

UNITED STATES PATENT OFFICE.

JOHN H. MELCHERS, OF DECATUR, ILLINOIS.

PROCESS FOR BLEACHING OLD PAPERS, PAPER-STOCK, STRAW, &c.

1,032,229.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, JOHN H. MELCHERS, a citizen of the United States, and a resident of Decatur, in the county of Macon and State of Illinois, have invented a new and Improved Process for Bleaching Old Papers, Paper-Stock, Straw, &c., of which the following is a full, clear, and exact description.

My invention relates to a process for bleaching old papers, paper stock, straw, etc., and it consists in the various steps hereinafter set forth.

An object of my invention is to provide a process by means of which the coloring matter, ink, etc., may be removed from old papers so as to make stock of pristine whiteness.

A further object of my invention is to provide a process for bleaching paper stock in which there are iron salts.

A further object of my invention is to provide a process which is comparatively simple and inexpensive for carrying out the first-mentioned objects.

In the bleaching of old papers which contain ink, anilin, colors etc., the difficulty has heretofore been in getting rid of the iron salts which exist, or which are formed by precipitation. These salts tend to give the pulp a yellowish tint even when the main substance of the coloring matter is destroyed. The manner in which I overcome this difficulty is best explained by outlining the operations necessary for carrying out my process.

The material to be bleached is first beaten into a pulp with water. A quantity of alkaline sulfid is then added. This may consist of calcium sulfid (CaS) or potassium sulfid (K_2S). The addition of the calcium sulfid decomposes the coloring matter. The pulp is then washed in the customary way and neutralized with oxalic acid $\text{C}_2\text{H}_2\text{O}_4$ and is then bleached again with hyposulfurous acid HSO_2 , prepared by dissolving zinc with sulfurous acid H_2SO_3 . This process results in a product which is very white, and which can be used for making the whitest kind of paper.

I claim:—

1. The herein described process of bleaching old papers, paper stock, straw, etc., which consists in pulping the material, treating it with an alkaline sulfid, neutralizing the solution with oxalic acid and subsequently treating with hyposulfurous acid.

2. The herein described process of bleaching old papers, paper stock, straw, etc., which consists in pulping the material, treating it with calcium sulfid, neutralizing the solution with oxalic acid and treating the neutralized solution with hyposulfurous acid.

JOHN H. MELCHERS.

Witnesses:

L. C. WHEAT,
JACOB H. LATHAM.