

July 5, 1927.

1,634,809

H. F. WEISS

WALL BOARD

Filed April 28, 1926

Fig. 1.

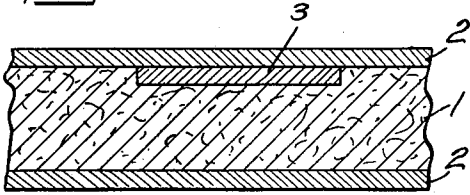


Fig. 2.

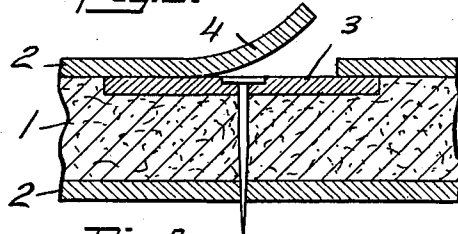


Fig. 3.

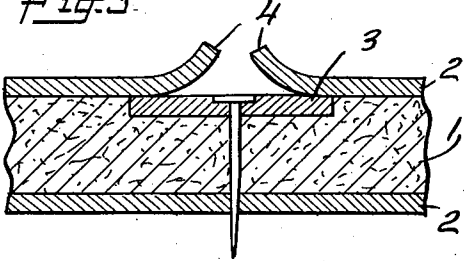


Fig. 4.

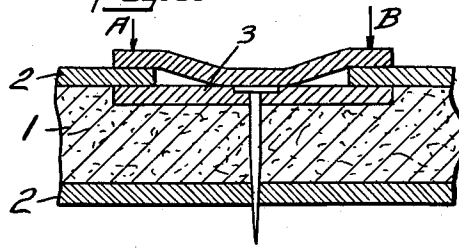


Fig. 5.

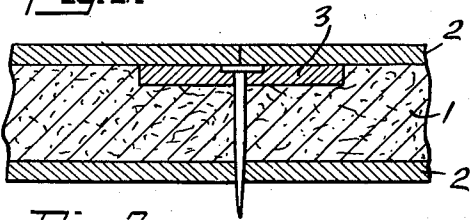


Fig. 6.

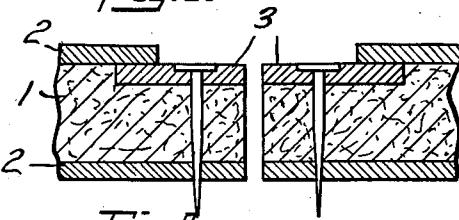


Fig. 7.

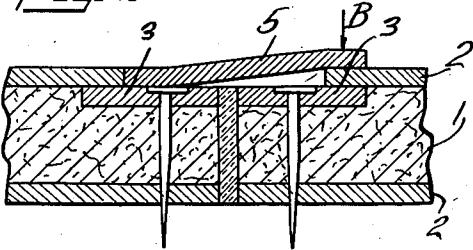


Fig. 8.

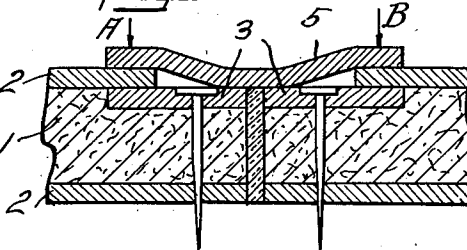


Fig. 9.

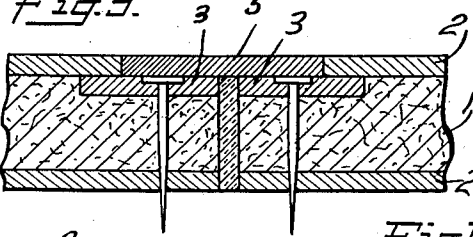


Fig. 10.

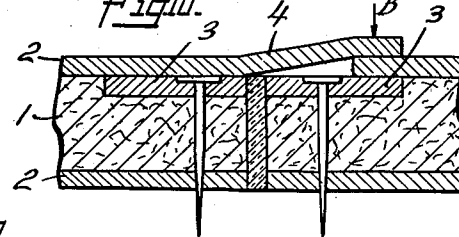
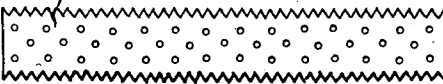


Fig. 11.



