

United States Patent Office.

WILLIAM JOHN LYND, OF GOLDEN CITY, COLORADO TERRITORY.

Letters Patent No. 90,565, dated May 25, 1869.

IMPROVED PROCESS OF SEPARATING IRON AND OTHER METALS FROM POTTERS' CLAY.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, WILLIAM JOHN LYND, of Golden City, Jefferson county, Colorado Territory, have invented a new and useful Process for Removing Iron, Copper, and Other Discoloring-Matter from Potters' Clay and other Argillaceous Substances; and I hereby declare the following to be a full, clear, and exact description of the same.

The object of my invention is to remove the iron, copper, and other discoloring matter from argillaceous substances which are to be used for the manufacture of white and other wares, or for other purposes; and to this end,

My invention consists in subjecting the argillaceous substance in solution to the action of artificial or natural magnets, or of electricity, or of both in conjunction, in the manner herein specified.

In carrying out my invention, I employ a bath, of wood or other suitable material, which contains a solution of potters' clay, (water being usually the solvent,) and one or more artificial magnets, usually plates or sheets of magnetized iron or steel; but these magnets may be bars, rods, balls, chippings or filings of steel, iron, nickel, cobalt, or any composition capable of being magnetized.

In case thin magnetized plates of iron or steel be adopted, they are held a short distance apart from each other in the bath, by ordinary or suitable means, or they may be joined together, with their similar poles in contact.

When the magnets are thus placed in the bath, a thin solution of potters' clay is poured in, so as to partially or wholly cover them, which is allowed to remain for from six to twelve hours.

At the end of this period, the magnets are taken from the bath, and the iron, copper, and other discoloring matters deposited on them from the liquid clay are removed, after which they are again deposited in the solution, and this process is kept up until the clay is purified.

For better and more rapid purification, there may be employed two or more baths, provided with similar or dissimilar magnets, as the case may be.

Under this arrangement, the argillaceous solution is allowed to pass from the first bath to the second, from the second to the third, and so on, before the magnets in the bath from which the clay is withdrawn are removed for cleansing.

In connection with, and in furtherance of the above process, the bath or baths containing the clay in solu-

tion may be advantageously lined with magnetized or unmagnetized iron or steel.

In the process as above described, natural or artificial magnets are alone employed to act upon the bath of clay, without the aid of any electrical current or currents.

Yet electricity can be used to advantage in the following manner:

Supposing, for instance, there be a succession of baths. Let the magnets be removed from the first bath, leaving therein nothing but the clay in solution. Then let two wires, leading from a suitable battery and connected with the bath, convey a current of electricity through the clay. This will, in from twenty-four to thirty hours, precipitate the discoloring matter, or cause it to settle at the bottom of the bath.

The upper portion of the clay can now be drawn off into the second bath, and there be acted on by the magnets, as above described.

The poles of the battery are not placed in contact with any of the magnets, nor is the battery used in combination or simultaneously with them; and this use of electricity is not a necessity, since the purification can be effected without it. It is, however, of some advantage, and expedites the operation, by preparing the clay for the subsequent application of the magnets.

Having now described my invention, and the manner in which the same is or may be carried into effect, What I claim, and desire to secure by Letters Patent, is—

1. The process of removing iron, copper, and other discoloring-matters from potters' clay and other argillaceous substances, by subjecting the clay, when in solution, to the action of one or more magnets, in the manner and for the purposes set forth.

2. The method of precipitating the iron and other discoloring-matter in the clay solution, by passing through the bath containing such solution a current of electricity, as and for the purposes set forth.

3. The mode of preparing potters' clay and like substances from which discoloring-matter is to be removed, by subjecting such substance, in solution, first, to the action of a current of electricity, and afterward to magnetic action, in the manner and for the purposes specified.

Witnesses:

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