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UNITED STATES PATENT OFFICE.

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DRAWING, ROLLING, AND WIREDRAWING OF METALS.

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To all whom it may concern:

Be it known that I, GASTON DE DUDZEELE, subject of the King of Belgium, residing at Paris, France, have invented certain new and useful Improvements in the Drawing, Rolling, and Wiredrawing of Metals, of which the following is a specification.

This invention relates to the drawing, rolling and wire-drawing of metals and has for its object to enable the articles under treatment to be subjected to several successive operations without the necessity of annealing or cleaning between each operation, as is the case with the known methods. The improvement constituting the present invention consists in amalgamating by any suitable means the surface of the article under treatment. In this way, there is formed a penetrating layer of amalgam, the coefficient of friction of which on the draw plates, mandrels, and rolling and other cylinders, is much less than the friction of the raw metal and even acts to a certain extent as a lubricant, so that it becomes possible to subject the articles to several successive mechanical treatments without any other operation.

It is therefore clear that the process according to this invention is of the greatest importance for the drawing, wire-drawing and rolling of metals, more particularly in the case of the manufacture of drawn steel tubes or bars of circular or other profile in section.

In order to carry out the process, it is sufficient to clean the article, such for instance as a billet or bloom or a steel tube in the rough, and to dip it in an aqueous solution, containing about ten grams of bi-chloride of mercury per litre. An amalgam is thus formed on the surface of the steel, which makes it possible to subject the article to several successive drawing operations without annealing or cleaning.

It is obvious that the invention is in no way confined to the example above given and that the amalgamation of the surface of the metal may be carried out by any other suitable method.

It is to be understood that by the expression "mechanically working metals" in the appended claims, it is intended to cover drawing, wire-drawing and rolling metals.

What I claim is:

1. A process for mechanically working metals to change their form, comprising, amalgamating a metal starting piece to be worked into a different form, and then mechanically working the amalgamated metal starting piece into its changed finished form.

2. A process for mechanically working metals to change their form, comprising, treating the surface of a metal starting piece to be worked into a different finished form with a solution of a mercury salt capable of amalgamating the surface of the piece, and then mechanically working the amalgamated metal piece into its different finished form.

3. A process for drawing metals, comprising, amalgamating the metal to be drawn and then mechanically drawing the amalgamated metal.

4. A process according to claim 2, said solution of a mercury salt being an aqueous solution of about ten grains of bi-chloride of mercury per litre.

In testimony whereof I have signed my name to this specification.

GASTON DE DUDZEELE.

Witnesses:

J. ANNENGAND,

W. DEFÉVRIMONT.