H. ROBERTS.

METAL COATING APPARATUS.

APPLICATION FILED JAN. 7, 1909.

917,662. Patented Apr. 6, 1909.

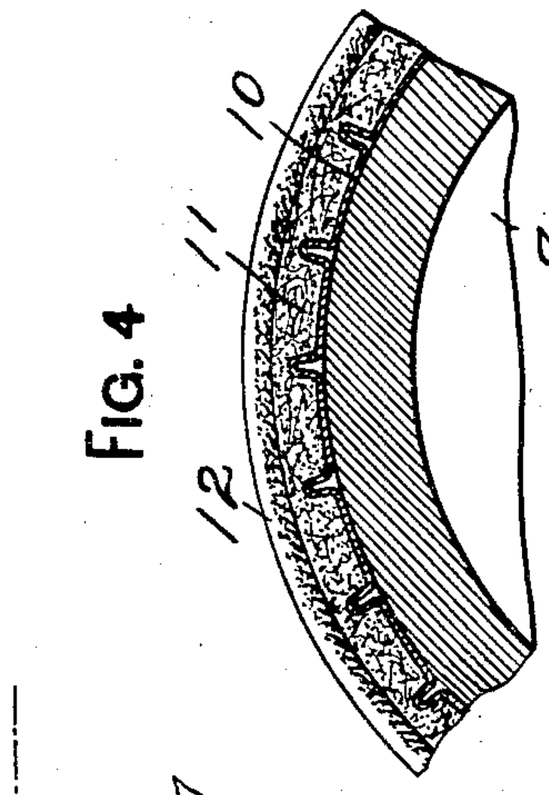

FIG. 4

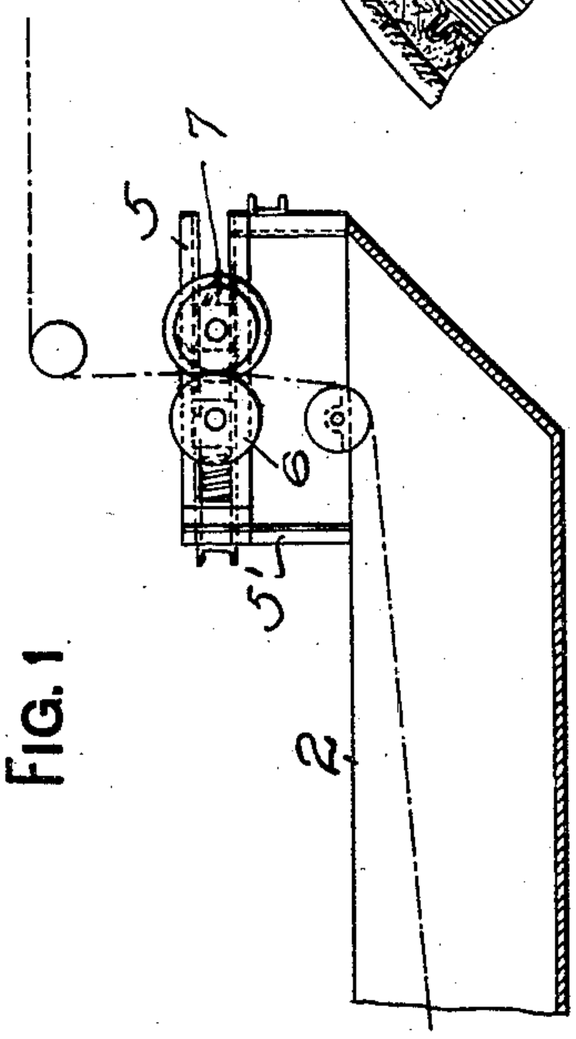

FIG. 1

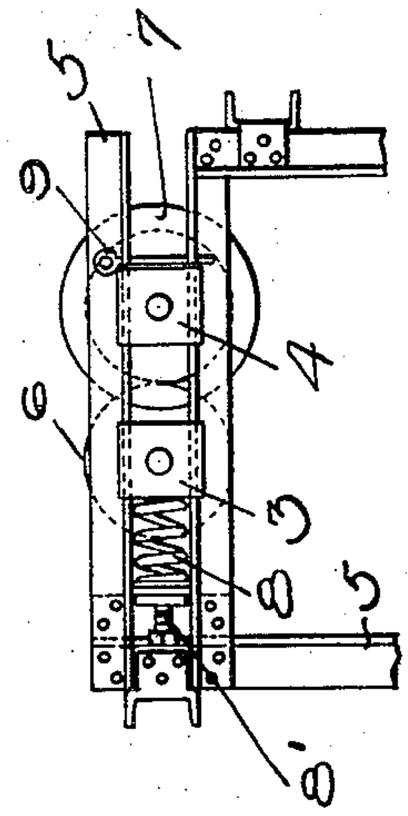

FIG. 3

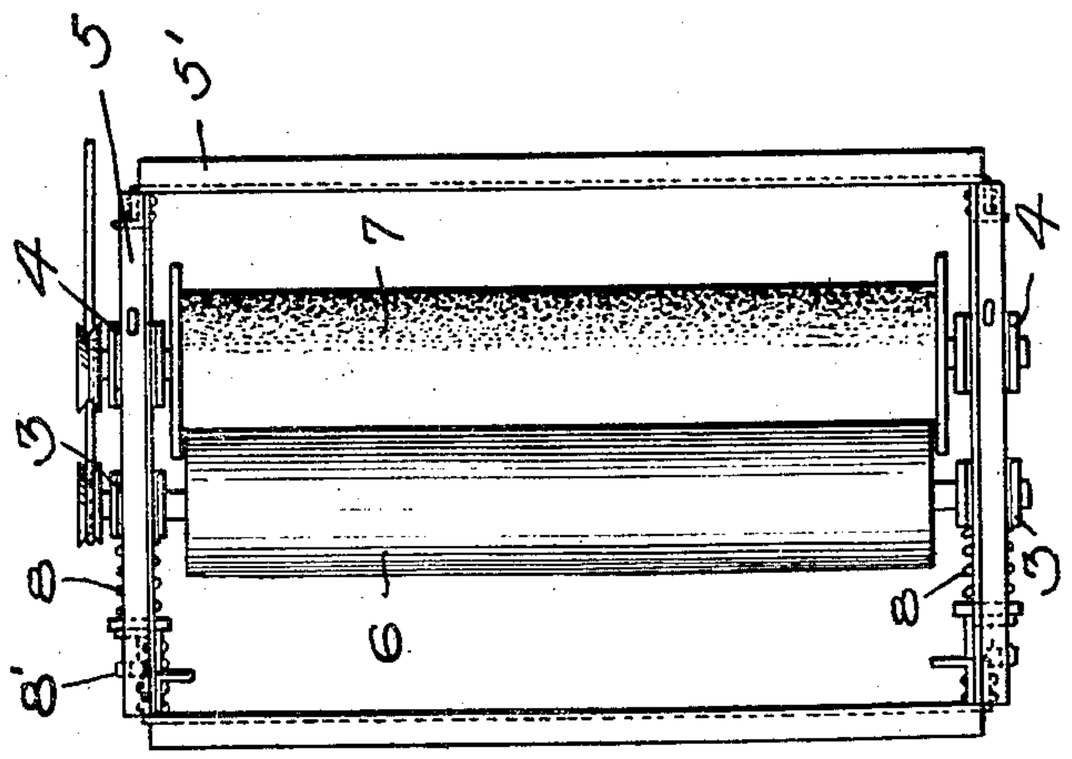

FIG. 2

WITNESSES

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METAL-COATING APPARATUS.

No. 917,662. Specification of Letters Patent. Patented April 6, 1909.

Application filed January 7, 1909. Serial No. 471,069.

To all whom it may concern:

Be it known that I, HENRY ROBERTS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Metal-Coating Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide in metal coating apparatus wherein the metal after being subjected to a cleaning or preparatory treatment is caused to be passed through a molten bath of coating material, means for removing the surplus of coating material from the metal as it emerges from the coating bath; and it consists in the construction and combination of parts as will be hereinafter more fully set forth.

Figure 1 is a vertical sectional view of my improved apparatus; Fig. 2 is an enlarged plan view of the same; Fig. 3 is an enlarged side elevation; and Fig. 4 is a fragmentary sectional view of a wiping roller to be hereinafter referred to.

I shall now describe my invention so that others skilled in the art to which it appertains may understand and construct the same.

