A. BLOCK.

CONCRETE WALL CONSTRUCTION.

APPLICATION FILED APR. 12, 1918.

1,324,027.

Patented Dec. 9, 1919.

2 SHEETS—SHEET 1.

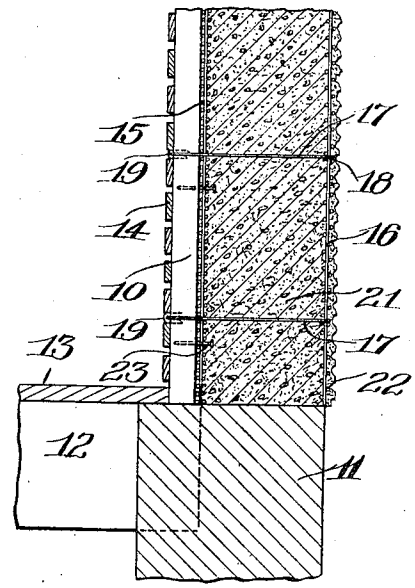


Fig. 1

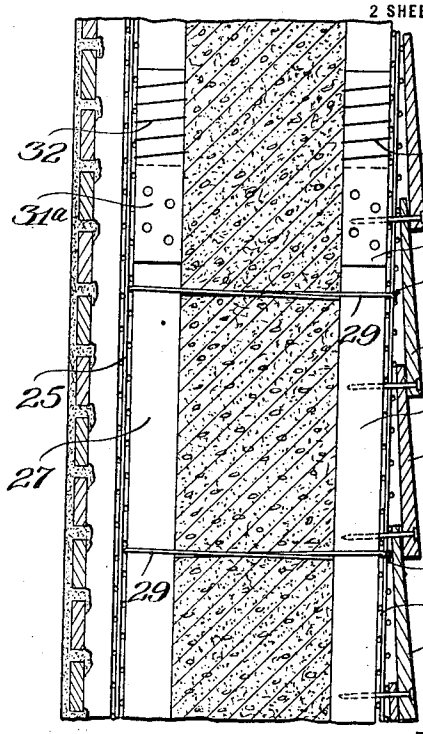


Fig. 6

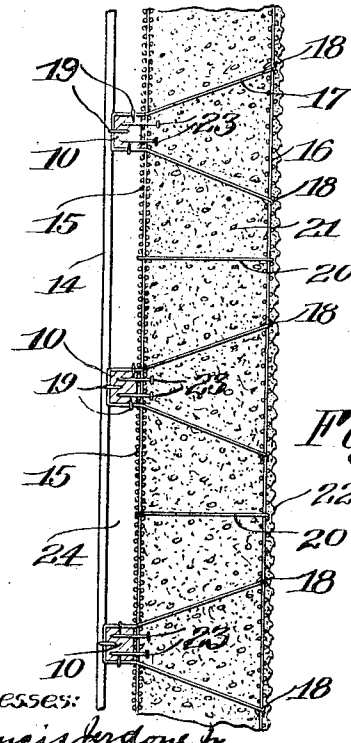


Fig. 2

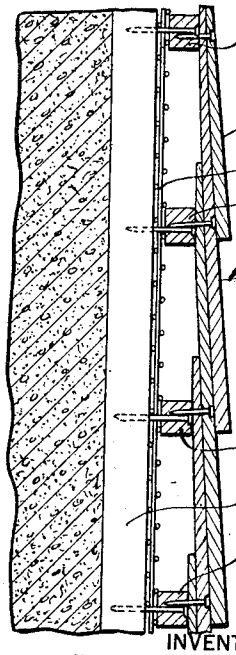


Fig. 5

Witnesses:
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2 SHEETS—SHEET 2.

