

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PROCESSES OF WIRE-DRAWING.

Specification forming part of Letters Patent No. 203,346, dated May 7, 1878; application filed  
March 16, 1878.

*To all whom it may concern:*

Be it known that we, VIRGIL D. P. KENERSON and CHARLES HENRY MORGAN, both of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in the Art or Process of Wire-Drawing or Drawing Wire; and we do hereby declare that the following is a full, clear, and exact description of our said invention.

It is well known to all skilled in the art of wire-drawing that the surface of wire, preparatory to being drawn, must be covered with some substance that will firmly adhere to it, when the latter is drawn through the draw-plate or die, to act in combination with oil or some fatty substance as a lubricant, to prevent the surface of the wire coming in direct contact with the inner surface of the draw plate or die, since, if the attempt be made to draw wire with ordinary lubrication, the wire or draw-plate, usually both, will be much damaged. Consequently various substances have heretofore been used for this purpose, such as wheaten or rye flour paste or lime paste, to cover or coat the wire, such coating being dried upon the wire before the operation of drawing commences, while, during the operation of drawing the wire, oil or some fatty matter is applied, in any convenient manner, to the coated wire before it passes through the draw-plate or die, which oil or fatty matter, acting in combination with the dried coating upon the wire, forms a lubricant, as before indicated, and the best known previous to our present invention.

In practice, however, serious objections have been encountered by manufacturers of wire in the use of these old lubricants as above described, since it required considerable time to properly dry the pasty coating, while at the same time it was almost, if not quite impossible, to apply it to the wire so that it would be uniform for any considerable length in any single bunch or coil of wire, owing to the fact that it would naturally run down upon the under sides of the wire when the wire coils were hung up to dry after being immersed in or covered with the liquid paste.

The practical result of this was, that wire could not be drawn evenly, and in many cases

the pasty substance would be forced into the body of the wire, thereby forming indentations in the latter during the operation of drawing the wire through the draw-plate or die.

Then, again, the coating of paste increased the size of the wire, and that, too, in an irregular and uneven manner, as before indicated, to such an extent as to require great power to draw the wire through the draw-plates, consequently increasing the expense of drawing wire, while at the same time greatly increasing the liability of damage to the wire and draw-plates.

To overcome and obviate the foregoing and other objections is the object of our present invention or improvement in the art of wire-drawing, which consists in discarding wheaten or rye flour paste entirely, and immersing in or covering the wire, preparatory to being drawn, with a solution of common salt, alone or in combination with lime-water.

After the wire has been immersed or dipped into the solution of common salt, or bath of lime-water mixed with a solution of common salt, it is dried, and is then ready to be drawn or run through the draw-plate, oil or some fatty matter being used in combination with such coating to produce the desired lubrication.

The coating for the wire obtained in the manner last above described is very thin, hard, and uniform, and enables the manufacturer to draw his wire in a very uniform and perfect manner, and at very much less expense, as regards power, attendants, and damages to draw plates and wire than by the old mode or process in use previous to our said invention.

Having described our improvement in the art or process of wire-drawing, what we claim therein as new and of our invention is—

An improved method of drawing wire, consisting of coating or covering the wire, preparatory to being drawn, with a solution of salt, substantially as and for the purposes set forth.

VIRGIL D. P. KENERSON.  
CHARLES HENRY MORGAN.

Witnesses:

EDWIN E. MOORE,  
CHARLES HILL MORGAN.