No. 843,937. PATENTED FEB. 12, 1907.

J. L. GIVEN.

MAKING CONCRETE WALLS.

APPLICATION FILED OCT. 4, 1906.

Fig. 1.

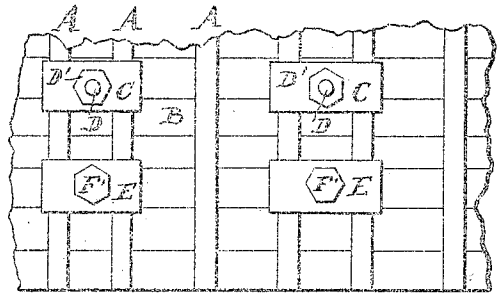
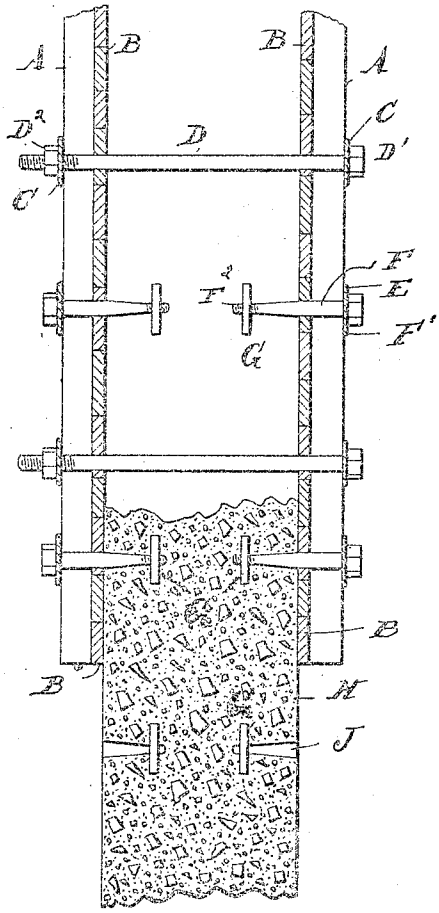



Fig. 2.




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# UNITED STATES PATENT OFFICE.

JOHN L. GIVEN, OF THOMPKINS COVE, NEW YORK.

## MAKING CONCRETE WALLS.

No. 843,937. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed October 4, 1906. Serial No. 337,362.

*To all whom it may concern:*

Be it known that I, JOHN L. GIVEN, a citizen of the United States, and a resident of Thompkins Cove, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Making Concrete Walls, of which the following is a specification.

This invention relates to improvements in making concrete walls; and the object of my invention is to provide a new and improved means for securely holding the uprights against which the planking rests that forms the side walls of the pocket in which the mixture of concrete or any other mortar-like substance from which the wall is to be built can be filled and tamped, which means are simple in construction, strong and durable, permit of readily erecting and readily detaching the side walls, and do not require the use of expensive braces and struts, and hence do not occupy much space.

In the accompanying drawings, in which like letters of reference indicate like parts in all the figures, Figure 1 is an outer side view of part of the wooden side wall for making a concrete wall. Fig. 2 is a vertical transverse sectional view through a concrete wall partly finished and through the casing and framing for the same.

In making walls of concrete or of mixture of cement or lime and sand, cinders, broken stones, and the like this mixture, while moist to a greater or less extent, is filled into a pocket or box the transverse dimensions of which are equal to the desired thickness of the wall, and in this pocket this mixture is thoroughly tamped, so as to force out all air and to cause an intimate contact of all the particles of the mixture. For the purpose of erecting the wall vertically and keeping it in proper shape the boards or planking which form the sides of this pocket are secured to uprights, which in turn must be held firmly in position, so as to prevent their spreading under the weight of the composition filled in between them and under the effect of the blows delivered in tamping.

Heretofore it has been customary to brace uprights by means of struts and braces resting against the upright and against a horizontal support or some adjacent vertical support, all of which requires much labor and material, interferes with the free handling of material, and is necessarily very expensive. I use uprights A, formed of ordinary wooden joists, and against the inner sides of these uprights I fasten the planking or boards B, the distance between the inner face of said planking being equal to the desired thickness of the wall, as shown in the drawings. Across two adjacent joists or uprights A, I place metal plates C on both walls of the box or casing, and through these plates and side walls I pass a screw-bolt D of sufficient weight and strength, the head D′ of said bolt resting against one plate C, and a nut $D^2$, screwed on the threaded opposite end of the bolt, resting against the plate C on the other side wall of the box or casing, is formed. These bolts D hold the two sides walls of the box thus formed in proper position and prevent them from spreading under the weight of the material filled in between them or under the impact of the blows delivered in tamping. Additional plates E also extend across two adjacent joists A, and through holes in these plates I insert screw-bolts F, provided with heads F′ at their outer ends and tapered at their inner ends, the other ends of these bolts being threaded, as shown at $F^2$. These bolts F are passed through holes in the planking and project from the inner surface of the side walls of the casing a greater or less distance—say approximately one-third of the thickness of the wall—and on their inner ends I screw nuts G. These nuts G, it will be seen, are embedded in the concrete H of the completed wall, wherein they remain. After the space between the two walls has been filled up to a certian height the lower bolts F are unscrewed and withdrawn, the nuts G remaining in the concrete H, and the side walls formed of the joists and planks can now be raised and held in place by screwing the bolts F into the nuts G, that have been embedded in the concrete higher up, and so on, the side walls formed of the joists and planks being gradually raised as the wall increases in height. Of course before the wooden partitions can be raised the bolts D, embedded in the concrete, must first be withdrawn and then replaced. The completed wall has holes J in both surfaces, which holes are formed by withdrawing the tapering bolts F. These holes can be filled with cement or they may remain in the wall and can be used for receiving hooks, bolts, &c.

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

1. In an improved device for making concrete walls, the combination with side walls, between which the concrete is to be filled, of transverse connections for preventing the spreading of these side walls, independent bolts projecting from each of said side walls into the spaces to be filled with concrete, which bolts are tapered toward their inner ends, and a detachable piece mounted on the inner end of said bolts within the spaces to be filled with concrete, substantially as set forth.

2. In an improved device for making concrete walls, the combination with side walls, between which the concrete is to be filled, of transverse connections preventing the spreading of these side walls, bolts projecting from each side wall into the spaces to be filled with concrete, which bolts are tapered toward their inner ends and have the inner tapered ends screw-threaded, and nuts screwed on said tapered inner ends of the bolts within the spaces to be filled with concrete, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 2d day of October, A. D. 1906.

JOHN L. GIVEN.

Witnesses:
ARTHUR LINCOLN,
ED. DALE CONRAD.