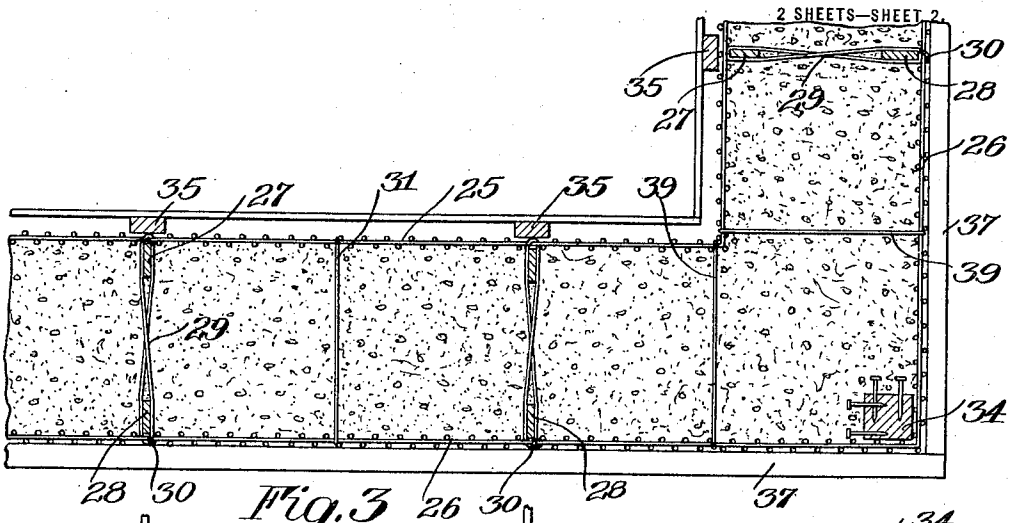


Fig. 3

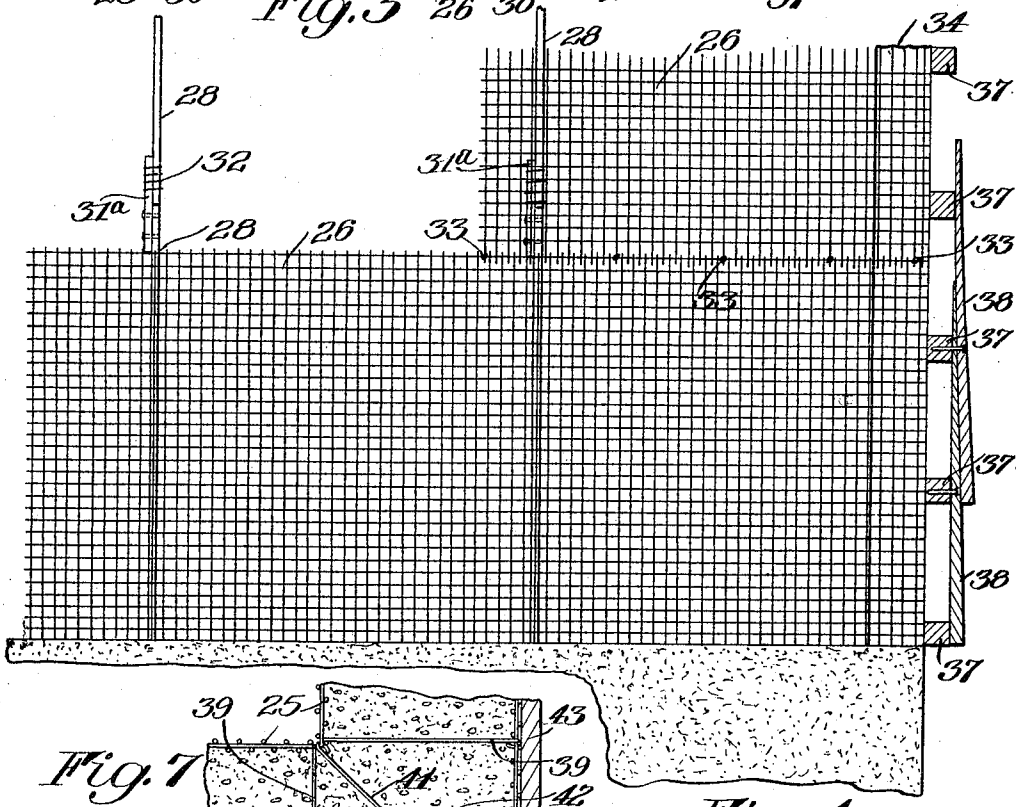


Fig. 4

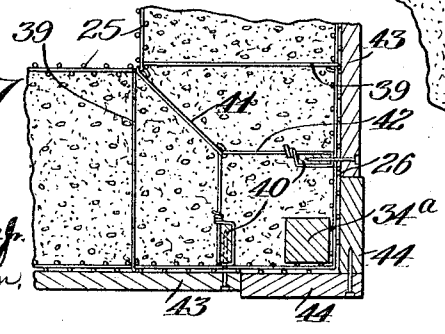


Fig. 7

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UNITED STATES PATENT OFFICE.

