

# UNITED STATES PATENT OFFICE.

LOUIS A. BRODE, OF GLASGOW, ASSIGNOR TO CHARLES DOUGLAS & CO., OF  
NO. 60 BARRON STREET, PORT DUNDAS, NORTH BRITAIN.

MANUFACTURE OF SLABS OR BLOCKS FROM WOOD OR PAPER PULP, OR FROM SHEETS MADE FROM SUCH  
PULP, &c.

SPECIFICATION forming part of Letters Patent No. 233,322, dated October 19, 1880.

Application filed September 11, 1880. (No specimen.) Patented in England December 17, 1879.

*To all whom it may concern:*

Be it known that I, LOUIS ABRAHAM BRODE, of Glasgow, in the county of Lanark, North Britain, have invented Improvements in the  
5 Manufacture of Slabs or Blocks from Wood or Paper Pulp or from Sheets Made from such Pulp, the same being applicable for other purposes, for which I have obtained Letters Patent of the United Kingdom of Great Britain  
10 and Ireland by my petition, bearing date the 17th day of December, 1879, of which the following is a specification.

My said invention relates to improvements in the manufacture of slabs or blocks or other  
15 articles from the pulp of wood or paper-pulp, such as rag or straw pulp, or from sheets made from such pulp, and is particularly applicable to the manufacture of table-tops, such as those of sewing-machines and other similar flat articles, but is also applicable to the manufacture  
20 of other articles, which can be formed or molded as hereinafter described and then submitted to pressure.

In carrying my said invention into effect in  
25 making flat slabs or blocks, such as table-tops or the like, the pulp is formed into sheets or layers, and deprived of the greater part of the water the pulp contains, so that two, three, or more such sheets or layers will give the re-  
30 quired thickness of slab or blocks or similar articles; or sheets already formed—such, for example, as straw boards—may be employed, in place of the said sheets or layers of pulp, for the purposes of my invention. The said sheets  
35 or layers are then coated with a solution of gum tragacanth or tragacanthin, formed by dissolving it in water to about the thickness of treacle. When this solution has thoroughly soaked into the material of the said sheets or layers the  
40 said sheets or layers are coated with a paste formed as follows: A mixture of rye or wheaten flour, pitch-powder, litharge, alum, and gelatine is prepared by boiling together about thirteen parts, by measure, of the flour with two  
45 parts, by measure, each of the alum and gelatine and one part, by measure, of the litharge. When this mixture has been boiled and thoroughly incorporated by stirring during boiling, it is allowed to become cold, when about two parts,

by measure, of fine powdered pitch are mixed 50 and thoroughly incorporated therewith.

The sheets or layers, coated as above described, are placed together, such a number of such sheets or layers being employed as is requisite to form the required thickness of slabs or 55 blocks or similar articles, which are then placed between zinc or other sheets or plates to separate the said slabs or blocks or similar articles, the one from the other, and the whole is placed in a press and therein subjected to pressure, 60 any press (such as a hydraulic press) which will give a great pressure being suitable for the purpose. The said slabs or blocks or similar articles are allowed to remain subjected to this pressure for about twelve hours, when they are 65 removed from the press and the zinc or other plates are removed therefrom, and the said slabs, blocks, or similar articles are placed in a drying-chamber or other drying place and submitted therein, for about twelve hours, to a 70 temperature of about 100° Fahrenheit. The said slabs or blocks or similar articles are or may be then covered with veneer, which may be affixed by a solution of gum tragacanth or tragacanthin and the paste before described, 75 or in the ordinary way, or they may be enameled, which may be effected as follows: The slabs, blocks, or other articles, when they are removed from the drying-chamber, are submitted to great pressure in the manner hereinbe- 80 fore described, but between heated metal plates, and remain subjected to this pressure until the said plates become cold. The degree to which these plates are heated may be any degree such as will not burn or char or otherwise injure the 85 material of the slabs or blocks or similar articles. The foundation for the enameling is given by saturating them with tar varnish and submitting them to a high temperature, which will cause the tar varnish to penetrate the slabs, 90 blocks, or like articles.

The pulp may be formed at once of the thickness of the slab or block or similar article required, instead of in separate sheets placed together, in which case the solution of gum 95 tragacanth or tragacanthin and the hereinbefore-described paste are mixed and thoroughly incorporated with the pulp, which is deprived



of any excessive amount of water by pressure or otherwise, in the proportions, by measure, of about one part of gum solution and one part of the paste to three parts of the pulp, and the  
 5 slabs, blocks, or similar articles thus formed are treated by pressure and heat, as hereinbefore described. In carrying this part of my invention into effect a mold is employed, in which the pulp is placed and pressed to expel  
 10 the surplus water, and after the gum and paste have been mixed with the pulp in the said mold pressure is again applied, by which moisture is expelled and the materials forced into a compact mass. The mold or part thereof may have  
 15 perforations therein for the escape of the moisture. I prefer, however, to form the slabs, blocks, or like articles as herein first described.

In making the slabs or blocks or like articles, a layer or layers of wood may be embedded in  
 20 or between the sheets or layers of pulp or sheets of paper material, so that by the relative proportions of the wood and pulp or paper material any required weight of slab, block, or like article may be obtained.

25 In making molded articles, such as basins, the pulp of wood or paper material (from which the greater amount of water is expelled) is mixed with the gum and paste and molded in

a mold of a shape corresponding to that of the article being made, and otherwise treated essentially as before described with regard to the making of slabs or blocks or like articles at once of the requisite thickness. The articles thus formed may then be enameled, as before described. 30 35

I claim—

The improvements in the manufacture of slabs or blocks from the pulp of wood or paper-pulp, or from sheets made from such pulp, and in the manufacture of such other articles as  
 40 can be molded and submitted to pressure from the said materials, by treating the said materials with a solution of gum tragacanth or tragacanthin and a paste, (composed as hereinbefore described,) and subjecting them to heat  
 45 and pressure, essentially as hereinbefore described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS A. BRODE. [L. S.]

Witnesses:

ROBERT ADAM GUNN,

JAMES SMITH BEGG,

115 St. Vincent Street, Glasgow.