

UNITED STATES PATENT OFFICE.

ERNST KRETSCHMANN, OF GROSS LAFFERDE, GERMANY.

PAPER FOR CONTROLLABLE SECRET WRITING.

SPECIFICATION forming part of Letters Patent No. 650,901, dated June 5, 1900.

Application filed April 20, 1899. Serial No. 713,763. (No specimens.)

To all whom it may concern:

Be it known that I, ERNST KRETSCHMANN, a citizen of the Province of Hanover, and a resident of Gross Lafferde, in the Province of Hanover, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Paper for Controllable Secret Writing, of which the following is a specification.

The object of the present invention is a paper to be used in a secret correspondence and to be written upon with a non-poisonous ink, easily procurable anywhere, this paper at the same time giving the consignee an opportunity of ascertaining whether the contents of the letter have been read before by an outsider or not.

Secret inks termed "sympathetic" generally are solutions of haloid salts (chlorid, bromid, iodid, fluorid) of cobalt. These solutions, which are used like any other inks on ordinary writing-paper, leave no traces of the characters visible on the paper; but on heating the paper near a lamp or with a match the written characters appear in a pale green color against the white ground and disappear again after cooling. A great hindrance to the use of these inks was the fact that the ingredients, besides being poisonous, were not to be got everywhere. Moreover, anybody knowing of a secret correspondence going on and getting hold of such a letter could read it without any traces of his reading it being left. In my invention these disadvantages have been overcome in the following manner:

The paper to be used in a secret correspondence is impregnated with a solution of one of the aforesaid salts and written upon with a solution of common table-salt. The paper being marked with a control-ink will, on heating it, show the characters in the same way as did the old cobalt-ink-written letters; but at the same time the application of heat will cause the control-ink marks to be altered permanently, thus making the reading by an outsider liable to be detected.

Ordinary writing-paper having a rough surface is soaked in a solution of one of the haloid salts of cobalt, a convenient solution be-

ing composed of one part of chlorid of cobalt, twelve parts of glycerin, and two parts of gum-arabic in ninety parts of water. After completely soaking the paper is dried and glazed, as usual.

The preparation of the writing-ink need not be described, any strong solution of common table-salt in water giving the desired results.

The composition of colorless control-ink suitable for the purpose intended is as follows: about two grains of resorcin and the same quantity of paratoluidin dissolved in eight drops of water and six drops of sulfuric acid.

When a communication in table-salt ink is written on the aforesaid paper marked with dots or lines of the control-ink, the paper will appear unchanged until heat in any form is applied. The writing will then appear in a bluish green and the control-marks in dark brown; but while the writing will disappear again after cooling the control-marks will remain conspicuous.

The handling of paper soaked in weak solutions of cobalt salts like those described is by no means dangerous, as it is impossible to remove any cobalt from the paper by other but chemical means.

I claim—

1. A paper for controllable secret writing, containing a haloid salt or haloid salts of cobalt and bearing marks of an ink the color of which is permanently altered by heating, substantially as described.

2. Paper for controllable secret writing, consisting in unglazed writing-paper soaked in a solution of one part of a haloid salt of cobalt, twelve parts of glycerin and two parts of gum-arabic in ninety parts of water, and bearing marks of a solution of two grains of resorcin and two grains of paratoluidin in eight drops of water and six drops of sulfuric acid, substantially as set forth.

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

ERNST KRETSCHMANN.

Witnesses:

KIRKE LATHROP,
LEONORE BASCH.