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IMPROVEMENT IN THE MANUFACTURE OF WATER AND FIRE-PROOF PAPER.

THOMAS IRVING, JOHN McNEIL, GEORGE W. RICH, AND CYRUS J. FAY,
OF ELWOOD, NEW JERSEY.*Letters Patent No. 60,635, dated December 18, 1866.**The Schedule referred to in these Letters Patent and making part of the same.*

TO ALL WHOM IT MAY CONCERN:

Be it known that we, THOMAS IRVING, JOHN McNEIL, GEORGE W. RICH, and CYRUS J. FAY, of Elwood, in the county of Atlantic, and State of New Jersey, have invented a new and useful Improvement in the Manufacture of Water and Fire-Proof Paper; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same.

This invention relates to an improvement in the manufacture of that class of paper which is used for the covering of sides and roofs of buildings, or for other purposes of a similar nature.

Our paper is manufactured from manilla or hemp rope, in the following manner: The rope is first cut into pieces two inches in length; after which it is put into a revolving or rotary boiler, and boiled in a solution of alkali, under a steam pressure of twenty pounds to the square inch, for fourteen hours, (more or less.) From thence the mass is passed to the pulp engines, where, when reduced to what is called half pulp, it is saturated with a solution of gum catechu and borax, in addition to the usual rosin sizing. In passing over the paper machine, and before entering the second press rolls, the paper is passed through a solution of alum and borax, which closes up the surface, making the paper nearly water and fire-proof. When the paper has passed over the drying cylinders, it passes between two shafts with rings on them, or else between two rolls, with horizontal lines and grooves arranged at equidistant spaces, so as to indent the paper, that it can be easily and correctly folded and lapped at regular intervals. These rolls also spot or mark the paper, so as to denote where the tack or nail should be driven. The paper then passes to the shears, where it is cut into sheets of any desired width; for siding or weather-boarding, or even for roofing, the most convenient width is two feet. These sheets are creased so as to form four laps, for siding; and it is more easily handled, especially in windy weather, than it would be if cut wider.

This paper is very strong, and bags made up from it, with water-proof cement, may be filled with water, which will entirely evaporate in the air before any trace of moisture appears on the outside of the bag. Furthermore, our paper takes paint very readily, and it is not liable to soon crack or rent, like wood; it is less combustible than wood; it is a non-conductor of heat and electricity, and a large building can be covered at a comparatively small expense.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. Water-proof paper, prepared as herein described, as a new article of manufacture.
2. The within-described process of manufacturing water-proof paper, by treating manilla, or hemp, or other fibrous material, with the ingredients and in the manner set forth.

Witnesses:

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