

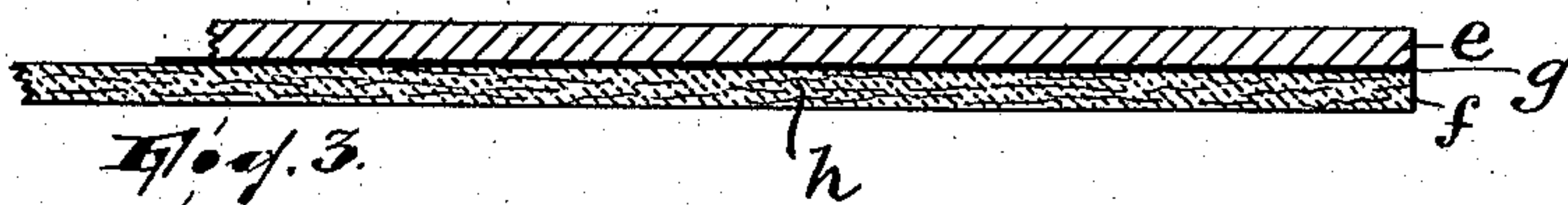
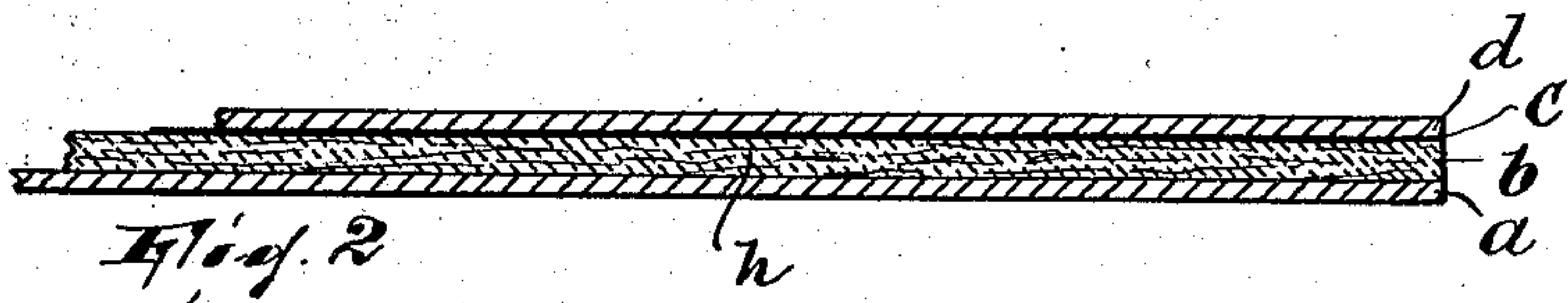
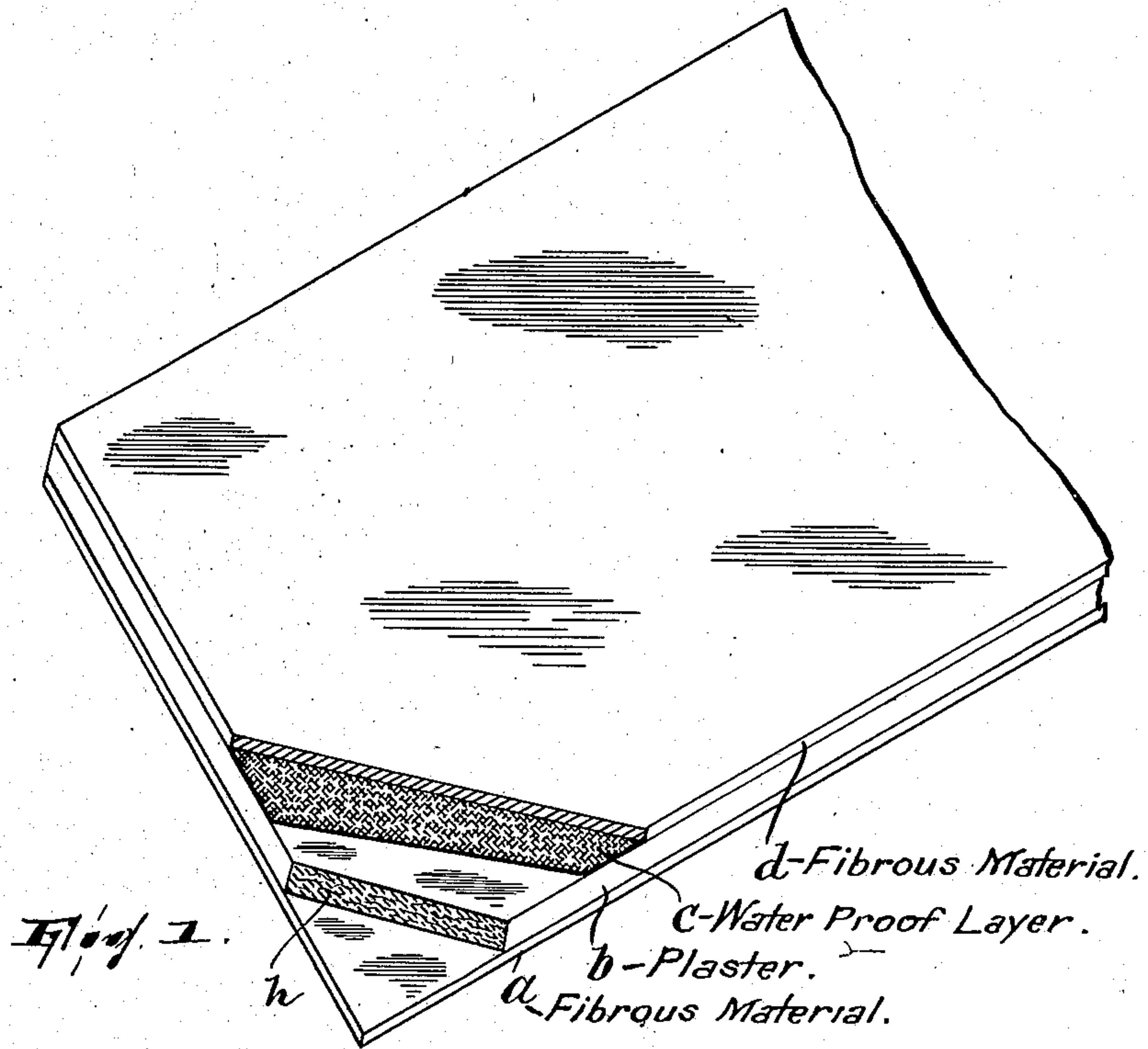
S. J. KELLEY.

