

UNITED STATES PATENT OFFICE

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PROCESS OF FORMING ASPHALT CEMENT PLY BOARD

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The invention relates to the manufacture of ply board suitable for use for various purposes such as the forming of the lining or inner panels of automobile bodies. It is the object of the invention to obtain a product which has the desired thickness and strength and which is free from any tendency to warp or distort either before or after its application.

In the present state of the art paper board has been manufactured in which asphaltum is used as the binder for the fibers. This board is not of sufficient thickness or strength for use as liner panels and to increase the thickness a plurality of plies have been cemented together by asphaltum. It has been found, however, that when so cemented there is a great tendency for the product to warp and distort so that it is not suitable for use as a plain straight panel.

To overcome this objection I have devised a process for forming the multi-ply board which results in a straight product and one which has little or no tendency to warp. To this end the invention consists in the novel process and product as hereinafter set forth.

In the drawing:

Figure 1 is a diagrammatic longitudinal section showing the manner of treating an assembly of several plies of stock in forming the multi-ply board;

Figure 2 is a perspective view of a sample of the completed product.

My improvement is based on the discovery first that the coefficient of expansion of the paper board plys differs from that of the asphaltum which is used for cementing them together. As a consequence where a plurality of such plies have their adjacent faces coated with hot asphaltum and are then pressed together, the product upon cooling will warp due doubtless to the greater contraction of the asphaltum in comparison to that of the board. It is therefore necessary

either to substitute a cement which has a different coefficient of expansion or one corresponding to that of the paper or to alter the expansion (or rather the contraction) of the paper plys cemented. This I have accomplished by expanding the paper through the introduction of moisture to an extent which is equal to the contraction in the asphaltum. Thus the moist paper plys when cemented by asphaltum will gradually contract upon loss of moisture to an extent equal to the contraction by loss of heat in the asphaltum and in this manner distortion is avoided.

As shown in detail, A, B and C are three strips of the asphaltum paper stock which are fed into contact with each other. The intermediate strip B first passes through a water bath D and is then fed to the rolls E, E' which apply hot asphaltum at a temperature of approximately 350 degrees Fahrenheit to the opposite sides of the paper. The three strips then pass together through presser rolls F which force them into intimate contact, the strips A and C being upon opposite sides of the strip B. Upon leaving the rolls F the entire strip passes through a water bath G in which it remains for a sufficient time for the outer layers A and C to absorb a certain amount of moisture. Also, as the water is cold the heat from the hot asphaltum is dissipated.

The product resulting from the process just described is straight when it leaves the water bath and has no tendency to warp or distort as would be the case if the moistening step were omitted. It is therefore my understanding that this freedom from distortion is due to the substantially equal contraction of the moistened paper and the asphaltum.

What I claim as my invention is:

1. The process of forming multi-ply asphaltum paper board which consists in passing one ply of the paper through a water

bath, coating both sides of this ply with hot asphaltum, feeding plys on opposite sides of the coated ply, pressing the plys together and passing the product through a water
5 bath.

2. The process of forming multi-ply asphaltum board which consists in cementing a plurality of plys to each other by hot asphaltum and in introducing a limited quantity of water into the outer plys subsequent
10 to the cementing of the same.

In testimony whereof I affix my signature.

SIDNEY J. BLUM.

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