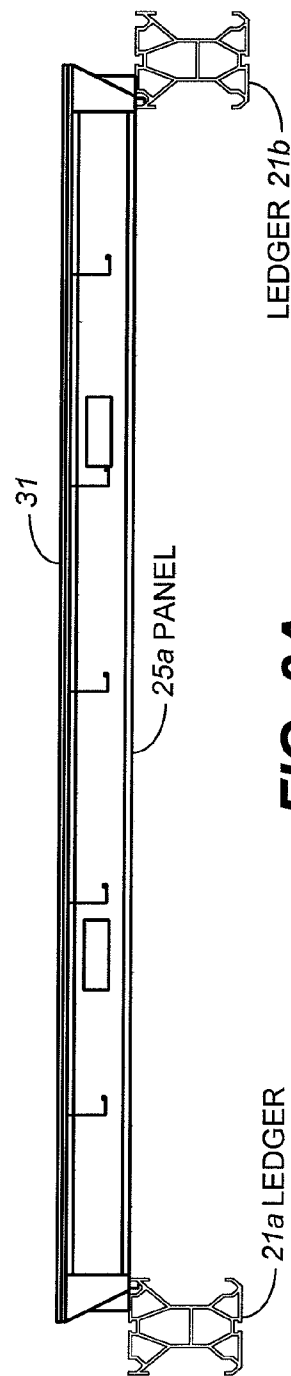
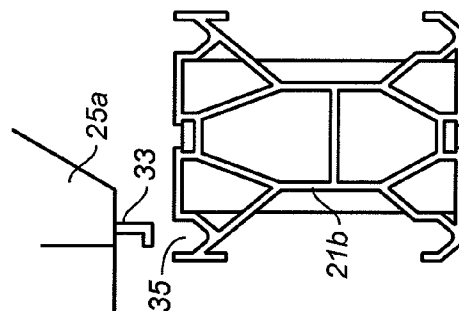
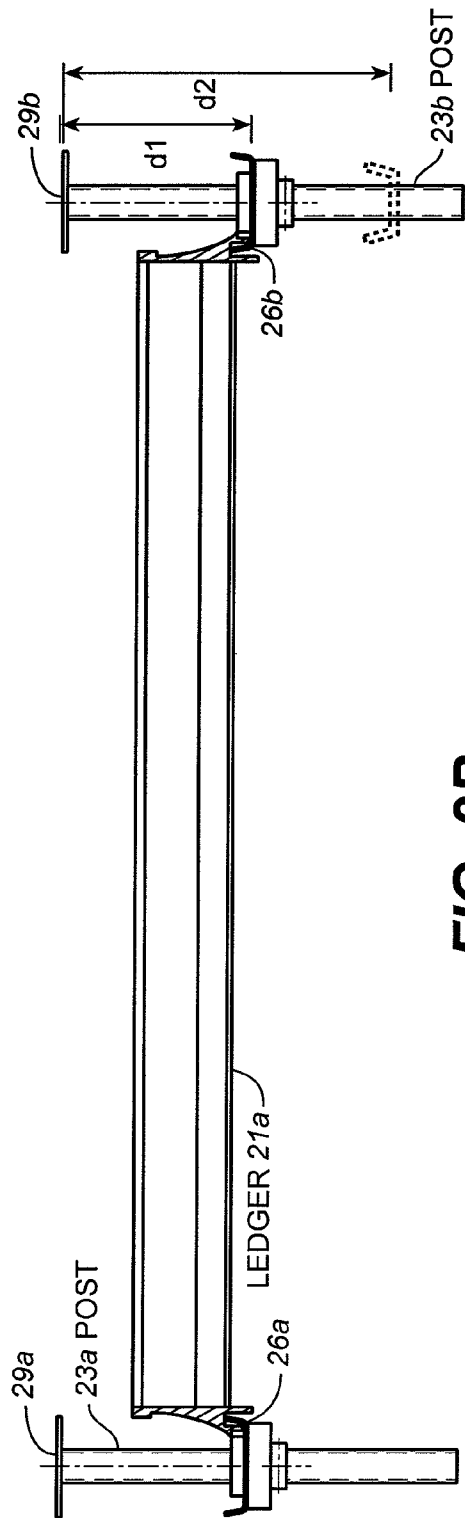
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SAN FRANCISCO, CA 94111(52) **U.S. Cl.** **249/18**(21) Appl. No.: **11/468,558**(22) Filed: **Aug. 30, 2006****Related U.S. Application Data**(63) Continuation-in-part of application No. 11/365,372,
filed on Feb. 28, 2006.(57) **ABSTRACT**

A shoring system includes posts that provide direct support for poured concrete through top plates. The posts also provide support for ledgers, which support forming panels, which in turn support poured concrete. Ledgers and forming panels are removed without removing posts, so that posts provide continued support until concrete is set.







