UNITED STATES PATENT OFFICE.

GEORGE D. FEIDT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO AMERICAN CHEMICAL PAINT COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF DELAWARE.

CLEANING COMPOUND FOR METALS.

1,119,781. Specification of Letters Patent. Patented Dec. 1, 1914.

No Drawing. Application filed September 14, 1914. Serial No. 861,550.

To all whom it may concern:

Be it known that I, GEORGE D. FEIDT, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Cleaning Compound for Metals, of which the following is a specification.

The principal object of the present invention is to provide a satisfactory, easily applied, comparatively inexpensive and efficient detergent or cleaning compound for cleaning metals and preventing them from rusting or corroding both before and after painting.

Although the compound or detergent may be used in connection with almost any of the commercial metals, it is especially useful in treating steel and iron, which are more liable to corrosion than any other commercial metals.

I have discovered that steel and like metals may be cleaned to great advantage by means of an admixture of denatured alcohol and orthophosphoric acid. This compound or admixture of alcohol and phosphoric acid not only attacks the steel, leaving a clean bright surface, but also chemically acts on obnoxious substances, such as oil and grease, perspiration, soldering fluids, moisture, etc., changing them into harmless bodies which are readily wiped away when the cleaning operation is completed. The compound or admixture quickly dissolves rust and thin coatings of oxids and penetrates all cracks, and crevices, producing a totally clean surface that is free from tendency to rust. Steel surfaces treated by my detergent are in excellent condition for receiving and retaining a coat of paint. Steel cleaned by my detergent or admixture and then painted will not rust, because the paint comes into actual and intimate contact with the surface of the steel and is not separated from it by rust forming or other deleterious bodies, such as moisture, oil, grease, soldering fluids, etc.

My cleaning composition, compound or manufacture is made by mixing orthophosphoric acid and denatured alcohol. As a result of this heat is liberated and an alcoholic phosphate is formed and an excess of alcohol is added so that the resulting compound is an alcoholic phosphate dissolved in alcohol.

The proportion of the acid to the alcohol may be varied to a great extent provided there is sufficient alcohol to complete the chemical reaction with total amount of the acid,—that is the excess of alcohol may be varied to suit conditions. A large excess of alcohol produces a thin liquid that easily penetrates all cracks and seams but acts rather slowly whereas a small excess makes a more viscous liquid that acts quickly. I have found that suitable proportions for ordinary sheet steel work are as follows: Orthophosphoric acid, 87% solution, by volume, 1 part. Ethyl alcohol, denatured, by volume, 2 parts. The compound thus formed is inflammable due to the alcohol but if this property is objectionable it may be destroyed by the addition of suitable quantities of carbon tetrachlorid, say by ¼ volume of carbon tetrachlorid.

The described composition of matter or admixture may be used by painting the metal with it and then after the lapse of a few minutes, during which it can act, the metal is wiped. When the metal is dry it can be painted or if the metal is protected from the elements it need not be painted until after the lapse of several months.

What I claim is:

1. A cleaning agent for metals consisting of an admixture of orthophosphoric acid and denatured alcohol.

2. A cleaning agent for steel consisting of an admixture of phosphoric acid, alcohol and carbon tetrachlorid.

In testimony whereof I have hereunto signed my name.

GEORGE D. FEIDT.

Witnesses:

J. H. CRONER,

J. T. FEIDT.