

UNITED STATES PATENT OFFICE.

EDWIN J. WATSON, CHARLES S. HALL, AND PAUL BAUER, OF WORCESTER, MASS.; SAID BAUER ASSIGNOR TO SAID WATSON AND HALL.

COATING FOR WIRE PREPARATORY TO DRAWING.

SPECIFICATION forming part of Letters Patent No. 284,345, dated September 4, 1883.

Application filed February 12, 1883. (No specimens.)

To all whom it may concern:

Be it known that we, EDWIN J. WATSON, CHARLES S. HALL, and PAUL BAUER, all of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in the Art or Process of Drawing Wire; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to the application of a peculiar anti-friction coating or lubricant to the surface of wire or wire rods, to facilitate their reduction in size; and it consists in the use of chlorine to unite such substances as are suitable for coatings or lubricants to the wire which is to be drawn or reduced.

It is well known to those skilled in the art that when wire is to be reduced by drawing through a hole in a die-plate there must be some substance on the wire which shall come between the surfaces of the two metals—viz., the wire and the die-plate—in order to lessen the friction and to prevent the die from scratching the wire.

It is well known to those versed in chemistry that chlorine has a powerful affinity for the metals. We have made use of this property by employing chlorine, either free or in its compounds, to impart valuable adhesive qualities to substances which are suitable for coatings or lubricants for wire which is to be drawn or reduced in size.

Our composition or coating is composed of the following substances mixed together: about four pounds of chloride of lime, six gallons of water, six gallons of pulp or paste made from potatoes or any vegetables of similar qualities or constituents, or made from any kind of flour or from starch, and three gallons of milk of lime.

The proportions of the ingredients of our composition may be varied somewhat, if de-

sired, as we do not wish to limit ourselves strictly to the proportions above given.

It is not necessary to use all of the above-named substances for a coating, as chlorine and water, in combination with one or more of the other substances named, are all that are necessary to constitute a coating that will work well; but we prefer to use the composition as given above.

As chlorine is not suited for transportation as a gas, we have found it more convenient to use one of its combinations—viz., chloride of lime, or bleaching-powder. Other compounds of chlorine may also be used—as, for instance, hypochlorite of lime, the chlorides of calcium, soda, and potash, hydrochloric acid, and chlorine-water.

By the use of our invention wire rods or wire can be drawn heavier drafts, and a greater number of drafts, without reannealing, than by any other coating known to us. It can also be used successfully on fine sizes of wire, while other coatings are not adapted to both coarse and fine sizes.

We disclaim the use of the compound of chlorine with sodium or common salt with or without lime as a coating.

Having described our improvements in the art or process of drawing wire, what we claim herein as new and of our invention, and desire to secure by Letters Patent, is—

A coating for wire preparatory to its being drawn, composed of chloride of lime, water, pulp or paste, and milk of lime, in the proportions substantially as above described.

EDWIN J. WATSON.
CHARLES S. HALL.
PAUL BAUER.

Witnesses:

THOS. H. DODGE,
JOHN C. DEWEY.