

UNITED STATES PATENT OFFICE.

WILLIAM B. CARPENTER, OF NEWARK, NEW JERSEY.

WATERPROOFING PAPER WITH CELLULOID AND OTHER MATERIALS.

SPECIFICATION forming part of Letters Patent No. 251,410, dated December 27, 1881.

Application filed April 27, 1881. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM B. CARPENTER, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Waterproofing Paper with Celluloid and other Materials, of which the following is a specification.

My invention relates to an improvement in the manufacture of water-proof paper; and it consists in combining asbestos with any suitable plastic water-proof material, such as celluloid, lignoid, coroline, shellac, resin, or gums. These or others will be united with the asbestos, either singly or in compounds of any of them, according to the kind of paper to be made; and any well-known or suitable coloring material may be used, according to the color required.

Asbestos is a well-known and cheap substance, and is capable of being worked into a pulp that may be felted; and this combined with water-proof materials like those above named makes a very durable water-proof and nearly or entirely fire-proof paper, of great service, on which to write or print, or which may be used in certain departments of the mechanic arts where paper with these properties is required.

In the manufacture of this paper the asbestos will be reduced to a suitable fiber and the water-proof material or materials to powder. I will herein speak of celluloid as the representative substance. This is not dissolved, but ground to a powder, either dry or in water, until it is of suitable fineness for the particular paper to be made. The asbestos and celluloid are then mixed together, until they are thoroughly incorporated, in water, forming a pulp, to be made into paper by any well-known or suitable process or machinery not needful here to describe. After the paper has been made and has passed through the last of the heated

rollers commonly used in paper-making, and has been left to dry, I may add two steps to the process, according to the nature of the substance or substances used with the asbestos.

First. The paper may be put through a vapor bath, or atmosphere of alcohol, when the substance used—such as celluloid—is capable of being dissolved by alcohol; but when a resin or gum is used, on which alcohol has little or no effect, then the vapor bath may be of turpentine or an equivalent substance. The object of the vapor bath is to partially dissolve any of the materials which may not be thoroughly integrated by the action of the heated rollers above referred to.

Second. Then, after the vapor bath, the paper passed through the heated rollers will become more perfectly incorporated. The paper is then finished, and is ready for the various uses to which it may be applied.

The proportion of asbestos and other material will be regulated by experiment according to the kind of paper to be made.

I claim—

1. A paper made from asbestos and plastic waterproof, simple or compound substance or substances, such as celluloid, lignoid, coroline, shellac, resin, or gums, substantially as and for the purposes specified.

2. The process of making paper-pulp by mixing in water the plastic material with the asbestos, substantially as and for the purpose set forth.

3. The process of putting the paper through a vapor bath and afterward through heated rollers, substantially as and for the purpose specified.

WILLIAM B. CARPENTER.

Witnesses:

HORACE HARRIS,
S. R. STEADMAN.