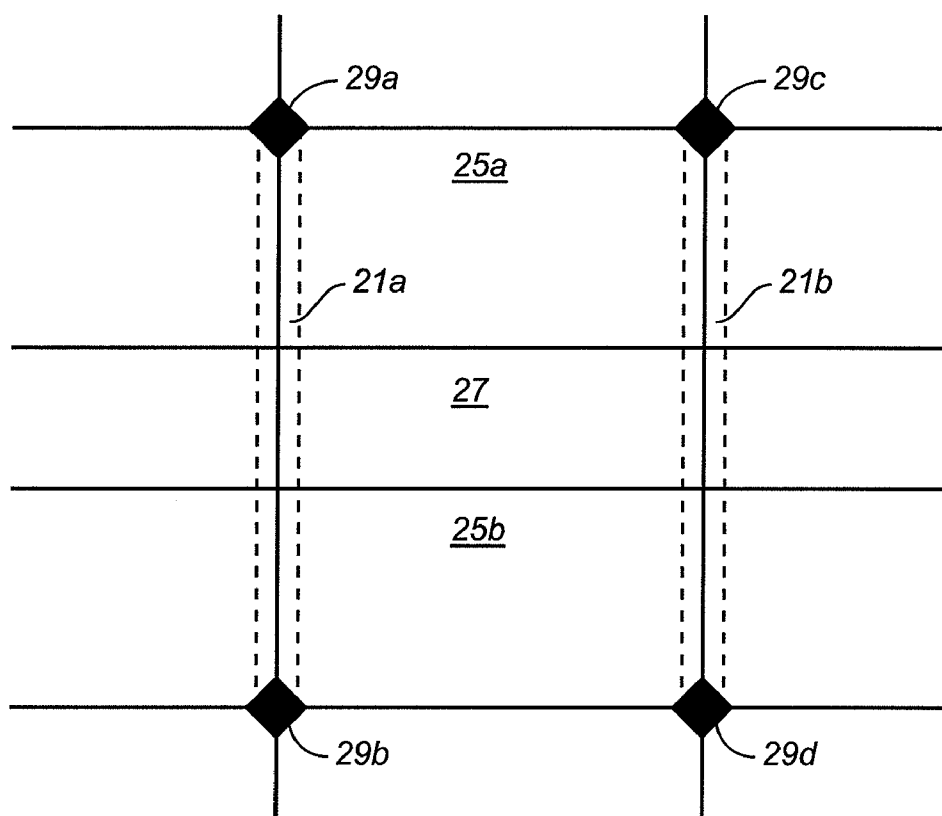


FIG. 4

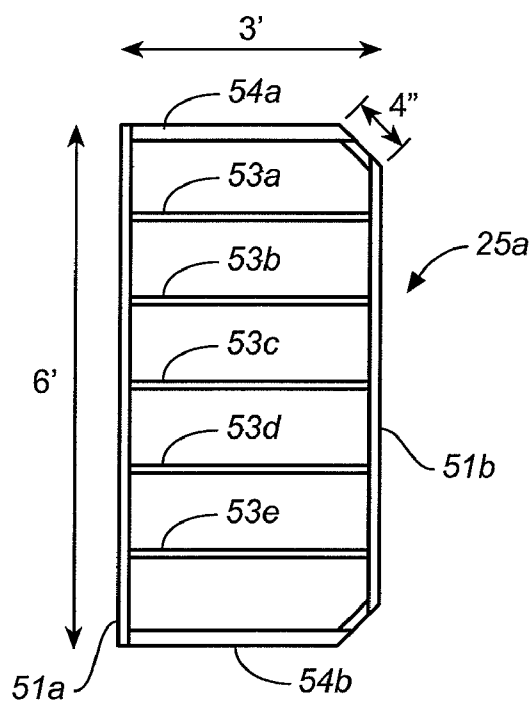


FIG. 5A

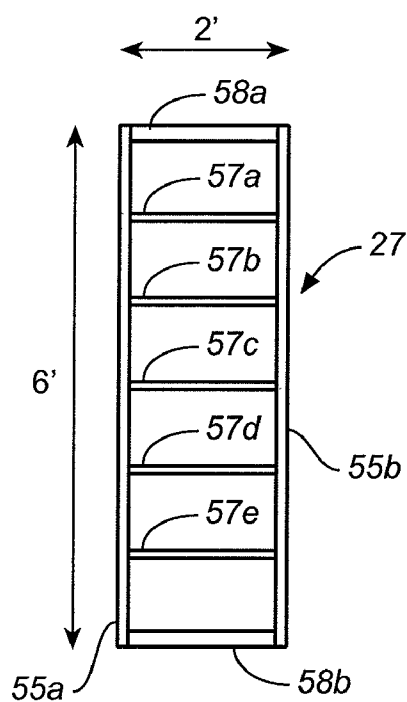
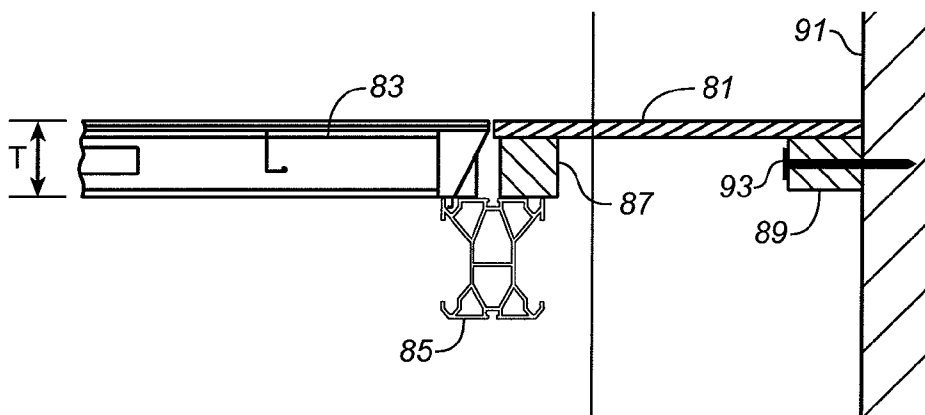
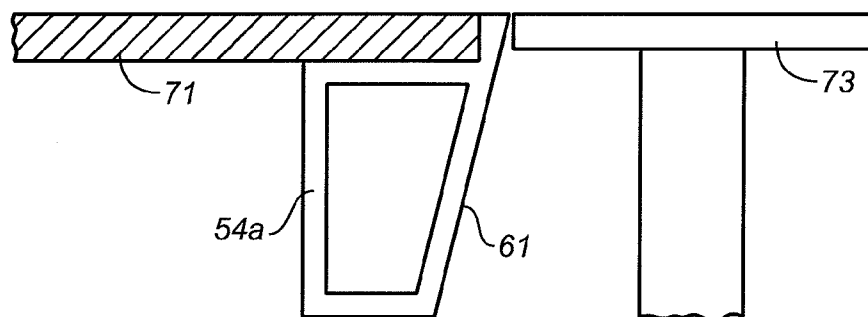
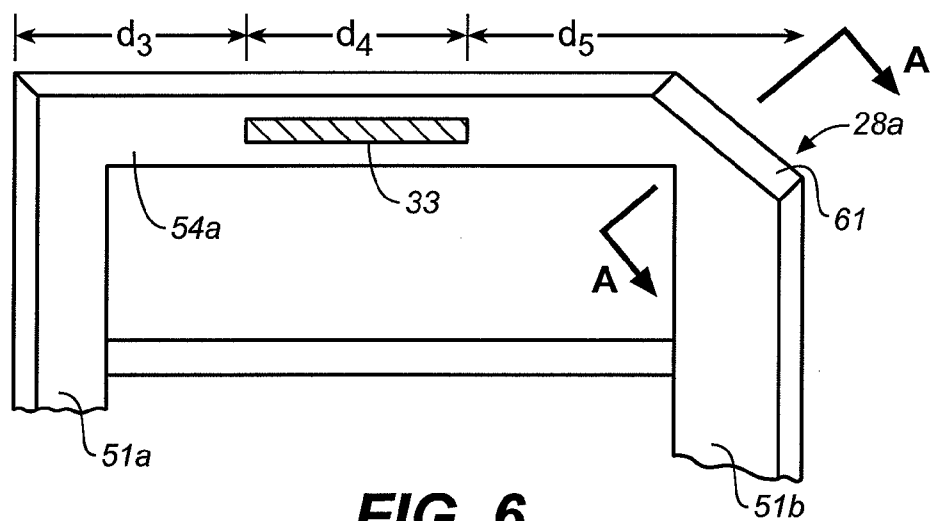


FIG. 5B



SYSTEMS AND METHODS FOR SHORING CONCRETE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 11/365,372 which application is incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] This application is related to construction of concrete structures and in particular to shoring systems and methods for forming structures using poured concrete.

[0003] Concrete is commonly used in construction of buildings. In some applications, concrete is poured into a volume that is defined by shoring (or "shuttering") and allowed to set before the shoring is removed. This technique is particularly useful for construction of concrete floors such as used in commercial or residential buildings and in parking structures. In such an application, the shoring must adequately contain the poured concrete without leaks and must support the weight of the concrete until it sets. In addition, it is desirable that shoring be quick and simple to set-up and take-down so that costs are not excessive.

[0004] In most shoring systems, a series of vertical supports, also known as "legs" or "posts" are used to support the poured concrete on a structurally sound base. For example, in a multi-story building, a previously constructed floor may be used as the base for supporting a subsequent floor. Posts generally have a base plate to distribute any load on a base surface. Posts may come in a range of lengths depending on the spacing required between the base and the bottom of the poured concrete structure being formed. In addition, posts may be adjustable in length so that a range of spacing can be achieved with an individual post. Neighboring posts may be connected by support members to create a framework that is strong and does not deform under load. Such support members may be attached at various locations along posts to form horizontal or diagonal support members. In addition, posts may support horizontal components (horizontal supports) that in turn support the poured concrete.

