

UNITED STATES PATENT OFFICE.

HENRY W. FARK, OF CLEVELAND, OHIO.

WIRE-DRAWING COMPOSITION.

SPECIFICATION forming part of Letters Patent No. 618,079, dated January 24, 1899.

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To all whom it may concern:

Be it known that I, HENRY W. FARK, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Methods of Making Wire, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The objects of my invention are to make wire-drawing easier and cheaper than it was to the present time, to prevent scratching, cracking, and breaking of the wire while it is being drawn, and to have a wire in better condition when it is finished than could be produced heretofore.

The effect of my compositions is, first, the wire is thoroughly cleaned (without injury to it) of all scales, rough iron, and foreign matter, so that a coating can be put on which will come in contact with the solid material of the wire, and, second, a coating is left on the wire which causes it to become ductile and to slip easily and prevents scratching, cracking, and breaking.

My invention consists of five general parts. Each part is composed of a mixture which co-operates with and is aided and influenced by the mixtures composing the other parts.

The first part consists of a mixture through which the wire runs just before it passes through the last set of rolls, while it is yet hot and in the rod form. It is for the purpose of cleaning the wire from rough material and scales that may be clinging to it. The composition must be hot while it is being mixed and will be kept hot on account of the wire being hot while it is drawn through it. It consists of the following ingredients in the proportions specified: paraffin-wax, four pounds; water, one barrel; alcohol, one-half pint; camphor, one ounce; camphor-oil, one table-spoonful. Having been drawn through this solution, the wire is ready for the next mixture, which comprises the second part of my invention.

The second part consists of a mixture which further cleanses the wire and leaves a coating on it preparatory for its passage through the first dies. It is mixed by steaming. It consists of the following ingredients in the

proportions specified: water, one barrel; glue, two pounds; slaked lime, one bushel; paraffin-wax, four pounds; camphor-oil, one ounce; sulfur, one ounce. The camphor-oil and sulfur must be mixed together before they are put with the other ingredients. The wire having been dipped into this solution dries very quickly and therefore the dry-house is not necessary, but the wire is ready to run through the dies. This being done, the wire is ready for the next step, which composes the third part of my invention.

The third part is a mixture which will remove the coating of the second part, together with all scales and impurities it may have gathered from the wire while it was being passed through the dies. The wire is dipped into this solution. It is composed of the following ingredients in the proportions specified: solution of alcohol, one-half pint; camphor, one ounce, (two table-spoonfuls;) water, one barrel; camphor-oil, one teaspoonful; copperas ten pounds. After it has been dipped into this solution it is then dipped into water and is then ready for the fourth part of my process.

The fourth part consists of a mixture which further cleanses the wire. It consists of the following ingredients in the proportions specified: camphor, one ounce; alcohol, one-fourth pint; water, one barrel. After this has been applied, the wire is permitted to lie for a few minutes until the liquid has dripped off. The wire is then ready for the "plating," as it is called, which may be done in the manner always employed for this purpose heretofore, as follows: by dipping the wire into a solution containing the material with which it is to be plated—for example, a solution of copperas and water. The solution varies with the coating or plating that may be desired. The wire is now ready for the next composition, which is the fifth part of my invention.

The fifth part consists of a mixture which is for the purpose of coating the wire preparatory for its last passage through the dies. It prevents the copper or brass plating from being removed and renders wire more ductile and prevents the formation of scales and also prevents scratching and breaking. It is composed of the following ingredients in the proportions specified: water, one barrel; glue,

one-half pound; soap, one bar or its equivalent; yolks of two eggs.

The advantages of my invention consist—

First. In the great economy. The materials used are much cheaper than the materials used in compositions for wire-drawing heretofore. The dry-house is dispensed with, and for that reason also much fewer men are necessary than in the use of the compositions employed heretofore.

Second. The work is easier and wire can be drawn more quickly, without breaking, scratching, or cracking, than could be done up to the present time.

Third. In the improved condition of the wire after it is finished. The wire is not cracked or scratched, and having been thoroughly cleaned from all scales and the formation of new scales prevented the plating of copper, brass, or tin, whatever may have been used, adheres directly to the solid wire, and therefore does not peel off to leave a place to rust.

The wire is not injured in cleaning by the use of my composition.

What I claim, therefore, as my invention, and desire to have secured by Letters Patent, is—

The method of making wire, which consists of passing the hot rod through a composition composed of the following ingredients, in the proportions specified: paraffin-wax, four pounds; alcohol, one-half pint; water, one

barrel; camphor, one ounce; camphor-oil, one table-spoonful, then passing it through the last set of drawing-rolls, then passing it through a solution which further cleans it and leaves a coating preparatory for its passage through the dies, composed of the following ingredients, in the proportions specified: water, one barrel; glue, two pounds; slaked lime, one bushel; paraffin-wax, four pounds; camphor-oil, one ounce; sulfur, one ounce, then drawing the rod through suitable dies, then passing it through a solution for removing this coating and further cleaning the wire, composed of the following ingredients, in the proportions specified: solution of alcohol, one-half pint; camphor, one ounce, (two table-spoonfuls;) water, one barrel; camphor-oil, one teaspoonful; copperas, ten pounds, then passing the wire through the cleaning solution, composed of the following ingredients, in the proportion specified: camphor, one ounce; alcohol, one-quarter pint; water, one barrel, then plating the wire, then passing it through the solution for coating the wire, preparatory to its last passage through the dies, composed of the following ingredients in the proportions specified: water, one barrel; glue, one-half pound; soap, one bar, or its equivalent; yolks of two eggs.

HENRY W. FARK.

Witnesses:

SAMUEL C. BLAKE,
E. P. EIRICH.