

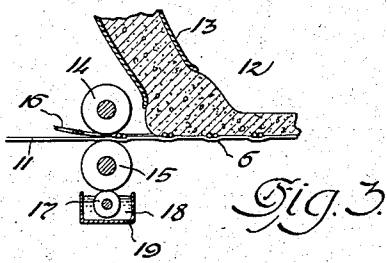
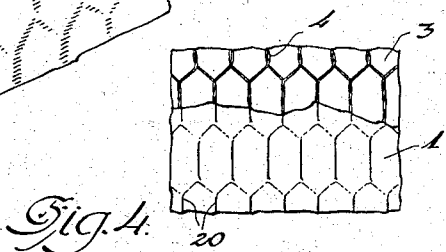
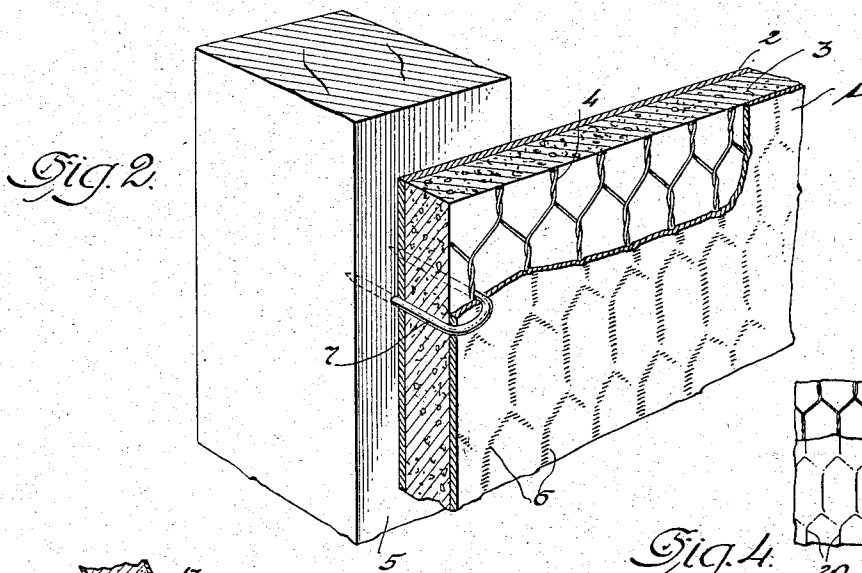
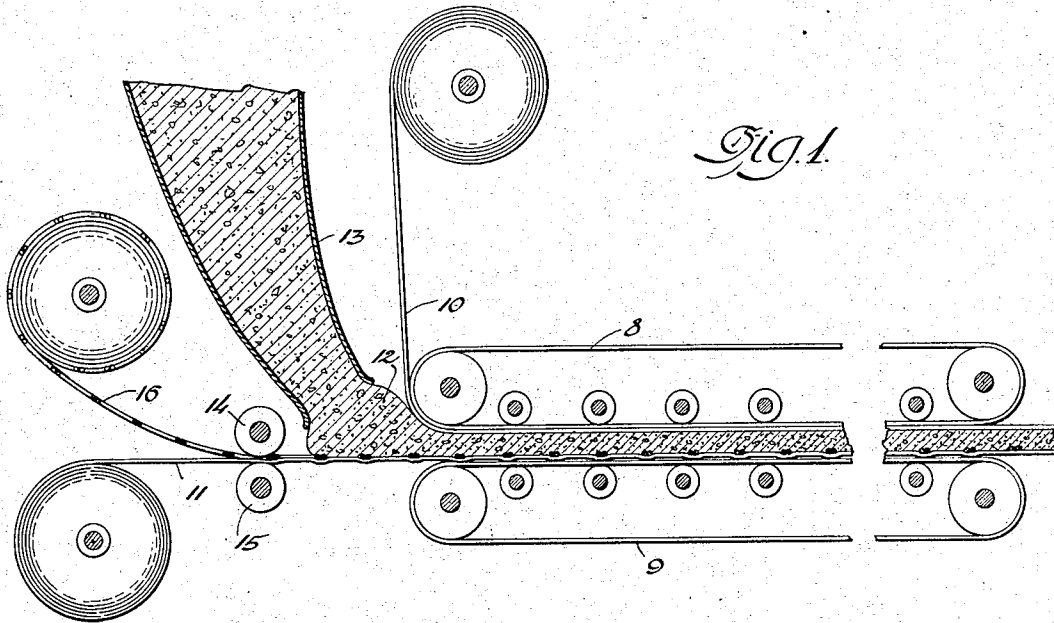
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PLASTER BOARD

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UNITED STATES PATENT OFFICE

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PLASTER BOARD

Application filed July 23, 1926. Serial No. 124,355.

