

UNITED STATES PATENT OFFICE.

PERCY BRAUBACH MEERBOTT, OF SECAUCUS, NEW JERSEY, ASSIGNOR TO JOHN T. STANLEY, OF NEW YORK, N. Y.

COMPOSITION OF MATTER.

1,075,663.

Specification of Letters Patent.

Patented Oct. 14, 1913.

No Drawing.

Application filed October 21, 1912. Serial No. 726,891.

To all whom it may concern:

Be it known that I, PERCY BRAUBACH MEERBOTT, a citizen of the United States of America, residing at Secaucus, in the county of Hudson and State of New Jersey, have invented a new and useful composition of matter to be used for bleaching all fibers, vegetable or animal, and straw, and the fabrics and articles of commerce made from any of them, leather, and the like, of which the following is a description.

The objects of my invention are: To provide a highly efficient bleaching compound, which will not harm any fiber, which may be easily applied without danger of harmful mistakes, which will not cake or lose strength by the absorption of moisture from the atmosphere; one which though used in solution is transported dry as a solid; which is quick-acting, which leaves no salt or other deleterious substance in the water to set in the fiber; one which will have extensive use, especially in the laundry industry; one which in solution upon the application of heat up to the boiling point of water will freely liberate oxygen in a nascent state; one which in laundry work will reduce to a minimum the rinsing necessary to remove alkalis; one which is neither strongly acid, nor strongly alkaline, but remains around the neutral line in all reactions in the bleaching process; one which will serve also for cleaning purposes and as a disinfectant, which may be used with or without soap, or in acid water, and which is relatively cheap.

Other objects will appear from the herein-after description.

My composition consists of the following ingredients: Perborate of soda, NaBO_3 ; boric acid, H_3BO_3 , preferably in the proportion of one to one, thoroughly commingled in solid, pulverulent form. I do not confine myself to the proportions stated, but the best results are obtained by compounding the perborate of soda and the boric acid in the proportion of about one to one by weight, and somewhat the same results are obtained by compounding the ingredients one to one by volume. I am aware that the proportions of these ingredients for perfect chemical union, as deduced from molecular weights, would be perborate of soda 163.4 to boric acid, 123.4; but the excess of boric

acid in my preferred proportion of one to one accelerates the liberation of oxygen, and also the free boric acid will in turn react upon any free alkali, such as caustic soda or carbonate of soda, to form borax.

I will now describe my improved bleaching compound as preferably applied in the washing process in the laundry, as follows, as an illustration only, and not by way of limitation, and from this description all other uses may be deduced by those familiar with the art without experiment. After the wash has been introduced into the laundry wheel, it is given a cold water bath, called soaking, for a period of about fifteen minutes, to remove superficial dirt or any water soluble compounds, or any albuminous matter which can be carried away by cold water, and would be coagulated by hot water. Often a small addition of soda is made to this bath to overcome the hardness of the water. After this water has been discharged, a new addition of water is made and soap added. This is known as the cold suds, and is run for a period of about fifteen minutes, when the temperature is gradually brought to 160 degs. F. Again, after about fifteen minutes, this water is discharged and a second suds, similar to the first, is applied and brought to 160 degs. F., and here the bleaching solution or compound is added, in the proportion of about two ounces of the solid compound to thirty gallons of water. Now the water is brought almost to the boiling point. After a period of about twenty-five minutes this water is discharged and thorough rinsing made by new additions of water. At this point, with other bleaching agents much rinsing is necessary, because souring must subsequently be done, and with free alkali present, a salt will be formed, which is detrimental to the fiber and to good results in mangling; but with my bleaching compound, no such salt is formed, for with my improved compound the free boric acid present acts upon any free alkali that is in the wheel, almost to neutralize these alkalis, because of the formation of borax, which can be readily rinsed out and is known to be chemically feebly acid, and with hydrolysis becomes very feebly alkaline.

Proceeding with the laundry process, after thorough rinsing the wash is soured by

the use of any suitable acid, such as oxalic or acetic acid, and again the goods are rinsed until practically neutral, whereupon they are blued, extracted in an extractor to
5 remove the water, and then mangled.

My improved bleaching compound is not intended as a substitute for soap, and it can be used in water with soap or without soap, or in weak acid solutions. It will upon the
10 application of heat up to the boiling point of water, freely liberate oxygen in a nascent state, due to the fact that a mild acid like boric acid accelerates the liberation of oxygen.

15 In place of boric acid, I may employ any other mild acid in the solid state which will not coagulate soap, such as lactic acid, tartaric acid, formic acid, and the like, nor cake the compound because of its hygro-

scopic nature, and which will not liberate oxygen before put in solution. 2

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

1. A bleaching compound, consisting of perborate of soda and boric acid. 2

2. A bleaching compound, consisting of perborate of soda and any mild, inorganic acid in solid form which is soluble in water, and which will not destroy fiber. 30

In witness whereof, I have hereunto set my hand at the borough of Manhattan, city, county and State of New York, this 19th day of October, 1912.

PERCY BRAUBACH MEERBOTT.

In presence of—

H. N. DIKEMAN,

JOHN J. RANAGAN.