[0005] In one example, posts support horizontal components, also known as "beams" or "ledgers." Such ledgers are generally supported at each end by a post. Between parallel ledgers, joists may extend and attach to ledgers. The tops of ledgers and joists may be on the same level (and on the same level as the tops of posts). Subsequently, a layer of plywood or similar material is laid over the ledgers and joists. The plywood layer is laid so that there are no significant gaps and when concrete is poured it is contained by the plywood. The plywood is supported by the joists and ledgers, which in turn are supported by the posts. One example of such a system is provided in U.S. Pat. No. 6,871,454, which patent is hereby incorporated by reference in its entirety. This example is illustrated in FIG. 1, which shows posts supporting ledgers and ledgers supporting joists. Tops of posts, ledgers and joists define a surface across which plywood is laid. Concrete is then poured on and contained by the plywood.

[0006] In many applications, concrete structures must be supported for some time after pouring so that the concrete has sufficient structural strength and does not collapse. The time period before shoring may be removed can vary depending on the structure and the type of concrete used. In

some cases, after an initial period, some shoring may be removed as long as the concrete structure is still supported at a certain number of points. For example, after 1-2 days it may be possible to remove plywood sheets that contain the concrete, as the concrete is solid at this point. However, the concrete does not have sufficient strength to be entirely unsupported at this stage, so it is desirable to use posts to provide support at certain points distributed across the lower surface of the concrete structure. In one example, posts are withdrawn to allow removal of ledgers and joists for use elsewhere. The posts are then reinstalled to support the concrete structure. In another example, posts are removed and then different posts are installed to provide support until the concrete has fully set. However, such a procedure is time consuming and labor intensive.

[0007] In order to avoid having to take down and replace posts, certain posts have a drop head that allows removal of some shoring components while posts remain in place. Posts with a drop head generally remain in contact with the surface of the concrete from the time the concrete is poured until it reaches an adequate strength to be self-supporting and are not moved during removal of other shoring components. In one example of such a system, a surface is defined by the tops of the posts and horizontal supports, but instead of laying plywood over this surface, panels are attached to horizontal supports so that the panels extend along the same surface as the tops of the posts and horizontal supports. Concrete is then poured over this surface. However, in this case, concrete directly contacts the horizontal supports adding to the difficulty of removal and cleaning of such components. Also, attachment of panels and horizontal supports may be complicated in this case.

[0008] Some shoring systems do not use horizontal supports and attempt to support poured concrete using posts and panels alone. However, such systems may lack structural strength or, in order to achieve necessary structural strength, may have heavy panels that are difficult to position. Also, such systems generally support panels only at corners, which may cause considerable stress at these points, which may cause failure.

[0009] Therefore, there is a need for an improved shoring system that allows removal of certain shoring components without moving posts, while being simple and cheap to manufacture, install and remove.

SUMMARY OF THE INVENTION

[0010] A shoring system includes vertical posts that extend from a base to a top plate. Ledgers extend between neighboring posts in at least one direction at a height below the top plate. The ends of ledgers have features that attach to corresponding attachment features on posts in a secure manner. Forming panels are placed so that their ends overlie and are supported by ledgers. Forming panels are purpose-made panels of predetermined size and shape. Panels taper inwards towards the bottom so that they may be more easily lowered into place. In addition, interlocking features are provided on the bottom of forming panel ends and on the tops of ledgers so that these components are secured together from lateral movement. Forming panels are placed so that they are in close contact with neighboring panels along their sides and ends. Certain forming panels have cut-off corners, with inward sloping corner surfaces, that are placed so that they are in contact with top plates. In this way, panels and top plates define a surface that is formed by

prefabricated components to have no significant gaps that would allow poured concrete to escape. Plywood sheets may be cut to fit any gaps between panels and structural features such as walls and columns. Concrete is poured over the surface defined by forming panels and top plates and is allowed to dry.

[0011] After a first period of time (typically 1-2 days, though sometimes longer) forming panels and ledgers are removed. The attachment features holding ledgers to poles are dropped to a lower position by withdrawing a pin that previously supported them in an upper position. Alternatively, some other mechanism is used to hold the attachment features in an upper position at one time and a lower position at another time. With the attachment features in the lower position, there is sufficient space so that forming panels may be moved with respect to ledgers so that their interlocking features are separated. Forming panels and ledgers may be moved out of position as a result. The forming panels and ledgers can then be used elsewhere. Forming panels and ledgers are removed without moving posts, so posts continue to support the concrete without interruption or the need for additional shoring. At a later time, after the concrete has sufficient structural strength (up to a month later), posts are removed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 shows components of a shoring system of the prior art including posts, ledgers between posts, and joists extending between ledgers, with plywood sheets overlying posts, ledgers and joists.

