No. 781,820. PATENTED FEB. 7, 1905.

R. T. FROST.

WALL CONSTRUCTION.

APPLICATION FILED FEB. 18, 1904.

Fig. 1.

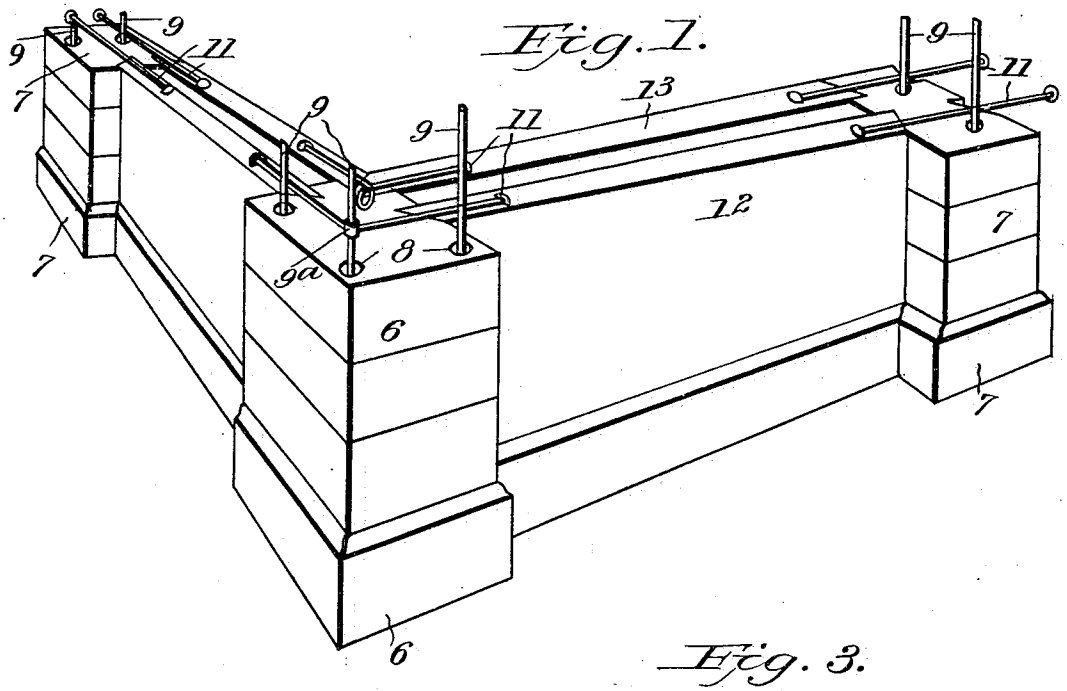


Fig. 3.

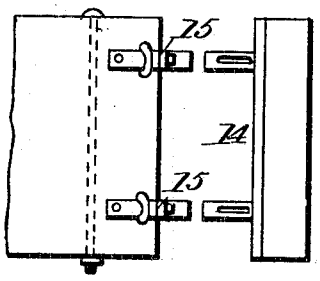


Fig. 2.

Witnesses

C. N. Walker.

Geo. E. Tew.

Inventor

Robert T. Frost

By Milo B. Stevenson & Co. Attorneys

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UNITED STATES PATENT OFFICE.

ROBERT T. FROST, OF DOWS, IOWA.

WALL CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 781,820, dated February 7, 1905.

Application filed February 18, 1904. Serial No. 194,144.

To all whom it may concern:

Be it known that I, ROBERT T. FROST, a citizen of the United States, residing at Dows, in the county of Wright and State of Iowa, have invented new and useful Improvements in Wall Construction, of which the following is a specification.

This invention relates to a process of constructing walls or buildings and to the product resulting therefrom, and contemplates the idea of making the pillars or abutments of dry or previously-cast blocks and then molding the walls between the abutments *in situ*. The abutments act as supports for the molds and also make unnecessary the use of staging, as well as supporting the molded portions of the wall in position, whereby building may proceed continuously without waiting for the molded portions of the wall to become absolutely hard.

Further advantages and improvements will be apparent from the following description.

In the accompanying drawings, Figure 1 is a perspective view of a partly-completed wall constructed according to my invention. Fig. 2 is a plan view thereof. Fig. 3 is a partial side elevation of a mold-section used in making the wall.

