

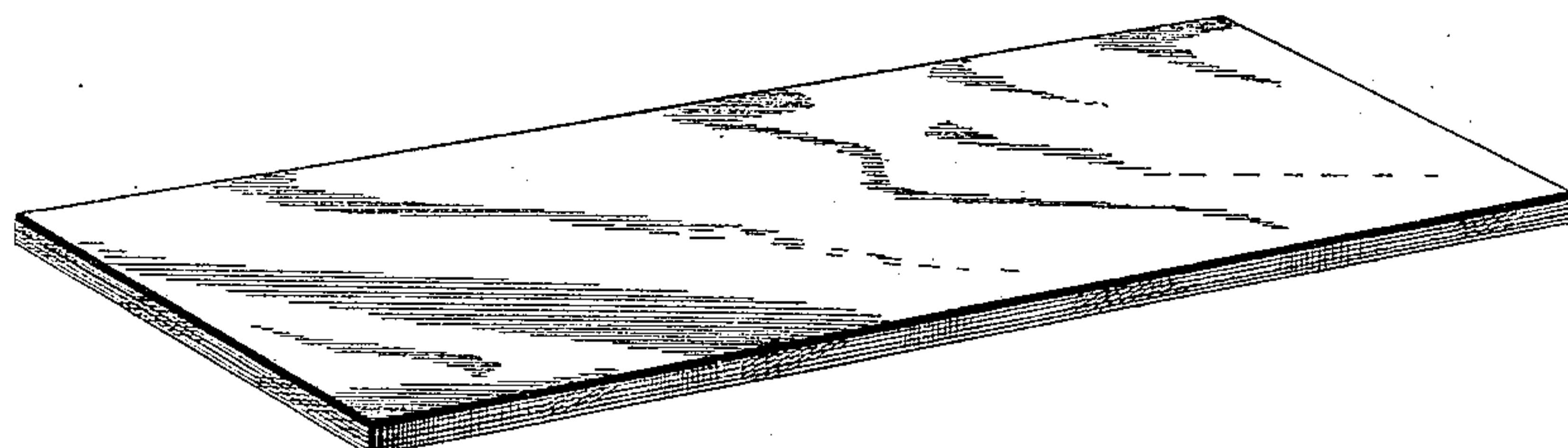
(No Model.)

S. H. HAMILTON.  
PAPER BUILDING MATERIAL.

No. 449,738.

Patented Apr. 7, 1891.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

*Jas. E. Hutchinson.*

*Henry C. Hazard.*

*Inventor.*

*S. H. Hamilton, by*  
*Erindell Russell, his Att'y.*

# UNITED STATES PATENT OFFICE.

SILAS H. HAMILTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY  
MESNE ASSIGNMENTS, TO BENJAMIN F. RANDELL, OF HILLSDALE,  
MICHIGAN.

## PAPER BUILDING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 449,738, dated April 7, 1891.

Application filed May 2, 1888. Renewed August 20, 1890. Serial No. 362,800. (No model.)

*To all whom it may concern:*

Be it known that I, SILAS H. HAMILTON, of Philadelphia, in the county of Philadelphia, and in the State of Pennsylvania, have in-  
5 vented certain new and useful Improvements in Paper Building Material; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of a board of my improved building material, and Fig. 2 is an exaggerated cross-section of the same.

Letters of like name and kind refer to like parts in each of the figures.

15 The design of my invention is to produce a building material which shall possess the desirable qualities of wood and be capable of all the uses to which wood is applicable, and at the same time shall be substantially fire-  
20 proof; and to this end my said invention consists in a building material which is composed of the ingredients and constructed in the manner substantially as and for the purpose hereinafter specified.

25 In the carrying of my invention into practice I employ any ordinary paper, such as is made from straw, manila, or other like material, and make the same in rolls in the usual way, except that when in pulp there is added  
30 a solution composed of silicate of soda one part, alum two parts, bicarbonate of soda two parts, and aqua-ammonia three parts, which are dissolved in water and added to the pulp in the proportions of about eight parts of the  
35 former to forty parts of the latter. During the process of manufacture a sizing of starch is added to the paper in the usual manner. If desired, the pulp may be colored to cause it to resemble any one of the kinds of hard  
40 wood. The sheets of paper thus made are afterward coated with a cement composed of glue and oil, preferably linseed, in the propor-

tion of one gallon of the former to one-half pint of the latter, and are then combined under heat and pressure into a compact board, the dimen- 45  
sions and thickness of which may be varied at will. After the material has been thus formed it should be kept under pressure for a period of from one week upward, dependent upon the paper used, in order that the boards 50  
may become thoroughly cured or seasoned, after which they are capable of being worked in the same manner as are any of the hard woods of commerce, and of being applied to all of the purposes for which the same are 55  
used.

While the proportions of the chemicals as stated are preferably used, they may be varied both with relation to each other and to the pulp without departure from the spirit of 60  
my invention.

Having thus described my invention, what I claim is—

1. As an improved article of manufacture, a building material composed of paper-pulp, 65  
silicate of soda, alum, ammonia, and bicarbonate of soda, in substantially the proportions specified, made into sheets, and the same combined by means of a cement, substantially as and for the purpose described. 70

2. As an improved article of manufacture, a building material composed of paper-pulp, 75  
silicate of soda, alum, ammonia, and bicarbonate of soda, in substantially the proportions specified, made into sheets, and the same cemented together under pressure, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of January, 1888.

SILAS H. HAMILTON.

Witnesses:

M. A. ANDREWS,  
JOS. J. CAMP.