[0013] FIG. 2A shows a cross section of a shoring system according to an embodiment of the present invention including posts, ledgers and forming panels having predetermined sizes and shapes so that top plates on posts and forming panels form a continuous surface for containing concrete.

[0014] FIG. 2B shows how a ledger of FIG. 2A is attached at either end to attachment features on posts.

[0015] FIG. 3A shows how the ends of forming panels of FIG. 2A overlap and are supported by ledgers and have interlocking features to secure forming panels to ledgers.

[0016] FIG. 3B shows a detailed view of interlocking features of the forming panel and ledger of FIG. 3A.

[0017] FIG. 4 shows a top-down view of the shoring system of FIG. 2A showing a continuous surface formed by top plates and forming panels.

[0018] FIG. 5A shows a more detailed view of a first shoring panel that has ribs for structural strength and cut-off corners to fit with top plates.

[0019] FIG. 5B shows a more detailed view of a second shoring panel that has regular corners and does not contact top plates.

[0020] FIG. 6 shows a portion of the shoring panel of FIG. 5A in more detail.

[0021] FIG. 7 shows a cross-section of a portion of the shoring panel of FIG. 6.

[0022] FIG. 8 shows a panel of predetermined size forming a flush surface with plywood that is cut to fit a gap between the panel and a wall.

DETAILED DESCRIPTION OF EMBODIMENTS

[0023] FIG. 2A shows a cut-away view of a shoring system according to an embodiment of the present invention. Posts are shown supporting ledgers. Specifically, ledger

21a is supported by posts 23a and 23b. Forming panels 25a, 25b and 27 are supported by ledger 21a at one end. Forming panels 25a, 25b and 27 are placed together so that little or no gap exists between them. Forming panels 25a, 25b and 27 form one portion of a repeated pattern of panels that extends across a surface that is used to form a concrete structure. Thus, forming panels 25a, 25b and 27 are in contact with other panels also. Forming panels 25a and 25b have identical dimensions in the present example and are therefore interchangeable.

[0024] Posts 23a and 23b have top plates 29a and 29b respectively. Top plates 29a and 29b are square in shape but are oriented at 45 degrees to the sides of forming panels 25a, 25b and 27. Forming panels 25a and 25b have cut-off corners 28a and 28b respectively, that abut top plates 29a and 29b. In one example, cut-off corners 28a and 28b of forming panels 25 and 27 are four inches (4") in length and extend at 45 degrees to the sides they connect. The sides of top plates 29a and 29b are four inches (4") or just under four inches, for example three and thirty-one thirty-seconds inches ($3\frac{31}{32}$ ") so that a top plate is fractionally smaller than the opening formed between forming plates.

[0025] FIG. 2B shows a more detailed view of ledger 21a and its attachment to posts 23a and 23b. Posts 23a and 23b both have attachment features 26a and 26b respectively that provide support for ledger 21a. Attachment features may include a support plate that is mounted to a post so that it extends laterally and provides support for corresponding features on the ends of a ledger. Ledger 21a has end features that attach to the support plate so that when the ledger is lowered into place it cannot fall out of position or be easily disturbed. In general, ledger 21a can only be separated from attachment features 26a and 26b by vertically separating ledger 21a and attachment features 26a and 26b. This may be achieved by moving ledger 21a up or moving attachment features 26a and 26b down.

[0026] In order to facilitate removal of ledger 21a after concrete is set, attachment features 26a and 26b are designed to be moved down. In one example, a pin extends through a post and attachment features 26a and 26b are maintained in an upper location by the pin. Attachment features 26a and 26b may include a support plate, which is a metal plate with an opening extending around a post. The support plate extends in a plane perpendicular to the axis of the post and may have features that mate with corresponding features on ends of ledgers. A support plate may also be keyed to be in a particular rotational orientation with respect to a post. When the pin is removed, attachment features 26a and 26b drop to a lower location. An alternative system with movable attachment features is described in U.S. Pat. No. 6,871,454. FIG. 2B shows ledger 21a in an upper location when attachment features 26a and 26b are at a distance d1 from top plates 29a and 29b. In this upper location, ledger 21a supports forming panels 25a, 25b and 27 so that their top surfaces are at the same level as the top of top plates 29a and 29b as shown in FIG. 2A. FIG. 2B also shows a lower location for attachment features 26b a distance d2 from top plate 29b. When attachment features 26a and 26b are in the lower position, there is sufficient distance (d2) between attachment features 26a and 26b and the bottom of a poured concrete structure overlying top plates 29a and 29b to allow ledger 21a to be moved up and out of attachment. Thus, the upper portion of posts 26a and 26b may be considered as

drop heads. Such drop heads may be permanently attached to the remainder of the posts or may be detachable and replaceable.

