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COLLECTOR DRUM

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Fig. 1.

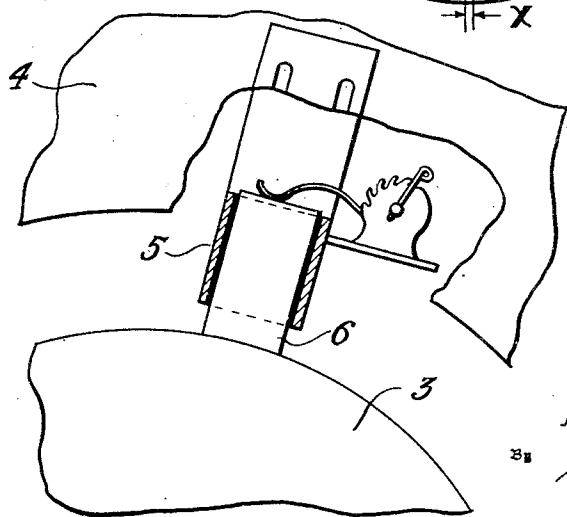
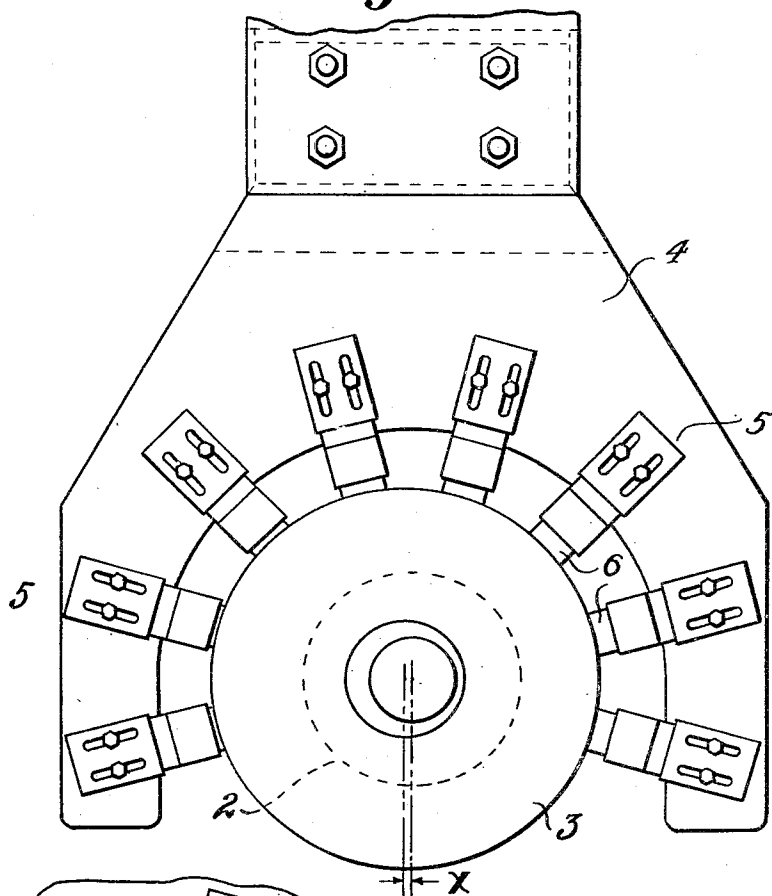


Fig. 2.

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COLLECTOR DRUM

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2 Claims. (Cl. 173—324)

1 This invention relates to collector drums, and, more particularly, to those which are used in the art of electro-deposition, although not limited thereto.

In the continuous electroplating or electro-galvanizing of metallic strip or the like, the work-piece is directed over suitably disposed conductor rolls for the purpose of rendering the strip itself electrically conductive as it moves through the plating apparatus. The electrical current flows from the conductor roll to the strip, and ordinarily it is introduced to the conductor roll by a collector drum which is associated with the neck of the latter. The usual method of supplying electrical current to the collector drum is through the medium of electrical contact brushes which are disposed in brush holders and held against the collector drum by spring tension.

In commercial electroplating operations considerable difficulty is encountered in making the electrical contact brushes properly contact the collector drum associated with the neck of the conductor roll. This is for the reason that the electrical contact brushes stick in the brush holders on cycles.

It is among the objects of the present invention to provide a collector drum, the use of which will result in the elimination of the sticking of the electrical contact brushes in their respective brush holders.

The invention, then, comprises the features hereinafter described and as particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative of several of the number of ways in which the principles of the invention may be employed.

In said drawing:

Figure 1 is an end elevation of a conventional conductor roll such as is used in electroplating lines and the like, together with a new and improved collector drum which cooperates with the electrical contact brushes which are held in respectively adjacent brush holders; and

Figure 2 is an enlarged fragmentary elevation illustrating in detail the manner in which the electrical contact brushes occupy their respective brush holders and the contact surface provided by the periphery of the collector drum.

Referring more particularly to the drawing, the numeral 2 designates a conductor roll, the same

2 forming part of a conventional line for performing any one of various electrochemical operations, including electroplating, electrogalvanizing electro-pickling, etc.

5 The conductor roll 2 is supported in suitable bearings (not shown) and carries in outboard relationship a collector drum 3. Disposed around the periphery of the collector drum 3, and in spaced relationship with respect thereto, is a suitably supported semi-circular brush holder support 4. This brush holder support 4 has detachably secured thereto a series of suitably spaced brush holders 5, in each of which there is disposed one or more brushes 6 which extends **10** radially inward toward the axis of the conductor roll 2 to contact the periphery of the adjacently disposed collector drum 3. As shown in Figure 2, the brushes 6 in the brush holders 5 are spring-loaded in order to resiliently influence them to- **15** ward the periphery of the collector drum 3.

So far as I am aware, the peripheries of the collector drums of the prior art have, up until the time of the present invention, been concentric, and, therefore, impart no motion to the brushes **20** 6 in the brush holders 5, and this has caused sticking of the brushes in the brush holders.

I have discovered that by grinding the collector drum 3 even as little as $\frac{1}{16}$ " eccentric to the bore of the conductor roll 2, there is caused sufficient **25** inward and outward motion of the brushes 6 in the brush holders 5 to completely eliminate sticking of the brushes. The degree of eccentricity is graphically shown at X in Figure 2.

While I have shown and described a certain **35** specific embodiment of the present invention, it will be readily understood by those skilled in the art that I do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of the invention as defined in the appended claims.

I claim:

1. Apparatus for supplying electrical current to a rotatable element comprising a collector drum, an axis for said collector drum, means for **40** mounting said collector drum for rotation eccentrically about said axis, electrical contact brushes mounted peripherally of said collector drum and extending radially inwardly toward the axis thereof, and resilient means for influencing said **45** brushes inwardly toward the periphery of said collector drum whereby sticking of the brushes is eliminated.

2. Apparatus for supplying electrical current to a rotatable element comprising a collector drum, an axis for said collector drum, means for mounting said collector drum for rotation eccentrically about said axis, stationary brush holders mounted about the periphery of said collector drum, brushes mounted in said brush holders for sliding movement toward the axis of said collector drum, and resilient means for influencing said brushes inwardly toward the periphery of said collector drum whereby sticking of the brushes is eliminated.

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