ALVIN BLOCK, OF ROCHESTER, NEW YORK.

CONCRETE WALL CONSTRUCTION.

1,324,027. Specification of Letters Patent. **Patented Dec. 9, 1919.**

Application filed April 12, 1918. Serial No. 228,092.

To all whom it may concern:

Be it known that I, ALVIN BLOCK, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Concrete Wall Construction; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My invention relates to a concrete wall construction and has for its object to provide means by which the green walls of a concrete building or other structure may be held while hardening without the use of the ordinary removable forms or molds, as well as obviating the use of the reinforcing metal bars commonly employed in structures of this kind.

A further object of the invention is to provide a relatively light concrete wall construction for building purposes with means embedded therein upon which the finishing walls of the building may be secured.

Still another object of the invention is to anchor upon the studding of a frame building sections of wire netting or like material in spaced relation adapted to be filled with concrete to produce a relatively thin cement wall having on its outer surface a stucco finish substantially covering the wire mesh and which is obtained without the use of the methods generally employed for providing a finish of this kind. To these and other ends the invention resides in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a fragmentary sectional elevation of a wall embodying the preferred form of the invention;

Fig. 2 is a sectional plan of the wall shown in Fig. 1;

Fig. 3 is a plan section of a modified form of wall construction;

Fig. 4 is an exterior elevation of the wall shown in Fig. 3 with the outer covering removed;

Fig. 5 is a fragmentary sectional elevation of the wall shown in Fig. 3, indicating the manner of applying the shingles thereto;

Fig. 6 is a similar section including both the inner and outer finish of the wall, and

Fig. 7 is a sectional plan illustrating the method of constructing the corners of the wall shown in Fig. 6.

Similar reference numerals throughout the several views indicate the same parts.

In carrying out the preferred form of the present invention, I employ the studding of a frame building, preferably of wooden construction, as a means upon which to secure sections of wire netting or like material of a relatively fine mesh from which are outwardly spaced sections of netting of a relatively coarse mesh suitable to permit concrete poured between said sections to be forced through the latter, and form thereon a stucco finish substantially enveloping or covering the strands of the mesh and the exposed portions of the ties connecting said sections when the building is completed. In this way, a stucco finish may be obtained without the use of the methods generally employed in work of this kind which are more or less expensive and which require the services of skilled labor as well.

Referring to the drawings, 10 indicates the studding or upright frame members which are carried by the sills 11 arranged to support the floor stringers 12 on which rests the floor 13, as shown in Fig. 1. Secured upon the inner faces of the studding are the laths 14 for holding the plastering in cases where it is desired to provide a plastered wall.

Exteriorly of the studding and secured thereto by suitable nails or staples (not shown) is the wire netting 15 of comparatively fine mesh while spaced therefrom is the netting 16 of a considerably coarser mesh. The outer netting 16 is connected with the studding 10 by the yokes 17 which are formed of relatively heavy wire bent to the shape shown in Fig. 2, the sides of the yoke being projected through the inner netting 15 and thence through the outer netting and bent back by the use of a pair of pliers or other tool to form the hooks or eyes 18 which engage the strands of the wire netting and temporarily support the latter. The sides of the yoke are bent outwardly at the point where they leave the studding, thereby serving to better brace the netting 16 with which their extremities connect. The inner end of the yoke which engages the studding on three sides thereof is preferably secured by means of the staples 19. Additional ties 20 are placed between the studding at suitable

intervals and serve to tie the outer netting to the inner netting. The netting is built up in sections step by step and the concrete poured in from time to time and tamped sufficiently to force through the outer netting the proper amount of material to give the desired stucco effect as indicated at 22 in Figs. 1 and 2. The cement may also be brought out and a uniform coating effected by tapping the wire strands with a light tool before the material has a chance to harden. Nails 23 are partially driven into the studding before the cement is poured so that the heads thereof may serve to anchor the cement when the latter is hardened.

