April 24, 1934. C. J. STROBEL 1,955,984

ARTIFICIAL BOARD AND METHOD OF FORMING THE SAME

Filed Jan. 25, 1932

FIG. 1.

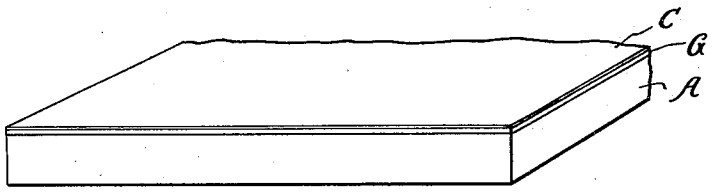


FIG. 2.

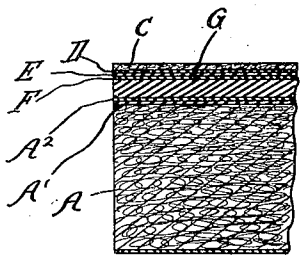
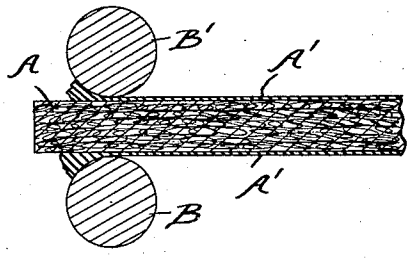


FIG. 3.



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ARTIFICIAL BOARD AND METHOD OF FORMING THE SAME

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5 Claims. (Cl. 154—2)

The invention relates to artificial board material more particularly designed for use in the construction of motor vehicle tops, as a sound deadener or absorber, and also as an insulator against heat and cold, and it is the object of the invention to combine the above qualities with a facing which is waterproof, durable and capable of receiving a high finish. To this end the invention consists in the construction and method of forming the same as hereinafter set forth.

In the drawing:

Figure 1 is a sectional perspective view of my improved board;

Figure 2 is an enlarged section of a fragment of the board;

Figure 3 is a diagram showing the manner of forming the board.

The body portion of my improved board is formed from integrated fibrous or cellulous material which is semi-rigid, self-supporting, and having sound-absorbing, and heat-insulating properties. Such material is commercially known as "Celotex" board, although other boards of a like nature, and which possess essentially the same qualities, can be utilized. This material has a considerable degree of rigidity, but due to its porous fibrous nature, is highly resistant to the passage of sound vibrations therethrough, as well as acting as an insulator against heat and cold. However, the surface of the material is not of a character which will permit of forming a durable inexpensive weatherproof finish. Another material which is both durable and capable of a weatherproof finish is that known as vulcanized fibre. This, however, is of a character which will readily transmit sound vibrations so as to render it unfit for use in motor vehicle top construction. My improved board consists essentially of a body portion of the sound-resistant "Celotex" construction with an exterior facing of a thin sheet of vulcanized fibre so secured to said body as to be capable of independent expansion and contraction. This is of the utmost importance for the difference in the coefficient of expansion of "Celotex" board and the vulcanized fibre is such that any direct connection between the two would under certain weather conditions cause a wrinkling of the exterior finish. This wrinkling, of course, would destroy the perfect adhesion between the two materials.

To obtain such a board as described, which is free from wrinkling, I proceed in the following manner: The "Celotex" board is first rubberized on both sides by running the board A between two rolls B and B'. The rubber gum banks between the top roll and the board, and between the bottom roll and the board, subsequently coating the two sides at one time. A naptha solution of rubber, shoddy, and compounding ingredients is preferably used to form a coating A'. A second coating A^2 is given the top of the board. The facing material C is a thin sheet of vulcanized fibre, commonly known to the trade as "fish" paper. This is first rubberized on its lower surface with a solution of rubber dispersed in water, of which one of the main and important ingredients is glue, preferably casein, due to its waterproofing qualities, as indicated at D. A second coating E of rubber dispersed in water is then applied to the bottom of the fish paper over the first coat. This second coat contains about 50% of the glue ingredient used in the first coat. The glue content varies for different types of material. A third coat F is then applied over the second coat, this being without casein, and finally a fourth coat G is applied over the third coat, this being a sheet of calendered rubber that has not been put into solution.

The body and facing portions of the board having been prepared as just described, they are placed together, the rubber sheet adhering to the double coated face of the "Celotex" board. The upper surface of the fish paper is then coated with a suitable primer; the entire board is then vulcanized, which also results in the drying of the primer.

While I have described above the use of vulcanized fibre or fish paper, various other kinds of paper, fabrics, aluminum foil, or metal sheeted to .005" thickness can be used. In each case the rubber underneath acts as a universal joint for the expansion and contraction of the top layer and the fibrous board.

No mention has been made of the decorative embossed surfaces to which the fish paper, or other materials, can be subjected if desired, previous to the application of the water dispersions of rubber and glue mixtures.

The board formed as just described may be applied in the construction of vehicle bodies by cutting to a suitable size to span the top frame of a vehicle body to which it is nailed or otherwise secured. The entire exterior surface of the body may then be finished in the usual manner. Such a construction not only gives a high and thoroughly weatherproof exterior finish but is also entirely free from any tendency to wrinkle under different temperature or weather conditions. This is due to the fact that the rubber layer intermediate the fish paper and the body material

will distribute all stresses due to differential expansion so as to avoid any tendency to wrinkle.

What I claim as my invention is:

1. An artificial board comprising a body of integrated fibrous material, a facing of thin vulcanized fibre and an intermediate layer of resilient material for distributing under all conditions all stresses due to differential expansion or contraction to avoid wrinkling.

2. An artificial board comprising a body of integrated fibrous material of a sound resistant character, a facing of thin vulcanized fibre and an intermediate layer of rubber for distributing under all conditions stresses due to differential expansion and for avoiding wrinkling.

3. An artificial board comprising a body formed of integrated fibrous material, of a sound resistant nature, an outer facing formed of a thin layer of vulcanized fibre and an intermediate layer of rubber, said rubber layer being effectively cemented to both the vulcanized fibre and the body material.

4. The method of forming artificial board having a fibrous body and an exterior surface portion formed of vulcanized fiber which consists in rubberizing the surface of the fibrous body, coating the inner surface of the vulcanized fibre with a mixed solution of rubber and casein, re-coating said surface with rubber solution and in cementing a sheet of rubber to said surface and to the rubberized surface of said fibre board.

5. An artificial board comprising a body of integrated fibrous material, a facing of thin finishing material and an intermediate layer of resilient material for distributing under all conditions all stresses due to differential expansion or contraction to avoid wrinkling.

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