UNITED STATES PATENT OFFICE.

VIRGIL D. KENERSON AND CHARLES N. HOWE, OF WORCESTER, MASS.

PREPARATORY COATING FOR WIRE-DRAWING.

SPECIFICATION forming part of Letters Patent No. 297,606, dated April 29, 1884.

Application filed September 14, 1883. (No specimens.)

To all whom it may concern:

Be it known that we, VIRGIL D. KENERSON and CHARLES N. HOWE, both citizens of the United States, and both residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Preparatory Coatings for Drawing Wire; and we declare the following to be a description of our said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same.

The object of our invention is to afford a bath or coating material for preparing wire for the dry process of drawing, which will produce a superior, fine, even, and lustrous finish upon the surface of the wire, and which shall be free from tendency to attract moisture and rust.

The nature of our invention consists in a bath or coating composed of or containing starch in solution with water or other suitable solvent, the starch being cooked or scalded, and employed either alone, with sal-soda, or combined with other substance which it may for some cases and purposes be desirable to employ.

In the preparation of our improved coating-bath we dissolve and boil a quantity of ordinary dry granulated starch in a sufficient amount of water to give a liquid bath of the desired consistency, the density of the solution being regulated by the number of drawings to which the wire is to be subjected. If only one drawing is to be given, the bath may be made quite thin, so as to deposit a comparatively thin coating on the metal surface; but if several drawings of the wire through the dies are to be made before annealing, then the bath may be made quite thick and tenacious, so as to deposit and dry as a thick coating on the wire. It should not, however, be so thick that it will not deposit and dry in an even and uniform manner upon the surface of the metal.

If the coating material is not to be used immediately, or is expected to last for several days, it will be found beneficial to add to the solution or mixture a small quantity of sal-soda or alkaline salt, or some equivalent substance, to prevent the mixture from fermenting, changing, or separating. This will preserve the bath in proper condition for use for a somewhat longer time without materially detracting from its beneficial qualities and effects.

The following may be stated as suitable proportions for a bath or preparatory wire-coating for ordinary wire-drawing, viz: ten pounds of starch and thirty gallons of water thoroughly mixed together and slightly boiled or scalded.

This coating-mixture is applied to the wire, in the usual manner, by immersing the wire in coils within the bath and then drying it in a heated room until the time of drawing the wire. The solution can be used either hot or cold, as preferred.

This coating, while it is highly advantageous for all varieties of wire, is most especially beneficial for use on needle-wire, wire to be copper-finished, and on the nicer grades of wire, as it gives a very superior, smooth, even, and beautiful surface finish, such as cannot be obtained with the ordinary flour coatings, lime coatings, or other kinds of coatings heretofore employed.

If desired, scalded or boiled starch may be used in other mixtures for coating wire preparatory to drawing in dry condition, with beneficial results, and we desire to include such use as within the scope of our invention.

We are aware that rye-meal, starch-water, beer-grounds and wheat-flour have been heretofore used in what is known as the "wet process" of drawing wire. Such lubricants and the method of their use are, however, of essentially different nature from our present invention, and we do not make claim herein to such or to any other farinaceous substances as employed in the wet process of drawing wire.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. As a coating for wire preparatory to drawing, a paste made of starch mixed with

water and scalded and dried upon the surface of the wire, substantially as set forth.

2. A coating for wire preparatory to drawing, consisting of a paste made of starch mixed with water and scalded, and having combined therewith an alkaline substance—as sal-soda—substantially as hereinbefore set forth.

Witness our hands this 11th day of September, A. D. 1883.

VIRGIL D. KENERSON.
CHAS. N. HOWE.

Witnesses:
CHAS. H. BURLEIGH,
S. R. BARTON.