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METHOD IN THE MANUFACTURE OF BOARDS OF FIBROUS OR/AND PLASTIC MATERIAL

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ABSTRACT OF THE DISCLOSURE

A means and method for making board composed of fibers, synthetic resins and mixtures thereof by pressing the material in a hot press including a glazing plate which has a material-contacting surface composed of a film that is detachably secured to such surface by an adhesive of such a nature that it permits the easy stripping away of the film when desired.

This invention relates to an improved method for the manufacture of boards made of fibres or/and plastic materials.

More particularly this invention relates to a means and method for the manufacture of boards of fibres and/or plastic materials in hot presses in which glazing plates are used in order to impart to the board a surface structure of the even, finely polished surface of the glazing plate.

When the material to be pressed consists of wet sheets of cellulose pulp, for example, it is subjected in the hot press to high pressure and so high a temperature that water present in the pulp is removed while the pulp fibres are bonded together in a board. Normally, the wet sheet is held on its face remote from the glazing plate by a wire screen or a perforated sheet which renders possible the withdrawal of the evaporated water from the wet sheet.

Methods of this kind used hitherto have the drawback that particles originating from the material to be pressed deposit on the glazing plate and after a number of pressing operations they reduce the evenness of the surface of the glazing plate to such a degree that the manufactured boards cease to have acceptable surface properties. For this reason the glazing plate must be demounted from the press at regular intervals in order to be cleaned and repolished. This requires an exchange of glazing plates which is time wasting and causes considerable interruptions in the production line.

One main object of the invention is to provide a process in which these drawbacks are eliminated. According to one main feature of the invention the glazing plate is on its surface facing the material to be pressed, coated with a film and kept detachably connected therewith by means of a non-curable adhesive.

This film can be used a plurality of times and then in a very easy manner can be removed by being peeled off from the glazing plate by means of a tape, for example. Thus the plate proper need not be demounted from the press and the interruption of operation caused thereby is avoided. The film may be made of some suitable plastic material, paper, metal, or similar material. A particularly suitable material is paper that has been coated with a metal having the form of an aluminum sheeting, for example. The coating film as well as the adhesive must be of such type that they withstand the curing temperatures used in the process of manufacturing the boards. These temperatures may be in the range of 100 to 200 and even reach 250° C. and still more. The binding power of the adhesive should not be greater than will permit removal of the film by peeling off after it has become dirty and needs replacement. An example of a well suited adhesive is the bonding agent or pressure-sensitive type activated by pressure, such as is used in conventional pressure-sensitive tapes.

It is possible to introduce between the plates in a hot press of the single or the multi-layer type wet sheets which at their top face can be bounded by the glazing plate covered with the coating film according to the invention and at the bottom face by a wire screen or perforated metal sheet or the like. When applying a new coating film, this film can loosely be placed on the top surface of the material to be pressed and introduced between the plates and then be bonded to the overlying glazing plate in the subsequent pressing operation. In case the film consists of paper coated with a metal sheeting, the paper to be provided with the adhesive must be turned so that its adhesive carrying surface is uppermost facing the overlying glazing plate.

The boards manufactured according to the invention can be laminated or sheeted. They may consist of fibrous material intermixed with plastic or resin or, if desired, be constituted by plastic material solely.

While several more or less specific embodiments of the invention have been described, it is to be understood that this is for purpose of illustration only, and that the invention is not to be limited thereby but its scope is to be determined by the appended claims.

What we claim is:

1. The method of forming sheet material from a mass of particulate material selected from the group consisting of fibers, synthetic resins, and mixtures thereof, which comprises subjecting said mass to elevated temperatures and mechanical pressure between two opposed surfaces, at least one of said surfaces constituting a glazed, imperforate surface, the other of said surfaces being a perforate surface permitting escape of water and steam from said mass under the action of said temperatures and pressure applied to said mass, and preventing particles having their origin in said mass from adhering to said glazed surface under the influence of said elevated temperatures and mechanical pressure, said prevention of said adherence being effected by applying to said glazed surface a sheet of material selected from the group consisting of paper, metal, and metal coated paper and having a film of pressure-sensitive adhesive on the surface thereof in contact with said glazed surface, said sheet being characterized by its ability to be readily peelable intact from said glazed surface.

2. The method of claim 1, wherein said sheet of material applied to said glazed surface comprises a layer of metal coated paper.

3. The method of claim 1, wherein said sheet of material applied to said glazed surface comprises a layer of metal.

References Cited

UNITED STATES PATENTS

2,442,422	6/1948	Loetscher	156—289
2,528,152	10/1950	Landgraf	156—323
2,528,168	10/1950	Paulsen	156—323
2,630,395	3/1953	McCullough et al.	156—323
2,660,548	11/1953	Soehner	156—323
2,748,048	5/1956	Russell	156—289

3,303,081	2/1967	Michaelson et al.	156—289
3,228,091	1/1966	Rice et al.	156—289
3,236,714	2/1966	Traut	156—323
3,256,121	6/1966	Abell	156—62.2
3,454,457	7/1969	Hale et al.	156—289

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