April 24, 1934. F. L. CARSON 1,956,091

SOUND DEADENING BOARD PROCESS

Filed July 6, 1931

FIG. 1.

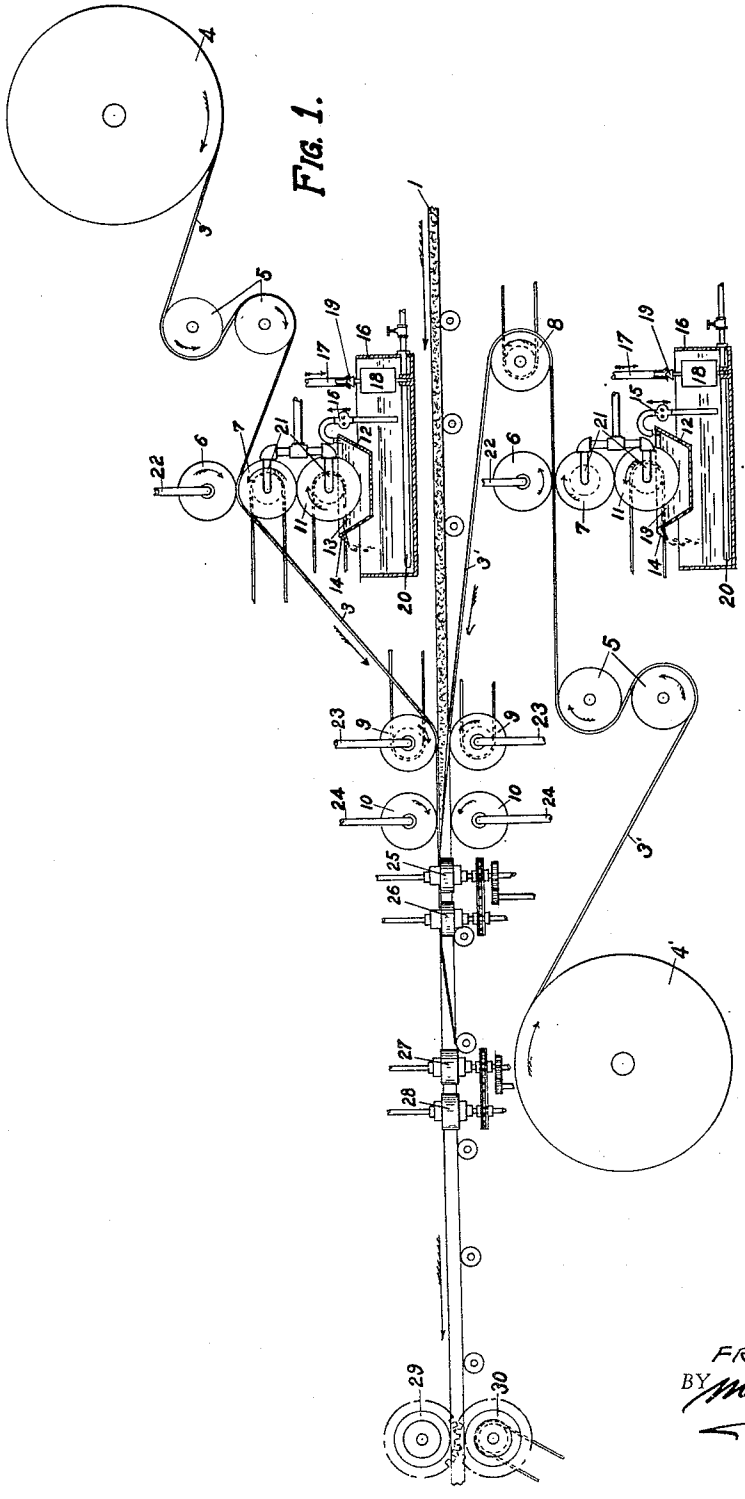


FIG. 2.

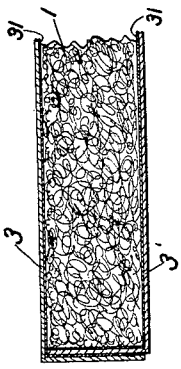


FIG. 3.

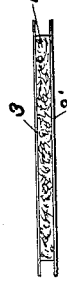
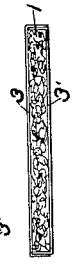


FIG. 4.



FIG. 5.



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SOUND DEADENING BOARD PROCESS

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Application July 6, 1931, Serial No. 548,894

3 Claims. (Cl. 154—28)

This invention relates to loose fiber wall board or sound deadener in sheets and has for its objects a method of applying a paper covering to such boards, also the finished products of the process.

The material to be handled by the process consists of sheets or an endless web of thick loosely matted fibered material herein termed a board, and which is made of long shredded or otherwise separated fibers of the bark of the redwood tree all held together by a suitable binder. The present application has nothing to do with the production of the loose fibered board which may be produced by any desired process from the fibers mentioned, for instance, being run from a Fourdrinier machine. This board is made in wide slabs of various thickness up to several inches and on account of its very open fibrous structure it cannot readily be attached to a surface with glue or other adhesive, and besides its surface and particularly its edges are easily injured in handling, and it is one of the objects of my invention to provide a tightly adhering paper covering for the light open fibered sheet material so that its subsequent handling and placing will be easier to carry out, and that wall coverings may be attached to it.