PLASTER BOARD.

APPLICATION FILED AUG. 8, 1907.

905,191.

Patented Dec. 1, 1908.



WITNESSES

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STEPHEN J. KELLEY, OF PASSAIC, NEW JERSEY.

PLASTER-BOARD.

No. 905,191.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed August 8, 1907. Serial No. 387,606.

To all whom it may concern:

Be it known that I, STEPHEN J. KELLEY, a citizen of the United States, residing in Passaic, Passaic county, New Jersey, have invented certain new and useful Improvements in Plaster-Boards; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to wall coverings or the like of the kind known in the art as "plaster-board."

The principal object of my invention is to provide a plaster-board which shall be capable of resisting bending strains to a considerable degree, substantially proof against the material separation of its constituent members or the disintegration of its plaster portion should bending actually be effected, adapted to retain its original condition, intact, in the vicinity of holes punched in it by securing nails or the like, and proof not only against the disintegrating influences of moisture but against its transmission therethrough.

To this end my invention consists in a plaster-board comprising as its essential elements a layer of plaster or the like and a layer or layers of paper, straw, or other fibrous and tough and substantially impermeable material having a total thickness which shall at least approximate that of the plaster.

I am aware that plaster-board has been heretofore made in which layers of plaster and fibrous material have been used. One of these comprises a plurality of layers of plaster and alternating layers of paper; another comprises a layer of plaster having a layer of paper or other fibrous material embedded (incased) therein. My invention, in one aspect thereof, distinguishes from both of these in that the fibrous body is tough and at least approximately as thick as the plaster layer. Thereby I secure the advantage that the body of fibrous material offers a resistance to bending strains which is proportionate to the thickness (and hence the susceptibility to fracture) of the plaster, in other words, it acts not merely as a carrier or holder for the plaster but as a rein-

forcing, stiffening backing or support therefor. This, whether the fibrous body is placed against one or both sides of the plaster-layer. The further advantage is derived that when securing nails are driven into the plaster-board (the fibrous layer being then the outer one, as is usual), the resistance of the fibrous material being proportioned to that of the plaster, the latter will give away to the entering nail only in the path thereof, the surrounding portion of the plaster being unaffected because the portion of the fibrous material which surrounds the hole formed by the nail resists any tendency to be indented or countersunk by the entering nail; in this connection it may be said that where the plaster-board has a layer of fibrous material on both sides of the plaster layer and is not otherwise reinforced as herein stated, the outer fibrous layer should alone at least approximate in thickness the thickness of the plaster layer.