In the construction of a wall according to this invention the corner and other abutments are preferably constructed of blocks of molded material allowed to dry and harden before being placed in the building; but these blocks may be of natural stone or other material or within the broad idea of the invention may be iron beams or pillars. The blocks referred to are indicated at 6 and 7, the former being the corner-blocks and the latter the blocks forming the intermediate abutments. These abutments or pillars are to be spaced a proper distance to carry I-beams or girders for supporting the floors, roof, and inner walls and may be varied in construction and location according to the architectural design of the building. Preferably the blocks are molded with several registering vertical holes 8 therein to receive vertical rods 9, the holes being considerably larger than the rods. The rods are made in sections which are joined as the building progresses in any suitable manner, as by sleeve-couplings 9^a. Several courses of blocks may be laid and then the rods are run down through the holes and screwed into the couplings below. Soft or slushy concrete or cement is then poured into the holes, making a solid bond of iron and concrete which binds the abutment-blocks securely together.

The sides of the abutment-blocks which adjoin the intermediate walls are rabbeted or grooved, as at 10, to receive the ends of the molded wall-sections hereinafter described. To assist in binding the abutments and the molded wall-sections together, headed rods 11 are laid across each course of the abutment-blocks and bind the parts together lengthwise. After the abutments have thus been built to a sufficient height the intermediate walls are molded *in situ*, preferably in the form of exterior and interior walls 12 and 13. The molds are constructed according to the configuration of the wall desired, and in a simple form comprise boards 14, fitted at the end with brackets and clamps (indicated at 15) constructed to engage against the abutments. These mold-sections are placed in position between the abutments and are supported in place by means of the clamps referred to and also by means of twisted wires 16, which are inserted through holes in the inner and outer mold-sections and fastened or twisted to temporarily hold said sections together. As shown, one mold-section is placed on the inner side of the wall and the other mold-section on the outer side thereof.

It is desirable in building construction to produce a hollow wall, to save material, and also to form a dead-air space. This is done by placing sheets of expanded or reticulated metal (indicated at 17) lengthwise between the abutments within the space between the wall-sections, and the expanded metal is temporarily spaced apart by blocks 18 inserted therebetween. When the parts are so arranged, the mold is ready to receive concrete or plastic material. This is put in between the mold-sections and the expanded metal to form the interior and exterior walls and allowed to set. When sufficiently hard, the mold-sections are removed and the ends of the wires 16 are cut off flush with the faces of the wall These

wires form a cross-bond, and inasmuch as they extend through the expanded metal assist in supporting the latter. The blocks 18 are then knocked out, leaving the completed wall-sections in position.

In the course of building operations changes can be made from one part of the building to the other to allow the molded sections in the former to become sufficiently hard and dry. The abutments are built up as fast as necessary and act to support the intermediate wall-sections until they become completely hard. Inasmuch, too, as the abutments are of sufficient size and strength to support the molds and the workmen and to carry the weight of the building until the intermediate sections of the walls are thoroughly dry, building can proceed at a rapid rate, since the weight of the upper courses of the intermediate walls is to a large extent taken off the lower sections thereof and there is little danger of possible collapse incident to supporting the weight of upper courses, workmen, &c., upon lower courses not fully hardened.

At 19 a window or door frame is indicated, illustrating the manner in which such casings are placed adjacent an abutment. Obviously such casings may be, if desired, put in the molded sections at the time they are made. The construction is obviously fireproof and the method of combining permanent blocks as abutments with intermediate sections molded therebetween allows a much more rapid and cheaper construction than if the whole wall were formed of blocks previously molded or than if the whole wall were molded *in situ*, which, it is believed, would be very slow and perhaps impracticable.

Various modifications may be made within the method indicated above and in the wall resulting therefrom without departing from the scope of this invention, which is not limited except as may appear in the following claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. The method of building walls, consisting in erecting spaced pillars of solid material, extending spaced sheets of reticulated material between said pillars, placing a mold-section between the pillars, outside said sheets, and filling the spaces between said reticulated material and the mold-section with a body of plastic building material.

2. The method of building walls, consisting in erecting pillars in courses of solid material bonded together, molding interior and exterior wall-sections in courses between said pillars, in molds secured to said pillars, and bonding said wall-sections to the pillars and to each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT T. FROST.

Witnesses:
A. L. SHAGLER,
L. L. BERNHAUER.