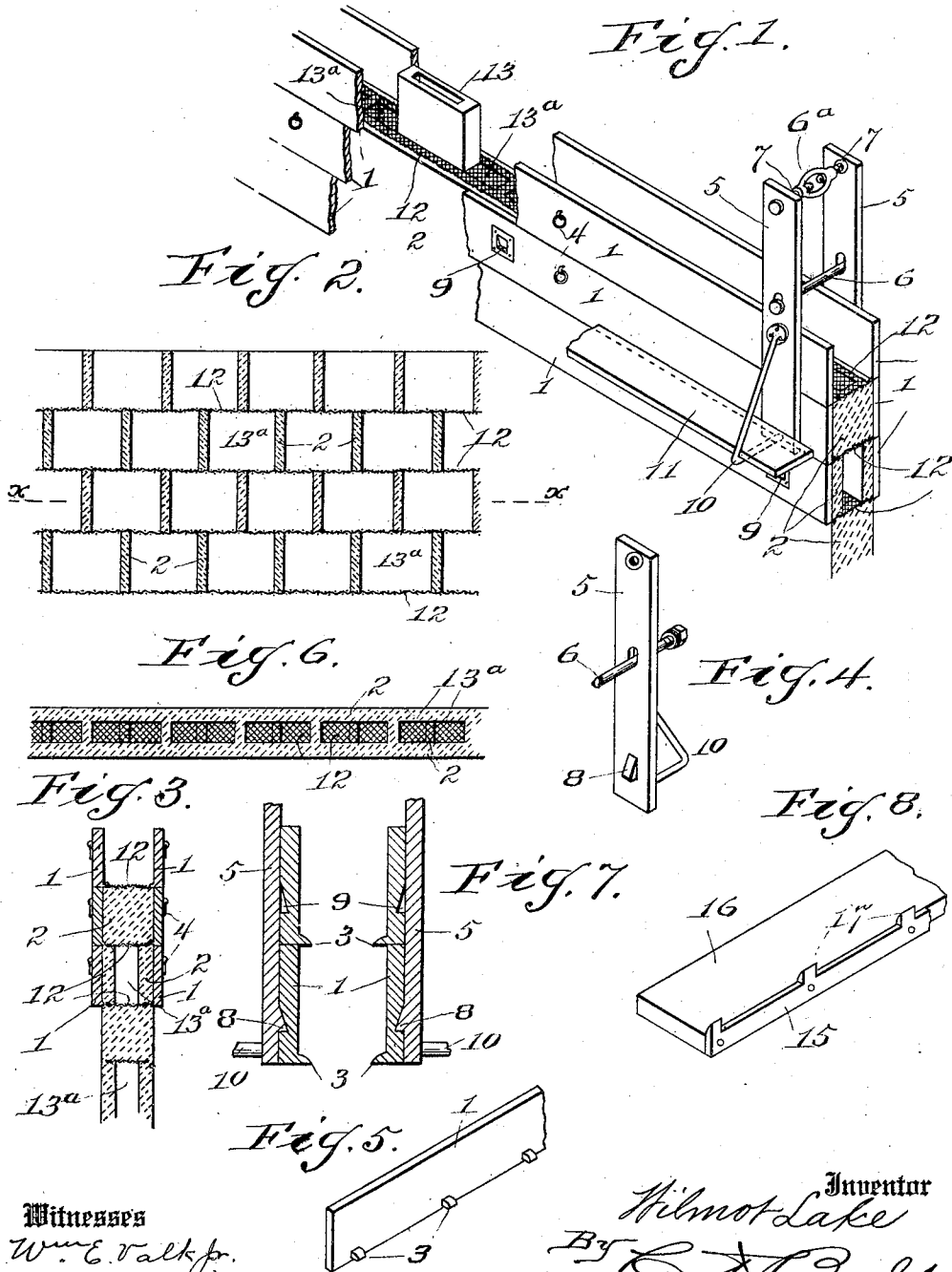


W. LAKE.
HOLLOW CONCRETE WALL.
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Patented Mar. 19, 1912.



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1,020,919.

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To all whom it may concern:

Be it known that I, WILMOT LAKE, citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Hollow Concrete Walls, of which the following is a specification.

The object of the invention is to provide improvements in hollow concrete walls for the purposes of binding the concrete, preventing sweating, protecting the wall hollows, and permitting communication between the hollows of the wall.

A still further object of the invention is to provide a silo for the concrete, and means for supporting the operator or operators from the laid wall sections or layers during the laying of the remaining sections or layers of the wall.

A still further object of the invention is to provide a silo like apparatus for constructing hollow artificial walls, such apparatus embodying sides comprising a plurality of boards or slabs adapted to be used successively one after the other in the process of wall forming, means intervening the wall layers so as to permit the artificial substance of one layer to congeal or harden with the adjacent layers, and to protect the hollows of the wall, and permit communication between the hollows of the wall.

Various other objects, advantages and improved results are attainable in the practical application of the invention.

In the accompanying drawings forming a part of this application: Figure 1 is a perspective view of part of a wall showing the application of the invention. Fig. 2 is a longitudinal vertical section of part of a wall embodying my invention. Fig. 3 is a cross section. Fig. 4 is a detail perspective view of part of the clamping device and platform holder. Fig. 5 is a perspective view of part of one of the side boards. Fig. 6 is a section on the line $x-x$ Fig. 2. Fig. 7 is a detail cross section. Fig. 8 is a perspective view of a modification.