[0027] Ledgers extend between neighboring posts in one direction so that a pair of ledgers run parallel to each other, spaced apart by the same spacing as between posts. For example, FIG. 3A shows a cross sectional view of two ledgers **21a** and **21b** running parallel (in a direction perpendicular to the plane of the page). Ledgers **21a** and **21b** are supported by posts as previously described. Partially overlying ledgers **21a** and **21b** at either end is forming panel **25a**. Forming panel **25a** is supported at either end by ledgers **21a** and **21b**.

[0028] Panel **25a** and ledgers **21a** and **21b** have interlocking features that cause panel **25a** to be retained in position once it is correctly located. FIG. 3B shows panel **25a** separated from ledger **21b** to show interlocking features. In particular, panel **25** has a flange **33** extending downwards into a corresponding groove **35** in ledger **21a**. In general, panel **25a** may not be removed from ledgers **21a** and **21b** without separating panel **25a** from ledgers **21a** and **21b** in the vertical direction. This may be achieved by lowering ledgers **21a** and **21b** as previously described. Unlike certain prior systems that use more complex arrangements for attaching shoring components together, end portions of forming panel **25a** directly overlie ledgers **21a** and **21b** and are thus directly supported by ledgers **21a** and **21b** without the need for special attachment components. Ledger **21a** is below the level of poured concrete and is therefore not exposed to poured concrete. This makes removal easier and may make cleaning unnecessary.

[0029] Panel **25a** is formed to have a predetermined size and shape, unlike certain prior systems that used plywood sheets that were not always of any specific size or shape. Panel **25a** is formed of aluminum for light weight and strength, although other materials may also be used. In some cases, a covering layer may be used on the upper surface **31** of Panel **25a**. For example, a covering layer of plastic may assist in removal of panel **25a** from concrete. In other examples, a forming panel may be made of a combination of aluminum and plywood or other materials. As shown, panel **25a** has considerable thickness (in excess of five inches in one example) in comparison to a sheet of plywood and as a result, panel **25a** has rigidity that plywood alone lacks. Therefore, panel **25a** does not require additional joists between ledgers **21a** and **21b**. Panel **25a** only requires support at edges. Panel **25** tapers inwards from upper surface **31**, so that the bottom of panel **25** is narrower than the top. This facilitates removal of panel **25a** when neighboring panels are still in place. Tapering of panel **25a** allows panel **25a** to be rotated away from a concrete structure without interference from a neighboring panel.

[0030] FIG. 4 shows a top-down view of the shoring structure including forming panels **25a**, **25b** and **27**. Also shown are top plates **29a** and **29b** as previously shown, and top plates **29c** and **29d**. As can be seen in FIG. 4, forming panels and top plates form a continuous surface without significant gaps (at least without gaps that would allow significant leakage of poured concrete). The positions of ledgers **21a** and **21b** under forming panels are shown by dotted lines. Posts are located eight feet (8') apart in one direction and six feet (6') apart in the other direction. In another example, posts are placed six feet (6') apart in both directions. In yet other examples, different spacing may be

used and the present invention is not limited to any particular spacing. Thus, ledgers **21a** and **21b** measure a little less than eight feet in length and are spaced six feet apart. It should be noted that FIG. 4 and other drawings of the present application are not intended to be drawn to scale. FIG. 4 shows one portion of a repetitive pattern that may extend over a great area. Only four principal components are used in constructing a shoring structure according as shown, posts including drop heads with top plates, ledgers two types of panels (forming panels **25a** and **25b** are identical but forming panel **27** is different from forming panel **25a**). In other examples, panels may be designed so that only a single type of panel is needed.

[0031] FIG. 5A shows a view of forming panel **25a** from underneath so that its structure is visible. In particular, side flanges **51a** and **51b** are shown extending along either side of forming panel **25a** and end flanges **54a** and **54b** are shown at either end of forming panel **25a**. In addition, ribs **53a-53e** are shown extending across panel **25a** from one side to the other to provide stiffness and structural strength to panel **25a**. The dimensions of forming panel **25a** are approximately six feet (6') by three feet (3') with two cut-off corners measuring four inches (4"). In one example, forming panel **25a** is made fractionally less than these dimensions, for example less by $\frac{1}{32}$ of an inch in each dimension. This gives dimensions of five feet, eleven and thirty-one thirty-seconds inches ($5'11\frac{31}{32}"$) by two feet, eleven and thirty-one thirty-seconds inches ($2'11\frac{31}{32}"$). The dimensions of panel **25a** are such that it has sufficient strength to support concrete while being light enough to be easily handled.

[0032] FIG. 5B shows a view of forming panel **27** from underneath so that its structure is visible. In particular, side flanges **55a** and **55b** are shown extending along either side of forming panel **27** and end flanges **58a** and **58b** are shown at either end of forming panel **27**. In addition, ribs **57a-57e** are shown extending across panel **27** to provide stiffness and structural strength to panel **27**. The dimensions of forming panel **27** are six feet (6') by two feet (2') without cut-off corners. As with forming panel **25a**, dimensions may be made fractionally smaller than these nominal lengths.

