Dec. 17, 1940. J. N. DEVEREUX 2,225,585

METHOD OF MAKING TEXTURED FIBERBOARD

Filed April 12, 1937 2 Sheets-Sheet 1

FIG.-4

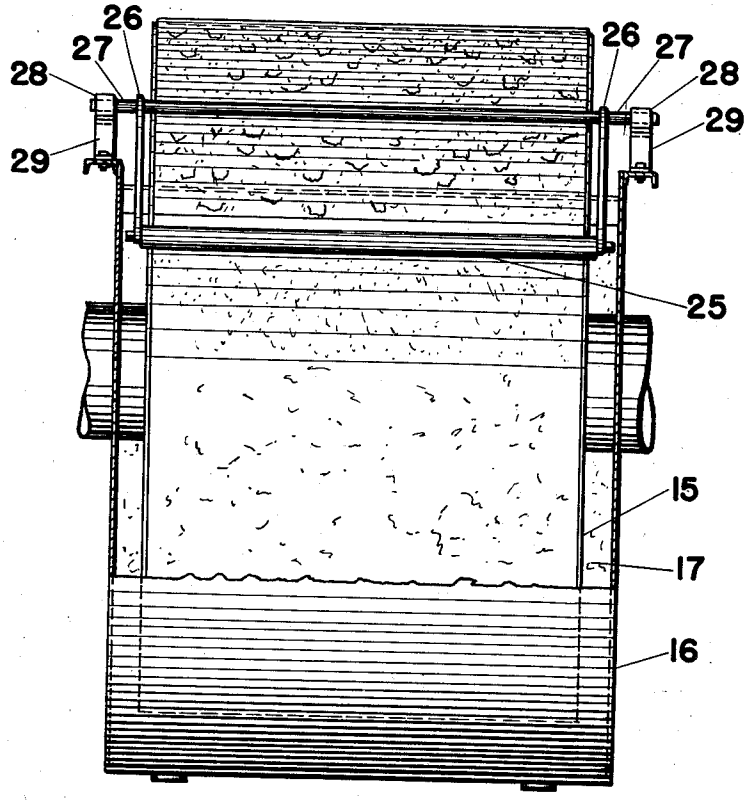


FIG.-1

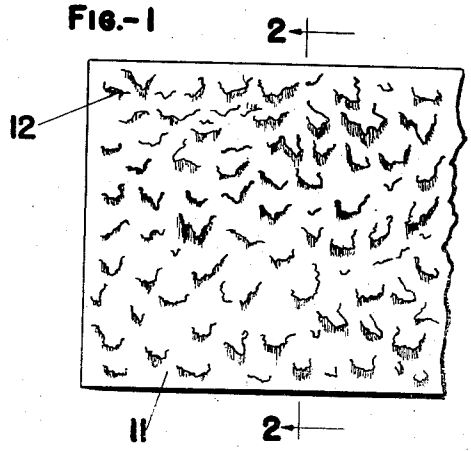


FIG.-2



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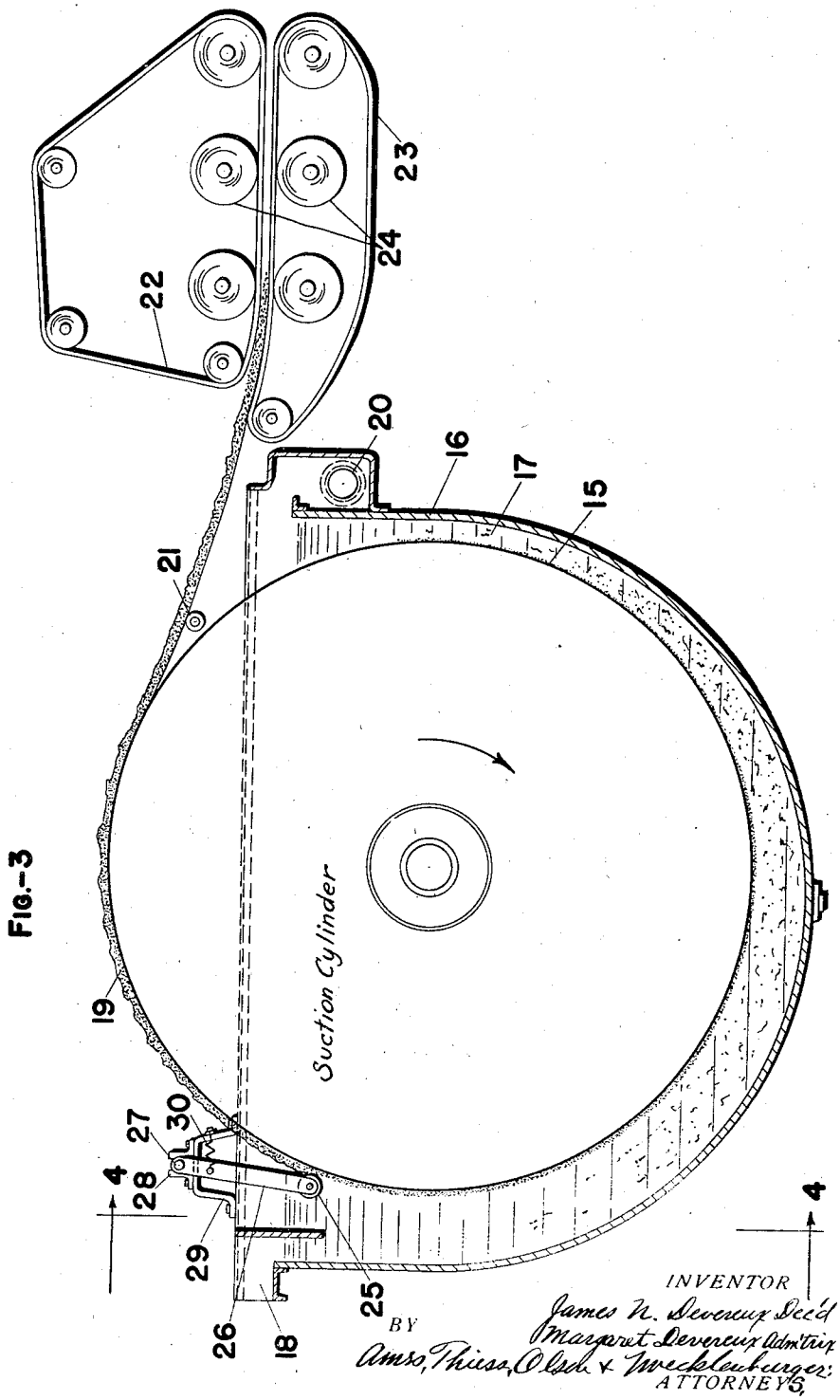


FIG.-3

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UNITED STATES PATENT OFFICE

2,225,585

METHOD OF MAKING TEXTURED FIBERBOARD

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Application April 12, 1937, Serial No. 136,280

1 Claim. (Cl. 92—39)

This invention relates to fiberboards and their manufacture, and has reference more particularly to fiberboards with a textured face. The invention further relates to a method for preparing said textured surface fiberboard.

In the manufacture of fiberboards made of vegetable fibers, such as willow, cottonwood, etc., fibers, the inventor has discovered that attractive surface texture effects may be secured by disturbing the surface fibers during the formative period and causing said surface fibers to segregate themselves into elevated areas in haphazard arrangement while the board is subjected to suction on a foraminous support. This effect can be conveniently accomplished by dragging a rigid member, such as a roller, against the surface of the board being formed, or immediately after it is formed, the roller lightly pressing against the forming or newly formed board while the suction is still acting on the board. The board is then preferably but not necessarily rolled to flatten down the elevated areas to a certain extent and thus improve the appearance of the board. In the case of colored boards, the final pressing operation serves to squeeze out the coloring matter from the elevated areas so that these areas have a lighter and more striking appearance as compared to the body of the board.

An object of this invention therefore, is to provide a fiberboard having one face textured with raised areas of fiber.

Another object of the invention is to provide a suitable method for preparing such a textured fiberboard; also to improve fiberboards and their manufacturing method in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which

Fig. 1 is a face view of a piece of the improved textured fiberboard,

Fig. 2 is a sectional view through the fiberboard taken on line 2—2 of Fig. 1,

Fig. 3 is a central, sectional elevation through a form of apparatus suitable for producing the improved fiberboard, and

Fig. 4 is a sectional elevation through the apparatus taken on line 4—4 of Fig. 3.

