

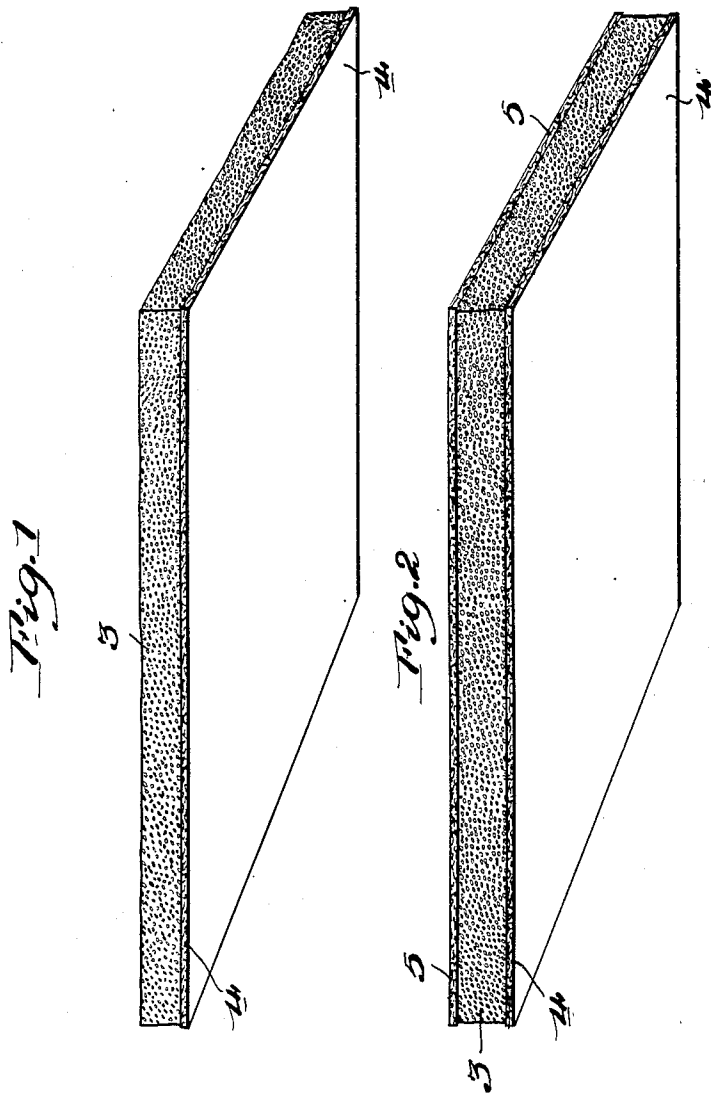
Aug. 30, 1932.

C. A. WATSON

1,874,674

ARTIFICIAL BOARD

Filed Feb. 27, 1928



Inventor

Clifford A. Watson

By *Stryker & Stryker*
Attorneys

UNITED STATES PATENT OFFICE

CLIFFORD A. WATSON, OF ST. PAUL, MINNESOTA

ARTIFICIAL BOARD

Application filed February 27, 1928. Serial No. 257,187.

This invention relates to an artificial board suitable for use as a roofing or in the construction of the walls of buildings.

It is my object to provide a rigid, waterproof board containing a body of cellular asphalt of light weight and good insulating qualities. A further object is to provide a board of this kind which can be manufactured at an unusually low cost.

I am aware that sheet material such as felt or paper board and various other boards of fibrous composition have heretofore been coated and saturated with asphalt to render them more or less impervious to moisture and for use upon the walls or roofs, but where such boards are saturated they lose much of their insulating value and their weight is greatly increased, while mere coating of the exterior has been found to be inadequate to prevent absorption of moisture by the fibrous interior body. The board of the present invention has a thick, hard body of cellular or foam like structure composed of asphalt and this body is protected and reinforced by one or more layers of relatively thin fibrous sheet material.

The invention will be best understood by reference to the accompanying drawing in which Figure 1 is a perspective view of a small piece of my improved board in its simplest form and Fig. 2 is a similar view of another form of the board in which both faces are covered by a sheet of fibre board, felt or the like.

As shown in the drawing, the greater part or interior of the board consists of a body 3 of cellular asphalt. This body is strengthened and protected by at least one sheet 4 of fibre board, felt or other suitable tough sheet material to which the body 3 adheres. As shown in Fig. 2, for some purposes, and particularly where smooth, more or less decorative surfaces are required, a second sheet 5 of fibrous sheet material is secured upon the face of the board opposite the sheet 4.

