

UNITED STATES PATENT OFFICE.

BENJAMIN F. AIKEN, JR., OF MILLBURY, AND CHARLES W. NEWHALL, JR.,
AND GEORGE W. B. ELLIS, OF WORCESTER, MASSACHUSETTS.

LUBRICANT FOR WIRE-DRAWING.

SPECIFICATION forming part of Letters Patent No. 303,691, dated August 19, 1884.

Application filed April 6, 1883. (No specimens.)

To all whom it may concern:

Be it known that we, BENJAMIN F. AIKEN, Jr., of Millbury, in the county of Worcester and State of Massachusetts, and CHARLES W. NEWHALL, Jr., and GEORGE W. B. ELLIS, both of Worcester, in the county and State aforesaid, and all citizens of the United States, have invented a new and useful improvement in a wire coating or bath as a lubricant for the wire while being drawn, which is fully and clearly set forth in the following specification.

Our invention relates to the process of coating or covering the wire, preparatory to its being drawn, with a lubricating composition or substance; and it consists in the use or application to the surface of the wire of a solution of dextrine, either alone or in combination with any of the wire-coatings now in use, such as flour, clay, lime, salt, tale, &c. In some cases the solution of dextrine may be advantageously used alone by dissolving the dextrine in water and subjecting it to the application of heat for a time, or until it is thoroughly cooked, in the same manner as the flour coating is now prepared, adding water in sufficient quantity to form a bath of the proper thickness, so that as the wire is immersed a thin even coating of the solution of dextrine will be formed on the wire; or the solution of dextrine may be reduced by the addition of lime-water or "clay-water." Ordinarily, however, we prefer to improve the character of and increase the adhesive properties of the coating-baths now in use—such as flour, clay, lime, salt, tale, &c.—by adding to them a solution of dextrine in such quantity as to cause them to flow evenly over the surface of the wire and adhere more closely thereto. In case flour is used, we employ from one-half pound to two pounds of dextrine to each twenty pounds of flour. The amount of dextrine to be used will vary with the quality of the flour, and also the size of the wire to be coated. We then prepare the bath and apply the same to the wire in the same manner as is now pursued in case flour is used alone. The solution of dextrine may be prepared separately from the bath by adding water and subjecting it to the action of heat; or the dextrine may be added to the bath and afterward boiled, in those cases where heat is to be applied to the bath; or, in

some cases, it may be advisable to dissolve the dextrine in cold water and apply the same either alone or in combination with any of the coating materials now in use.

By the use of dextrine in combination with the several coating materials now in use I obviate, to a large extent, the objections to the use of such coatings—viz., that they scratch the wire; that they do not dry readily and evenly; that they increase the size of the wire; that they flow to the under side in drying; that they are too expensive, or that they do not sufficiently adhere to the surface of the wire. When even a small quantity of the solution of dextrine is added to any of the various coating-baths now in use, the quantity of the coating substance required—such as flour, lime, clay, salt, tale, &c.—is very much lessened, and when flour is used, a cheaper quality may be employed. A thinner coating only is needed on the wire, which more readily "sets" and dries, thereby rendering the coating more uniform, causing it to adhere more closely to the wire, and securing a superior lubrication while the wire is being drawn.

The amount of dextrine to be used with the several coating materials now in use will vary with the different conditions under which it is used, but will be easily ascertainable by any one skilled in the art. In general the amount as used with flour will be found most advantageous. We do not, however, confine ourselves to any specific proportion of dextrine to be employed in connection with any of the coating materials now in use; nor do we claim herein the use of a wire-coating composed of a solution of dextrine alone, separate application having been made for such invention; but

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

The wire coating or bath, preparatory to drawing, formed by adding dextrine to a solution of flour, meal, lime, clay, salt, or tale, as and for the purpose set forth.

B. F. AIKEN, JR.
C. W. NEWHALL, JR.
GEO. W. B. ELLIS.

Witnesses:

R. B. FOWLER,
GEO. E. SMITH.