Referring to the drawings by numerals, the fiberboard is provided with a textured surface 11 composed of a multiplicity of raised areas 12 of vegetable fibers integral with fibers composing the body of the board. On one edge, each of these areas 12 has a portion 13 which slopes gently into the plane of the body of the board, and on the other edge a portion 14 slopes abruptly into the plane of the body of the board. Thus when light falls upon the board from one side, the portions 14 cast shadows on the surface of the board which serve to accentuate the textured effect produced by said raised areas. Furthermore when the board is viewed from different angles, different effects are produced thus adding to the interesting character of the textured surface.

In order to produce the improved textured fiberboard, there is provided a rotatably mounted cylinder 15, the outer periphery of which is composed of a foraminous support, such as a wire screen. This cylinder dips into a tank 16 which contains a water suspension 17 of vegetable fibers, such as wood fibers of willow, cottonwood or other desired trees or woody plants. This water fiber suspension is introduced into the tank 16 through an inlet device 18 and suction is applied to the inside of the cylinder in a manner well known to the art, so as to form a fiberboard 19 on the foraminous support. Any excess stock overflows from tank 16 through an outlet device 20. The fiberboard 19 which is formed, is led off from the cylinder 15 over a guide roller 21 and between endless belts 22 and 23 of suitable material, such as felt, which are pressed heavily against the two faces of the board by pairs of pressure rollers 24 so as to squeeze out excess moisture from the board and prepare it for a subsequent drying operation.

One of the salient features of the present invention consists in providing a roller 25 or other rigid member which is rotatably mounted at its ends in the lower ends of a pair of arms 26. The upper ends of arms 26 are pivotally supported on a rod 27 which is received in bearing sockets 28 secured on brackets 29, the latter being supported on the framework of the board machine. The arms 26 normally extend upwardly at an angle to the vertical so that the roller 25 presses lightly against the board 19 in its formative state due to the action of gravity on said roller. Springs 30 may connect each of the arms 26 to a fixed support to increase the pressure of the roll 25 on the board being formed. However, the springs 30 may be dispensed with and the pressure of the roll on the board varied by changing the position of the rod 27 relative to the cylinder 15, thus depending entirely on gravity. The roll 25 may be located below the level of the fiber suspension 17 in tank 16, or it may be raised slightly above the level of said suspension with good results. The action of the

roller 25 is to retard the movement of the loose surface fibers of the board as the body of the board moves ahead. When sufficient loose fibers are built up back of the roll, the latter raises slightly and rides up over the elevated masses of fibers. Suction is maintained on the cylinder 15 under the roller 25 so as to insure an integral bond between the fibers in the elevated areas and the body of the board. The gently inclined edges 13 of the elevated fiber areas appear on the leading side of said areas, while the abruptly inclined edges 14 appear on the following side of the board. The pressure rollers 24 acting on the belts 22 and 23 serve to flatten down these elevated fiber areas and give the surface of the board a more uniform and pleasing appearance. If coloring matter, such as dyes and pigments, are used in the water-fiber suspension, the rolls 24 serve to squeeze the coloring matter from the elevated fiber areas and make them lighter in shade than the body of the board, thus making a greater contrast of color in the textured effect.

While the illustrated examples constitute practical embodiments of the invention, it is not to be limited precisely to these details, since manifestly the same may be considerably varied without departing from the spirit of the invention as defined in the appended claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

The method of making a haphazardly textured uneven-surfaced fiberboard, which comprises drawing vegetable fibers from an aqueous suspension onto a moving foraminous support by means of suction applied through the latter so as to form a relatively thick, wet, coherent mat of fibers thereon, and substantially simultaneously with the formation of said mat haphazardly disturbing the surface thereof remote from the support so as to retard the movement of said surface relative to the body of the mat, thereby forming irregularly distributed raised areas on said mat, and thereafter slightly compressing the mat to expel some of the water therefrom and somewhat to flatten down the raised areas, and then drying the resulting mat to form a coherent fiberboard.

MARGARET DEVEREUX,
Administratrix of the Estate of James N. Devereux, Deceased.