In the drawing accompanying this application Fig. 1 is a side elevation, partly in section, of an apparatus to carry out my invention.

Fig. 2 is a cross section of a small piece of fibrous board covered with paper in accordance with my invention.

Figs. 3, 4 and 5 are cross sections of the board in successive steps of covering.

Since the process and products constitute the main features of the invention no more mechanism than necessary to carry out the successive steps is shown in the drawing.

The sheets of fibrous board may be any width, though usually they are about four feet wide and if taken from a Fourdrinier machine are of unlimited length being advanced in direction of the arrow as at 1 along a conveyor of any kind as the rollers 2. The paper 3 for covering the board is taken respectively from upper and lower rolls 4, 4', passed over tensioning rolls 5, then between rolls 6, 7, then the upper band of paper 3 passes at an angle toward the moving fiber board 1 and against the same, while the lower band of paper 3' passes from rolls 6 and 7 over a guide roll 8 before passing to the lower side of the fiber board 1, both upper paper band 3 and lower paper band 3' are then forced into contact with the fiber board by means of rollers 9, 10.

Rollers 7 are for the purpose of applying a coating of hot melted pitch to the surfaces of the paper which are to lie against the board, and they receive this pitch from contact with a lower roll 11 revolving in a trough 12 of melted pitch 13 which maintains a constant level of the melted pitch by overflow 14 of surplus continuously pumped into the trough by a pump 15 from a lower tank 16 in turn kept supplied with melted pitch through a pipe 17 from any suitable store of hot melted pitch. The level of melted pitch in tank 16 is roughly maintained by a float 18 operating a valve 19 in supply pipe 17.

The pitch used is preferably a grade of asphalt having a melting point of about 300° Fahrenheit and it is kept in fluid condition by steam coils as at 20 in tank 16 and wherever necessary, also the pipes and tanks are protected from heat losses by any approved covering not shown.

Rolls 7 and 11 are driven by chains or otherwise, as indicated, and may be initially heated and kept hot by steam pipes 21 connected with their interiors, while rolls 6 are kept cold by circulation of cold water through them from pipes 22. This permits the application of melted asphalt to the paper at a temperature which would injure the paper if it were not protected by the chilling roll 6.

Rolls 9 which press the paper against the board are also internally heated by steam pipes 23 to re-melt the pitch and rolls 10 are chilled by cold water from pipes 24 so as to quickly chill the melted pitch and cause it to adhere to the loose fibers of the filler 1 without running in the interstices.

The bands of paper 3, 3' are somewhat wider than the fibrous board 1 and made to wrap over the edges of the board in overlapping relation as clearly shown in Fig. 2. This is accomplished by successive hot and cold rolls 25, 26, 27, 28 which are driven as indicated and which operate against the edges of the board to fold the paper thereagainst as indicated, rolls 25, 26 operating on the lower band of paper 3' to turn the projecting margins upward as from the showing of Fig. 3 to that of Fig. 4, and rolls 27, 28 forcing the upper margins down to complete the board to the condition shown in Fig. 5.

As the product is a very light sound deadening loose fibered sheet of material encased in paper, and as the board is easily crushed, the various rolls must press but lightly upon it, and at 29, 30 is shown a pair of soft rubber covered traction rolls for drawing the board along without injury.

An important feature of my invention is the

successive application of heating and chilling rolls as this makes it possible to cement the paper to a loose fibered board of this kind with a high melting point asphalt necessarily applied at such a high temperature that the heat would ordinarily injure the paper and make it brittle, and the result is a unique product consisting of the loose fibered central filler sheet completely encased in an overlapping paper covering sealed in place by a continuous layer 31 of high melting point asphalt so as to effectually exclude insect pests of any kind yet preserving the porosity and sound deadening value of the material and the strength of the paper.

The hot asphalt-coated paper itself as taken from rolls 6 and 7 without application to the fibrous web 1 is in itself a very important product of my invention as it provides a tough building paper with fiber strength unimpaired, yet coated on one face only with a heavy layer of high melting point asphalt making an absolutely waterproof non-flowing coating yet preserving the opposite side of the sheet in natural condition as required in general use.

I claim:—

1. The process of protecting fibrous sound deadening sheet material which comprises sealing paper over its outer surface with molten pitch as a cement, said pitch being of a high melting point, and quickly chilling the pitch as soon as the paper is in place.

2. The process of protecting fibrous sound deadening sheet material which comprises sealing paper over its outer surface with molten pitch as a cement, said pitch being of a high melting point, and the paper prevented from scorching by application of a chilling surface adjacent the application of molten pitch.

3. The process of protecting fibrous sound deadening sheet material which comprises applying molten asphalt to one side of a paper sheet while protecting the paper from scorching, pressing the coated side of the paper in contact with the sound deadening sheet while applying a melting heat to the paper, and thereafter chilling the paper to cause a quick setting of the molten asphalt.

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