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W. E. MIDDLETON.

CONCRETE WALL OR COLUMN CONSTRUCTION.

APPLICATION FILED OCT. 29, 1906.

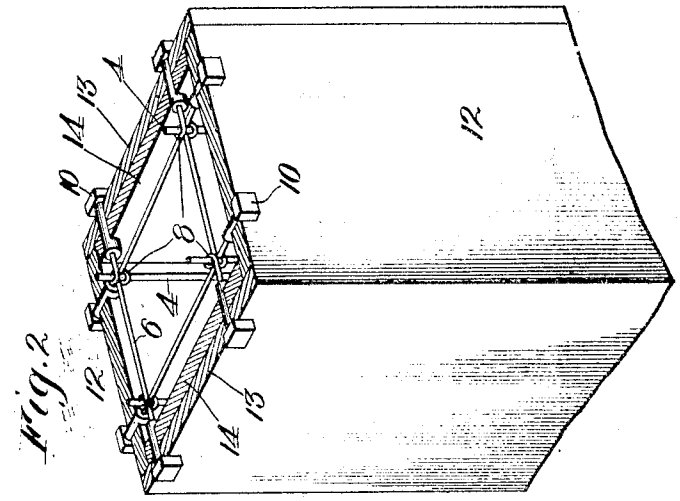


Fig. 2.

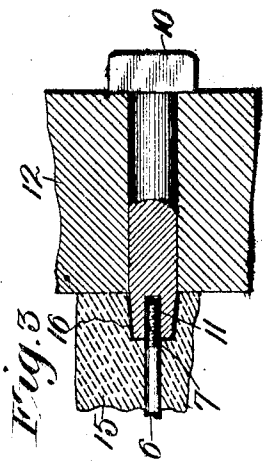


Fig. 3.

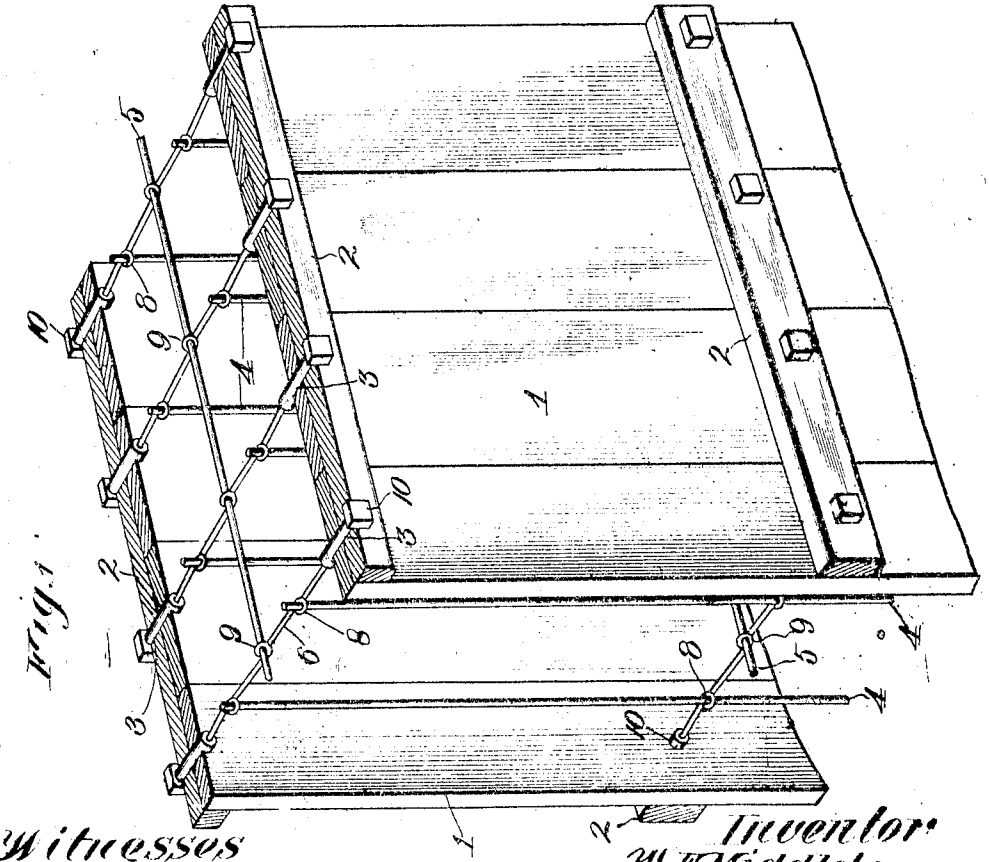


Fig. 1.

Witnesses
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CONCRETE WALL OR COLUMN CONSTRUCTION.

No. 871,879. Specification of Letters Patent. Patented Nov. 26, 1907.