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## UNITED STATES PATENT OFFICE.

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## WALL BOARD.

Application filed April 28, 1926. Serial No. 105,163.

This invention relates to a method for constructing and applying fibre, plaster, pulp and other types of boards having a paper or other fibrous surface, and especially types  
5 suited for walls, ceilings, and building construction.

The invention embraces a new method for concealing joints, nails or other fasteners used in applying such boards, so that the  
10 wall or other surface made therefrom shall have a continuous surface of the material which forms the surface of the board. The invention also includes the product.

The principal objects of this invention  
15 are to provide a simple and efficient means of concealing joints, nails or other fasteners in wall boards of the paper-lined type, to eliminate the necessity of using any putty or filler which would form a non-homogeneous surface, and to enable a wall or ceiling  
20 to be built of wall boards without the necessity of having any panelling or projecting strips of other covering, thus making the finished wall or ceiling look as smooth as a  
25 wall built of lath or plaster.

This invention is especially applicable to mineral filled boards, as well as boards made of other like materials, and especially relates to such boards when applied to building construction to replace lath and plaster.

Heretofore, when wall boards or other composition boards have been used in the construction of walls and ceilings, it has been found necessary to conceal the heads of  
35 nails, and of joints between the boards, by means of strips or panelling. While putty has been used to fill such cracks and cover such fasteners, this method has been unsatisfactory for the two different types of  
40 surfacing, that is, the paper or other fibrous surfacing of the board, and the putty, are readily distinguishable when painted or calcimined, or even when finished with a wall paper. Many substitute methods have been  
45 devised but none so far has proven entirely satisfactory in my judgment except for the method described in my copending application Serial No. 60,029, filed October 2, 1925. The new method eliminates the difficulties  
50 experienced with the methods used in the past and furnishes a continuous paper or fiber surface which effectively conceals nail heads and other fasteners, and also the joints.

All of the figures are somewhat diagram-

matic in character and except for Fig. 11 show cross sections through wall boards. Fig. 1 shows a nailing strip below the outer or finishing layer or liner of a wall board. Fig. 2 shows how the liner may be cut to the  
60 nailing strip and then folded back to permit the driving of nails. In Figs. 3 and 5, the liner is cut and folded in a somewhat different manner. In Fig. 4 a strip is cut from the liner and the cut-out so formed is covered  
65 with a substitute strip. Fig. 6 illustrates the joint between adjacent wall boards after the nails have been driven to secure the boards to studding, but before the cut-out has been filled with the finishing material, Figs. 7, 8,  
70 9 and 10 show different ways of filling the cut-out to cover the joint. Fig. 11 shows a perforated nailing strip with a serrated edge.

The invention is carried out by inserting a strip of paper, called a nailing strip, beneath the wall board liner and adjacent to it during the process of manufacturing the board shown in Fig. 1. As there is no cohesion between the liner and the nailing strip the liner may be readily separated for the purposes hereinafter set forth. Since the board is held to the studding or other supports by nails driven through the nailing strip as shown in Figs. 2 to 10, the nailing strip should be made of paper or other material which will be strong enough for the purpose. The nailing strips are located  
80 along each edge of the board and also at the places where the board is to be nailed or otherwise fastened to the structure, that is, the nailing strips register with the studding or other framing to which the board is to be fastened.

Fig. 1 shows a portion of a cross section of a board containing a nailing strip made  
85 according to my invention. The central portion, 1, may be of pulp fibre, or plaster, or any other filling of which the board may be constructed. The liners 2 may be of paper or other fibrous material suitable for surfacing boards and may vary greatly in thickness. Both liners, or either one, have a nailing strip 3, for the purpose of this invention.

The width of the nailing strips can be made as desired, but in general they will not be over 2", but may vary from 1/2" to 6". The location of the nailing strips can also be varied, but in general, they will be along the edges of the boards and spaced about  
110

16" or 24" apart, or the standard spacing of studding. The nailing strips can be indicated by markings on the surface of the liners as desired, such markings to be of such a character that they will not deface the continuity of the surface.

When the nailing strip is distant from the edge of the board as in Figs. 2, 3, 4 and 5, the surface of this plane is slit with a knife, or other convenient instrument, and is turned back. Such a knife should be provided with guard wings so adjusted that it will only cut just through the paper liner, or other fiber surface, that is, to the nailing strip.

