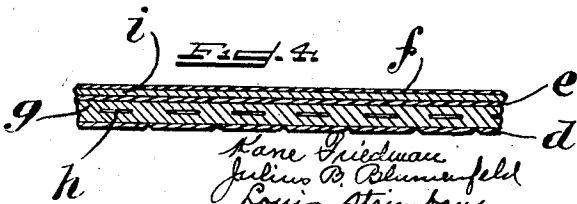
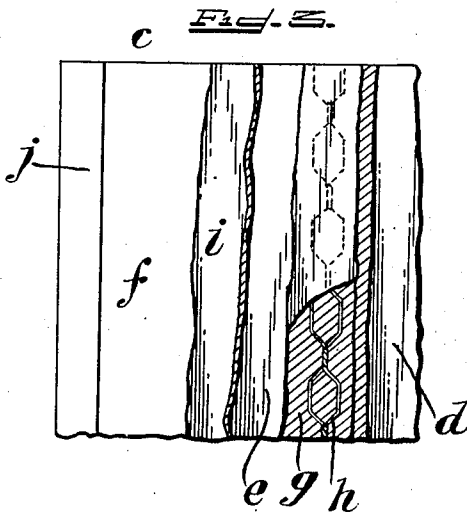
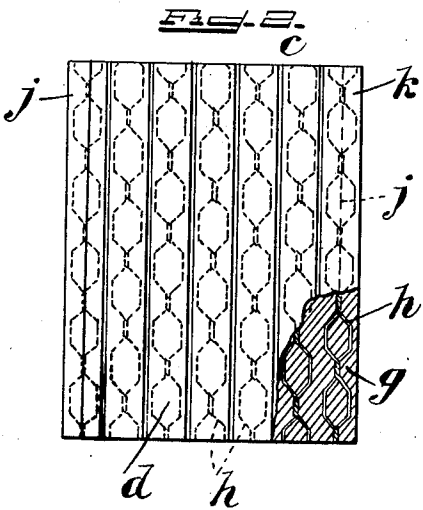
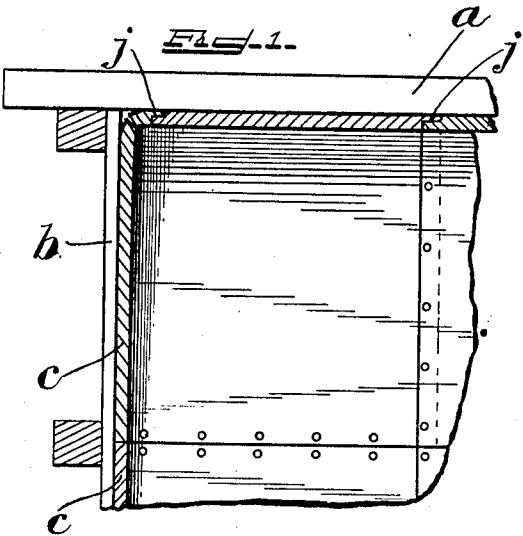


K. FRIEDMAN, J. B. BLUMENFELD & L. STRIMBAN.
PLASTER BOARD.

APPLICATION FILED FEB. 28, 1908.

912,664.

Patented Feb. 16, 1909.



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UNITED STATES PATENT OFFICE.

KANE FRIEDMAN AND JULIUS B. BLUMENFELD, OF NEW YORK, N. Y., AND LOUIS STRIMBAN,
OF STEPNEY, CONNECTICUT.

PLASTER-BOARD.

No. 912,664.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed February 28, 1908. Serial No. 418,171.

To all whom it may concern:

Be it known that we, KANE FRIEDMAN and JULIUS B. BLUMENFELD, subjects of the Czar of Russia, residing at the borough of Brooklyn, in the city of New York, county of Kings, and State of New York, and LOUIS STRIMBAN, a citizen of the United States, residing at Stepney, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Plaster-Boards, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

Our invention relates to lathing and more particularly to that class thereof commonly known as "plaster-boards."