This invention relates to plaster boards or similar parts wherein a core of plastic or other material such for instance as cellular material is incorporated between facing sheets such as of paper, and has for its object to provide a reinforced board of such a nature that the position of the reinforcement in the board may be readily determined from its outward appearance, so that in use full advantage of such reinforcement may be taken when nailing or stapling the boards to a support.

A further object is to provide for the reinforcement of such boards in a most advantageous manner, wherein the reinforcement is close to one of the surfaces of the board and may therefore operate to protect practically the entire board beneath such reinforced surface.

The invention also contemplates the incorporation of a reinforcement in such a board directly beneath the outer surface thereof in such manner that the exact or practically the exact disposition of such reinforcement may be readily detected, thereby enabling nails or staples to be passed through the board in any desired relationship to the reinforcement.

Still further, the invention aims to utilize the reinforcement in the manufacturing of the board to effect the impressing of indicating marks upon the surface covering of the board in such manner that such marks will be effective in determining the disposition of the said reinforcement beneath such surface covering, and still further objects subsidiary to or resulting from the aforesaid objects or from the construction or operation of the invention as it may be carried into effect, will become apparent as the said invention is hereinafter further disclosed.

In carrying the said invention into effect, I may incorporate in a plaster, cellular, fibrous or similar board having covered surfaces such as of paper, or even of the same material as the core, a reinforcement in the form of a wire fabric disposed immediately beneath one of the surface coverings as distinguished from its being incorporated substantially within the core of the board and provide impressions or markings on such sur-

face covering indicating the disposition of the said reinforcing wire fabric, and such impression or marking may be effected in the process of manufacturing the board by rolling the wire fabric and the paper covering with which it is associated, together in such manner that the said wire fabric creates an impression on the paper corresponding to its disposition relative thereto, which impression may be reduced to actual markings by means of an ink roller or platen operated on the outer side of the paper covering.

All of which is more particularly described and ascertained hereinafter, by way of example, having reference to the accompanying drawing, wherein—

Figure 1 is a diagrammatic illustration of a machine arrangement adapted to produce a board having the characteristics of the present invention;

Figure 2 is a fragmentary perspective view showing the application of such a board to a support, part of the outer covering of the board being broken away to illustrate the reinforcement;

Figure 3 is a fragmentary view of part of the arrangement shown in Figure 1, illustrating means for effecting a printed impression of the reinforcement on the outer covering of the board; and

Figure 4 is a fragmentary elevation of such a printed board with part of the outer covering broken away to illustrate the reinforcement.

Similar characters of reference indicate similar parts in the several figures of the drawing.

Referring first to Figure 2, the board in question is shown as comprising front and rear surface layers 1 and 2 of paper or other suitable covering material between which is a plaster core 3, although the materials from which the core or the surface coverings are formed are not part of the essential features of the invention and may vary according to requirements, for instance, the core may be of cellular material such as wood fibre, but the principal form of board at present in common use to which the invention especially lends itself is that type commonly known as

"plaster board", wherein a plaster core is enclosed in paper surface coverings, and it is with reference to this particular type of board that the invention will be described for purposes of illustration.

It has long been suggested to incorporate in the center of such a board wire fabric or similar reinforcing material which acts as a reinforcement for the board as a whole having no particular relation to one or other side of the board, and in the present instance it is proposed to utilize a reinforcing fabric 4 arranged substantially upon one side of the board, so that in applying such a board to a support 5, this reinforcement may be arranged at the outer side which is farthest removed from the support as indicated in the said Figure 2, thus enclosing practically the entire board except the surface covering 1 between the reinforcing fabric and the supporting means. In this case it will be observed that an entirely different support is given to the core of the board than is the case where the reinforcement is substantially within the core.

It is desirable in applying a reinforced board to a support that advantage should be taken of the reinforcement in nailing or stapling the board so that the nails may be so disposed to the reinforcement that they engage or coact therewith in a manner enabling the reinforcement to prevent the nails or staples passing through or into the board to an undue extent or being pulled there-through due to strains which may be imposed on the nails or staples after the boards have been affixed in place. Such strains may occur as a result of warping of the supporting structure either due to dampness, age, fire or other causes, and, as especially in the case of fire, the ability of the nails or staples to retain their effective hold upon the board, and maintain it in its protective relation to its supports is of extreme importance.