In the drawings, the reference numeral 2 indicates the coating bath of a metal coating mechanism. Journaled in the bearings 3 and 4, slidably mounted in the ways 5 of the framework 5′ overhanging that end of the bath 2 from which the coated metal emerges, are the rollers 6 and 7. The roller 7 is surfaced with a wiping material against which the moving coated metal is adapted to be forced by means of the roller 6 through the medium of coiled springs 8, provided with the tension adjustment screws 8′. By means of the pin arrangement 9 the bearings 4 of the roller 7 may be held against movement in the ways 5 of the frame 5′, while also allowing of the ready removal of the roller for the insertion of another roller when the wiping surface of the roller has become worn. However, while I have shown the wiping roller 7 journaled in stationary bearings, it may also, if desired, be provided with tension springs as in the case of the roller 6.

The wiping surface of the roller 7 may be of any suitable material adapted to this purpose which will wipe the coated metal, leaving a smooth and even surface as distinguished from a brush which will leave a more or less uneven surface. I prefer, however, to use "mineral wool," as asbestos, as I find this to be admirable wiping material by reason of the fact that it does not adhere to the melted coating metal. In Fig. 4 I show the roller 7 formed with the peripheral recesses 10 and around this recessed surface I place a layer of mineral wool or asbestos 11, which is bound to the surface of the roller by means of the asbestos rope 12. The wiping material applied to the roller in this manner presents a surface that is not easily disintegrated by the abrading action of the metal during the wiping operation, the cushion effect caused by the interposed layer of the material producing an effective wiping action.

The construction of the wiping roller or rollers may vary according to the shape or pattern of the metal to be coated. For instance, in the case of wire fabric, where connective knots or joints are present, it will be apparent that these knots or joints will have more of an abrading or disintegrating action on the wiping material during the wiping operation than the strands or body portions of the fabric, in which case it would be desirable to provide those portions of the wiping roller or rollers with which said knots or joints contact, with a thicker wiping surface than would be required for the body of the fabric. Also in the case of wire strands, only those portions of the roller adapted to receive the strands may be provided with wiping material.

The wiping rollers 6 and 7 are adapted to be rotated by any suitable means in a direction opposite to that of the moving coated metal which passes upwardly from the coating bath to between the rollers 6 and 7, as shown in Fig. 1. Any suitable mechanism may be employed for drawing the metal through the coating apparatus.

The advantages of my invention will be appreciated by those skilled in the art.

The invention will be found particularly adaptable to the coating of wire fabric, the construction of the wiping mechanism being such as to insure the contact of the wiping material with every portion of the coated fabric as it emerges from the bath.

While I have shown and described my apparatus as having only one roller provided with wiping material, it will be apparent that several rollers may be employed if desired. Many other changes will suggest themselves

to the mechanic which would not be a departure from my invention and I do not therefore desire to limit myself to the precise construction shown.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A roll for removing the surplus coating from metal as it emerges from a coating bath, having a covering of suitable wiping material and a cushioning material between the body of the roll and the wiping surface.

2. A roll for removing the surplus coating from metal as it emerges from a coating bath, having a covering of suitable wiping material and a cushioning medium also of wiping material between the body of the roll and the wiping surface.

3. A roll for removing the surplus coating from metal as it emerges from a coating bath, having a complete covering of wiping material.

4. A roll for removing the surplus coating from metal as it emerges from a coating bath, having a complete covering comprising a rope or strand of wiping material.

5. A roll for removing the surplus coating from metal as it emerges from a coating bath, having peripheral recesses, a cushioning medium of wiping material filling said recesses and covering the surface of the roll and an external covering of wiping material surrounding and binding said cushioning medium.

6. A roll for removing the surplus coating from metal as it emerges from a coating bath, having peripheral projections, a cushioning medium of wiping material covering the surface of the roll and extending over said projections, and a rope or strand of wiping material surrounding said cushioning medium.

7. Apparatus for removing the surplus coating from metal as it emerges from a coating bath comprising a supporting frame provided with guideways, a wiping roller surfaced with wiping material and having bearings slidably mounted in said guideways, detachable means for retaining said bearings therein, and a spring-pressed tension roller having bearings slidably mounted in said guideways and coöperating with said wiping roller.

8. Apparatus for removing the surplus coating from metal as it emerges from a coating bath comprising a supporting frame provided with guideways, a wiping roller surfaced with wiping material and having bearings slidably mounted in said guideways, detachable means for retaining said bearings therein, and a spring-pressed tension roller having bearings slidably mounted in said guideways and coöperating with said wiping roller, said wiping roller being provided with annular flanges adapted to extend beyond the ends of the tension roller.

In testimony whereof, I have hereunto set my hand.

HENRY ROBERTS.

Witnesses:
M. A. BARTH,
M. ARTHUR KELLER.