Plaster boards, as now commonly used, comprise a plurality of superimposed layers of paper and a plaster, or lime, cement between same, the paper being relied upon to give the required toughness to permit nails to be driven therethrough and the plaster being relied upon to give permanency and rigidity to the board. Ordinarily, these boards will be made up of from eight to ten layers and will run from 3/16 to 5/16 of an inch in thickness, and are applied in parallel, flat surfaces by being nailed to the joists or beams. In practice, however, it has been found to be impossible to shape these boards to irregular surfaces, owing to the tendency of the plastic cement to break and crumble when bent, thus causing the disintegration of the entire composition entering into the board at the bend and adjacent thereto. A further difficulty in this type of board is that a large surface and a correspondingly large body is required to insure the required rigidity, it being impossible to separate a board into strips and use such strips as an ordinary lath, when such may be desired for purposes of economy in building construction, or to secure a good holding surface for the plaster wall, or finishing coating.

The main object of our invention is to provide a plaster board which will possess the toughness and rigidity of those of the ordinary type above referred to, and will, in addition thereto, be so reinforced by a flexible metallic member as to be readily bent to fit any irregular location and still have the entire board remain intact.

A further object is to provide a board which will be possessed of the desired tough-

ness while being made up of a small number of layers of paper, the metallic reinforcement, above referred to, permitting the use of a thick layer of plaster, or plaster composition, without sacrificing the quality of toughness.

A still further object is to provide a reinforced plaster board wherein the reinforcing material will be arranged in parallel lines on substantially the same plane, and spaced apart so as to permit the separation of a board into narrow lengths, if desired.

A still further object is to provide a plaster board wherein the outer facing-sheet will be of fireproof material, so as to increase the refractory character of the board.

A still further object is to provide a board of this character wherein opposite parallel edges are undercut, or overhung, so as to interlock with similar edges upon adjoining boards in a manner to insure a perfect fitting of the boards and, at the same time, permit adjoining boards to be secured in place by the same nails, thus insuring economy in applying the boards to the building. And a still further object is to provide a plaster board which may be economically produced, readily handled in applying to a building and have as little perishable matter in its composition as possible.

The invention consists in the novel features of construction and manner of associating the various elements entering into the plaster board, hereinafter set forth and described and more particularly pointed out in the claims hereto appended.

Referring to the drawings:—Figure 1 is a view in elevation of a section of a wall showing the plaster boards secured thereto; Fig. 2 is a view of a single plaster board showing the wire reinforcing strips in dotted lines, said board being broken away to disclose the said wire reinforcing strips and illustrate that construction which permits the separation of the board into narrow widths; Fig. 3 is a view of a part of a plaster board, broken away upon a plurality of different planes to illustrate the nature of the various strata entering into the composition of the board; and Fig. 4 is a cross-section of a part of a board.

Like letters refer to like parts throughout the several views.

In the embodiment of our invention shown in the drawings, *a* indicates the

floor-beams, and *b* one of the joists of a building. Nailed to these parts of the buildings, as a substitute for the ordinary lath, are a plurality of plaster boards *c*, which ordinarily are approximately thirty inches square. Each said board is made up of a plurality of alternating sheets of flexible fibrous, or woven material, and a plastic cement, the said fibrous or woven material preferably consisting of a backing *d* of builder's lining paper, which has a rough texture or finish, an intermediate sheet *e* of the same material and an outer sheet, or facing, *f* composed of asbestos paper for the double purpose of giving a superior finish to the outside of the board, and one which will resist the action of heat thereon to an extent to protect the board from all but excessive heats. These layers, or sheets, *d*, *e*, *f*, are relied upon to impart toughness to the entire board and to prevent the formation of holes therein by reason of the crumbling of the plaster or cement used as a bond between them, and constituting the main body of the board. Placed between the sheets *d*, *e*, is a layer *g*, of a plaster composition composed of gypsum or plaster of paris with a suitable filler and an ingredient to cause the same to adhere to the paper, which layer is of substantially half the thickness of the entire board and takes the place of several superimposed layers of plaster and paper now commonly used in plaster boards. Ordinarily, the use of plaster of this thickness would result in a board not having the required toughness, the breaking of a body of plaster of this thickness tending to cause a local disintegration which would render the use of the board undesirable. To obviate this difficulty, and at the same time, impart flexibility to the entire board, we embed in this layer of plaster a wire mesh *h* which serves to prevent the breaking of the board at any point, to an extent to cause a separation of one part thereof from another.