Application filed October 29, 1906. Serial No. 341,003.

To all whom it may concern:

Be it known that I, WILLIAM E. MIDDLETON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Concrete Wall or Column Construction, of which the following is a specification.

This invention relates to concrete wall or column construction and my object is to produce simple and efficient means for bracing the walls of the falsework and for securing suitable reinforce bars in a fixed relation to said walls to insure proper and complete embedment of the bars in the concrete wall or column.

A further object is to interlace the reinforce bars together at low cost and utilize certain of said bars if desirable, as anchors or supports for canopies, brackets or fire-proof windows as hereinafter explained.

With these objects in view and others of a tributary nature, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a sectional perspective view of a portion of the falsework and reinforce bars for the concrete wall. Fig. 2, is a sectional perspective view of falsework and reinforce bars for a concrete column. Fig. 3, is an enlarged section showing the threaded relation between one of the transverse reinforce rods, a bolt therefor and one of the walls of the concrete column.

In the said drawings, 1 indicates falsework walls composed in Fig. 1 of series of planks or boards arranged edge to edge and connected at intervals by cross cleats 2, said cross cleats and boards at suitable intervals being provided with alined holes or passages 3. A skeleton reinforce work for embedment in the concrete to be filled in between said walls to produce a solid concrete wall, consists preferably of vertical bars 4 arranged in planes in alinement with holes 3, horizontal reinforce bars 5 arranged by preference in the same vertical plane and centrally between the series of bars 4 and in the same horizontal plane as holes 3, and transverse tie-rods 6, said tie-rods having their ends threaded as at 7. Said tie rods 6 for the purpose of securing the reinforce bars together are bent or coiled around the upright bars 4 as at 8 and around the horizontal bars 5 as at 9, this arrangement producing a skeleton reinforce work which is secured reliably between the walls 1 by means of the headed bolts 10 which extend through holes 3 and are provided with threaded sockets 11 to engage the threaded ends of rods 6.

In Fig. 2, the falsework consists of opposite walls 12 and 13 fitting together so as to form a vertical box, the walls 13 preferably overlapping the edges of walls 12, and having planks 14 secured to their inner sides and engaging the inner edges of walls 12 to provide stops for the latter and insure a plumb position thereof. The reinforce work for the column is of precisely the same construction and arrangement as in the wall shown in Fig. 1 except that in lieu of the horizontal bars 5 additional tie rods 6 are employed. The reinforce bars are arranged vertically and at substantially equi-distant points from the corners of and within the box, the rods being arranged horizontally and coiled or bent around the bars 4 and then engaged by the bolts as hereinbefore explained, the said bars, rods, and bolts being identified by the same reference characters as in Fig. 1. By thus interlacing or interlocking the bars with the rods, the former are held in a fixed position with relation to the box and consequently will be completely embedded within the concrete column produced by depositing concrete in said box.

After the concrete wall or column is "set" the bolts 10 are unscrewed from the rods 6 and the falsework is removed leaving standing a concrete wall or column 15, provided in each side with sockets 16, into which project the threaded ends of rods 6, which sockets are plugged with concrete unless it is desired to reengage the bolts with said rods or to screw other bolts onto said rods for the purpose of supporting a canopy, brackets, fire-proof windows or other structures. If such structure is not to be secured to the wall at the time of erection of the latter the holes are plugged with cement as explained, such plugs being dug out at any time in the future when it is desired to utilize said tie-rods as an anchor or support for a structure, it being understood in this connection that the coils or bends in the tie-rods and the various reinforce bars together with the cohesion of the cement with the tie-rods coöperate in resisting any longitudinal movement of the tie-

rods under the strain imposed thereon by the structure supported and that consequently practically the entire strength of the concrete structure is utilized as a support for the canopy or other structure secured thereto.

From the above description it will be apparent that I have produced a cement wall or column construction possessing all of the features enumerated as desirable and which may obviously be modified in minor particulars without departing from the principle and scope of the appended claims.

Having thus described the invention what I claim as new and desire to secure by Letters Patent, is:—

Means for forming concrete structures comprising falsework, horizontal rods disposed longitudinally between the walls of the falsework, transverse horizontal rods centrally connected with a longitudinal horizontal rod and having their ends threaded and terminating approximately in the planes of the inner faces of the walls of the falsework, vertical rods connected with the transverse rods between the ends of the same and longitudinal rods, and threaded sleeves inserted through the falsework and removably engaging the threaded ends of the transverse rods the said sleeves fitting over the ends of the transverse rods beyond the inner faces of the falsework whereby when the sleeves are removed the ends of the rods will be projecting within sockets in the face of the concrete structure.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM E. MIDDLETON.

Witnesses:
H. C. RODGERS,
G. Y. THORPE.