To facilitate such nailing or stapling in proper relation to the reinforcement, I propose to mark the surface covering 1 with impressions 6 corresponding to the formation and disposition of the reinforcing fabric, so that a workman may know just where to drive the nails or staples in order to engage the reinforcement in the required manner, and 7 indicates a staple driven through the board in such manner that it embraces part of the wire fabric, this being easily effected by simply driving the points of the staples through the board on opposite sides of one of the impression lines 6 as will be readily seen.

Figure 1 illustrates a simple method of producing a board of the type illustrated in Figure 2, and involves the utilizing of a well known type of machine for making plaster boards, wherein upper and lower conveyor belts 8 and 9 are adapted to guide upper and

lower paper ribbons 10 and 11 between which plaster 12 is fed from a hopper 13 in such manner that the plaster forms a core between the upper and lower paper strips as they pass between the belt conveyors 8 and 9, and the precise details of this machine are not thought to require further explanation.

The machine is modified, however, by the addition thereto of upper and lower rolls 14 and 15 between which the lower strip of paper 11 passes before receiving the plaster 12 and between which a ribbon of wire fabric 16 is also passed, the said fabric being pressed against the upper surface of the lower ribbon 11 as it passes between the said rollers 14 and 15, so that this fabric lies upon the lower ribbon as it passes between the belt conveyors, and the plaster is fed on to the upper surface of the said wire fabric as clearly shown in Figure 1.

The said roller 15 may have a surface of a somewhat resilient nature so that the pressure of the upper roller 14 will cause the meshes of the fabric to make impressions in the paper 11, which impressions will be more or less permanent and apparent in the completed board as shown in Figure 2, to indicate the form and disposition of the said reinforcing fabric for the purposes hereinbefore explained.

In the modification shown in Figure 3 an inking roller 17 supplied with ink 18 from a reservoir 19 may be utilized to ink the surface of the roller 15 which in this case will then produce printed markings 20 on the surface of the board, serving the same purpose as the previously mentioned impressions.

It will be understood that in addition to the advantages gained by the disposition of the reinforcing fabric on one of the sides of the board beneath the surface coating thereof in the manner described, and the marking referred to, it is a much simpler matter to manufacture a board with the reinforcement adjacent one of the surface coverings than in the center of the core, as such surface coverings forms a positive support for the reinforcing fabric during the manufacturing of the board, whereas considerable difficulty would be met with in supporting the fabric in the center of the board during such manufacture as will be quite obvious.

A board of the type referred to embodying the present invention is very desirable for use in places where it may be subjected to heat or dampness which may tend to produce an inherent weakness in the board favorable to any tendency of nails or staples to sink into the same, and meets any of the requirements called for at the present time for fire protection, so that it recommends itself for use in walls and ceilings of apartment houses and similar constructions, wherein wall board reinforcement is especially desirable.

Herein, and in the claims, the term "sur-

5 face covering" or "facing material" is intended to be interpreted in its broadest sense as indicating the surface portion of the board even though it may, as a matter of fact, be
10 actually an integral part of the board and not a truly separate layer of different or even similar material to the core of the board, the limitation being in the disposition of the reinforcing fabric immediately beneath one of the surfaces of the board; and the term
15 "paper" is used as indicative of any material which may be used as a surface covering where a separate covering of different or similar material to the core is provided.

20 This invention may be developed within the scope of the following claims without departing from the essential features of the said invention, and it is desired that the specification and drawing be read as merely illustrative and not in a limiting sense, except as necessitated by the prior art.

What I claim is:—

1. In a board having a core interposed between sheets of facing material, a reinforcing wire fabric interposed between one of
25 said sheets and said core.

2. In a board having a core interposed between sheets of facing material, a reinforcing wire fabric interposed between one of
30 said sheets and said core, and means on the outer surface of said sheet indicating the disposition of said wire fabric.

3. In a board having a core interposed between sheets of facing material, a reinforcing
35 wire fabric interposed between one of said sheets and said core, and an impressed delineation of said wire fabric on the sheet extending thereover whereby the disposition of said wire fabric beneath said sheet is indicated.
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4. In a board having a core, a reinforcing wire fabric in said core, a covering sheet over said core, the delineation of said fabric being indicated on said sheet.

45 5. A plaster board having a wire fabric applied to and exposed at a surface of the plastic material, and a covering sheet applied over said fabric.

50 6. A plaster board having a wire fabric embedded in and exposed at a surface of the plastic material, and a covering sheet applied over said fabric.

In testimony whereof I affix my signature.
CURRY O. WALPER.

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