

# UNITED STATES PATENT OFFICE.

STEPHEN MOORE, OF SUDBURY, MASSACHUSETTS, ASSIGNOR TO HIMSELF  
AND HOMER ROGERS, OF SAME PLACE.

## IMPROVEMENT IN THE MANUFACTURE OF LEATHER-BOARD.

Specification forming part of Letters Patent No. **139,598**, dated June 3, 1873; application filed  
March 5, 1873.

*To all whom it may concern:*

Be it known that I, STEPHEN MOORE, of Sudbury, in the county of Middlesex and State of Massachusetts, have invented an Improvement in the Manufacture of Leather-Board, &c.; and I do hereby declare that the following is a description of my invention sufficient to enable those skilled in the art to practice it:

In the manufacture of pasteboard, card-board, and leather-board, it is customary to wind the sheet of pulp in coils or layers upon a cylinder, cutting, slitting, and opening the tube thus formed, to make the sheet of board, the board being subsequently passed through calender-rolls to dry it, and to harden and solidify its surfaces, and to compact the fibers throughout the sheet. The layers owe their adhesiveness to the pulpy condition of the material as the layers are united upon the cylinder.

For the many purposes for which the leather-board is now used, a great degree of tensile strength is requisite, and the board, as usually made, is liable to crack and break open at the surfaces, if subjected to much bending. To remedy this very good stock has to be used, but board made from such stock will not sell on account of its high cost.

The purpose of my invention is to strengthen the board without increasing its cost, and to attain such a result, I form the board of two kinds of stock, a filling of cheaper stock, and a skin upon one or both surfaces of such filling of superior stock, the whole being formed and united in the paper or board making process, or while the material is all in a pulpy or semi-pulpy condition.

In practice, I proceed as follows: Beginning with the surface or skin-making stock, I take such stock from its vat upon the felt

or apron, and conduct it to and wind it upon the cylinder, and, having wound a sufficient number of layers, I then take upon the apron the stock from the vat containing the weaker pulp, or the pulp to form the body or filling, and conduct this to and wind it upon the cylinder around the coil already wound upon it. Having coiled enough stock to form the filling I disconnect the felt or apron from the filling-vat, and again connect it with the vat containing the surface-stock, and conduct the sheet of pulp to the cylinder and wind it around the filling, the adjacent surfaces of the different grades of material uniting in precisely the same manner that the layers of the same material unite.

By these means I obtain a very perfect board, possessing a greater degree of strength than can be obtained without making the whole board of stock as perfect as is the stock forming the outer surfaces of the board. The skin upon each side of the filling may be made of any desirable degree of thickness as compared to the thickness of the filling, in accordance with the nature of the stock and the degree of strength required. I prefer to make the filling of about twenty to thirty layers, and each skin or outer surface of about ten layers.

I claim—

The improvement in the manufacture of leather-board, consisting in forming the board with a filling surfaced by the layers upon the cylinder, substantially as described.

Executed this 7th day of January, A. D. 1873.

STEPHEN MOORE.

Witnesses:

FRANCIS GOULD,  
M. W. FROTHINGHAM.