Fig. 2 shows a cross section of a board in which the liner has been slit to the nailing strip and the resulting flap has been turned back, exposing the nailing strip. This exposed nailing strip should register with the studding, or other framing to which the board is to be fastened. The board is then fastened by means of nails, or other fasteners, at the exposed nailing strip, as shown in Fig. 2. The nail, or other fastener, is driven into the board far enough so that the top of it is flush with or lower than the exposed surface of the nailing strip 3. Either the underside of the flap 4 which has been turned back, or the exposed nailing strip 3 is coated with glue or some other suitable adhesive and the flap 4 is then replaced to its original position before slitting. The nails, or other fasteners, are thereby effectively concealed, and a continuous surface of the finishing layer on the wall board forms the surface of the wall or ceiling, or other structure.

Fig. 3 illustrates a modification of the method shown in Fig. 2. For applying the board, the liner is slit in the same manner, but the layer is peeled away from the nailing strip on both sides of the slit instead of one side as in Fig. 2.

In Fig. 4 a double slit is made in the liner and the strip of liner so detached is entirely removed, exposing the nailing strip. After the board has been fastened, the strip of liner so removed may be replaced, but care must be taken so that the strip which has been removed registers exactly with its former position to secure a continuous surface. If it is not desired to re-use the strip of liner so removed, another concealing strip is used. A strip of paper 5 or other fibrous material of about the same character and thickness as the strip removed but appreciably wider, is pasted, or otherwise fastened by a suitable adhesive to the nailing strip, after the board has been fastened to the studding or other framing. As shown in Fig. 4, this strip 5 overlaps the slits on either side of the removed strip but is not pasted to the liner where the overlap occurs. A knife is then used to slit both this strip

and the liner to the nailing strip at the points A and B in Fig. 4. The trimmings thus formed from the concealing strip and liner are removed and the concealing strip is then fastened by glue or other suitable adhesive to the nailing strip. In this manner a continuous surface is produced due to the perfect fit of the concealing strip in the channel in the liner.

Fig. 5 shows the board after it has been fastened to the studding or framing, with the nails concealed by the method illustrated in Fig. 3, with the joint of the two abutting papers directly above the head of the nail.

When it is desired to conceal a joint such as is caused by two boards butting against one another as shown in Figs. 6, 7, 8, 9 and 10, the nailing strip extends back from the edge of the board a given distance. The liner may either extend beyond the edge of the board or may be cut back from the edge of the board.

Fig. 6 shows a cross section of two boards butting against each other with the liner cut back a certain distance from the joint and with the nails in place, the top of the heads being flush or slightly below the nailing strip. The boards may butt tightly against one another or may be left with a space between them as illustrated in Fig. 6. If a space is left between the boards, I prefer to fill this with a suitable putty or other filler so that it will be flush with the top of the nailing strip.

Fig. 7 shows one method of carrying out my invention to conceal the joints. If the liner has been cut away so that the edge is a straight line, or approximately straight, a strip of paper, or other fibrous material, of the same thickness as the liner, wide enough to cover the exposed nailing strip of both boards, is butted against the edge of one of the liners, and is glued, or otherwise fastened by a suitable adhesive, to the exposed nailing strip. The paper, or other fiber strip 5 overlaps but is not glued or fastened to the liner which it overlaps. A slitting knife is then run down at the point B through both the covering strip and the liner underneath to the nailing strip, and the trimmed strips of liner and covering strip are discarded.

The covering strip is then glued, or otherwise fastened, to the nailing strip and butted against the liner.

The method of Fig. 7 may be varied as shown in Fig. 8, in which the covering strip 5 overlaps the liner on both boards and is trimmed and finished in the manner described for Fig. 4.

Fig. 9 shows the finished construction with the nails or other fasteners, and the joint concealed with a covering strip of about the same paper or other fiber used in the liner on the board, thereby exposing a con-

tinuous homogeneous surface of similar material. The hairline joints at the points where the liner and covering strip butt together may be disregarded. They are practically invisible.

If the board has been constructed so that the liner extends beyond the edge of the board as shown in Fig. 10, the method used will be similar to that for Fig. 7, except that the liner is continuous and the joint which appears at the left in Fig. 7 will not be present. The method of making the joint at the right will be the same as for Fig. 7.

