

No. 855,792.

PATENTED JUNE 4, 1907.

J. E. LAPPEN.
COMPO BOARD AND PROCESS OF PRODUCING SAME.
APPLICATION FILED OCT. 4, 1904.

Fig. 1.

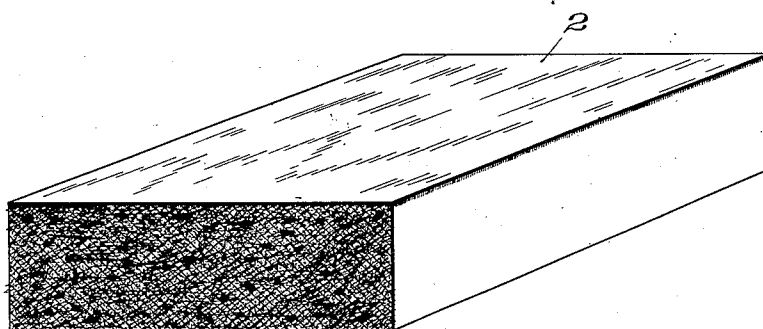
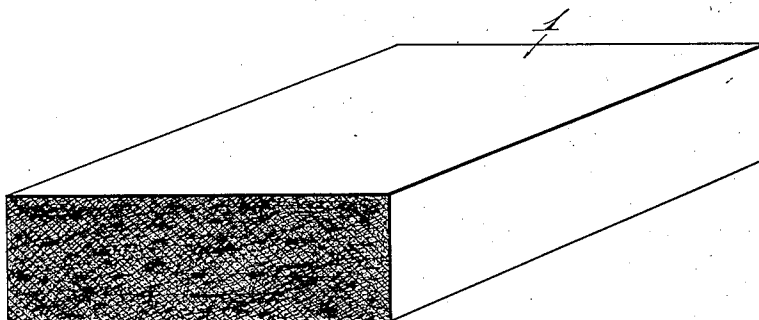


Fig. 2.



Witnesses.

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COMPO-BOARD AND PROCESS OF PRODUCING SAME.

No. 855,792.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed October 4, 1904. Serial No. 227,092.

To all whom it may concern:

Be it known that I, JAMES E. LAPPEN, a citizen of the United States, residing at Decorah, in the county of Winneshiek and State of Iowa, have invented certain new and useful Improvements in Compo-Boards and Processes of Producing the Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a new and useful composition board, which for brevity may be called compo board; and to this end, my invention consists of the novel compo board, and the novel process of producing the same, hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like notations refer to like parts throughout the several views.

In said drawings, Figure 1 is a perspective view of a rectangular piece of compo board, the main body of which is composed of fiber and elaterite; and the exterior portions of which are impregnated with paraffin; and Fig. 2 is a similar view, showing a specimen block or piece of board, composed solely of the fiber and the elaterite.

I produce this compo board in the following manner: I take vegetable fiber, preferably flax fiber, and reduce the same into a finely divided condition or pulp in an ordinary beating engine. I then dry the said fiber pulp. I take "elaterite" and dissolve the same in benzin. This is best done by boiling the elaterite in a body of benzin, with the use of a double boiler. I then thoroughly commingle the fiber pulp and the said liquor of elaterite, or dissolved elaterite, and mold the product, under pressure, into any desired form. This will give the compo board of the composition attempted to be illustrated in Fig. 2 of the drawings. If it is desired that the compo board shall be capable of a smooth finish and high polish, then the product as it comes from the mold, is boiled in paraffin, with the result that the external portions of the compo board will become impregnated with the paraffin, thereby giving the product or compo board 2, which is attempted to be illustrated in Fig. 1 of the drawings. Elaterite is a mineral which has

become a well known article of commerce, and which, because of its peculiar gummy or rubber-like characteristics, is frequently called, in the trade, "mineral rubber." Of the flax fiber pulp, I take about 200 pounds, for example, and thoroughly commingle the same with about 2½ gallons of dissolved elaterite, and after the same is molded into form, get a product or piece of compo board which weighs about 205 pounds.

This compo board, thus produced, has the following characteristics or features: it is hard, tough, heavy, and strong. Its tensile strength is substantially the same as cast gray iron, and its weight is about the same as lignum vitæ. Its density is, if anything, greater than lignum vitæ. It will not chip nor crack, nor break, but, under a crushing strain, would simply buckle up. It is waterproof, and under the action of fire, will char, but will not blaze. It is a perfect non-conductor for electricity, up to any limit of voltage that I have been able to apply. I have tested a block thereof, one-fourth inch thick, under a current of 16,000 volts, and the insulation was perfect. How much greater voltage the same block would have stood, I do not know. It will hold its molded form in the atmosphere, under exposure to sun and rain, without deterioration and without warping; and it does not warp under exposure to artificial heat, up to the charring temperature. In view of these characteristics, it is especially adapted for use as an electrical insulator, and is also capable of general application in the arts as a substitute for wood and metal in many instances.

If the product as it comes from the mold, or as shown in Fig. 2, is boiled in paraffin, thereby securing the product shown in Fig. 1, or a compo board having its exterior portions impregnated with paraffin, then the compo board is susceptible of a very smooth finish and a high polish, well fitting the same for ornamental purposes, such as for use in household furniture, office fittings, desks, etc., and is especially well adapted for use for razor hones and anti-friction bearings.

Flax fiber pulp suitable for this purpose, can be cheaply produced, because of the great abundance of flax straw; and the elaterite is also available, at a comparatively low price; and, hence, this compo board is capable of being produced at a cost which

enables the same to compete with wood and iron for many kinds of use. My said compo board is therefore, not only new, but is a useful article of manufacture.

5 It will, of course, be understood that the proportions of the ingredients may be varied to a considerable extent, without departing from the spirit of the invention. It is also possible that instead of benzin, some other
10 suitable solvent may be employed for the elaterite. For some classes of use, such as for electrical insulation, the fiber pulp must be from flax; but for some other uses more or less wood or common straw pulp may be
15 used with the flax fiber pulp.

So far as I know, the compo board or product herein disclosed and claimed, can only be produced by the process herein disclosed and claimed.

20 It will, of course, be understood that it is not possible accurately to represent the texture of the compo board in a drawing, hence the sections shown must be accepted as simply suggestive. In the actual board, the ingredi-
25 ents are thoroughly commingled, so that the product has substantially a uniform texture

throughout. The paraffin impregnation is intended to be indicated by the marginal in and out shade lines on the block 2 in Fig. 1; the surface shading thereof, on the face, is
30 intended to indicate the polish or finish.

What I claim and desire to secure by Letters Patent of the United States is as follows:

1. A compo board composed of fiber and elaterite, and having its outer surface portion impregnated with paraffin, substantially as described. 35

2. The process of producing a compo board composed of flax fiber and elaterite, and having its outer surface portion impregnated
40 with paraffin, which consists in reducing the flax fiber to dry pulp, and the elaterite to liquid form, then thoroughly commingling the said ingredients, then molding the same into form, under pressure, and then boiling the
45 product in paraffin, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. LAPPEN.

Witnesses:

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