My invention further consists in a plaster-board comprising an outer layer of fibrous material, a layer of hard plastic material and a layer of adhesive water-proof material interposed between the first two layers and intimately binding them together, a plaster-board so formed being highly homogeneous and substantial in character and water-proofed in such a way that while it prevents moisture from working through the plaster board and deleteriously affecting the same it leaves the outer surface of the fibrous material in its natural state and thus well adapted to receive and hold plaster, paper or the like placed in adhering contact therewith.

For the purpose of illustrating my invention I have shown certain forms of my improved plaster-board in the accompanying drawing, wherein,

Figure 1 shows a piece of my improved plaster-board comprising two layers of fibrous material and an interposed layer of plaster; Fig. 2 is a sectional view of what is shown in Fig. 1; and, Fig. 3 is a sectional view of a piece of my improved plaster-board comprising a single layer of plaster and a single layer of fibrous material.

In the manufacture of plaster-board such as is shown in the drawing, and referring first to Figs. 1 and 2, I cut heavy fibrous material, such as straw-board, card-board, or the like, of the kind used in manufacturing heavy paste-board boxes or heavy mailing

tubes, into sheets of suitable size. A plaster compound is then prepared, say from plaster of paris or the like and water, hair, wood fiber or other fiber filaments being mixed therewith and rather copiously interspersed therethrough; the consistency of this being such that it will spread readily over a surface, it is put in a layer on one of the sheets of fibrous material throughout the whole length and breadth thereof. The plaster layer is then allowed to dry, *i. e.*, to harden, whereupon I coat its exposed surface with a water proofing liquid, such as paint, which also has the property of adhesion. While the paint is still wet, or partially so, I lay thereon another sheet of the fibrous material having of course the same dimensions as the first sheet and also having its contour corresponding with that of the first. For the purpose of imparting neatness in appearance to the finished product, so much of the plaster material as may project beyond the edges of the fibrous material may be cut away or otherwise removed before it sets. The water proof coating of paint or the like serves not only to prevent the transmission of moisture through the plaster-board, but to prevent moisture from having access to the plaster-board which is back of it, *i. e.*, the layer of plaster and one layer of fibrous material, so that the moisture will not disintegrate the plaster and the back layer of fibrous material and tend to destroy the adhesion between the several layers. It will be understood, of course, that the paint or water proof layer may be eliminated, the top or outer layer shown in Fig. 1 being then also made to adhere to the plaster layer by being placed thereon before the layer sets. The fiber filaments may also in some cases be eliminated, if the layer or layers of fibrous material are so formed, as herein stated, as to afford of themselves the proper reinforce. In said Figs. 1 and 2 *a* is the first or back layer of fibrous material above referred to, *b* the layer of plaster, *c* the water proof layer, and *d* the front or outer layer of fibrous material.

In Fig. 3, *e* is a layer of fibrous material and *f* a layer of plaster; *g* is a layer of paint or other water proof material between the layers *e* and *f*. The layers of the plaster board shown in Fig. 3 are built up in the same manner as the layers *b*, *c* and *d* in Figs. 1 and 2. As in Figs. 1 and 2 so in Fig. 3, the water proof layer may be omitted.

h denotes the fiber filaments.

My improved plaster board is adapted to be attached as a wall covering and thereupon to receive against its exposed face either a

decorative paper or the like or another layer or layers of plaster, of course, after the plaster-board is in position. It is fire-proof, and being proof against dampness may be used for outside work, for instance, as a basis for the application of stucco and other plastic finishes.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A plaster-board consisting of an outer layer of fibrous material and a layer of hard plastic material adhering together, the body of fibrous material being at least approximately as thick as the body of plastic material, substantially as described.

2. A plaster-board consisting of an outer layer of fibrous material and a layer of hard plastic material adhering together, the body of fibrous material being at least approximately as thick as the body of plastic material and having fiber filaments interspersed therethrough, substantially as described.

3. A plaster-board consisting of adhering layers of tough, indurated and substantially imperforate fibrous material and hard plastic material, the body of fibrous material being at least approximately as thick as the body of plastic material, substantially as described.

4. A plaster-board consisting of adhering layers of tough, indurated fibrous material and hard plastic material, the layer of fibrous material being the front or outer layer, and being at least approximately as thick as the layer of plastic material, substantially as described.

5. A plaster board consisting of an outer layer of fibrous material, a layer of adhesive water-proof material and a layer of hard plastic material, the layer of water-proof material being disposed between and acting to intimately bind together the fibrous layer and the plastic layer, substantially as described.

6. A plaster board consisting of an outer layer of fibrous material, a layer of paint and a layer of hard plastic material, the layer of paint being disposed between and acting to intimately bind together the fibrous layer and the plastic layer, substantially as described.

In testimony that I claim the foregoing, I have hereunto set my hand this 5th day of August, 1907.

STEPHEN J. KELLEY

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.