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J. L. LIVINGSTON
BUILDING WALL CONSTRUCTION
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Fig. 1

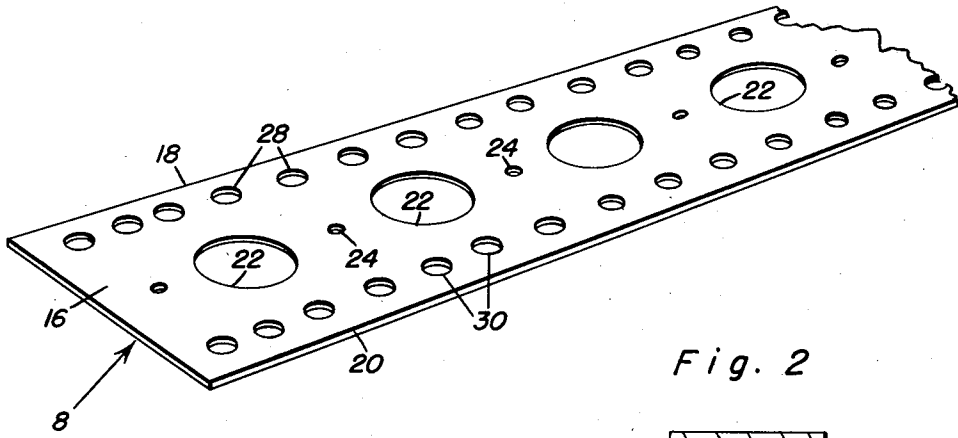


Fig. 2

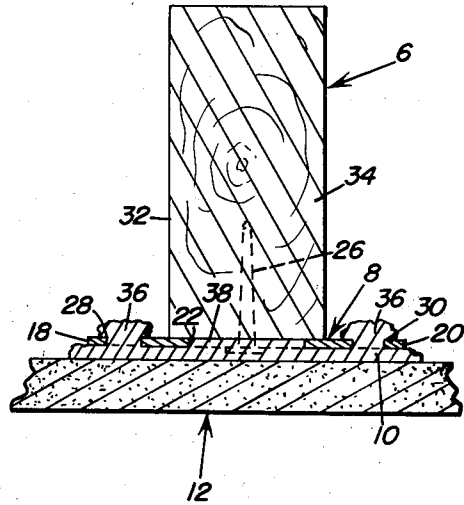
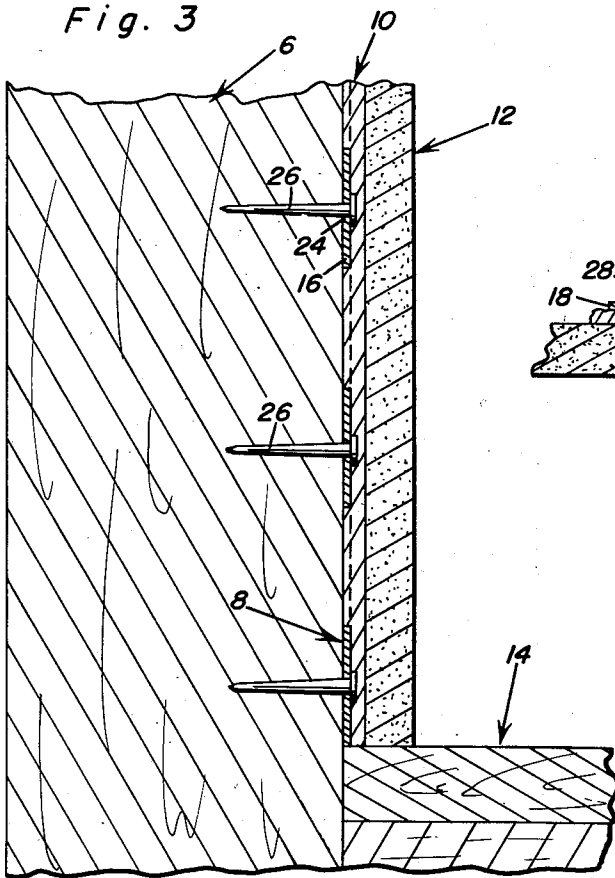


Fig. 3



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BUILDING WALL CONSTRUCTION

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2 Claims. (Cl. 20—4)

The present invention relates to certain new and useful improvements in a fabricated wall construction and has more specific reference to the wall structure as a complete assemblage, to a special nailing and bonding strip and, what is just as important, to the method steps pursued in constructing the wall for plastering or painting, as the case may be.

