UNITED STATES PATENT OFFICE.

FREDERICK E. DODGE, OF MALDEN, MASSACHUSETTS.

ANTICORROSIVE COATING.

975,124. Specification of Letters Patent. Patented Nov. 8, 1910.

No Drawing. Application filed November 22, 1909. Serial No. 529,435.

To all whom it may concern:

Be it known that I, FREDERICK E. DODGE, a citizen of the United States, residing at the city of Malden, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Composition of Matter Entitled "Anticorrosive Coating," of which the following is a specification.

The object of this invention is the compounding of a coating or cement for application particularly to iron and other metals requiring protection against oxidation, for filling holes in metal, for smoothing rough surfaces, and generally for coating objects with either a thick or a thin layer which rapidly hardens, and which when fully set cannot be chipped, scaled or peeled off by moisture, heat, wear or even the sharp blows of a hammer.

I usually prepare this composition, which I term an anticorrosive brush and trowel cement, in two shades, one brown and the other buff. Although I do not restrict myself to these two shades, I prefer the same because well adapted for all the usual purposes for which the cement is designed.

For the production of the brown cement, the following materials are used, and in about the proportions named:

Red lead	20	parts.
Monoxid of lead	25	"
White lead	25	"
Whiting	18	"
Boiled linseed oil	2½	"
Venetian red	2½	"
Japan drier	2	"
Spirits of turpentine	2	"
Lamp black	.025	"
China clay	3	"

To make the buff cement, the following materials are compounded:

Red lead	20	parts.
Monoxid of lead	25	"
White lead	25	"
Whiting	18	"
Boiled linseed oil	2½	"
French yellow ocher	2½	"
Japan drier	2	"
Spirits of turpentine	2	"
China clay	3	"

In mixing the above, the red lead, monoxid of lead, white lead and linseed oil are placed together in an ordinary paint grinding machine, and ground to a stiff paste. This mass is then put in a mill known as a "putty chaser," and ground for two hours. If the brown coating is the one being produced, the Venetian red and lamp black are now added, followed by the turpentine and the drier. With the mill in operation, the whiting is next slowly added, and finally the China clay. After this, the mill is run for another two hours, making a total of four hours grinding.

For the buff coating, the French yellow ocher should be substituted in lieu of the Venetian red and lamp-black, but the process is otherwise the same.

Of the above materials, the monoxid of lead should be unvitrified, and what is known as "massicot," the whiting should be bolted; the Venetian red should be of the bright grade; the French yellow ocher should be a dry powder; the lamp-black in oil, and the China clay in a fine powder.

In place of the white lead, there may be substituted either zinc white, barytes, strontian white, zinc sulfid, lead sulfids, or lead sulfates, but they are not so desirable as the white lead. This element, when free from acid and ground in pure oil, forms a binding for the other pigments, inasmuch as they are all used in a dry form and require a finer ground pigment to hold any particles that may not absorb sufficient oil to unite them. Moreover, the white lead is not easily affected by the other elements, and can be used with any of the others to form the cement.

The China clay is employed because of its property of holding in solution the more weighty pigments, and to lighten the specific gravity of the whole; but it is not so essential as the others, and may be substituted by silica, gypsum, alumina, soapstone and a few other inert elements of like characteristics.

One advantage of the whiting used is that it acts as a good filler, and is an absorbent of the oil, thereby rendering the surface of the coating somewhat dry so that successive coats of the cement will adhere one to the other in case several layers are desired, this whiting, as well as the China clay and other elements named in connection therewith, may be grouped under the general heading of "inert earths."

In applying this cement to iron, any surface rust is first removed. If the coating

is put on with ordinary care, all rusting of the metal will absolutely cease. The reason why all rusting beneath this cement is prevented is because it keeps from the metal all possible carbonic acid, hydrogen peroxid and other oxidizing elements, and further excludes any electrolytic action. It is therefore impossible for the iron or other metal to be superficially affected, no matter for how long a time the same is exposed to any oxidizing source, provided the coating remains intact. The cement being absolutely impervious to moisture and ordinary acids, as well as resistant to wear, there is no way in which the metal can be reached by water, or chemicals such as would be met with in usual structures.

So hard and resistant is this cement when fully hardened, that hammer-blows will not flake it off from the metal surface to which it has been applied, and it is only by means of a hammer and cold-chisel that it can be removed.

When used for filling blow-holes and other cavities in cast metal, this cement will behave to the cutting or boring tool practically like the iron, steel or other metal itself.

In above formulæ, I have provided for but two shades or colors of the coating, but the same may be made in almost any other desired shades, subject to the presence of the red lead and monoxid of lead, by the substitution of such coloring matters as are necessary for the production thereof.

This cement, when it is to be used as a brush paint, should be thinned with pure spirits of turpentine to the proper consistency. Whenever the cement is not to be used for a few days, it should be kept in a tightly closed receptacle and have its surface covered with turpentine.

While it is proven that most remarkable effects are obtained in the use of the coating wherein the unvitrified monoxid of lead is employed as above set forth, yet I find that an unusually good coating for metals is produced when usual litharge of commerce is substituted therefor, provided the proportions of the ingredients are as stated.

What I claim as my invention and for which I desire Letters Patent is as follows, to wit;—

1. The within described cement composed of red lead twenty parts; monoxid of lead twenty-five parts; white lead twenty-five parts; whiting eighteen parts; linseed oil two and one-half parts; Japan drier two parts; spirits of turpentine two parts, and China clay three parts.

2. The within described cement composed of red lead, unvitrified monoxid of lead, white lead and an inert earth in substantially equal proportions, and small amounts of boiled linseed oil, Japan drier and spirits of turpentine.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 18 day of November, 1909.

FREDERICK E. DODGE.

Witnesses:
EDMUND J. FARR,
THOMAS J. HEWITT.