June 19, 1923.

1,459,170

C. O. WALPER

WALL CONSTRUCTION

Filed July 20, 1922

Fig. 1.

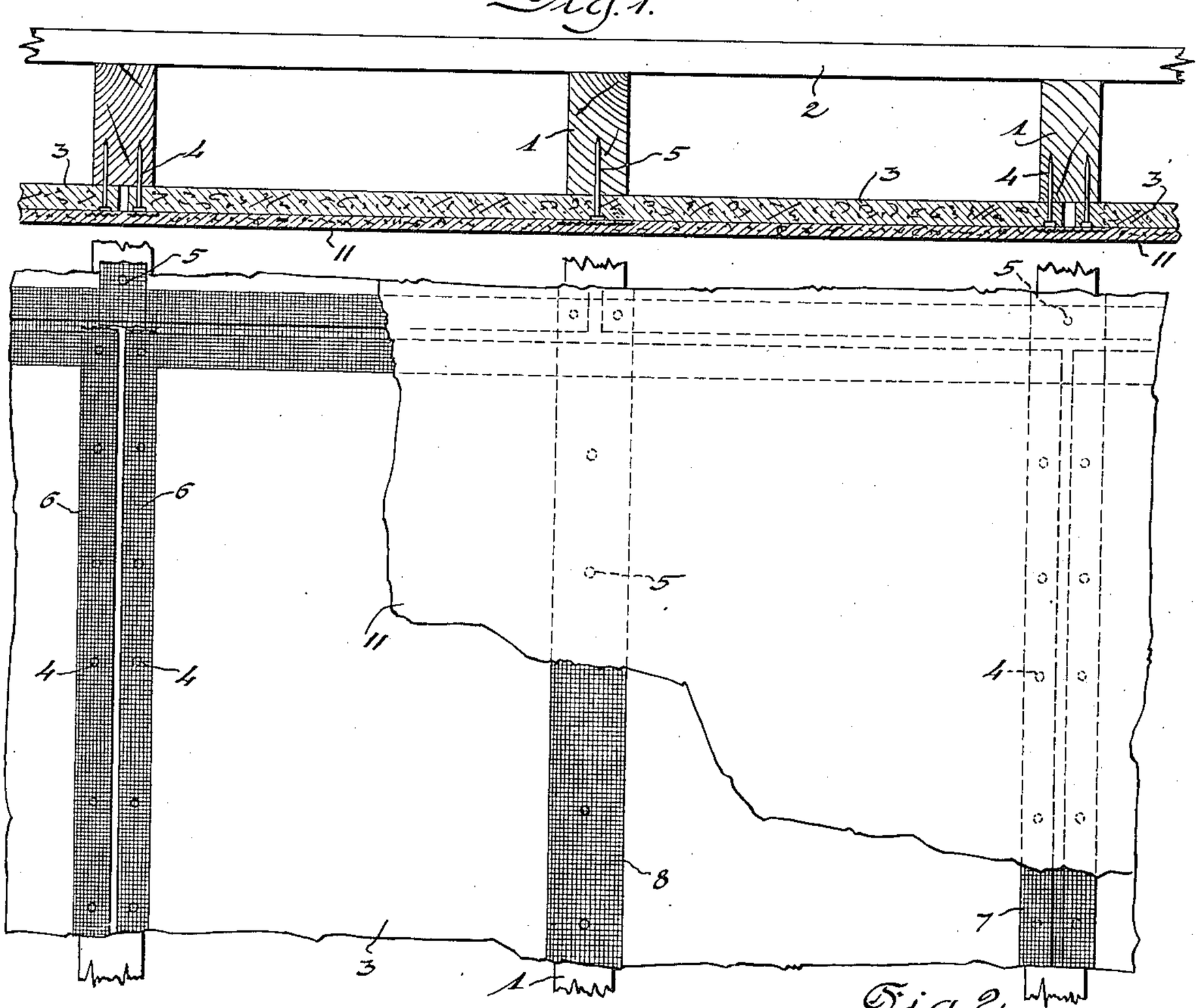

Fig. 2.

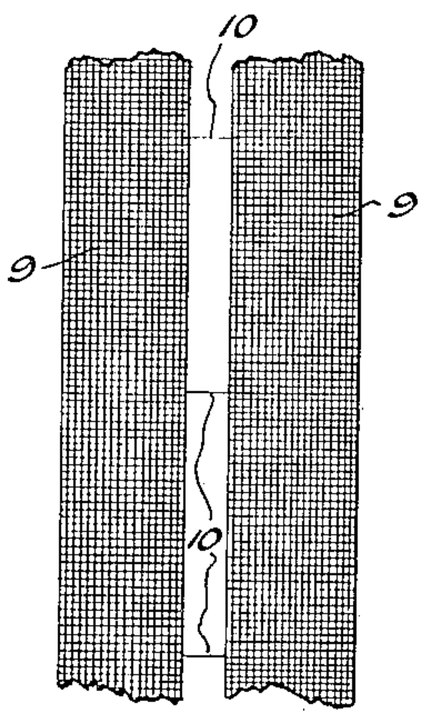

Fig. 4.

