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COMPOSITE WOOD PULP SHEET.
APPLICATION FILED NOV. 19, 1906.

1,063,941. Patented June 3, 1913.

Fig. 1.

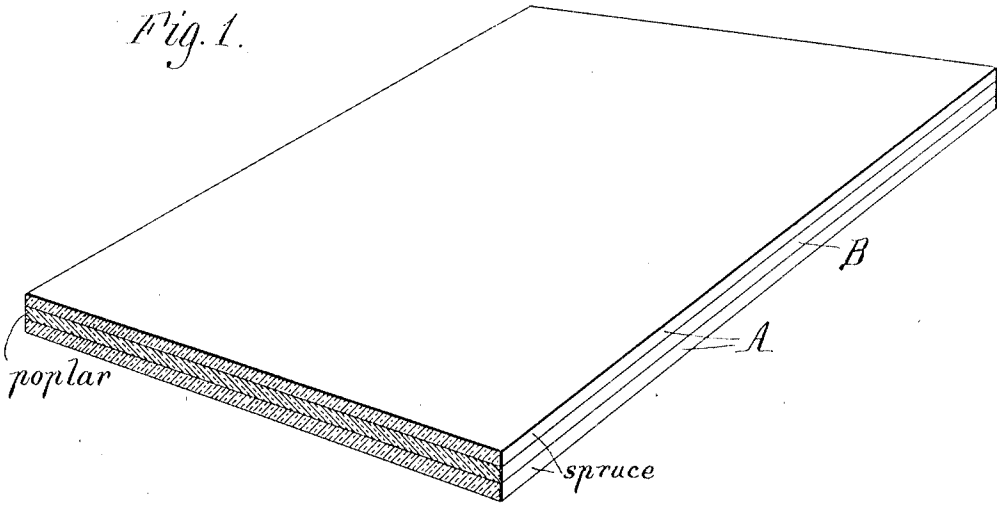
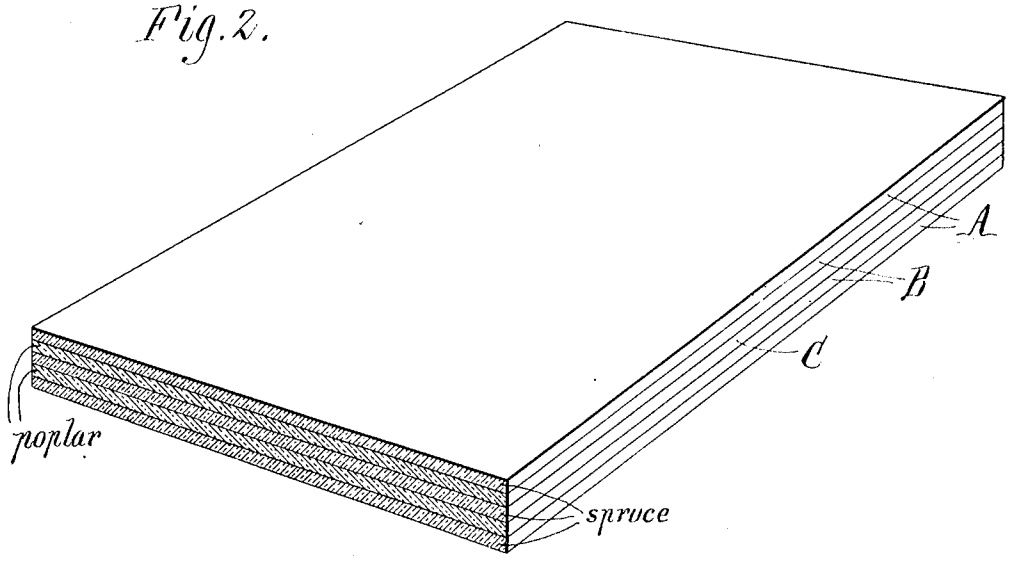


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES P. LEWIS, OF BEAVER FALLS, NEW YORK; HARRY S. LEWIS ADMINISTRATOR OF SAID JAMES P. LEWIS, DECEASED.