To permit the separation of a board into narrow widths, if it be desired to use same as the ordinary lath, we make the mesh entering into the composition of each board, of a plurality of parallel, independent strands spaced apart sufficiently to permit the board adjacent to each said strand to be cut through, while, at the same time, bringing the strands sufficiently close together to avoid the presence of any material areas, which will not be reinforced. To indicate the points at which the boards may be cut, we score the sheet *d* along the line between adjacent strands of reinforcing wires *h*. Between the sheets *e*, *f* is a thin layer *i* of the same plastic composition as enters into the layer *g*. Two of the opposite parallel edges of each board *c* are undercut, or overhung, as at *j*, *k*, so as to permit the lapping of the

edges of adjoining boards in a manner to permit a single line of nails to secure both adjoining edges to place. We form the laps *j*, *k*, on two edges only, because of the mechanical difficulties attendant upon the formation of such laps upon all edges of the board.

In use, the boards heretofore described are applied in the ordinary and well-known manner, the lap *k* of one board passing under the lap *j* of the adjoining board and the nails being driven simultaneously through both boards. In applying the boards to an angle in the wall, or at the ceiling angle, instead of cutting and fitting the boards at this point, it is merely necessary to force the boards to place, the reinforcing mesh of wire *h* holding the board together, even though the plaster and paper entering therein should break. While this bending of the board would have a tendency to crumble the plastic composition, particularly in the layer *g*, we have found, in practice, that the wire mesh *g* holds all parts of the board together and prevents the formation of holes or voids. The facing *f* being of asbestos, while not making the board absolutely fireproof, presents a refractory surface, which would protect the wall from ordinary temperatures, in case of fire. It would not be sufficient, however, to resist extremely high temperatures.

Boards of this character should not be used to make a "finished" wall, a dressing or surface of ordinary plaster being relied upon for the finished surface. While the use of large sheets of the plaster board is more economical to apply, requiring no skilled labor, if desired, a large board may be divided into a plurality of smaller boards of substantially the dimensions of the ordinary wood lath, each of which will be held together by the wire mesh *h* therein. When so used, the thickness of the layer *g* of plaster will afford large surface area between the laths, to which the plaster surfacing will readily adhere.

In forming the laths or boards to irregular places, care should be taken to bend them across the strands of reinforcing wire mesh *h* and not longitudinally thereof when the breaking strains could occur between the reinforced points.

It is not our intention to limit ourselves to the composition of the plaster forming the body of the board, as such may be varied without departing from the spirit and scope of the invention. Nor is it our intention to limit ourselves to the specific details shown in the drawings.

Having described the invention, what we claim as new and desire to have protected by Letters Patent, is:—

1. As a new article of manufacture, a plaster board comprising a plurality of alter-

5 nated layers of plaster cement, and fibrous
sheets, and a plurality of parallel, independ-
ent strands of flexible, metallic reinforce-
ments embedded in said plaster cement,
and spaced apart from each other, whereby
said board may be cut into strips each hav-
ing a reinforcement therein.

10 2. As a new article of manufacture, a
plaster board comprising a plurality of alter-
nated layers of plaster cement, and fibrous
sheets, and a plurality of parallel, independ-
ent strips of a flexible, metallic mesh em-
bedded in said plaster cement, and spaced
apart from each other, whereby said board
15 may be cut into strips each having a rein-
forcement therein.

20 3. As a new article of manufacture, a
plaster board comprising a plurality of alter-
nated layers of plaster cement, and fibrous
sheets, and a plurality of parallel, independ-
ent strips of a flexible metallic mesh em-
bedded in said plaster cement, and spaced
apart from each other, whereby said board
may be cut into strips, each having a rein-
25 forcement therein, the outer layer of fibrous
or woven material being scored to indicate
the parts of the board which are not rein-
forced.

4. As a new article of manufacture, a
plaster board comprising a base sheet of 30
fibrous material, a relatively thick layer of
plaster cement thereon having a flexible
metallic reinforcement embedded therein,
a second sheet of fibrous material, a thin
layer of plaster cement and a facing sheet 35
of asbestos paper, whereby a refractory sur-
face is presented outwardly.

5. As a new article of manufacture, a
plaster board comprising a plurality of
alternated layers of plaster cement, and 40
fibrous sheets, and a plurality of parallel,
independent strips of a flexible metallic
mesh embedded in said plaster cement, and
spaced apart from each other, whereby said
board may be cut into strips each having 45
a reinforcement therein, and a facing sheet
of asbestos paper.

In witness whereof, we have hereunto
affixed our signatures this 27th day of Feb-
ruary, 1908 in the presence of two witnesses. 50

KANE FRIEDMAN.

JULIUS B. BLUMENFELD.

LOUIS STRIMBAN.

Witnesses:

F. T. WENTWORTH,

E. A. ALLEN.