

UNITED STATES PATENT OFFICE.

SAMUEL B. DORLAN, OF UPPER UWCHLAN TOWNSHIP, DORLAN'S MILLS
P. O., CHESTER COUNTY, PENNSYLVANIA.

IMPROVEMENT IN COMPOSITIONS FOR SIZING.

Specification forming part of Letters Patent No. **170,352**, dated November 23, 1875; application filed
March 20, 1875.

To all whom it may concern:

Be it known that I, SAMUEL B. DORLAN, of Upper Uwchlan township, Dorlan's Mills P. O., (formerly of East Brandywine township,) in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Sizing; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same.

My invention consists in sizing paper-pulp by treating it with chloride of lime and sulphuric acid. It also consists in the complete process of sizing paper-pulp by treating the same with chloride of lime, sulphuric acid, clay, or other fiberless paper filling, soap, starch, hyposulphite of soda, alum, and oil.

In carrying out my invention I proceed as follows: I take six hundred pounds of Manila or other paper stock, and place it in the engine; wash them as clean as possible with pure water; add one hundred and twenty pounds chloride of lime; one hour afterward add twenty pounds sulphuric acid; two hours afterward add three hundred pounds English china clay; one hour afterward add twenty pounds white tallow soap, dissolved in hot water; one hour afterward add thirty pounds of starch, boiled; then add ten pounds, more or less, of hyposulphite of soda, and when short add sixty pounds natron porous alum in the engine. Half hour before the stuff is emptied, in case it froths in the machine, add half-pint of sperm-oil in stuff-tubs.

I am aware that sulphuric acid has been added to bleaching substances in order to neutralize the injurious action thereof; but I am not aware that sulphuric acid has been combined with chloride of lime for the purpose of sizing.

I do not claim chloride of lime as a sizing ingredient, this being the subject-matter of Letters Patent granted to James M. Dorlan, June 11, 1872; but I have found that in order to properly size the pulp to produce pulp-sized paper the gummy nature of the size is vastly increased or improved by the use of sulphuric acid. Heretofore, after the bleaching operation, the bleach was washed out, but by my invention the bleach and acid are caused to remain, and employed for sizing purposes; hence I have made an improvement in the art.

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

1. In sizing paper-pulp, the process of treating it with chloride of lime and sulphuric acid, substantially as and for the purpose set forth.

2. The complete process of sizing paper-pulp by treating it with chloride of lime and sulphuric acid, in conjunction with clay or other fiberless paper filling, soap, starch, hyposulphite of soda, alum, and oil, substantially as and for the purpose set forth.

SAMUEL B. DORLAN.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. GRANT.