UNITED STATES PATENT OFFICE.

C. P. BROCKETT, E. TODD, AND JNO. BROCKETT, OF NEW HAVEN, CONN.

COMPOSITION FOR CLEANING AND SILVERING METALS.

Specification forming part of Letters Patent No. **27,425**, dated March 13, 1860.

To all whom it may concern:

Be it known that we, C. P. BROCKETT, ELIPHALET TODD, and JOHN BROCKETT, all of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Composition for Cleaning and Silvering Metals by One Continuous Application; and we do hereby declare that the following is a full, clear, and exact description of the same.

The nature of our invention consists of a composition of an alkaline solution of silver and soap, whiting and alcohol, forming what we call "silver-soap," for the purposes of cleaning and silver-plating metal at one continuous operation, by simply rubbing it on the metal to be plated with a clean linen rag or other such substance.

To enable others skilled in the art to make and use our composition, we will proceed to describe it in as clear and brief language as possible.

We take one gallon (1 gal.) of soft water and one pound (1 lb.) cyanuret of potassa, and to this we add two ounces (2 oz.) of silver dissolved in as much hydrochloric acid as will take it up. This composition forms our cyanide of silver—an alkaline silver solution. To the solution thus made we add eight pounds (8 lbs.) of good white or common hard soap, cut into shreds, also four pounds (4 lbs.) of the common sal-soda of commerce, and stir the whole together in a proper vessel, so as to incorporate them together. This action is promoted by the aid of moderate heat. When this is accomplished we add to the foregoing solution four pounds (4 lbs.) of pulverized refined whiting (carbonate of lime) and one quart (1 qt.) of alcohol, and stir the whole thoroughly together for some minutes, when they become a homogeneous mass, forming our silver-soap, which is adapted for the purposes heretofore pointed out. Different quantities may be made, using these relative proportions of substances.

The method of applying this composition is simply by rubbing it on the surface of the metal to be plated. It is especially adapted for replating the metal of old harness and carriage-work, and such like plated saddlery-ware, the brass work of which has been previously plated with silver and afterward worn off. We take, for example, a piece of such hardware denuded of its silver-plating, and the brass-work left rusty. To this we apply our silver-soap described, by simply rubbing it on with a rag, when it soon removes all the oxide on the metal, and leaves a coating of pure silver adhering to the brass in its place, and forming a true silver-plating which is capable of being polished with a burnisher, and of enduring for a considerable period of time. We made this discovery by experimenting, and now use our silver-soap in common practice with great success. The soap and whiting seem to possess the property of removing the oxide and dirt from the metal to be plated, and to prepare the surface to attract and make the silver adhere to it. The alcohol promotes the intimate mixture of the substances. This at least seems to us to be its office according to our experiments. It is well known that soap will combine with any alkaline solution to act in a superior manner, when strongly alkaline, and not too stronly caustic. Hence the employment of the crude carbonate sal-soda.

We have endeavored to explain the chemical actions and reactions of the substances of which our silver-soap is composed; but whether we are correct or not the soap itself, in regard to its composition and its very useful results, is a practical and useful new invention.

The same composition, with the exception of substituting gold or other precious and enduring metal for the silver, may be used for gilding or plating various metals.

We believe that we are the first who have discovered that a soapy metal compound is adapted to clean and plate metal at one continuous application, and this is our invention; but a silver compound is the most useful that can be used, because it is the one which will be most generally employed.

Our silver-soap will plate new or old metal, but it is specially and most conveniently adapted for replating, as it can be applied in spots of any size to old articles that have been partly deprived of their plating, more especially brass plated articles; but it is also adapted to brass, copper, &c.

The proportions of the substances described may be somewhat varied without vitiating the results which we obtain.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is—

The compound of silver-soap herein described, consisting of an alkaline solution of silver, soap, carbonate of lime, and alcohol, in about the proportions stated, and for the purposes of cleaning and plating metals, as set forth.

C. P. BROCKETT.
ELIPHALET TODD.
JOHN BROCKETT.

Witnesses:
EDWIN M. ABBEY,
GEO. ARTHUR FLAGG.