It is a matter of common knowledge that conventional methods of erecting and attaching wallboard or similar wall members involve certain disadvantages which seriously affect the finish of a wall. That is to say, nails fall out due to shrinkage and warpage of the timbers and weaken the bond between the wallboard and timber (stud or joist) resulting in unsightly spots on the exterior of the finished wall. Attempting to cope with the problem by concealing the nail heads with spackle is a time consuming and seldom successful job.

The present inventive concept has to do with achieving a stronger bond between the stud or ceiling joist and the wallboard; utilizing the advantages of nails in the structure and eliminating the disadvantage of nails. Further, it has to do with ways and means of applying wallboard on interior walls without the objectionable presence of nail heads on the surface of the wallboard except at certain joints where a limited amount of tape covering usually unobjectionable, is resorted to and properly used.

More specifically, the method aspect of the over-all concept has to do with constructing or fabricating a wall or, an alternatively, a ceiling, wherein the following steps are followed; namely, superimposing a perforated metal strip against a stud surface, nailing the strip permanently to said stud, plastering a film of adhesive compound over the entire obverse surface of said strip and causing portions of the compound to lodge in the perforations and thus key itself in certain perforations and to pass through other perforations in a manner to adhere directly to said stud, and erecting and pressing wallboard against said film of adhesive, whereby to bond the wallboard in place almost wholly through the medium of said film after, of course, the latter sets up and hardens sufficiently to stay put.

With the respect to the structural phases of the invention, novelty is predicted on a combination of elements characterized by stationary stud, a flat metal anchor strip of a length commensurate with the length of the stud, said strip having a central row of relatively large holes, intervening small nail holes aligned with said large holes, having rows of additional holes along its marginal edges, said strip being of a width greater than the cross-section of said stud, said strip being superimposed against the usual nailing face of said stud and permanently nailed to said face with nails driven into the stud by way of said nail holes, a layer of adhesive compound spread thickly over the obverse face of said strip with portions thereof anchored and keyed in the various holes, and a panel of wallboard opposed to said stud, strip, and compound, and bonded and solely held in place by way of the compound, whereby to obviate the necessity of defacing the

wallboard by driving surface damaging nails through the wallboard, as is usually done.

Other objects, features, and advantages will become more readily apparent from the following description and the accompanying sheet of drawings.

In the accompanying sheet of drawings wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a fragmentary perspective view showing the aforementioned specially constructed nailing and bonding strip;

Figure 2 is a fragmentary horizontal sectional view showing the essential features of the improved wall construction; and,

Figure 3 is a fragmentary vertical section showing the details of construction in a manner to bring out certain aspects thereof not clearly visible in Figure 2.

Referring to Figure 2, for example, the numeral 6 designates what is broadly referred to as a support timber. Inasmuch as the invention involves the construction of both side walls and ceilings and while the expression walls perhaps comprehends it, it is to be mentioned, in passing, that the expression "timber" covers either a regular vertical wall stud or a ceiling joist and the disclosure herein under consideration is to be so construed. The numeral 8 designates a metal member which serves as a bonding strip or anchor for the layer of adhesive mastic or equivalent compound 10. The wall surfacing material is denoted generally by the numeral 12. Specifically, this is a panel or piece of so-called wallboard. The numeral 14 in Figure 3 designates what may be generally referred to as a suitable floor.