[0033] While the above description refers to pouring concrete for forming horizontal structures such as floors of a building that extend along a horizontal plane, in other examples, concrete may be used for non-planar structures. A shoring system according to embodiments of the present invention may also be used to define a non-planar surface by adjusting poles to different heights so that forming panels are inclined from the horizontal.

[0034] Using a shoring system according to an embodiment of the present invention is simpler than many prior systems. Posts and ledgers are put in place, with poles being adjusted in height so that the top plate is at the level desired for the bottom surface of the concrete structure being formed. Ledgers are located so that features on ledgers interlock with corresponding attachment features on poles. The attachment features are in an upper position at this point. Forming panels are placed so that their ends overlie and are supported by ledgers. Forming panels having cut-off corners are placed so that the cut-off corner edges are in contact with top plates. When a surface has been defined by forming panels and top plates extending to an outer perimeter (a wall or barrier extending vertically), concrete is poured to cover the surface and occupy the volume defined by the surface and the outer perimeter. After the concrete has

dried (typically 1-2 days, sometimes longer), attachment features on posts are dropped to their lower positions and with them ledgers drop also. This leaves room to separate forming panels from ledgers and to separate ledgers from attachment features. Forming panels may be separated from ledgers and removed at this point. Once all the panels supported by a ledger are removed, the ledger itself may be removed. Removal of forming panels and ledgers may be done without moving or adjusting the posts. In some cases, posts are loosened at this point and then tightened into place to allow some sagging in a concrete structure. This is particularly important for large floors and where multiple floors are built in rapid succession with each floor supported by a previous floor. At a later time, when the concrete has gained sufficient structural strength (up to a month later), posts are removed. In the intervening period, ledgers and forming panels may be reused elsewhere.

[0035] FIG. 6 shows a more detailed view of a portion of panel 25a including cut-off corner 28a. The view shown in FIG. 6 is the same as that of FIG. 5A. Thus, FIG. 6 shows the view from below showing portions of side flanges 51a, 51b and also showing end flange 54a. FIG. 6A also shows flange 33 that extends from end flange 54a to engage a corresponding groove in a ledger or other supporting component (flange 33 is also shown in cross-section in FIG. 3B). Flange 33 is shown extending a distance d4 along end flange 54a. Distance d4 is less than the width of panel 25a. Thus, flange 33 is spaced a distance d3 from one side of panel 25a and spaced a distance d5 from the other side of panel 25a. In one example, d3 and d5 both measure nine inches (9") and d4 measures eighteen inches (18"). By limiting flange 33 to distance d4 and maintaining distances d3 and d5 clear from any such feature, the vertical dimension of panel 25a is less on either side of flange 33. This reduced vertical dimension facilitates removal of panel 25a after concrete has set. In particular, such a reduced vertical dimension allows panel 25a to more easily be slid over a neighboring panel during removal. In a typical removal procedure, drop heads are moved to their lowered positions along with ledgers and panels supported by the drop head attachment features. Then a panel is removed by raising it and rotating it to allow it to be lowered. Having areas on either side of flange 33 that have reduced vertical dimensions facilitates such removal by making it easier to slide the edge of one panel over its neighbor.

[0036] FIG. 7 shows a cross section of a portion of panel 25a as indicated by the line A-A' in FIG. 6. FIG. 7 includes a portion of a plywood sheet 71 supported by end flange 54a. FIG. 7 shows that a corner surface 61 formed by cut-off corner 28a is not vertical. Surface 61 slopes inwards forming an acute angle with plywood sheet 71. This facilitates installation of panels when there is little clearance between panels and top plates. FIG. 7 shows a top plate 73 and its location with respect to panel 25a. Clearly, a panel may be more easily lowered into position where an inward sloping surface such as surface 61 is provided. The panel is less likely to become jammed or stuck as it is lowered into position.

[0037] Generally, shoring is provided along surfaces that are not perfectly regular. Columns or pillars may extend through a surface where a concrete floor is to be poured. Walls may curve or have other irregularities. Even regular walls may be spaced apart such that it is difficult to use panels of predetermined size to provide all necessary shor-

ing. In such situations, panels of predetermined size may be used to provide shoring for some of the surface of the concrete structure while alternative shoring is used next to walls, columns and other structural features. One example of such alternative shoring uses plywood sheets supported by lumber. Plywood sheets may be cut to size so that they fit spaces left between panels of predetermined size and walls or other features.

