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P. BEGHETTI

1,950,650

CONCRETE FORM APPARATUS

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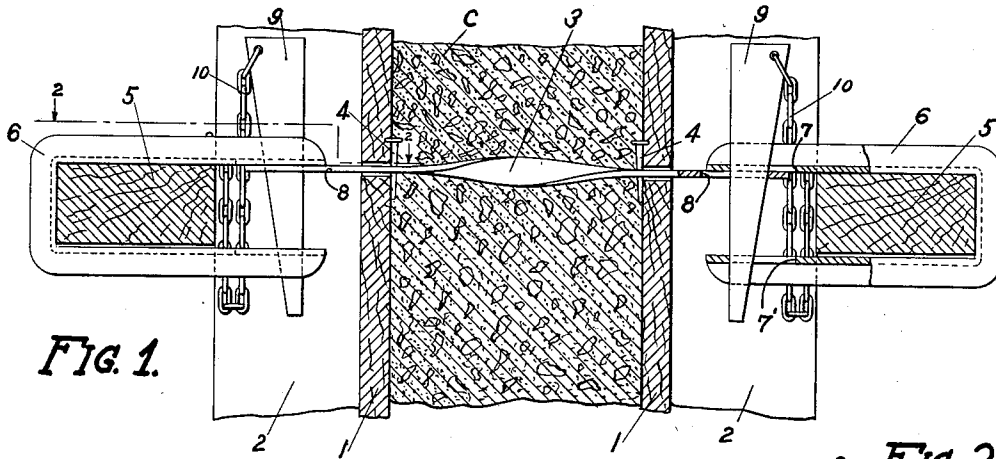


FIG. 1.

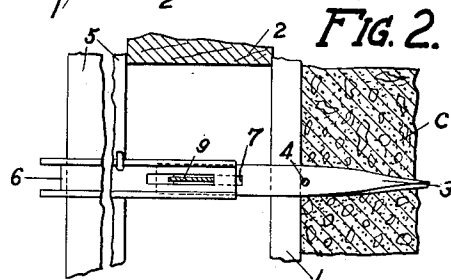


FIG. 2.

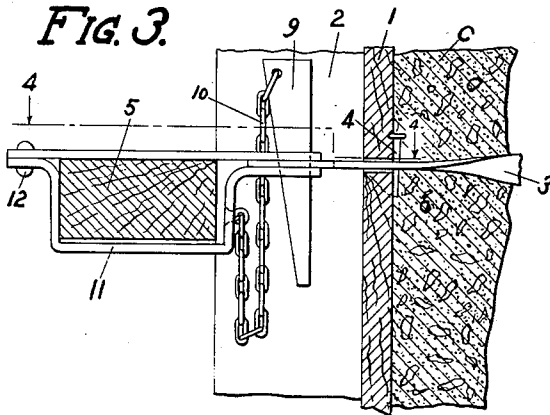


FIG. 3.

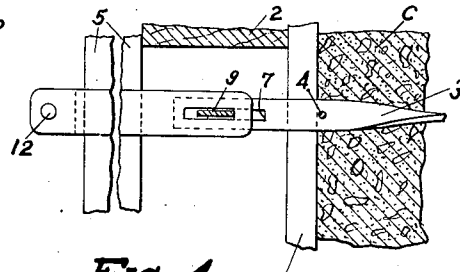


FIG. 4.

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CONCRETE FORM APPARATUS

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4 Claims. (Cl. 25—131)

This invention relates to mold clamps as used for holding together the sides of molds or forms for concrete walls in buildings or columns, etc.

The objects of the invention are to provide a simple clamp for properly spacing and retaining in position the sides of the forms or molds as set up for receiving wet mixed concrete or cement in the building of concrete walls, columns, etc., which mold clamp is easily used in ordinary form construction and quickly removed when desired.

Other objects will appear in the following description.

In the drawing accompanying this application Fig. 1 is a sectional view taken through a portion of a concrete wall with the wall forms held in place with my invention.

Fig. 2 is a sectional view of Fig. 1 taken along the line 2—2 of Fig. 1.

Fig. 3 is another form of my clamping device in position on one side of a concrete wall and wall form.

Fig. 4 is a sectional view of Fig. 3 taken along the line 4—4 of Fig. 3.

The standard practice in constructing concrete walls is to build up two walls of horizontally extending boards supported against rows of studding, the clear sides of the walls facing toward each other and separated the width of the desired concrete wall by spacers of some sort placed between the walls and against which the walls are tightly drawn by tie rods extending between the walls, which rods are provided with tightening devices at opposite ends outward of the wall forms for engaging the outer sides of the wall forms and drawing them against the spacers. Generally these tightening devices are adapted to engage directly against the outside of the walls of the forms, which system obviously requires a large number of tie rods, or they are adapted to engage the studs against which the walls are supported, which also means using a large number of tie rods and necessitates the rods passing through the walls exactly at the points where the studs are positioned. Others have used cross beams extending transversely of the studding for engaging with the tightening devices, and in order to secure a direct pull of the cross beams against the studding, have drilled holes through the cross beams for the ends of the rods to pass. This construction has proven the most satisfactory so far, but has the disadvantages of weakening the cross beam where it is drilled and increasing the labor costs to a prohibitive degree, and difficulty is found in making the holes meet the rods where several rods engage the same beam.