In manufacturing the board I take the sheet 4 and support it in horizontal position and then deliver to its upper surface a quantity of molten asphalt of foamy consistency. I have found that a suitable asphalt, or mixture of asphalts, is one that will melt at about 220 degrees Fahrenheit. The molten asphalt may be caused to foam and greatly increase in volume by adding to the heated mass a small quantity of sodium silicate in liquid form. The desired cellular structure may also be created by violent agitation of the melted asphalt or by injecting steam or water into the hot liquid mass. When the asphalt has been brought to the desired foamy consistency it is poured upon the sheet 4 in a layer of the desired thickness. A body or layer of about $\frac{1}{4}$ to $\frac{3}{8}$ of an inch in thickness may thus be created in a single pouring if desired, or if a thicker body is required a second layer may be superimposed after the first layer has been allowed to cool and solidify. The molten asphalt is now allowed to cool and harden so that a solid body of cellular or foam-like structure results. When cool the asphalt retains its cellular structure and is rigid and more or less brittle depending on the melting point of the asphalt used. Where a very hard self sustaining body is desired a quantity of Gilsonite is incorporated with asphalts melting at lower points. When so formed the body 3 has a multiplicity of dispersed cells which vary in size but are preferably on the order of those in coke.

Where the second surface sheet 5 is desired this may be applied to the body of asphalt 3 before the latter has entirely cooled so that it adheres to the surface, or after cooling a thin layer of hot asphalt may be applied as an adhesive between the sheet 5 and body 3. For use as a wall board I prefer the form of the invention shown in Fig. 2 and a thickness of board of from $\frac{3}{8}$ to $\frac{1}{2}$ inch. The surface sheets 4 and 5 may be treated with suitable waterproof material and their outer faces dec-

orated or coated with powdered or granular surfacing material.

My improved board has excellent insulating qualities by reason of the cellular structure of the body 3 and is perfectly impervious to moisture. The board may be shipped in slabs of any desired size and is protected during shipping by the surface sheets 4 and 5. These relatively tough sheets also protect the body 3 against breakage in handling and applying the board to the walls and roofs of buildings.

Having described my invention what I claim is new and desire to protect by Letters Patent is:

1. A pre-formed self sustaining, insulating board comprising a rigid slab of asphalt of cellular structure and substantial thickness, said asphalt having a melting point of about 220 degrees Fahrenheit and at least one relatively thin sheet of fibrous material secured to said body.

2. A pre-formed rigid, insulating board comprising a slab of substantially pure hard, cellular asphalt not less than one-fourth and not more than one-half inch in thickness and at least one relatively thin sheet of tough, fibrous material secured to said body and co-extensive with the superficial area thereof.

3. A pre-formed, self sustaining insulating board suitable for supporting plaster comprising a slab of substantially pure asphalt of foam-like structure, said slab being hard and inflexible at normal temperatures and a relatively thin surface sheet of fibrous material secured to said body.

4. A rigid, self sustaining wall board comprising a slab of hard asphalt without admixture of fibrous matter or rubber formed with a multiplicity of dispersed cells and relatively thin surface sheets secured to said body to protect and strengthen the same.

5. An artificial wall board comprising a slab of asphalt of foam-like structure and a relatively thin surface sheet secured to said body, said foam-like asphalt being secured to said sheet by application thereto in molten, hot condition.

6. An artificial wall board comprising a slab of asphalt without admixture of fibrous matter formed with a multiplicity of dispersed cells and a relatively thin surface sheet secured to said body by the normal adhesion of the asphalt while hot and without the application of heat subsequent to the application of said asphalt to the sheet.

7. The method of making a self sustaining wall board which consists in supporting a sheet of paper or the like in substantially horizontal position, then delivering to the upper surface of said sheet a layer of molten asphalt of foamy consistency and allowing said layer to cool and harden while adhering to said sheet.

8. The method of making a self sustaining

wall board which consists in supporting a sheet of paper or the like in substantially horizontal position, then delivering to the upper surface of said sheet a layer of molten asphalt of foamy consistency having a melting point of approximately 220 degrees Fahrenheit, said layer being not less than $\frac{1}{4}$ of an inch in thickness and allowing said layer to cool and harden while adhering to said sheet.

In testimony whereof, I have hereunto signed my name to this specification.

CLIFFORD A. WATSON.