

# UNITED STATES PATENT OFFICE.

WILLIAM A. O. WUTH, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO HIMSELF WASHINGTON BECK AND HENRY FEURHAKE, OF SAME PLACE.

## IMPROVEMENT IN METHODS OF CLEANING GLASS-MOLDS.

Specification forming part of Letters Patent No. **221,138**, dated October 28, 1879; application filed October 2, 1879.

*To all whom it may concern:*

Be it known that I, W. A. OTTO WUTH, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Method of Cleaning Glass-Molds; and I do hereby declare the following to be a full, clear, and exact description thereof.

Glass molds and plungers when used become coated with a hard film or coating of magnetic oxide of iron, which is exceedingly injurious to the glassware, in that it imparts to it a greasy appearance instead of the brilliant surface obtained in the mold when new or clean. This coating is formed by one day's use of a mold, and the only way heretofore known of removing it is by scouring the mold with a stone dipped in oil or emery; but this is objectionable, because almost invariably the mold is made uneven thereby, is soon worn away, and the pattern, if any, is ruined by the rubbing off of the clear sharp lines and corners. It is only by preserving these clear sharp lines and corners that it is possible to obtain pressed glassware resembling cut glassware.

In addition to this it is an operation which, owing to the hardness of the oxide, requires much time and labor, and is consequently a large item of expense, as the molds and plungers have to be cleaned every day. An ordinary plain mold will take from one to two hours to clean.

There are many molds of fine and intricate pattern which are never cleaned, because it cannot be done without injuring or ruining them.

By my invention I can remove the coating of magnetic oxide from the mold or plunger, and restore it to its first finish in a short time, without destroying, injuring, or changing its original surface or pattern; and it consists in treating the mold or plunger to a bath of melted borax, phosphate, or silicate of soda, or similar salt, which, uniting with oxide, separates it from the metallic iron, and forms therewith a glass, leaving the mold or plunger in a clean condition.

To enable others skilled in the art to use my invention, I will now describe its use and operation.

I melt a sufficient quantity of borax, phosphate, or silicate of soda, or other equivalent salt, in a suitable kettle to form a bath, in which to immerse the mold or plunger which is to be cleaned. The borax unites with the magnetic oxide, destroys its cohesion to the mold, and forms a colored glass. The mold is then taken out of the bath, and will be found to be coated with a film or enamel of glass, which, when the mold becomes cold, may be easily removed by slight blows of a suitable hammer, wooden mallet, or other instrument, as it is very brittle, or by immersing it in boiling water.

It is necessary, in order to prevent the mold from becoming reoxidized, to permit it to cool, either as described or by remaining in the bath until the bath becomes cold, before it is exposed to the air, as the action of the air upon it while heated causes its reoxidation.

After the removal of the glassy film adhering to the mold when it is taken out of the bath, it will be found to be entirely free from the coating of magnetic oxide, with its finish unimpaired, and in condition for immediate use.

The same bath may be used many times, its properties not being impaired by use. Its quantity, however, will be gradually diminished, and it must therefore be replenished from time to time.

The molds and plungers may be placed in the bath immediately after being used, and while still hot from such use. The cost of the bath will be very small. The salt will not attack or injure the metallic iron of the mold.

By this means I am enabled to effect the perfect removal from molds and plungers of the coating of magnetic oxide without labor and without injury to the pattern or surfaces thereof, and at very small expense.

What I claim as my invention, and desire to secure by Letters Patent, is—

The within-described method of cleaning glass molds and plungers, consisting of submitting them to a bath of melted borax, phosphate, or silicate of soda, or other salt, which, uniting with the coating of magnetic oxide of iron on the molds and plungers, will form a glass therewith, substantially as described.

In testimony whereof I, the said W. A. OTTO WUTH, have hereunto set my hand.

WILLIAM AUGUST OTTO WUTH.

Witnesses:

JNO. K. SMITH,  
T. B. KERR.