With reference now to Figure 1 the strip 8 is flat, is of appropriate rigidity and in practice is of a length commensurate with the length of the stud 6. It has a central or web portion 16 and linearly straight marginal edge portions 18 and 20. The web portion is perforated to provide relatively large keying holes 22. These are longitudinally spaced and are arranged in row alignment and the intervening smaller holes are nail holes 24 for the nails 26 as best seen in Figure 3. There are similar relatively small perforations or adhesive keying holes along the respective longitudinal edges and these are denoted by the numerals 28 and 30 respectively. When this strip is permanently nailed to the usual attaching face of the stud it will be noted that it is of a width greater than the width of that face or greater than the cross-section of the stud. This means that when it is properly nailed and placed the edges 18 and 20 extend well beyond the adjacent vertical sides or surfaces 32 and 34. It follows that the procedure requires nailing the metal strips to the stud in the manner shown, then the adhesive compound is plastered or applied with a broad knife to the metal strip so that it is bonded thereto in the manner shown best in Figure 2. Here, certain portions are shown anchored or keyed as at 36—36 in the respective holes 28 and 30, the central portions projecting into and being keyed in the holes 22 in the manner shown at 38. By being forced through and into the holes, the adhesive later hardens and forms a positive locking joint. The wallboard is erected and wherever necessary is nailed at the edges and held in contact with the middle studs or joists by temporary nailing and when the adhesive hardens the temporary nails are removed. In respect to the larger center holes 22 these do not have to necessarily be as large as shown and, in fact, all of the holes 22, 28 and 30 may be of suitable diameters, as is obvious.

With this method the wallboard is bonded to its foundation through center holes on the metal strip is further bonded and locked to the strip by locking holes on the outer edges of the metal strip which latter, in turn, is nailed to the stud or ceiling joist, as the case may be.

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The metal strip allows full advantage in the use of longer nails by not allowing the nail head to pull through it, whereas in the conventional method the nail holding advantage depends on the wallboard not allowing the nail head to pull through, which is many times weaker than when my method is used. Wallboard as it is now made, does not have the toughness or strength to prevent nails from pulling through or sinking into its surface when subjected to strain as the result of stud or ceiling joist warpage.

As it is now applied wallboard is secured at 8 inch to 10-inch intervals by the area of the nail head plus the strength of the wallboard at that point. As a result, there is no advantage in using a longer nail when, if under strain, the nail head would pull through the relatively soft wallboard. My method can successfully utilize longer nails and has a much greater bonding area.

To eliminate unnecessary expense and for ease of application the conventional method of nailing will be used at the edges of boards where "perf-a-tape" will have to be used anyway.

Although the expression "strip" has been used and implies sheet material with perforations or holes at prescribed occasions it is obviously within the purview of the invention to employ a length of open work metal lath material and, in addition perforated commercial plastics, or even so-called screen wire of an appropriate gauge and strength.

It is believed that the preceding description taken in conjunction with the drawing will be sufficient to comprehend the various aspects of the invention.

What is claimed as new is as follows:

1. In combination, a stationary stud, a flat metal anchor strip of a length commensurate with the length of the stud, said strip having a central row of relatively large stud exposing holes, intervening small nail holes aligned with said large holes, and rows of additional holes along its marginal edges, said strip being of a width greater than the cross-section of said stud, said strip being superimposed against the usual nailing face of said stud and being permanently nailed to said face with nails driven into the stud by way of said nail holes,

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a layer of adhesive compound spread thickly over the obverse face of said strip with portions thereof anchored and keyed in said additional holes and portions adhering to said stud by way of said large holes, and a panel of wallboard opposed to said stud, strip, and compound, and bonded to said strip and stud held primarily in place by way of the compound.

2. A composite wall comprising a stationary wooden stud, a flat faced elongate metal strip substantially commensurate in length with the length of said stud and of a width greater than the cross-section of said stud, said strip being provided with a centrally disposed longitudinal row of spaced holes providing adhesive keying holes, the respective longitudinal edge portions of said strip each having a row of longitudinally spaced additional adhesive keying holes, said strip being centrally superimposed against the usual nailing face of said stud and being permanently nailed to said face by way of nails driven into the stud through nail holes provided therefor in the central portion of said strip, the respective longitudinal edge portions of said strip projecting beyond adjacent vertical surfaces of said stud, a wallboard opposed in spaced parallelism to said stud and metal strip, and adhesive media spread thickly over the obverse face of said strip with portions thereof anchored and keyed in all of said adhesive keying holes and bonded to surfaces of the stud exposed by way of said first named adhesive keying holes, and the interior surface of said wallboard being joined by said adhesive media and securely fastened to the stud by way of the nailed strip and adhesive media and without the use of nails or equivalent fasteners.

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