

UNITED STATES PATENT OFFICE.

THOMAS C. VAN NÜYS, OF BLOOMINGTON, INDIANA.

IMPROVEMENT IN MEANS FOR PREVENTING FRAUD IN STAMPS, CHECKS, BONDS, &c.

Specification forming part of Letters Patent No. **197,303**, dated November 20, 1877; application filed November 1, 1877.

To all whom it may concern:

Be it known that I, THOMAS C. VAN NÜYS, of Bloomington, in the county of Monroe and State of Indiana, have invented certain new and useful Improvements in Means for Preventing Fraud in Stamps, Checks, Bonds, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to prepare paper for stamps, checks, bonds, tickets, labels, and other printed or written matter, and to provide suitable fluids for the purpose, so that they cannot be changed or reused, and so as to prevent fraud in the use of them.

The invention consists in impregnating the paper with a metallic salt or salts which will not be affected or changed in color by the vapors present in the air, and which will produce a colored, highly-insoluble sulphide by the action of a soluble sulphide.

The first solution is made of a salt of either nickel or cobalt, or mixtures of the two in any proportion. The other solution may be any soluble sulphide, such as the alkaline sulphides or the sulphides of the alkaline earths, or any equivalent sulphide which will by double decomposition produce, with the nickel and cobalt salts, insoluble sulphides of these metals.

The salts of nickel and cobalt which I prefer to use are the nitrates which are soluble in water.

The following description will enable others to use my invention: Take of crystallized nitrate of nickel, fifty-six grams; crystallized nitrate of cobalt, thirty-two grams; distilled water, one liter. Paper is prepared with this fluid either by placing the same in the fluid from three to five minutes, or by applying the fluid to both sides of the paper, by means of a brush, and drying it in a room or chamber heated by air or steam at a temperature not exceeding 212° Fahrenheit.

Stamps, postage and other kinds, after having been printed, but before the adhesive material has been applied, are either placed in the fluid, and let remain from three to five minutes, when the same are removed to the drying-chambers, and dried at a temperature not exceeding 212° Fahrenheit, and when dry the

adhesive material is applied; or stamps can be equally as well prepared in the following manner: After having been printed and the adhesive material applied, but before they have been penetrated with holes, the fluid is well applied to the printed surface, by means of a brush. They are then placed in the drying-chamber, and dried at a temperature not exceeding 212° Fahrenheit. They are then ready for the process of penetrating with holes.

Paper and stamps prepared by either of the above methods are ready for cancellation by the ink or canceling-fluid, which consists of one part either of the sulphide of sodium (Na_2S), or of the sulphide of potassium (K_2S), and four parts of distilled water. This ink or canceling-fluid is applied to the prepared paper or stamps by means of a pen, metallic or non-metallic; or, for canceling, this ink or canceling-fluid can be employed as a paste, made by mixing either the sulphide of sodium (Na_2S) or the sulphide of potassium (K_2S) with finely-powdered hydrated sulphide of calcium, with sufficient water, linseed-oil, glycerine, or mucilage to form a paste, and in this condition is applied to the prepared paper and stamps by a canceling stamp. Any desired coloring may be mixed with this paste.

Other soluble sulphides may be used, such as the barium and the strontium sulphides.

The impregnating salt or salts may be put into the paper in the manner given above, or during the process of manufacture, as in the sizing operation.

I do not confine myself to the exact proportions, nor to the strength of solution, since these may be varied without departing from the principle of my invention. Either of the solutions may be diluted with, say, five times, more or less, of its volume of water and still produce good results.

I have mentioned the nitrates of nickel and cobalt as preferable, but do not limit myself to these.

The production of a highly-colored insoluble compound in the body of the paper is the essential feature of the invention. This I find to be produced in the best and cheapest manner by using the salts of nickel and cobalt, singly or combined, and an alkaline sulphide. The salts of nickel and cobalt are not tar-

nished by exposure to the air, as are the salts of lead, mercury, and silver. When the black sulphide has been deposited in the paper, it cannot be dissolved out except by the use of highly-corrosive acids, such as would destroy the paper.

I prefer to apply the solutions in the order I have stated, but they could be reversed—that is, the paper may be saturated with a soluble sulphide, and the cancellation made with cobalt and nickel salts; but as the alkaline sulphides change if long exposed to the air, the best way to use the invention is as I have given it.

Instead of saturating the paper with the first solution, it may be mixed with the ink with which the stamp, check, or other paper is written or printed, and thus be sufficiently incorporated with the paper to produce the insoluble sulphide by the cancellation-fluid.

I do not claim, broadly, the application of a soluble salt to paper, and then applying another salt which will produce a colored precipitate in the paper, as a number of such have been described, but do not come within the limits of my invention.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent of the United States, is—

1. The improvement in the art of preventing fraud in the use of stamps, checks, bonds, drafts, bills, labels, tickets, and all other written or printed matters, consisting in first impregnating the paper with a soluble salt or salts of either nickel or cobalt, or the two combined, and then canceling, writing, or stamping, or printing upon the paper so treated with a soluble sulphide, so as to produce an insoluble colored sulphide in the texture of the paper, substantially as set forth.

2. Paper suitable for use in making stamps, checks, bonds, and other instruments of value, consisting of paper such as ordinarily used for these purposes, impregnated with a solution of a salt of either nickel or cobalt, or both, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I do affix my signature in presence of two witnesses.

THOMAS C. VAN NÜYS.

Witnesses:

ROBERT C. FOSTER,

WALTER E. WOODBURN.