April 11, 1944. J. D. BASTER 2,346,349

ELECTROPLATING METHOD

Filed Aug. 4, 1940

FIG. 1.

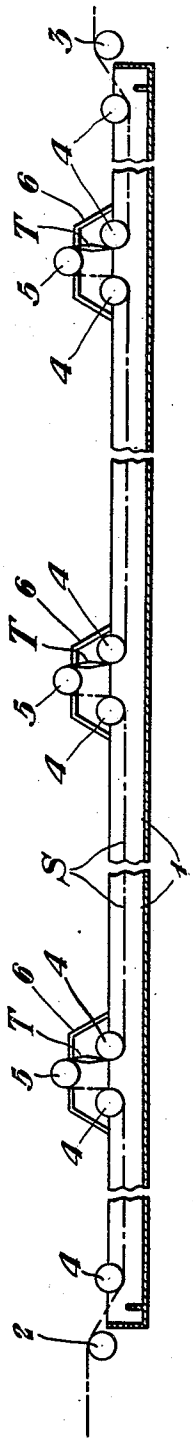
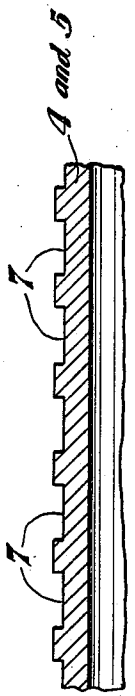


FIG. 2.



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ELECTROPLATING METHOD

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2 Claims. (Cl. 204—28)

This invention pertains to electroplating of metals, more particularly the plating of uniform coatings upon elongated ferrous stock.

In conventional electroplating equipment, it is customary to introduce the work to the electrolyte as cathode and to dispose, in close proximity to the path of travel of the work through the electrolyte, suitable anodes, usually of the metal to be deposited. Notwithstanding the disposition of the anodes, both upon the top and bottom sides of the work, a difference in thickness of coating acquired is detectable and renders the inversion of the strip at half-way points within the electrolyte desirable, in order to subject both sides of the work to the same coating conditions.

It is an object of the present invention to provide a novel method and means for effecting the inversion of flat metallic stock in an electroplating operation so that both sides thereof may be subjected to the same conditions of electroplating.

It is a further object to accomplish these ends in a manner wherein the stock is presented to the cathode contactor members with its greatest transverse dimension in firm engagement with the surface of the cathode contactor, and otherwise for providing means for maintaining the metallic strips in proper spaced relation, and in an ideal disposition for acquiring the most uniform electroplating.

In the accompanying drawing,

Figure 1 represents a longitudinal, sectional, elevational view of one form of the invention.

Figure 2 represents a fragmentary, cross-sectional view of the surface of one of the strip guiding rollers shown in Figure 1.

According to the invention, there is provided a suitable electrolytic cell or tank 1 having an entry guide roller 2 and an exit guide roller 3 with any suitable number of intermediate guide rollers 4 which might serve likewise as cathode rolls. In association with each pair of guide rollers 4, there is provided a twist guide roller 5 mounted above and in spaced relation to each pair of guide rollers 4. Suitable supports 6 may be provided on the edge of the electroplating tank for supporting this assembly of rolls.

The strips S are passed in parallel, co-planar relation through the electrolyte beneath the guide rollers 4 and upwardly over the second one of these rollers to the twist guide roller 5 between which and the secondary guide roller 4 the stock is twisted, as at T. Thus, in the strips ensuing travel through the electrolyte, its top and bottom surfaces have been reversed. This operation may be repeated as many times as required to dispose each side of the strips upwardly and downwardly, respectively, to give the desired treatment.

As shown in Figure 2, the rollers 4 and 5 are provided with strip guiding slots 7 disposed circumferentially around the periphery of each. The stock is thus assured of firm guidance and when operating under the proper tension is brought into flat-wise contact with the cathode rolls which may correspond to, or be placed adjacent, the rollers 4.

Efforts have been made in the past to provide for the inversion of strips being electroplated for the purposes hereinbefore set forth. By virtue of the manual methods employed for this purpose and the inadaptability of the equipment utilized therefor, the strips are frequently twisted on edge, not only in their travel throughout the bath but also in passing in contact with the cathode contactor rolls, which edge-wise engagement causes high current concentration resulting in the burning and fusing of the coatings. In accordance with the present invention the strips are positively held in twisted relation and are prevented from turning back to the original disposition until this is provided for at one of the twist guide stations as indicated.

While I have shown and described specific embodiments of the present invention, it will be understood that I do not wish to be limited exactly thereto, since various modifications may be made thereto without departing from the scope of the appended claims.

I claim:

1. The method of electroplating metallic strips in continuous lengths which includes guiding a plurality of strips through an electrolytic bath in flat, co-planar relation, and twisting said strips substantially 180 degrees while in motion through said bath so as to present both surfaces thereof to uniform electrolytic action.

2. The method of electroplating a flat metallic strip in a continuous length, which includes guiding such strip in a flat condition through an electrolytic bath and twisting it substantially 180° while in motion through the bath so as to present both flat surfaces thereof to uniform electrolytic action.

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