UNITED STATES PATENT OFFICE.

ISAAC LICHTENTAG AND ALEXANDER LICHTENTAG, OF NEW ORLEANS, LOUISIANA, ASSIGNORS OF ONE-FOURTH TO SIMON WEIS, OF SAME PLACE.

WRITING-INK.

SPECIFICATION forming part of Letters Patent No. 614,734, dated November 22, 1898.

Application filed June 29, 1898. Serial No. 684,764. (No specimens.)

To all whom it may concern:

Be it known that we, ISAAC LICHTENTAG and ALEXANDER LICHTENTAG, citizens of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Writing-Inks, of which the following is a specification.

Our invention relates to the production of a new article of manufacture—a writing-ink intended to take the place of the ordinary writing-inks of commerce.

Writing-ink is water containing in solution some coloring principle. The writing-inks of commerce can be readily removed from paper by acids or other chemicals. A writing-ink whose coloring principle would be carbon has been striven for, as carbon is unaffected by chemicals or the action of time, and attempts at producing such an ink have been made. Carbon of course is insoluble in water. Neither will it mix with it and remain in suspension. So in such attempts gums have been employed to hold the particles of carbon in suspension. The writing done with such an ink, however, can be washed from the paper with water.

It will be seen that in the production of a carbon writing-ink there are two difficulties to overcome—first, to keep the particles of carbon in suspension in the water, and, second, to fasten the same to the paper.

After continued trials and much experimentation we have discovered that soap will overcome both these difficulties, provided nothing else be used. Our experiments show that the addition of any other material will either precipitate the carbon or render the ink washable from the paper on which it may be written.

In the accomplishment of the purposes hereinbefore set forth and by the means thus described we have employed all forms of soap, but have obtained the best results from ordinary laundry soap. We also have found that the best means of preparing the ink is to first treat the carbon with the soap and then place it in the water, rather than dissolve the soap in the water and then add the carbon. We obtain the best results by intimately mixing the finely-divided carbon (the finest grade of lampblack, for example) with an equal quantity of soap, by weight, thus giving each particle of carbon a soap coating, and then adding such coated carbon to water, stirring the same, when it will be observed that the carbon apparently dissolves, the suspension is so perfect. For a gallon of water use two ounces of finely-divided carbon (the finest grade of lampblack, for example) and two ounces of soap. We have thus produced a new and superior article of manufacture which can be bottled and sold as is done with the ordinary writing-inks of commerce. We have observed that the ink improves with time, working more perfectly after it has stood a month or two.

We have found that soap has been used as an ingredient in printing-inks, pencils, and crayons, but never in a water writing-ink. Consequently we claim its use in the manner and for the purposes for which we apply it not only as original with us, but entirely a new discovery and invention.

What we claim, and desire to secure by Letters Patent, is—

1. In the production of writing-inks of the class herein described, namely: those consisting of water, holding in suspension finely-divided carbon; the process of suspending the carbon in the water and of rendering it unwashable when written on paper, which consists in supplying a substance which dissolves in the water and holds up the finely-divided carbon, and which causes the water to penetrate into the paper on which it may be written, carrying with it the carbon and uniting the same to the fiber of the paper, said substance consisting of soap.

2. The process of making writing-ink which consists in intimately mixing finely-divided carbon with soap, thereby giving each particle of carbon a soap coating, and subsequently adding such coated carbon to water, whereby the soap is dissolved and the carbon suspended in the solution, substantially as described.

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Witnesses:
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RAND MOSPERS.