

# UNITED STATES PATENT OFFICE.

EDWIN EUSTON, OF ST. LOUIS, MISSOURI, ASSIGNOR TO EUSTON LEAD COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

## PROCESS OF MAKING WHITE LEAD.

1,002,380.

Specification of Letters Patent.

Patented Sept. 5, 1911.

No Drawing.

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*To all whom it may concern:*

Be it known that I, EDWIN EUSTON, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Processes of Making White Lead, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the manufacture of white lead.

The object of the invention is to provide a process of converting light, fluffy, over-carbonated lead of approximately the formula  $3\text{PbCO}_3 \cdot \text{PbO}_2 \cdot \text{H}_2$  into white lead of the theoretically correct formula  $2\text{PbCO}_3 \cdot \text{PbO}_2 \cdot \text{H}_2$  and having all the physical qualities of the best white lead now being manufactured.

Various so-called "quick processes" have heretofore been attempted in the manufacture of white lead, but such processes have not proved entirely satisfactory from a commercial standpoint owing to the fact that they produced a light, fluffy, over-carbonated lead which required considerably more linseed oil to form a paint than perfect white lead of the composition  $2\text{PbCO}_3 \cdot \text{PbO}_2 \cdot \text{H}_2$  and which was inferior in other respects as a pigment to perfect white lead.

I have discovered that the excess of carbon dioxide can be removed from such over-carbonated lead to produce white lead of the composition  $2\text{PbCO}_3 \cdot \text{PbO}_2 \cdot \text{H}_2$  similar in all respects to the best white lead produced by any method of manufacture. Various means can be used for removing this excess of carbon dioxide, such, for example, as treating the over-carbonated lead with a solution of neutral acetate of lead of the characteristic acid reaction, or with a dilute mixture of water and acetic or other acid, such as nitric or sulfuric acid, it being desirable, however, to use an acid which forms soluble lead salts, which are readily removed from the white lead by washing.

The over-carbonated lead being treated is agitated by any suitable means with a suffi-

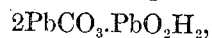
cient amount of acetate of lead solution or a mixture of acetic acid or other acid and water to permit free movement of the particles of lead in the liquid; and after all particles of the lead have been thoroughly treated the resulting white lead is prepared for the market in the usual way. The neutral acetate of lead solution should preferably show an acid reaction throughout the treatment, dilute acetic acid being added in small quantities during the process, when necessary. Or, if acetic or other acid and water are used, an amount of acid sufficient to obtain the desired result is used, usually 1% to 2% of the weight of lead treated being sufficient. The acid and water are preferably mixed together before being brought into contact with the lead, and additional amounts of dilute acid may be added during the treatment of the lead, if found necessary.

The products of the so-called quick processes and also the products sometimes produced by the old Dutch process, which are over-carbonated, can be converted into perfect white lead by my improved process.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A process of converting over-carbonated lead into commercial white lead, which consists in subjecting over-carbonated lead to the action of an acid solution and agitating it.

2. A process of converting light, fluffy, over-carbonated lead into commercial white lead of the chemical composition



which consists in treating the lead with a solution of neutral acetate of lead of acid reaction and agitating it.

In witness whereof I hereunto affix my signature in the presence of two witnesses, this twenty-ninth day of August, 1910.

EDWIN EUSTON.

Witnesses:

WELLS L. CHURCH,  
GEORGE BAKEWELL.