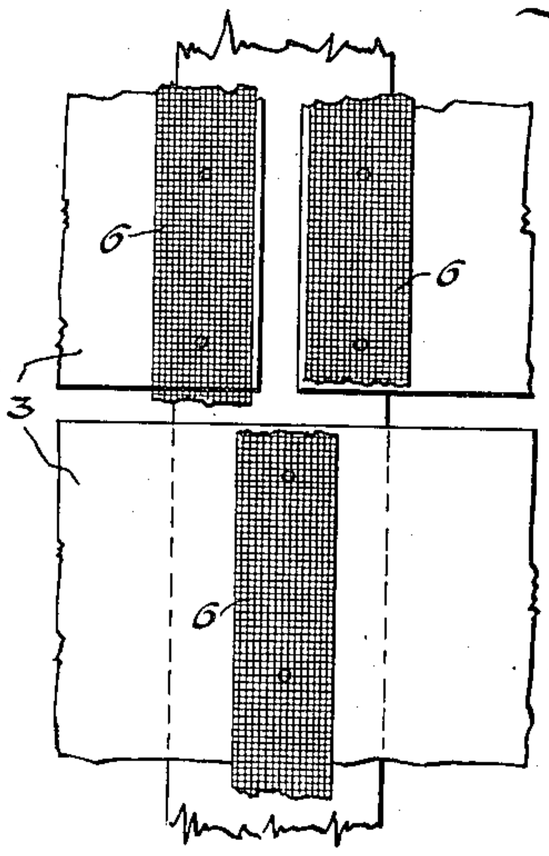

Fig. 3.

Inventor:

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Attorneys.

Patented June 19, 1923. 1,459,170

UNITED STATES PATENT OFFICE.

CURRY ORA WALPER, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-THIRD TO FRANK A. MASLEN AND ONE-THIRD TO BERNARD E. CLARK, BOTH OF DETROIT, MICHIGAN.

WALL CONSTRUCTION.

Application filed July 20, 1922. Serial No. 576,262.

To all whom it may concern:

Be it known that I, CURRY ORA WALPER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Wall Constructions, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a construction of walls and ceilings of buildings and has for its primary object a provision of means by which a finishing surface coat applied to plaster boards or other composition wall boards may be protected from the injurious action of the nails or other fastening means used in securing the wall boards to their supports.

A further object of the invention is to provide a form of reinforcement for use in conjunction with the finishing coat of a plastered wall to prevent cracking at points where the bending may occur over an underlying support.

Other objects will appear as the description proceeds, reference being had to the accompanying drawing in which—

Figure 1 is a horizontal section through a wall showing one embodiment of my invention;

Fig. 2 is a fragmentary elevation;

Fig. 3 is an enlarged detail in elevation of the structure illustrated in Fig. 2, and

Fig. 4 is a fragment illustrating a modified form of strip.

The use of plaster boards and other composition boards as substitutes for lathing and plaster is increasing but it has been found difficult to provide a satisfactory finish for the surface of such boards, particularly at the joints between their meeting edges. When a finishing coat similar to the putty coat used on ordinary plastered walls is applied to the surface of the plaster boards or other common wall boards cracks are likely to occur at the vertical joints along the studs, and at the horizontal joints where the boards are unsupported at the rear.

In my co-pending applications, Serial No. 493,921, filed August 20, 1921, and Serial No. 576,948, filed July 24, 1922, solutions have been presented for the problem of preventing cracking at the joints.

It has been found however that cracks will occur opposite a stud near the middle of a board where there are no meeting edges. Furthermore it has been the common practice to apply the ordinary plastering to walls and ceilings with only a subflooring of rough lumber in place because of the litter caused by the ordinary method of plastering. After the finishing coat of plaster has become dry, the hard wood flooring or other permanent floor surface is nailed in place upon the rough subflooring. When plaster boards are used in the ordinary house having wooden studs and wooden joists, they are secured in place by nails driven through the boards adjacent to their edges and since the boards are usually thirty-two inches in width to adapt them to the ordinary sixteen inch width from center to center of the studs and joists, an additional row of nails is used along the central line of the boards to secure them to the intermediate joists or studs. After a surface coat of plaster is applied to such plaster boards, the job is ready for the carpenters and it frequently occurs that the jarring caused by nailing the floors in place as well as the jarring occurring in the application of the wooden trim to door and window openings will cause the nails supporting the plaster boards and the boards themselves, to vibrate, and this vibration will produce a hammering action on the finishing coat opposite the nail heads sufficient to break the surface. In some cases after a floor has been nailed in place it is possible to locate the position of substantially every nail head upon the ceiling beneath by the openings left in the plastered surface where the nail heads have driven off a portion of the surface layer.

