

UNITED STATES PATENT OFFICE.

WILLIAM L. REYNOLDS, OF ST. LOUIS, MO., ASSIGNOR OF TWO-THIRDS HIS
RIGHT TO CALVIN HASKELL AND WILLIAM B. DEAN, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF WIRE.

Specification forming part of Letters Patent No. **159,610**, dated February 9, 1875; application filed
November 21, 1874.

To all whom it may concern:

Be it known that I, WILLIAM L. REYNOLDS, of St. Louis, Missouri, have made a new and useful Improvement in the Manufacture of Wire, of which the following is a full, clear, and exact description:

This invention relates to an improvement in the drawing of the wire, by means whereof such operation is materially cheapened, and the character and quality of the product improved.

Hitherto, in the manufacture of wire, it has been customary to give it a coating of flour-paste or lime previous to its passage through the reducing-dies, the object whereof being to reduce the friction of the operation, and to prevent the wire from being scratched, torn, and broken. A fluid lubricator does not suffice, being mainly stripped off and left on the entrance side of the die. It is necessary, therefore, to employ a solid substance, like those above named, which is susceptible of being so forced into the wire under the action of the die as to adhere to and protect the wire throughout its transit through the die.

For the purpose described, although calculated to give a measurably bright finish to the wire, the use of lime is objectionable, in that, by reason of the grit which it contains, it is apt to scratch the wire; and, further, the draft must be light, and but one drawing can be had without recoating. The wire is left dry, and unless oil is used the wire is liable to rust immediately. To the use of flour lie the objections that it is expensive; that it contains some grit, and is liable to scratch the wire; that it is difficult to properly dry the paste upon the wire; and that it does not leave the wire in a bright and finished condition, but with a black and roughened surface. Further, a flour coating is apt to dampen and cause the wire to rust. To remove these objections,

and to obtain a lubricator which is cheap—free from grit—with which the wire can be drawn two and three times to a coating, and which relieves the friction upon the die, are mainly the objects of my invention, which consists in the use of clay, or its equivalent, as a coating during the process of drawing.

In carrying out the invention I preferably employ a porcelain-clay or kaolin. With it a thin paste is made, as with lime or flour. This is applied to the wire rod and dried thereon, all in the ordinary way, and the rod is then passed through the dies by the usual process. For the finer sizes of wire the coating is used in a moist condition, or in a liquid form.

A clay coating thus applied dries readily, and wire so coated comes from the die with a bright, smooth surface, and as if it had been oiled. Another advantage is, that the vitriol-bath, into which annealed flour-coated wire has to be passed, is, by my improved method, dispensed with largely.

I am aware that in the manufacture of wire it was formerly the custom, during the annealing process, to protect the wire from the flame by coating it with clay. I do not, therefore, broadly claim the use of clay in the manufacture of wire, as the present improvement relates only to the drawing of the wire through the dies; but

Having described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

The use of clay in the manufacture of wire as a coating during the process of drawing, substantially as set forth.

WILLIAM L. REYNOLDS.

Witnesses:

CHAS. D. MOODY,
SAML. S. BOYD.