An air space 24 is formed between the inner wall covering and wire netting 15 which serves as an insulator and insures a relatively dry concrete wall at all times.

In a construction of this kind a considerable saving in the cost of the framing or studding may be effected as the size of these members may be reduced materially since they are reinforced by the outer concrete wall with which they are connected.

In the modified form of construction shown in Figs. 3 to 7, inclusive, the inner and outer sections of the netting 25 and 26, respectively, are preferably of the same mesh and are supported by the inwardly placed nailing strips or frame members 27 and 28 which are relatively thin strips of material connected by the tie bars 29 formed of suitable wire bent around said frame members and crossed between them whereby the latter are clamped by the wire sufficiently tight to prevent their accidental displacement before the concrete is poured. The ends of the wire forming the tie bar are twisted together as indicated at 30, preferably around one of the strands of the wire netting. Additional tie bars 31 are directly connected with the spaced netting sections as indicated in Fig. 3, the same being preferably formed of wire with hooked ends surrounding one or more of the wire netting strands. The upright frame members 27 and 28 for temporarily supporting the netting are preferably in short lengths slightly longer than the width of the netting itself, as shown in Fig. 4. In constructing the walls I prefer to build up the same step by step, that is, when the bottom sections of netting are filled with concrete and have hardened to a certain degree. I then superimpose additional frame members on those already embedded in the cement and connect them to the splice members 31ª preferably by the wire wrapping indicated at 32 in Figs. 4 and 6, said splice members having been previously nailed to the lower frame member before they were set up. I then superimpose upon the newly placed upright strips another section of netting at each side of the wall, preferably around the entire building, after which I fill the additional space with concrete. This process is continued until the walls of the building are completed. In addition, I prefer to tie the adjoining edges of the screen sections together by short pieces of wire as indicated at 33 in Fig. 4. When the concrete wall is completed the frame members 27 and 28, as well as the corner posts 34 and 34ª are firmly embedded in the concrete material and form suitable uprights upon which the lath supporting members 35 and the clapboards 36 are nailed as well as the longitudinally disposed stringers 37 which carry the shingles 38, as shown in Fig. 4. At the corners of the building on the outside I bend the wire netting around the corner posts and secure it thereon by nailing and while on the inside the netting is also bent at a right angle to form a continuous corner piece. I prefer to anchor it at this point to the outer sections by means of the ties 39 as shown in Figs. 3 and 7.

In Fig. 7, I also provide the nailing strips 40 which are embedded in the concrete and to which the inner section of netting 25 is anchored by the diagonally disposed wire 41 connecting with the wire 42 which has its opposite ends wrapped around and secured upon the strips 40.

These nailing strips afford a suitable support upon which the ends of the clapboards 43 are nailed, the latter abutting the corner finishing boards 44, which are nailed to the corner post 34ª through the wire netting. The lath supporting uprights 35 which are nailed to the frame members 27 may be varied in thickness according to the width of air space desired between the plastered and concrete walls.

I claim as my invention:

1. A concrete wall comprising a plurality of frame members, wire netting secured to said frame members, a second wire netting spaced from said first mentioned wire netting, yokes connecting said last mentioned wire netting to the frame members, said yokes having outwardly bent sides for bracing said wire netting, and plastic material interposed between said wire nettings and forced through the last mentioned wire netting to form a stucco finish.

2. A concrete wall comprising a plurality of frame members, wire netting secured to said frame members, a second wire netting spaced from said first mentioned wire netting, yokes connecting said last mentioned wire netting to said frame members said yokes having outwardly bent sides for bracing said wire netting, ties connecting said wire nettings intermediate said yokes, and plastic material interposed between said wire nettings.

ALVIN BLOCK.