The principal object of my present invention is to prevent this action of the nails upon the surface coating and to that end I have devised a structure herein disclosed.

In Fig. 1 a wall is shown in section having wooden studs 1 upon which is secured an outer sheathing 2 which may consist of

the ordinary clapboards or dropsiding. The inner surface of the wall consists of a series of plaster boards 3 secured in place upon the studding by nails 4 driven through the boards close to their meeting edges and by nails 5 driven through the central part of the panels into the studs which lie between the edges of the boards.

Along the studs or joists over the nail heads upon the surface of the plaster boards are secured metallic strips 6 which may be of an open mesh wire netting. These strips may be narrow and only of sufficient strength to prevent the chipping or hammering action of the nail heads as indicated at the left in Fig. 2 or in Fig. 3, or the strips may be of greater width as indicated at 7 at the right of Fig. 2, the strip being of sufficient width to extend across the joint between the meeting edges of the boards and over both rows of nail heads. The wider strip is preferable because of its additional function of acting as a reinforcement to prevent cracking at the joint between the meeting edges of the boards. A similar strip 8 is applied along the middle of the board opposite the intermediate stud 1 and this strip 8 is also preferably substantially as wide as the thickness of the stud, in order that it may act as a reinforcement to prevent cracking of the surface coat 11 along the edges of the intermediate stud. When pressure is applied upon the surface of the board between the studs there is a tendency for the rigid board to act as a lever with its fulcrum at the sharp edges of the stud causing an outward pressure at about the central line of the stud. This will frequently result in a crack along a stud where there is no meeting joint between boards.

The walls of wooden buildings are subject to other strains than those due to pressure upon the surface of the plastering or shocks due to hammering. In many cases the wooden framework is assembled into position while wet or before the lumber has become thoroughly seasoned and the subsequent drying and shrinking of the wood will produce strains upon the plastering. Settling of the walls is another common cause of the breaking of the plastered surface.

The broad wire strip along the studs acts as a reinforcement to prevent such cracking at the places where it is most likely to occur, but as stated before, the primary object of the present invention is to prevent injurious action of the nail heads upon the surface coating 11.

In Fig. 3 a fragmentary detail is shown to illustrate the manner in which the narrow strips may be applied over nail heads at a point at which the boards break joints, as is the case for example in the central portion of the upper edge of Fig. 2.

A modification is shown in Fig. 4 in which narrow strips 9 are united for convenience by cross wires or cords 10 at intervals for convenience in spacing the strips.

It will be obvious that other fabrics than woven wire may be used as a substitute therefor but it has not been deemed necessary to illustrate such obvious equivalents. The invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

I claim:

1. A wall structure comprising a composition board, a substantially unyielding member with which the central portion of the board is in contact on one surface, a surface coating on the opposite surface of said board, and a reinforcing fabric embedded in said surface coating opposite the point of contact of the board with said member.

2. In combination a plaster board, a relatively rigid supporting member with which the central portion of the board is in contact on one of its surfaces, a surface coating adhering to the opposite surface of said plaster board, and a reinforcing fabric embedded within said surface coating opposite the point of contact of the board with said supporting member.

3. A wall structure comprising a plaster board, a relatively rigid supporting member with which the board is in contact on one of its surfaces between its edges, securing means extending through the board into the supporting member, a surface coating upon the other surface of the board from that in contact with said supporting member, and a reinforcing fabric embedded within said surface coating opposite the point of contact of the board with said supporting member.

4. A structure as in claim 3 in which the reinforcing fabric lies between the fastening means and the surface coating.

5. A building structure comprising a composition panel, a support for said panel between its edges, fastening means extending through said panel into said support, a reinforcing strip overlying the exposed portions of the fastening means, and a surface coating of a plastic material covering the reinforcing strip.

6. A building structure comprising a composition panel, a support for said panel, fastening means connecting said panel and said support, a reinforcing strip overlying the exposed portions of the fastening means, and a surface coating of a plastic material covering the reinforcing strip.

7. A building structure comprising a composition panel, a support for said panel, securing nails extending through said board into said support, a reinforcing strip extending over the heads of the nails, and a surface coating of a plastic material overlying the

reinforcing strip opposite the heads of the nails.

8. A building structure comprising a support, a composition panel secured to the support between its edges by fastening means passing through said panel into said support, a reinforcing fabric extending along the surface of said panel over the exposed portion of said securing means and opposite the points of contact of the panel with its support, and a surface coating of plastic material extending across the strip and adhering to the plaster board adjacent thereto.

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

CURRY ORA WALPER.

Witnesses:

ARTHUR MINNICK,

EMMA DECLERCJ.