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SOLUTION FOR TREATING THE SURFACE OF STEEL OR IRON FOR THE APPLICATION OF PAINT

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6 Claims. (Cl. 148—6.5)

This invention relates to a rust-proofing process and formula which will effectively produce or cause to be produced on iron or steel or their alloys a protective rust-resisting coating which is a satisfactory finish coat in itself when oiled, or provides an adherent base for paint, enamel, or lacquer.

In the use of my improved solution herein set out I have demonstrated to my entire satisfaction that a treatment of a surface of steel or iron with my improved solution will enable paint, lacquer, japan, or other coloring or coating matter to be applied in an effective manner and that such coating will be retained until it is worn away as the result of natural effects. In other words, the coating will adhere so tenaciously as to prevent its being peeled or flaked off.

I am disclosing herein the ingredients comprising formulas for my improved solution and the proportions of such ingredients and the method of their application, these ingredients, the proportions thereof and method of application, having produced results entirely to my satisfaction. It will be understood, however, that the proportions may be deviated from to some slight extent and yet produce effective results, but as above noted, the formulas set out have been most satisfactory.

My improved solution comprises oxalic acid combined with nitric acid and a nitrate, either or both of the latter. In the treatment of a surface of steel or iron such surface is first thoroughly cleaned in any desired manner, gasolene or other similar substance having been found to work satisfactorily. After such surface has been cleaned and dried it is treated with an application of my improved solution. This may be applied by dipping the article into the solution and then allowing the solution to drain from the article. The article is then rinsed in water to remove any surplus portions of the ingredients and such article may then be subjected to any desired degree of heat, as in an oven, for the purpose of drying it.

As above intimated I contemplate a combination of various ingredients hereinbefore mentioned. As an example, oxalic acid and nitric acid may be employed to comprise the solution, or oxalic acid and a nitrate may be employed, or the three ingredients oxalic acid, nitric acid and a nitrate may be combined in the solution. The ingredients and the proportions thereof which I have found to effect most satisfactory results are as follows:

	To 1 gal. water
Oxalic acid	oz. 2
Nitric acid (36° Baumé)	c. c. 20

	To 1 gal. water
Oxalic acid	oz. 2
Nickel nitrate	oz. ¼

	To 1 gal. water
Oxalic acid	oz. 2
Nitric acid (36° Baumé)	c. c. 10
Nickel nitrate	oz. ¼

While I have mentioned in the above table the use of nickel nitrate it will be understood that any other nitrate may be employed as may be desired.

The steel or iron surfaces may be treated with my improved solution in a wide variety of temperatures which may vary from ordinary room temperature to 212° F. It is here noted, however, that the higher the temperature the quicker will the process be completed. As an example, with a room temperature of about 100° the treatment has been completed in about three minutes and with a higher temperature the treatment may be completed in less time.

I claim:

1. The process of producing a rust-resisting coating on iron or steel articles by subjecting them to the action of oxalic acid and nitric acid in solution and in the proportions of 4 to 12 parts of oxalic acid to 1 to 3 parts of nitric acid.

2. The process of producing a rust-resisting coating on iron or steel articles by subjecting their surfaces to the action of oxalic acid, nitric acid, and a nitrate in solution and in the proportions of 4 to 12 parts of oxalic acid to 1 to 3 parts of nitric acid.

3. A solution comprising oxalic acid and nitric acid and in the proportions of 4 to 12 parts of oxalic acid to 1 to 3 parts of nitric acid.

4. A solution comprising oxalic acid, a nitrate, and nitric acid and in the proportions of 4 to 12 parts of oxalic acid to 1 to 3 parts of nitric acid.

5. A solution consisting of oxalic acid dihydrate and nitric acid (36° Baumé) in the proportion by weight of 4 parts oxalic acid dihydrate to 1 part nitric acid (36° Baumé) in 1 gallon of water.

6. A solution consisting of oxalic acid dihydrate, a nitrate, and nitric acid (36° Baumé) in the proportion by weight of 8 parts oxalic acid dihydrate, 1 part nitrate and 1 part nitric acid (36° Baumé) in 1 gallon of water.

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