

(No Model.)

R. H. MARTIN.
NON-CONDUCTING COVERING.

No. 497,382.

Patented May 16, 1893.

Fig. 1.

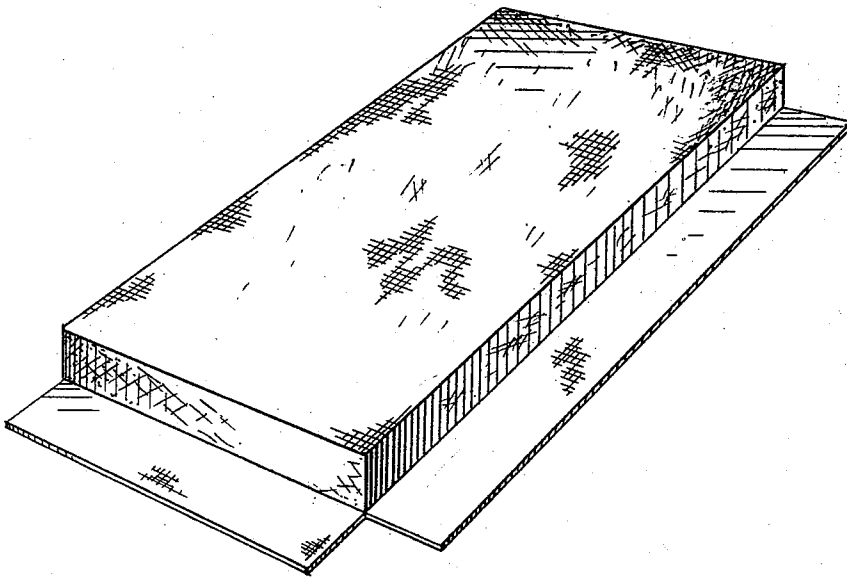
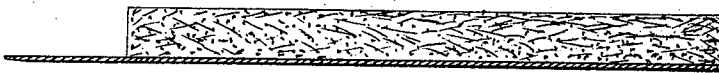


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ROBERT H. MARTIN, OF BROOKLYN, NEW YORK.

NON-CONDUCTING COVERING.

SPECIFICATION forming part of Letters Patent No. 497,382, dated May 16, 1893.

Application filed February 4, 1891. Serial No. 380,213. (No specimens.)

To all whom it may concern:

Be it known that I, ROBERT H. MARTIN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Non-Conducting Coverings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to non-conducting coverings to prevent conduction of heat or cold and it consists in a novel method of constructing such product and in the product so produced.

My improved non-conducting material is made in the form of a sheet of asbestos fiber in loose or flocky state which shall be peculiarly soft, flexible, elastic and porous, being in the nature of a soft bat or wad, and the fibers are held together by an adhesive material which extends here and there, throughout the entire thickness of the bat, so that it is held together by the adhesion of the fibers to each other at innumerable points throughout the bat and yet there is not present so much adhesive material as to interfere with the softness, flexibility, elasticity and porosity of the sheet or bat and owing to the method employed by me for introducing the adhesive or cementitious material, I am enabled to get a lighter product, possessing the qualities before referred to, than any heretofore known to me. I also avoid an objectionable feature in other similar products, that is to say, they are liable to split, because my sheet or bat is made in one thickness and the fibers extend without seams or layers, from one side to the other side of the bat.

To make my improved product I feed the fiberized and cleansed asbestos fiber to a picker by which it is thoroughly disintegrated and thrown onto a traveling apron in such quantities as may be desired to make the sheet or bat of the requisite thickness. The fiber is deposited upon the apron in an even manner.

I apply my cementitious material as follows: When using a dry cementitious material or size, such as starch, glue, dextrine, lime, cement or other adhesive material of that char-

acter, I grind it fine, in some instances so fine as to be practically a powder. In other instances, I leave it in larger particles, and this powder or granulated material I feed through the picker together with the asbestos fiber, so that in the bat which is deposited upon the apron, the cementitious material is scattered here and there throughout the mass of fibers in innumerable small particles being held by the fibers in the bat. As soon as the bat is made and preferably before any considerable handling of the same, it is subjected to moisture. Preferably a blast of low temperature steam, or water or other liquid ejected from an atomizer may be blown or otherwise forced through the bat. In this way the cementitious material is acted upon by the moisture and dissolving, adheres the fibers to each other at innumerable points, each point of adhesion, however, being exceedingly small, so as not to interfere with the lightness, porosity, flexibility and softness of the product. Instead of using cementitious material which is to be acted upon by moisture, I may use material which will be rendered adhesive by heat, such as ground shellac and various gums, and when such materials are used they may be fed with the fibrous material to the pickers the same as before stated, and then after the bat is made, it may be subjected in any suitable manner to the action of heat, which will act upon the adhesive material in such manner as to cause the fibers to be attached together as before stated.

Although for many purposes, I prefer to employ asbestos fiber alone as the fibrous material, for other uses I admix other fiber, animal or vegetable, together with the asbestos fiber, and a characteristic difference between my fabric and those which are made of fibrous material other than asbestos, is this: that a bat can be made of cow hair, wool, cotton, hemp and other fibrous material, without requiring any cementitious material to aid in binding or holding it together because fibrous material has the quality of tenaciously holding together when fibers are brought into contact with each other. Asbestos fiber, however, is peculiar in the respect that it has no tenacity of itself. On the contrary it is of the class of natural lubricants, and a bat made of asbestos fiber, or of material in which asbes-

tus fiber constitutes a large part, will lack the necessary strength to hold it together, if made as compact as I make my bats, unless an adhesive material be employed, and never before, so far as I am aware, has a bat been made in which the fibers throughout the bat have been attached to each other as mine are, and never before has my method been employed so far as I am aware. Asbestos felts have been treated upon the outside with adhesive material but they are liable to split as before suggested.

My bats or sheets may be coiled or rolled into coverings for pipes, or a single thickness may be used for that purpose. It may also be used in numberless cases where non-conduction of heat or cold, also the prevention of noise are desired.

Where absolute incombustibility is desired, I prefer to use a cementitious material which will not be acted upon by heat, such as lime, plaster of paris, certain of the silicates and other like cements. Other material of a non-conducting character may be used as an adulterate or filler and may be included with the asbestos if desired.

I claim—

1. The method herein described of making bats or sheets, consisting in feeding to a suitable machine, the fibrous material in soft flocculent condition and simultaneously therewith distributing throughout the fibrous material, adhesive material, substantially as set forth.

2. The method herein described, consisting in feeding to a suitable machine asbestos fiber, and simultaneously therewith feeding cementitious material in dry and finely divided condition and subjecting the resulting bat or sheet to the action of an agency which will make the adhesive material, adhesive, substantially as set forth.

3. As a new article of manufacture, a soft, flexible, elastic and porous bat or sheet, embodying asbestos fibers, which are attached together throughout the sheet or bat at separated points of adhesion, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

R. H. MARTIN.

Witnesses:

E. B. BARNUM,
JOSEPH CARSON.