The same reference numerals denote the same parts throughout the several views of the drawings.

While two or more pairs of side boards or slabs 1, may be employed for forming a silo into which is placed concrete 2, or other similar substance or material for forming artificial stone walls, three pair of such boards are sufficient in constructing a wall of

any desired height, as will be hereinafter fully explained. The lower longitudinal edge of each of said boards is provided with rests 3 projecting from the inner side thereof and adapted to rest upon the top edge of a wall layer or section for supporting the boards during the filling in of the concrete therebetween, such rests permitting the boards to be readily removed by suitable hooks applied to rings 4 on the boards, so that the boards may be used one after the other during the building of a wall.

The combination clamping device and platform holder comprises a pair of uprights 5 loosely hinged or fulcrumed centrally to a cross brace 6, the upper-end of the uprights are connected by a turn-buckle 6^a and a pair of screw-rods 7, one of which has a left-hand screw and the other a right-hand screw, or equivalent means for expanding and contracting this end of the clamp for effecting a similar movement of the other end thereof in a clamping operation, the lower end of the uprights is provided with cleats 8, which engage a plate opening 9, secured to the outer side of the boards 1, and the uprights are provided with a supporting bracket 10, for a platform board 11.

An essential feature of the invention consists in interposing fabric material such as wire gauze or wire mesh 12, or a similar element between the layers, sections or charges of concrete in the construction of a wall according to my method as follows: In starting a wall a set of hollow cores 13, is placed at desired intervals apart within a pair of side boards held in position by the clamping device, and the first layer or section of concrete is filled in flush with the top surface of the cores and the latter are removed, and a sheet of wire mesh is placed upon the top surface of the said concrete layer or section, the same set of hollow cores is set upon said wire mesh so that the cores now overlap the openings 13^a left in the wall section by the removal of the said cores therefrom with the fabric therebetween, another pair of boards is set (by means of the rest 3) upon the said first layer or section of concrete between the clamping members or uprights without adjusting or operating the latter, and a second layer or section of concrete is filled in upon the fabric or wire sheet and around the cores; a like third operation is perfected by raising the clamping device from the first

mentioned pair of boards to the second mentioned pair of boards, removing the said first boards from the wall and placing them upon the top edge of the said second boards where
 5 they are supported on the said second concrete section by their rests 3, the clamp is then tightened. This operation may be continued by successively alternating the boards in pairs, for building a wall of any desired
 10 height, without constructing a scaffold, as the workmen may stand upon the laid concrete sections while moving the clamps, and it is obvious that the platform boards carried by the clamp-brackets is used by the
 15 workmen for all other purposes in the operation of the apparatus for building walls. It will be seen that the wire gauze or mesh forms a support for the cores during the pouring of the concrete into wall position, and also forms a screen for the core openings, and that in the absence of the gauze the cores could not be used for making a wall according to applicant's invention.

Referring to the modification shown in
 25 Fig. 8, a strip 15 is secured to the bottom edge of the board 16, and the inner edge of such strip is provided with teeth 17 forming a rest or support for the board in a wall building operation, and answers the same
 30 purpose as the rests 3 hereinbefore referred to. Care should be taken that the wire sheets or mesh are narrower or of less width than the thickness of the wall so that the edges of the mesh will not protrude through to the surface or faces of the completed wall.
 35 It is obvious that the wire mesh not only forms a tie between the sections or layers of concrete, but it supports the concrete which partially over-laps said holes, and it covers
 40 the core holes and prevents their filling, and in view of the alternating position of such holes with the intervening wire mesh therebetween, communication is made between the set of holes of each layer from the bot-
 45 tom to the top and from end to end of the

wall, and the latter is preserved without the usual sweating, and a composite hollow wall without visible seams or joints is produced. It will be seen that the cross brace or fulcrum 6 will permit the clamp to be adjusted
 5c according to the thickness of the wall under construction.

I do not wish to be understood as confining myself to any particular fabric or character of dividing screens or mesh; to the
 55 wall material; to the means for operating the clamp; nor to the size, shape or particular material of the apparatus or any part or parts thereof.

Having thus described my invention what
 60 I claim as new and desire to secure by Letters Patent is:

1. A cored monolithic wall composed of alternate layers of concrete and fabric mesh, the cored openings and the partitions of the
 65 wall alternating vertically with the mesh intervening therebetween so as to permit communication between the openings.

2. A cored monolithic wall composed of alternate layers of concrete and wire mesh,
 70 and having openings alternating with vertical partitions so as to form communication between all of such openings through the mesh.

3. A hollow wall composed of alternate
 75 layers of concrete and wire mesh, each concrete layer having openings vertically there-through which alternate with vertical partitions in the layers, said mesh forming a support for suitable cores during the pouring of
 80 the concrete and forming top and bottom screens for the openings of each concrete layer.

In witness whereof I hereunto set my hand in the presence of two witnesses.

WILMOT LAKE.

Witnesses:

J. ROSS COLHOUN,
 JOHN W. GLENNAN.