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1,504,805

M. BORSODI

COMPOSITE STRUCTURE

Filed Dec. 27, 1921

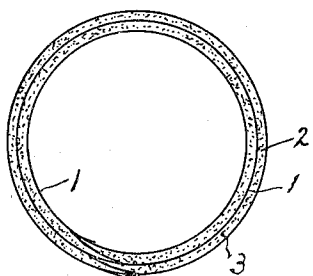


Fig. 1.

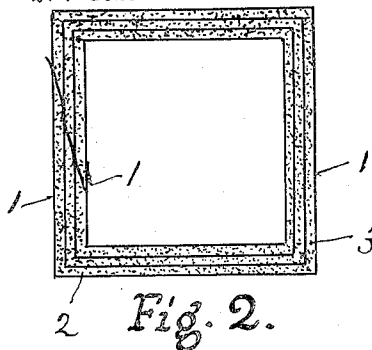


Fig. 2.

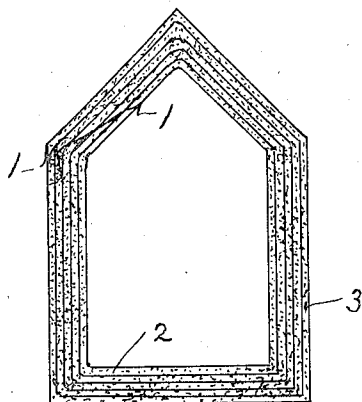


Fig. 3.

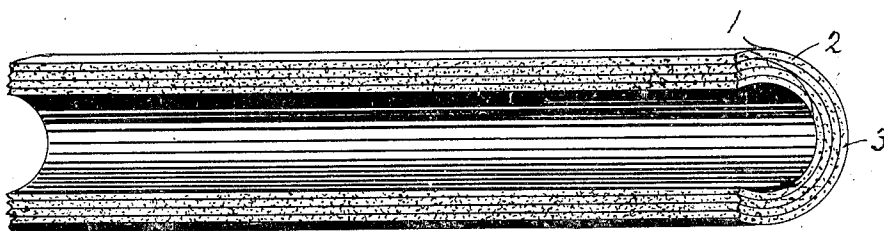


Fig. 4.

M. Borsodi Inventor

By his Attorney J. O. Fowler.

UNITED STATES PATENT OFFICE.

MORRIS BORSODI, OF NEW YORK, N. Y.

COMPOSITE STRUCTURE.

Application filed December 27, 1921. Serial No. 525,137.

To all whom it may concern:

Be it known that I, MORRIS BORSODI, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented a certain new and useful Composite Structure, of which the following is a specification, the same being 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.

This invention relates to bodies comprising a plurality of layers or laminae, and particularly to a structure wherein the several adjacent layers are held rigidly together by a suitable adhesive substance or cementitious or plastic material preferably having a granular substance which may be termed as grit incorporated therein or used therewith.

One object of the invention is to produce a body adapted to support various kinds of articles or materials and also, when desired, to constitute a wall of a container or enclosure of approved shape and contour.

Another object of the invention is to make composite structures of cylindrical shape and of various configurations by overlaying and preferably winding a thin sheet material, as of cellulose paper, or fabric, around a form—which may be of varied contour in different cases in cross section and introducing between each layer thereof a cementitious material and a granular substance, which cementitious material is adapted to harden and become rigid.

With the above named objects of the invention, and other objects and purposes which will be described below in view, the invention consists in the construction, arrangement and combination of parts hereinafter set forth, the whole forming an organization simple in construction, inexpensive to manufacture and efficient in practical use.

In the drawings, illustrative of one embodiment of the invention, which accompany and form a part of this specification,

Figure 1 represents a view in section of a cylinder constructed according to my invention;

Figure 2 is a section of a square container;

Figure 3 is a section of a structure of

irregular formation; and Figure 4 is a longitudinal section of a cylinder in which my invention is embodied.

Referring particularly to the drawings, the numeral 1 denotes a plurality of superposed layers or laminae of suitable material or formation between each of which layers is introduced glue, pitch or plastic substance which I term here in broadly as a cementitious material (2) adapted to become rigid and hard in a given time and to thereby hold the several layers tightly and securely together so as to form practically an integral mass.

A hard granular substance 3, such as sand or gravel, may be either incorporated in the cementitious material or applied to the same after it has been spread upon a layer, which granular substance serves to increase the thickness of the superposed layers of the structure. In cases where coarse sand or gravel is employed there will be more or less interstices of air between the layers, which air cells will serve to dissipate dampness.

The cylindrical embodiments of my composite structure may be in the form of circular tubes as shown in Figure 1 or of square containers in cross section as illustrated in Figure 2 or of irregular formation as shown in Figure 3.

The parts of the square structure shown in Figure 2 may be cut apart at the corners and used independently as separate plates for supporting purposes, while the circular cylinder of Figure 2 may serve to form the wall of a container, a suitable bottom or end portion having been attached thereto.

It will be noted that according to my invention a long roll of sheet material or other suitable article as paper may be wound on a form or drum of cylindrical or angular conformation. To the sheet thus wound a cementitious or other adhesive matter is applied which is coated with a preferably granular substance as sand or grit, after which another coating of adhesive matter is again applied which is covered by another layer of the wound sheet material. Adhesive matter is now applied to the surface of the newly wound sheet layer, then adhesive matter, a granular substance, and another coating of adhesive matter, which operation is repeated for every layer of the

sheet material, so that a transverse section of the product will comprise sheet material, adhesive matter, granular substance, adhesive matter, sheet material, adhesive matter, 5 granular substance, another coating of adhesive matter, sheet material, and so on, repeating the operation until the product is of the thickness desired, the whole forming, when dry, a continuous laminated product 10 of the required design of great strength and rigidity.

If desired various bodies of sheet material may be coated on one or both sides with the cementitious material and granular 15 substance and then the several sheet bodies so treated may be securely held together by an interposed suitable cementitious material.

My composite structure therefore may obviously be made in a great variety of forms 20 and it may also be used in a good many ways and under different conditions and for many different purposes, the invention residing in the structure itself and not in the form in which it may be made nor in the 25 various uses for which it may prove to be adapted.

I wish it to be understood that I do not desire to be limited to the particular use or 30 the exact details of construction shown and

described, for obvious modifications will occur to persons skilled in the art.

What I claim as my invention is:—

1. In an article of the class described, sheet material of a contour resulting from 35 having been wound on a form and comprising a laminated structure, each two adjacent layers of the sheet material having interposed between them adhesive matter and granular substance and superposed adhesive 40 matter, the latter lying between the granular substance and each layer of sheet material, whereby, when dry, a continuous laminated product of the required thickness and design 45 is formed of great strength and rigidity.

2. In an article of the class described, layers of sheet material of desired conformation comprising a continuous laminated 50 structure, each two adjacent layers of the sheet material having interposed between them adhesive matter and granular substance and superposed adhesive matter, whereby, when dry, a product of the required thickness and design is formed of 55 great strength and rigidity.

Signed at New York, in the county of New York and State of New York, this 20th day of December A. D. 1921.

MORRIS BORSODI.