[0038] FIG. 8 shows a plywood sheet 81 extending from a panel 83 of predetermined size as described earlier. Plywood sheet 81 may be cut to fit the space between panel 83 and a wall 91. Panel 83 is directly supported by a ledger 85. Plywood sheet 81 is supported at one side by beam 87, which in turn is supported by ledger 85. At the other end, plywood sheet 81 is supported by a beam 89. Beam 89 is attached to wall 91 by nail 93. Beams 87 and 89 may be standard sized pieces of lumber. Panel 83 has a thickness T in this example. Thickness T is chosen to be a suitable value so that when a standard size piece of lumber is used for beam 87, and sheet 81 has a standard thickness, the top surfaces of panel 83 and sheet 81 are at the same level. Thus, a flush surface is formed without any step in height between panel 83 and sheet 81. In one example, T is four and a quarter inches (4.25") so that it is equal to the height of a piece of 4x4 lumber (three and a half inches, 3.5") and a sheet of three-quarter inch (0.75") plywood. Other values of T may also be chosen for compatibility with particular lumber sizes or plywood thicknesses. It should be noted that in this embodiment of the present invention, all dimensions are in U.S. customary units, not metric units. This provides greater compatibility with other components found in the U.S. In particular, lumber is generally provided in standard sizes that are in U.S. customary units.

[0039] While the above described examples are illustrative of certain embodiments of the present invention, they are not intended to limit the scope of the present invention. Various modifications, which would be readily apparent to one skilled in the art, are intended to be within the scope of the present invention. The only limitations to the scope of the present invention are set forth in the following claims.

What is claimed is:

1. A forming panel for supporting a poured concrete structure, comprising:
 - a horizontal upper surface extending along a plane and bounded by a perimeter, the perimeter having first and second sides extending parallel in a first direction, first and second ends extending in a second direction perpendicular to the first direction, and first and second cut-off corner portions extending at forty-five degrees to both the first and second directions;
 - a first corner surface extending below the first cut-off corner portion, the first corner surface forming an acute angle with the horizontal upper surface; and
 - a second corner surface extending below the second cut-off corner portion, the second corner surface forming an acute angle with the horizontal upper surface.
2. The forming panel of claim 1 wherein the first and second cut-off corner portions extend four inches.
3. The forming panel of claim 1 further comprising first and second side flanges under the first and second sides and first and second end flanges under the first and second ends.
4. The forming panel of claim 3 further comprising a first interlocking flange extending downward from the first end flange to engage a corresponding feature in a first ledger and

a second interlocking flange extending downward from the second end flange to engage a corresponding feature in a second ledger.

5. The forming panel of claim 4 wherein the first and second interlocking flanges extend a distance along the second direction that is less than the extent of the first and second end flanges.

6. The forming panel of claim 3 wherein the distance from the horizontal upper surface to bottom surfaces of the first and second end flanges is four and a quarter inches.

7. An assembly for supporting a poured concrete structure, comprising:

- a forming panel having a horizontal upper surface extending along a plane and bounded by a perimeter, the perimeter having first and second sides extending parallel in a first direction, first and second ends extending in a second direction perpendicular to the first direction, and first and second cut-off corner portions extending at forty-five degrees to both the first and second directions, the forming panel having at least one interlocking flange extending from a lower surface;
- a ledger for supporting the forming panel, the ledger having at least one groove for engaging the interlocking flange of the forming panel.

8. The assembly of claim 7 wherein the interlocking flange extends a distance in the second direction that is less than the extent of the first and second ends in the second direction.

9. The assembly of claim 7 wherein first and second corner surfaces extend downwards from first and second cut-off corner portions, first and second corner surfaces forming acute angles with the horizontal upper surface.

10. The assembly of claim 7 wherein the distance from an upper surface of the ledger to the horizontal upper surface of the forming panel is four and a quarter inches.

11. The assembly of claim 7 further comprising a post with a drop head, the drop head supporting the ledger at

either a raised position or a lowered position depending on an adjustment of the drop head.

12. A method of forming an assembly to support poured concrete comprising:

- installing a plurality of posts extending vertically from a supporting surface, each of the plurality of posts having a drop head that provides support to one or more ledgers, each drop head having a top plate;

- installing a plurality of ledgers extending horizontally in between posts;

- installing a plurality of forming panels of predetermined size such that ends of forming panels overlie, and are supported by, ones of the plurality of ledgers, upper surfaces of the plurality of forming panels being flush with top plates of the plurality of posts; and

- installing at least one plywood sheet extending between one of the plurality of forming panels and a structural feature, the plywood sheet extending flush with the forming panel, the plywood sheet supported at one side by a single standard sized piece of lumber on one of the plurality of ledgers, the plywood sheet cut to fit between the forming panel and the structural feature.

13. The method of claim 12 wherein the piece of lumber has a height of three and a half inches and the plywood sheet has a thickness of three quarters of an inch.

14. The method of claim 12 wherein each of the plurality of forming panels has at least one interlocking flange, the interlocking flange extending into a corresponding groove in one of the plurality of ledgers.

15. The method of claim 12 wherein the plurality of ledgers extend in a first direction, the top plate is square in shape, and a side of the top plate extending at forty-five degrees to the first direction

16. The method of claim 12 further comprising attaching at least another piece of lumber to the structural feature to support the plywood sheet.

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