While the illustrations show the use of nails in fastening the boards, other fasteners may be used. The nailing strip may be placed adjacent to one liner or both liners.

A mineral filled wall board containing a nailing strip as shown in Fig. 1 has a plane of weakness and is liable to break off along the edge of the strip. This defect may be overcome by serrating the edge of the nailing strip in any convenient manner as shown in Fig. 11.

If the nailing strip is used in a wall board made by puffing a mixture of alkali silicate and filler between paper facings, as described in U. S. application Serial No. 720,510, filed June 17, 1924, the portion of the paper facing covering the nailing strip bulges and forms an uneven surface. This tendency to bulge may be overcome by perforating the paper. I do not know whether the holes allow steam or moisture to come in contact with the liner and equalize the contraction and expansion of the liner and nailing strip and thereby stop the bulging, or whether the good result is caused by the mixture penetrating through the holes and contacting and adhering to the liner and thereby holding it flat. This method of preventing bulging of the liner may be applied to other types of mineral filled boards.

Throughout the specification the word "wall" has been used in its generic sense to include not only side walls but also ceilings and other like areas.

Methods of concealing wall board fasteners and joints as disclosed herein are claimed in my divisional application, Serial No. 160,827, filed January 13, 1927.

I claim:

1. A wall board consisting essentially of a core, liners arranged on each surface of said core, and a nailing strip arranged beneath and in contact with one of said liners, said nailing strip and said liner being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board and then concealed by said liner.

2. A wall board consisting essentially of a core, liners arranged on each surface of said core, and a nailing strip with a serrated edge arranged beneath and in contact with one of said liners, said nailing strip and said liner

being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board and then concealed by said liner.

3. A wall board consisting essentially of a core, liners arranged on each surface of said core, and a perforated nailing strip arranged beneath and in contact with one of said liners, said nailing strip and said liner being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board and then concealed by said liner.

4. A wall board consisting essentially of a core, liners arranged on each surface of said core, and nailing strips arranged beneath and in contact with one of said liners spaced to register with the studding or frame work to which the board is to be fastened, said liner and said nailing strips being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

5. A wall board consisting essentially of a core, liners arranged on each surface of said core, and perforated nailing strips arranged beneath and in contact with one of said liners spaced to register with the studding or frame work to which the board is to be fastened, said liner and said nailing strips being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

6. A wall board consisting essentially of a core, liners arranged on each surface of said core, and nailing strips with serrated edges arranged beneath and in contact with one of said liners spaced to register with the studding or frame work to which the board is to be fastened, said liner and said nailing strips being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

7. A wall board consisting essentially of a core, liners arranged on each surface of said core and nailing strips arranged beneath and in contact with said liners at an edge of the board and on centers corresponding with the usual studding widths, said liner and said nailing strip being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

8. A wall board consisting essentially of a core, liners arranged on each surface of said core and perforated nailing strips arranged beneath and in contact with said liners at an edge of the board and on centers corresponding with the usual studding widths, said liner and said nailing strip being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

9. A wall board consisting essentially of a core, liners arranged on each surface of said core and nailing strips from one-half to six

inches wide arranged beneath and in contact with said liners at an edge of the board and on centers corresponding with the usual studding widths, said liner and said nailing strip being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

10. A wall board consisting essentially of a core, liners arranged on each surface of said core and nailing strips with serrated edges, said strips being from one-half to six inches wide, arranged beneath and in contact with said liners at an edge of the board and on centers corresponding with the usual studding widths, said liner and said nailing strip being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

11. A wall board consisting essentially of a core, liners arranged on each surface of said core and nailing strips less than two

inches wide arranged beneath and in contact with said liners at an edge of the board and on centers corresponding with the usual studding widths, said liner and said nailing strip being separable whereby the nailing strip may be exposed and a nail driven through it and said wall board.

12. A wall board consisting essentially of a core, liners arranged on each surface of said core, and nailing strips arranged beneath and in contact with one of said liners and spaced to register with the studding or frame work to which the board is to be attached, said liner and said nailing strip being readily separable whereby the nailing strip may be exposed and a nail driven through it and said wall board, the liner extending beyond one edge of the board.

In testimony whereof I affix my signature.

HOWARD F. WEISS.