Dec. 26, 1922. 1,439,954.

J. W. EMERSON.

GYPSUM WALL BOARD.

FILED JULY 21, 1921.

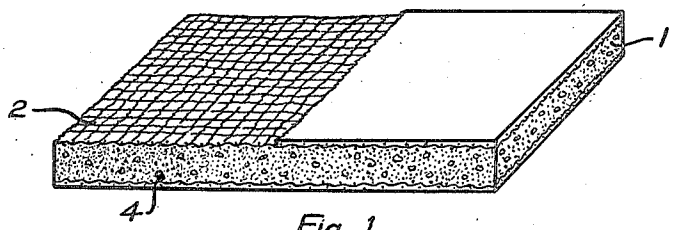

Fig. 1

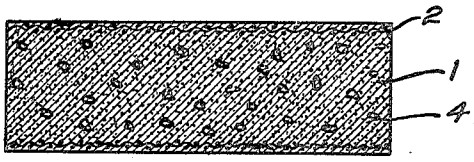

Fig. 2

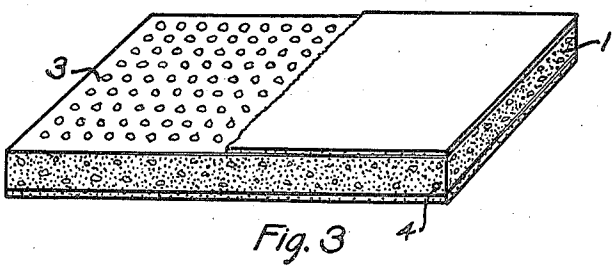

Fig. 3

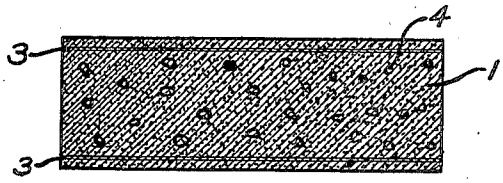

Fig. 4

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UNITED STATES PATENT OFFICE.

JOSEPH W. EMERSON, OF SALIDA, COLORADO.

GYPSUM WALL BOARD.

Application filed July 21, 1921. Serial No. 486,349.

To all whom it may concern:

Be it known that I, JOSEPH W. EMERSON, a citizen of the United States, residing at Salida, county of Chaffee, and State of Colorado, have invented certain new and useful Improvements in Gypsum Wall Board; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in the design or construction of so-called gypsum wall board.

Gypsum wall board as ordinarily made consists essentially of successive layers of cardboard and gypsum plaster, the cardboard being used chiefly as a reinforcing material to give strength to the plaster and for protection in handling.

One of the simplest and commonest forms of gypsum wallboard consists merely of a layer of gypsum plaster coated on its face and back with cardboard.

All gypsum wallboards of which I am aware present surfaces of cardboard. For this reason they are not waterproof and are ruined by water, since the cardboard, if wet, expands, becomes weak and flabby and tends to detach itself from the gypsum base, and thus to destroy the reinforcing effect.

My invention obviates this difficulty by not using cardboard at the surface, but substituting therefor a meshed material, such as cotton gauze or perforated paper, which, being applied while the plaster is in the plastic state, permits a little gypsum to pass through the meshes or openings and thus virtually present a gypsum plaster surface, instead of a cardboard surface. At the same time the reinforcing effect is at or near the surface where it is most needed and where it will do the most good.

By this form of construction and with the use of a waterproof gypsum product which has been subjected to the action of a stearic compound and to a caustic compound in the manner described and claimed in my copending application Serial Number 481,083 filed June 28, 1921, a waterproof gypsum board may be made, suitable for exterior as well as interior use.

In order to more clearly describe my invention I shall refer to the accompanying drawing in which

Fig. 1 represents one form of my wall board with part broken away to show the reinforcing material.

Fig. 2 shows a section of Fig. 1 on an enlarged scale.

Fig. 3 shows a modified form of wall board with a part broken away to show the reinforcing material, and

Fig. 4 shows a section of Fig. 3 on an enlarged scale.

The same reference characters represent the same parts throughout the different views.

My improved wall board comprises a body portion 1 of plaster, which may be a gypsum plaster, a Portland cement product or a magnesite cement product, or in short, any such material which exists in one stage of its formation in the plastic state.

In the process of manufacturing and while the material is still in the plastic state, I apply to both sides thereof a meshed material 2 such as cotton gauze, wire cloth, or as shown in Figs. 3 and 4, a perforated fabric 3 such as paper. Since the reinforcing material is applied while the material is still plastic, a little of the plaster will pass through the meshes or perforations and form a covering of plaster on the outside thereof, thus producing a plaster surface, which, in case my water repellent gypsum product is used, will be waterproof.

In order to make the plaster slightly resilient and prevent its cracking when nails are driven through it, I mix with the plastic material a small amount of resilient material such as cork, sawdust or the like, which is indicated by numeral 4 in the drawing.

The meshed or perforated reinforcing material should be used, not exactly at or on the surface but a trifle behind the surface and within the mass of plaster so that the actual surface shall be plaster while the reinforcing effect is virtually the same as if the material were at the surface where its effect is the greatest.

Having now describd my invention or discovery what I claim is:

1. A plaster board having reinforcing material within the same and near the surface thereof.

2. A plaster board having reinforcing material within the same and near the surface thereof, said surface being water repellent.

3. A plaster board having a reticulated reinforcing material within the same and near the surface thereof.

4. A plaster board comprising a water repellent plaster of Paris product having a reticulated reinforcing material embedded therein near the surface thereof.

5. A plaster board comprising a water repellent plaster of Paris product having sawdust intermixed therewith and meshed reinforcing material embedded therein near the surface thereof.

In testimony whereof I affix my signature.

JOSEPH W. EMERSON.