

UNITED STATES PATENT OFFICE.

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METHOD OF PLATING METALS WITH ALUMINUM.

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To plate iron and other metals in the form of sheets or strips, for instance with aluminum, chiefly three methods have been employed hitherto. In the first thereof the sheets or strips of the metal to be plated are covered at first preliminarily either on only one side or on both sides with the plating metal, then the covered sheets or strips are piled up, heated in common to the requisite temperature, and are then passed singly through a rolling-mill. This method is obviously not a continuous one, in that it is interrupted between every two consecutive sheets or strips, and there arises in consequence thereof waste at the front edge and the rear edges of practically every sheet or strip.

The second method proceeds in this way that the core metal is employed solely in the form of strips, these are covered also either on only one side or on both sides with the plating metal, then reeled up together with it and finally passed continuously through the rolling mill. As however, the core metal is stretched differently than the plating metal, the different elongations cause folds and fractures in the one or the other of the two metals, whereby numerous disturbances in the service are caused and, besides, the product is rendered imperfect and necessitates after-work in order to become suited for use.

The drawbacks adhering to said two methods have been overcome by the third method which constitutes an essential progress over them. Also in this case the core metal and the plating metal are used in the form of strips, but each is reeled up on a separate reel, the two metals are kept continually under tension, and contact with each other only in the rolling mill in which they are united with one another by pressure. It is in this way possible to produce in continuous service practically endless strips having a length of several hundreds of meters, without any waste.

But this otherwise excellent method fails where the thickness of the core metal surpasses a certain maximum limit, that is to say, where it becomes, owing to its thickness, so stiff that reeling it off and on causes great difficulties; these increase with the breadth and thickness of the strips and may become prohibitive. The method becomes prac-

tically impossible where the thickness of the core-metal amounts to more than about 6 mm. There are many cases in which a thicker core-metal is required, and in all these cases the method in question cannot be made use of.

Now, this drawback of that method has been overcome by the present invention, according to which the plating metal is unwound from a reel, whereas the core-metal is used in the form of sheets or plates of any desired thickness. These sheets or plates are introduced one after the other into the rolling mill, their neighbouring edges being either in contact with each other or separated from each other only by small, immaterial gaps, and the plating metal strip which is kept under tension contacts with the core metal just when this is entering between the rollers of the rolling mill. The core sheets or plates and the plating strip are of equal breadth, and both metals are united with one another by the pressure to which they are subjected in said mill. The two metals may be introduced into the rolling mill in a heated state, but it is also possible to have them heated only in the rolling mill itself by the pressure to which they are subjected therein. In either case a product is obtained containing individual core plates and a continuous plating strip, or two such strips if said plates are plated on both sides. The product may then be subdivided at the joints where the plates abut, also at other places, just as required, and the pieces may be rolled in cold state a second time until their thickness is that necessary for the purpose in view.

I claim:

The method of coating metal plates comprising feeding through rolls upper and lower continuous aluminum strips unwound from reels, introducing heated plates successively between the strips whereby both strips and plates are subjected to the pressure of the rolls to effect intimate cohesion between plates and strips whereby a continuous strip of compound metal stock is formed and separating the stock at points between the plates to form individual pieces of coated metal.

In testimony whereof I affix my signature.

FRANZ JORDAN.