COMPOSITE WOOD-PULP SHEET.

1,063,941. Specification of Letters Patent. Patented June 3, 1913.

Application filed November 19, 1906. Serial No. 343,968.

To all whom it may concern:

Be it known that I, JAMES P. LEWIS, a citizen of the United States, residing at Beaver Falls, in the county of Lewis and State of New York, have invented a new and useful Improvement in Composite Wood-Pulp Sheets, of which the following is a specification.

This invention relates to a composite sheet made up of several sheets or layers of wood pulp cemented together and has the object to produce a sheet which is smooth and attractive in appearance, strong and durable and which does not warp, buckle or otherwise change its shape in use, thereby enabling such sheets to be successfully used for a variety of purposes, for instance, for covering the walls of buildings instead of plaster.

Composite sheets in which the several sheets or layers are all made of the same kind of wood pulp are unsatisfactory in use and do not retain their shape but warp or buckle. I have found that by making the inner layer of such a composite sheet of poplar pulp and the outer or face layers of spruce pulp this difficulty is overcome and a composite sheet is produced which will retain its shape under the varying conditions of use and remain straight and flat and present smooth surfaces.

In the accompanying drawings: Figure 1 is a sectional perspective view of a three-ply sheet. Fig. 2 is a similar view of a five-play sheet.

Like letters of reference refer to like parts in both figures.

A represents the outer or face layers formed by sheets consisting of ground spruce pulp, and B represents the inner layer formed by a sheet consisting of poplar pulp.

In the three-ply sheet, represented in Fig. 1, a single central layer B of poplar pulp is combined with two outside or face layers A of spruce pulp. In the five-ply sheet, represented in Fig. 2, two inner layers B of poplar pulp are combined with an intermediate layer C of spruce pulp and two outer or face layers A of spruce pulp. In each case the inner layer or sheet of poplar pulp is flanked on both sides by sheets or layers of spruce pulp.

Poplar pulp is comparatively fine, has a short fiber and produces a sheet which will not warp or buckle but which is rather brittle and has a fuzzy surface too soft for the outer or face layers of the board. Spruce pulp has a longer fiber and produces a strong sheet which has a smooth tough surface and is suitable for the surfaces of the composite sheet but liable to warp under atmospheric changes. The sheets are formed of these two kinds of pulp in any usual or suitable manner and are then cemented or pasted together in the described order, preferably by a cement containing silicate of soda. The composite sheets so produced has smooth hard face sides, is strong and durable and does not warp, buckle or otherwise change from its true straight or flat shape. These qualities render the composite sheet particularly suitable for covering or facing the interior walls of buildings as a substitute for wall plaster, and constitute a wall covering or facing which is more quickly and cheaply applied than plaster, since these sheets are quickly cut to the desired size and secured by nails or tacks, and which retains its shape well and is sufficiently strong to stand all ordinary usage, and which can be ornamented by painting or papering in the manner in which the interiors of buildings are usually treated.

As usual in wood or pulp sheets, there is a definite or similar general arrangement of the fibers, or grain, throughout the layer, and preferably the sheets or layers of the composite board or sheet are so arranged that the grain of the poplar layer or layers will run crosswise, or at angle relative to that of the spruce sheet or sheets. Such relative arrangement of the layers or sheets gives even better results than are obtained when the grains of the several component layers or sheets have the same general direction.

I claim as my invention:

1. A composite wood pulp sheet consisting of separate outer and inner sheets ce-

mented together, the outer sheets being formed from wood pulp having a long tough fiber, and the inner sheet being formed from wood pulp having a short hard fiber, substantially as set forth.

2. A composite wood pulp sheet consisting of separate outer and inner sheets cemented together, the outer sheets being formed from spruce pulp having a long tough fiber, and the inner sheet being formed from poplar pulp having a short hard fiber, substantially as set forth.

Witness my hand, this 31st day of October, 1906.

JAMES P. LEWIS.

Witnesses:
HARRY S. LEWIS,
E. A. VAN NESS.