S. CABOT.

INSULATING BOARD.

APPLICATION FILED JULY 22, 1910.

Patented May 2, 1911.

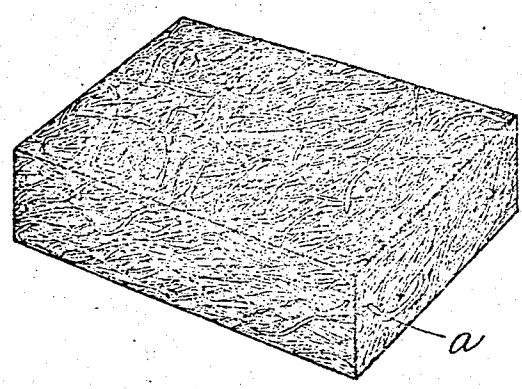

Fig. 1

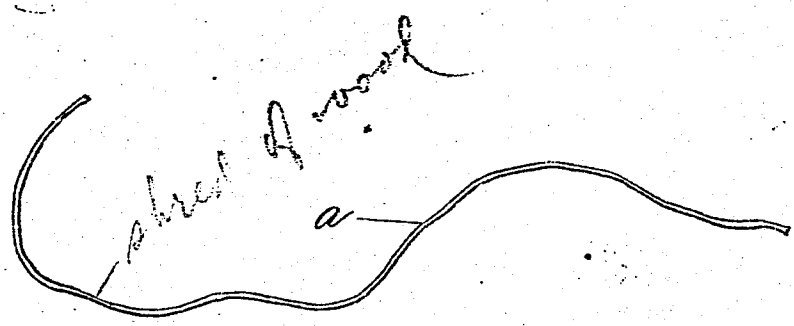

Fig. 2.

Witnesses:
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Heat insulating coverings.

UNITED STATES PATENT OFFICE.

SAMUEL CABOT, OF CANTON, MASSACHUSETTS.

INSULATING-BOARD.

991,271. Specification of Letters Patent. Patented May 2, 1911.

Application filed July 22, 1910. Serial No. 573,235.

To all whom it may concern:

Be it known that I, SAMUEL CABOT, residing at Canton, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Insulating-Boards, of which the following is a specification.

This invention relates to insulating boards adapted for refrigerating purposes, and also wherever an insulating board may be desired for heat or cold.

It has for its object to construct a board essentially of shredded wood, arranged in a promiscuous or tangled mass and adhesively secured together, and slightly but not severely compressed and dried, whereby dead air spaces are formed in the board which are permanently maintained; also to treat the board thus produced whereby it is substantially waterproof; also to treat the board thus produced whereby it is substantially water-proof and fire-proof.

Figure 1, shows a portion of an insulating board embodying this invention, and, Fig. 2, one of the shreds of wood.

a represents the shreds of wood, which are employed in the manufacture of the board. While these shreds may be produced in any suitable manner, so far as my invention is concerned, they are easily obtainable at shingle mills, being a waste produced when sawing shingles and sometimes called shingle hair. In the manufacture of the board these shreds are formed into a promiscuous or tangled mass, so that they are more or less interlocked, yet separated sufficiently to form air spaces. This mass is then provided with a binding material having adhesive characteristics, as for instance, it may be saturated with an adhesive solution for the purpose of adhesively securing the shreds together. Many adhesive solutions are adapted for the purpose, but I prefer to employ a viscose solution, which is made in any well known or suitable manner. Ordinarily such solution may be made by taking cellulose, such as paper stock, and treating it with caustic soda and bi-sulfid of carbon.

The bath into which the tangled mass of shredded wood is submerged may contain say, 5% viscose. Such a solution is sufficiently adhesive to secure the shreds together and is sufficiently alkaline to soften the shreds. The mass having been saturated with the viscose solution is dried and moderately but not severely compressed. The pressure of the hand may be sufficient but severe pressure acts to flatten the dead air spaces, so that the board loses a part of its insulating qualities. A viscose solution is especially well suited for this purpose for the reason that when dried it secures the shreds together, yet holds them more or less separated in order that the dead air spaces formed in the board may be permanently maintained, and also permits the board to yield slightly to pressure.

If it is desired that the product shall be waterproof, the mass thus treated and having its shreds adhesively secured together, at least sufficiently to maintain its shape, is then subjected to the action of a bath of resin or other soap and subsequently to a bath of aluminum sulfate, or a solution of some other substance, tending to form with the soap a substance insoluble in water.

In case some other adhesive solution than viscose is employed, a different water-proofing compound may be required.

In case it is desired to make the product substantially waterproof and fire-proof, the product which is compressed and dried may be subjected to a fire-proofing material, as for instance to a bath of an ammonium phosphate solution, approximately a 5% solution should suffice, or ammonium phosphate may be added to the viscose solution, and subsequently the mass treated with the waterproofing compound.

I claim:—

1. The insulating board herein described which is yielding and cellular, composed of a tangled mass of shredded wood, the shreds being adhesively secured together by a viscose solution, and the mass subsequently moderately compressed and dried.

2. The insulating board herein described which is yielding and cellular, composed of a tangled mass of shredded wood, the shreds being adhesively secured together by a viscose solution and treated with a soap and aluminum sulfate, to render the board substantially waterproof.

3. The insulating board herein described which is yielding and cellular and substan-

tially waterproof and fire-proof, composed of a tangled mass of shredded wood, the shreds being adhesively secured together, and the mass being treated with a water-proofing compound and with a fireproofing compound, and moderately compressed and dried, substantially as described.

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

SAMUEL CABOT.

Witnesses:
B. J. NOYES,
H. B. DAVIS.