106-78 CROSS REFERENCE EXAMINER

Aug. 24, 1954 D. E. CLEARY 2,687,359

PLASTERBOARD

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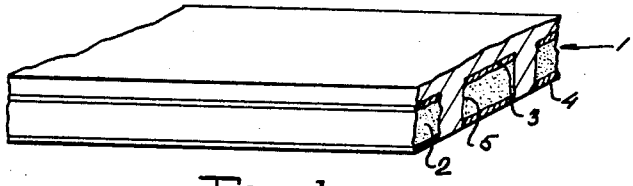


Fig. 1

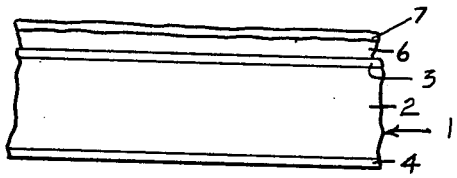


Fig. 2

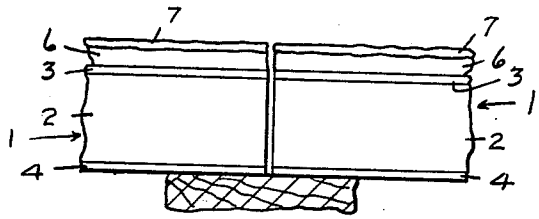


Fig. 3

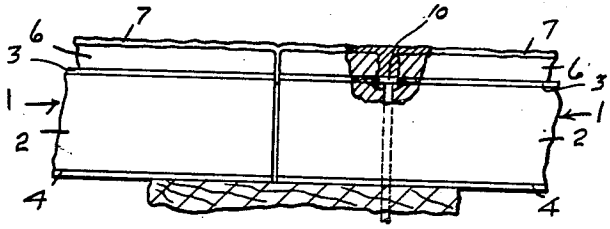


Fig. 4

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PLASTERBOARD

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4 Claims. (Cl. 117—25)

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This invention relates to plaster board and to a method of plastering and has for one of its objects the provision of an improved plaster board that is adapted to be installed in the same manner as conventional plaster board (such as the type known in the trade as "Rock Lath," although any conventional plaster board of sufficiently light weight and over which plaster is adapted to be applied and to which it will adhere is suitable), and which plaster board carries a layer of plaster on one side that is adapted to close the cracks between adjoining panels and cover the heads of nails, whereby the finished plastering job may be more quickly, easily and cleanly accomplished than heretofore.

The conventional practice in finishing room walls (such as the sides and ceilings of rooms) with plaster board is to first nail the panels of plaster board to the studding and ceiling joists in adjoining edge to edge relationship.

The next step is to apply the plaster to the sides of the panels that are opposite the said studding and joists, which is a lengthy and dirty process, and when completed there is no assurance that the plaster is of uniform thickness or consistency.

Further finishing steps may be taken according to the final finish or decoration desired.

The panels of the present invention make the above disagreeable, costly and objectionable plastering steps unnecessary. A room may be finished within from a quarter to half the time heretofore required to plaster the same and the job will be more uniform and better. Thus there is a very substantial saving in time.

Where the present invention is employed, any of the usual types of finish may be applied to the same. This invention is only concerned with the plaster board and with the method of plastering the room, and is not particularly concerned with the exact type of finishing material, such as paint, texture material, etc. that may be employed.

Another of the objects of the invention is an improved method of plastering room walls, such as the side walls or ceiling or both, where conventional framework is provided for supporting the plaster board.

Other objects and advantages will appear in the description and in the drawings.

In the drawings,

Fig. 1 is a fragmentary perspective view of a conventional prefabricated plaster board but having a layer of plaster on one side as provided for by this invention.

Fig. 2 is an enlarged fragmentary elevational view showing the invention in its preferred form.

Fig. 3 is an enlarged fragmentary elevational view of the adjacent edges of two panels of the type shown in Fig. 2 against a ceiling joist or wall stud, the latter being indicated in cross section.

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Fig. 4 is an enlarged fragmentary elevational view similar to that of Fig. 3, but wtih the surface coating of the boards smoothed over the crack and nail heads; the material filling one of the recesses over a nail head being indicated in cross section and the stud or ceiling joist being in cross section.

In detail, in Fig. 1 a conventional plaster board is indicated at 1. This particular panel comprises a sheet 2 of gypsum between sheets 3, 4 of tough fibrous material, such as relatively tough paper. Such panels may be of the standard unperforated type or they may be of the perforated type in which uniformly spaced circular perforations 5 are formed.

It has heretofore been the practice to nail these panels, as above described, to the studding and ceiling joists, or to one or the other, according to whether only the ceiling is to be plastered or the side walls or both. After the boards are nailed in place, the creamy plaster is applied to the outer sides (the sides facing into the room) in a continuous layer that extends over the cracks between the panels, partially filling them, and over the countersunk nail heads. This necessitates mixing the plaster and trowelling it over the panels, with the inevitable dropping of plaster on the floor, and likelihood of variance in thickness, consistency and degree of security to the panels, since the wet plaster is at all times subject to the influence of gravity tending to pull it away from the panels.

With the present invention, each panel, whether perforated or unperforated, has a layer 6 of plaster material of the conventional type applied to one side thereof in adherent, intimate contact with the fibrous sheet 3 or 4 (according to which side is uppermost). This plaster is preferably placed on the upper side of each panel when the latter is horizontal, hence there is no tendency for the plaster to drop from the panel, and a tight adherence of the plaster to the panel is assured. The plaster also is self levelling, thus providing a level surface.

