

UNITED STATES PATENT OFFICE.

E. P. HUDSON, OF NEW YORK, N. Y., ASSIGNOR TO NEW YORK WATER-PROOF PAPER COMPANY, OF NEW YORK CITY.

IMPROVEMENT IN THE MANUFACTURE OF RUBBER-COATED PARCHMENT-PAPER.

Specification forming part of Letters Patent No. **107,687**, dated September 27, 1870.

Be it known that I, E. P. HUDSON, of the city, county, and State of New York, have invented an Improved Vulcanized Material from Paper Body; and I do hereby declare that the following is a full and exact description thereof.

I take the material produced by my improved process, for which I have made application for Letters Patent, and which I will here briefly describe.

The paper (unsized) is first dipped in or passed through a bath composed of two volumes of commercial sulphuric acid and one volume of water, kept at a temperature of 60° Fahrenheit. Then, after washing it in clear water, it is passed through a bath of very dilute aqua ammonia. Again, after washing in water, it is passed through a bath of very dilute lime-water, and after washing once more in water, and while still wet, it is passed through a bath of glycerine, thus completing the process, and producing a material possessed of the very valuable qualities of strength, pliability, and imperviousness to water; but for uses where the material is much or long exposed to water, or to atmospheric changes, it is desirable to make the material more durable and unaffected by those influences.

To produce such a material, I take the material produced by the above-described process and treat it substantially as follows: A very liquid solution of india-rubber in benzine or other solvent having been prepared, the material is immersed therein, and, after re-

moving from the bath, it is dusted lightly with flowers of sulphur on both sides. It is then placed in a suitable chamber or oven and subjected to a heat of 270° Fahrenheit, or thereabout, for about one hour, at the end of which time it will have become vulcanized and possess many of the qualities of vulcanized india-rubber or india-rubber cloth.

Instead of applying the sulphur by dusting upon the surface of the material, it may be mixed with the solution of india-rubber in benzine in the proportion of about two per cent. of the caoutchouc used; or a portion of the sulphur may be mixed with the previous glycerine bath, and, of course, a less quantity is then required in the benzine solution or to be dusted on the material afterward.

This vulcanizing process may be applied either to single thicknesses of the paper material or to united thicknesses.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Treating paper previously subjected to the acid and glycerine processes with india-rubber and sulphur, and then to the action of heat, substantially as herein specified.

2. As a new article of manufacture, the material thus produced.

E. P. HUDSON.

Witnesses:

JOS. BROWN,
EDM. F. BROWN.