My invention eliminates the objections noted and provides improved means for setting up the molds or forms, insures the proper spacing of the form sides and the complete filling of the forms with

concrete, and is quickly removed after the concrete walls are set.

In the drawing the mold or form for the concrete wall C comprises opposed spaced parallel walls 1 of boards or other sheet material. The boards of the walls are supported on rows of studding 2. The proper spacing apart of the form walls 1 is accomplished by means of flat metal straps 3 disposed transversely across the form and extending between the boards of the walls respectively to a distance outwardly beyond the walls on opposite sides thereof terminating at their outer ends just inside the outer edges of the studding.

The straps 3 are of substantially uniform length, and are provided with openings spaced inwardly therealong from opposite ends for the insertion of pins or stops 4 against which the inner faces of the walls 1 abut, thereby spacing the walls apart. That portion of the straps 3 which extends between the walls and the stops is formed with an elongated twist, preferably one half turn, so that when the straps are positioned, the ends respectively are between adjacent superposed boards of the walls each, with their flat sides horizontal, the portion of the strap intermediate the ends is with its flat sides vertical, thus insuring a complete filling of concrete on all sides of that portion of the strap which remains in the wall. This is a very important point in my invention inasmuch as it permits the use of fairly wide straps, as is necessary in large construction work, where formerly the use of straps was impossible due to the fact that the concrete would not always fill directly beneath the straps, leaving air pockets and sometimes holes extending completely through the concrete wall.

In order to clamp the walls inwardly against the pins or stops 4, comparatively light beams 5, such as used for studding, are placed horizontally against the outer edges of the vertical studding 2 to lie beyond the outer ends of the straps 3 which extend outwardly on either side of the walls 1.

The beam members 5 are tightly drawn toward one another by means of special U-shaped clamps 6 which are slipped over the beam members 5 with free ends of the legs of the U-shaped clamps 6 on the beams on opposite sides of the wall directed toward each other and disposed above and below the opposite ends of the straps respectively. The ends of each of the clamps 6 are provided with vertically opening aligned slots 7, 7', one in the upper and lower leg of the clamps respectively, and the ends of the straps 3 also have a slot 8 aligned therewith but offset slightly from the slots in the clamp inwardly along the strap. An elongated wedge plate 9, adapted to pass through the slots in the legs and the slot in the strap, engages the clamp and the strap, the for-

ward or inner edge of the wedge adjacent the wall engaging against the outer ends of slots 7, 7' in the clamp, and the outer converging edge of the wedge engaging the outer end of the slot in the strap, so that by forcing the wedge downward the beam members 5 will be drawn toward each other until the inner faces of the walls 1 will tightly stop against the pins 4 in the straps. A chain 10 connects the wedge and clamp to keep the clamp and wedge together as a unit.

In order to remove the walls after the concrete is set, all that is necessary is to strike the lower ends of the wedges to loosen them from engagement with the clamps and straps respectively, and remove them from the slots. After the walls are down, the outer ends of the straps are easily broken off along the line of weakness made by the openings for the stops, thus leaving the concrete wall without any projecting ends of straps.

In Figs. 3 and 4 of the drawing if a modified form of clamp, the strap 3 and wedge 9 being the same as in the showings in Figs. 1 and 2.

In this form a clamp 11 completely embraces the beam 5, and the leg extending along one side of the beam is pivoted as at 12 to permit placing on the beam. Instead of the free ends of the clamp being spaced apart the width of the beam where they extend on opposite flat sides of the ends of the strap 3, they are brought together in fairly close association with the strap end. In this form of the invention, plain strap iron is used for the clamp, whereas in the preferred showing I use channel iron in order to insure against the free ends separating when the wedge is driven into the slots 7, 7'.

Other than in its extreme simplicity and cheapness and ease of installation without modifying any of the wall form structure, such as the studs, beams and wall boards, my invention provides means for drawing the beam 5 against the studs 2 in a straight line since the ends of the straps are inside the inner edge of the beam instead of

alongside, the latter condition having been found to cause the beams 5 to twist when the beam was drawn up against the studs.

Having described my invention, I claim:

1. A concrete form tie rod comprising a flat strap provided with a longitudinally extending slot adjacent an end thereof, a U-shaped member adapted to engage a portion of the concrete form between the arms thereof, the arms of said U-shaped member extending parallel to the strap at the end having the slot and said end of the strap disposed between the outer end portions of the arms of said U-shaped member, the outer end portions of the arms of said U-shaped member being provided with slots extending longitudinally of the arms and in substantial alignment with the slot in the strap, and a flat wedge plate extending through the slot in the strap and the slots in the arms.

2. In a structure as specified in claim 1, said U-shaped member being of channel section, with the flanges extending outwardly thereof.

3. In combination with the spaced opposed walls of a concrete form, vertical studding outward of the walls supporting the same, beam members extending transversely against the outer edges of the studding, horizontally aligned rod members transversely extending through said walls and terminating at their outer ends adjacent the inner edges of said beam members respectively, the beam members being positioned directly beyond the outer ends of the rods to intercept the longitudinally extending axes of said rods, means carried by the beam members arranged and adapted to engage the ends of said rods and wedge means for effecting relative movement of the rods and the means carried by the beams respectively.

4. In a structure as defined in claim 3, said wedge means each positioned between the beam member and the form wall.

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45	120
50	125
55	130
60	135
65	140
70	145
75	150