This plaster 6 is the usual water-setting cement-gypsum material that is mixed with water and with a light weight plaster aggregate to the consistency normally used when applied to lath in the conventional manner.

The cement-gypsum plaster and light weight aggregate may be present in substantially equal amounts by volume, the cement-gypsum plaster is a standard product usually sold in the trade under trade-marks such as "Red Top" and "Gold Bond" cement-gypsum plaster, and the aggregate may be any one of several such as vermiculite, and "Zonolite," said aggregates usually being an expanded mineral product to provide a light

weight permanent characteristic that will readily mix with the plaster.

The layer **6**, being wet and being a water-setting mixture, will obviously set upon drying and is then preferably sprayed with a 10% solution of sodium silicate. This spraying may be done when the plaster is still wet, which is preferable for then it will impregnate the surface layer of plaster to some extent as well as forming a coating **7** (Fig. 2) on said surface.

While the coating **7** of sodium silicate is still wet, it is sprinkled with a dry mixture of Keene's cement and hydrated finishing lime. This mixture is preferably about equal parts of Keene's cement and the lime. Keene's cement could, of course, be used by itself, but the mixture is preferred. The quantity used is such as will be held by the sodium silicate coating, and will virtually become part of said coating although in greater concentration at the surface. The mixture will not set when applied as above described, nor is it particularly hygroscopic to atmospheric moisture. Panels having the plaster layer **6** and coating **7** are easily handled, but to different shapes, and nailed to studding and ceiling joists. When the surface layer **7** is sprinkled with water it quickly forms a creamy plaster that is easily worked with a brush or trowel and once the layer is wetted, it will thereafter set in the usual manner. Prior to wetting, said layer is not set.

In actual practice, the panels are nailed to the studding to form the side walls of a room, and to the ceiling joists to form the ceiling. The procedure followed in nailing is the same as is employed with the conventional plaster board, such as "Rock Lath" and gypsum plaster boards under other trade-marks.

The nail heads **10** are set below the surface of the outer layer, generally as indicated in Fig. 4. The adjacent panels have their adjacent edges in substantially abutting relationship.

After the panels are nailed in place, the surface facing into the room, which surfaces consist of the layer **7** of water-setting unset plaster, are sprinkled with water until said layer is substantially saturated, and in which condition the plaster of said layer may be brushed, trowelled or floated so as to cover the cracks between boards (as seen in Fig. 4) and to fill the recesses over the nail heads.

The exposed wet plaster surface comprising layer **7** may be given any desired treatment and may constitute the finished inner surface of the walls and ceiling, or any other surface finish may be given. However, the main plastering operation is eliminated, inasmuch as the plaster **6**, which is the carrier for layer **7** is already on the plaster board. Whether the surface finish is to be a water or oil paint, or a texture paint or material is not pertinent to the present invention. These merely constitute the finishing touches, and the present invention in no way precludes finishing the surface in the ordinary manner and with any of the vehicles heretofore used for such purpose.

The present invention provides for a clean, fast, economical and more uniformly satisfactory job of plastering than heretofore. The layer **6** of plaster can be applied with absolutely uniform thickness and consistency since it may go into the panels at the factory where the panel boards are made and by precision mechanical means. The formula for the surface layer may obviously be varied, but the important thing is that the surface layer of plaster be water setting and

unset, and a layer that will not become set through absorption of atmospheric moisture. The panels should be as readily adapted for working the surface layer months after the layer **6** is applied as when first applied, but only upon wetting the same with a spray of water, as described, and once the surface has been wetted, it should set the same as the conventional gypsum-cement plaster or Keene's cement or lime mixtures.

It is pertinent to note that the present invention enables anyone having average mechanical ability to perform a full and complete plastering job that is the equivalent of a professionally applied house plastering job.

Also, it is to be noted that the setting of the unset outer layer appears to be materially expedited by the fact that it is associated with the set layer **6**. The impregnated outer surface of the set layer, to some degree, becomes scuffed and worked into unset layer in the normal operation of working the outer unset layer.

I claim:

1. A preformed plaster board comprising a panel of gypsum, a layer of water-setting cement-gypsum material applied to one side of said gypsum, said layer of gypsum material being mixed with water and with a light weight plaster aggregate, and a coating of sodium silicate and Keene's cement covering the side of said layer that faces away from said panel.

2. A preformed plaster board comprising a panel of gypsum, a layer of water-setting cement-gypsum material applied to one side of said gypsum, said layer of gypsum material being mixed with water and with a light weight plaster aggregate, and a coating of sodium silicate and Keene's cement and hydrated lime covering the side of said layer that faces away from said panel.

3. A preformed plaster board comprising a panel of gypsum, a layer of water-setting cement-gypsum material applied to one side of said gypsum, said layer of gypsum material being mixed with water and with a light weight plaster aggregate, and a coating of sodium silicate and a water-setting unset plaster including Keene's cement and hydrated lime covering the side of said layer that faces away from said panel.

4. A preformed plaster board comprising a panel of gypsum, a layer of water-setting cement-gypsum material applied to one side of said gypsum, said layer of gypsum material being mixed with water and with a light weight plaster aggregate, and a coating of wet sodium silicate solution covering the side of said layer that faces away from said panel, and a dry mixture of Keene's cement and hydrated lime applied to the coating of sodium silicate solution.

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