G. M. WRIGHT.

APPARATUS FOR COATING METAL.

APPLICATION FILED JULY 31, 1909.

1,050,897.

Patented Jan. 21, 1913.

Fig. 1.

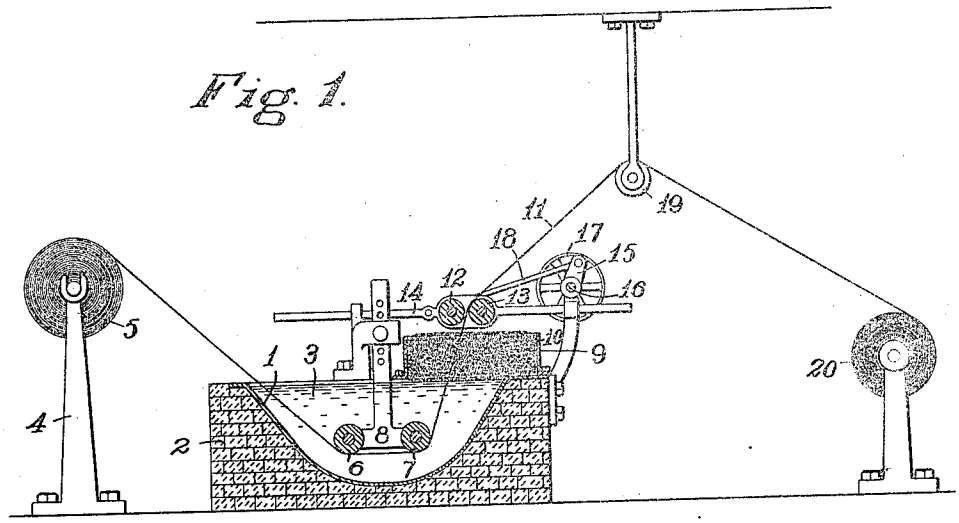
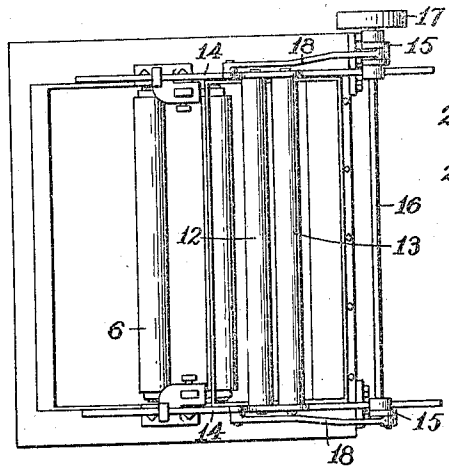


Fig. 2.



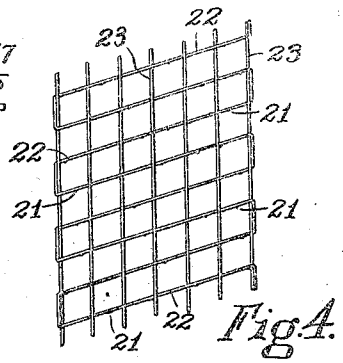


Fig. 4.

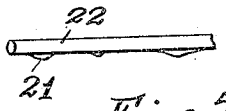


Fig. 5.

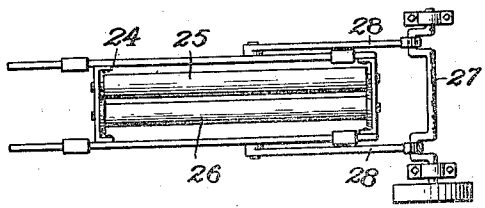


Fig. 3.

Witnesses.

R. D. Tolman.

Penelope Comberbach.

Inventor

George M. Wright

By Rufus B. Fowler

Attorney

UNITED STATES PATENT OFFICE.

GEORGE M. WRIGHT, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WRIGHT WIRE COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

APPARATUS FOR COATING METAL.

1,050,897. Specification of Letters Patent. Patented Jan. 21, 1913.

Application filed July 31, 1909. Serial No. 510,532

To all whom it may concern.

Be it known that I, GEORGE M. WRIGHT, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Apparatus for Coating Metal, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side view, shown in section, of my improved apparatus. Fig. 2 is a plan view. Fig. 3 is a detached view showing a modification of the reciprocating mechanism for cleaning the metal coated product. Fig. 4 is a perspective view of a section of woven wire cloth, and Fig. 5 represents a portion of one of the transverse wires of a woven fabric.

Similar reference characters refer to similar parts in the different figures.

The objects of my present invention are to provide an improved apparatus for applying a coating of molten metal to wire cloth, netting, or similar products, in order to remove the surplus molten metal from the wire product and to insure a uniform distribution of the molten metal, and I accomplish these objects by the construction and arrangement of parts as hereinafter described and pointed out in the annexed claims.

I have illustrated my present invention by its application to a galvanizing apparatus.

Referring to the accompanying drawings, 1 denotes a galvanizing pan or kettle usually set in brick work 2 and containing molten zinc 3. Upon a stand 4 is placed a coil 5 of wire cloth, or other product to be galvanized, which is conducted through the molten zinc 3 beneath the submerged rolls 6 and 7 carried upon a vertically adjustable frame 8. From the rolls 6 and 7 the wire product is conducted through a bed of pulverized charcoal 9, or similar material, for the purpose of stripping the surplus zinc from the galvanized product, the mass of pulverized charcoal 9 resting upon the molten zinc 3 and being retained in place by a curb 10. The strip of wire cloth, or other galvanized product, 11 passes between rolls 12 and 13 carried upon a reciprocating frame 14, which is actuated by means of cranks 15 on a shaft 16, to which rotary motion is imparted through a belt pulley 17, the reciprocating frame 14 being connected with the cranks 15 by means of links 18. The galvanized product is then conducted over a supporting roll 19 and rewound, by suitable take-up mechanism, into a coil 20. The galvanized product 11 passes slowly through the molten zinc by which it is covered with a thin layer of molten metal, the surplus metal being removed by the friction of the pulverized charcoal. The upward movement of the galvanized product through the charcoal tends to remove the surplus metal from the vertical strands, and also from the top and sides of the transverse strands of the product. A deposit of molten metal is, however, liable to form upon the under side of the wire strands, as shown at 21, Figs. 4 and 5. The objects of my present invention are to provide means for preventing a deposit of metal on the under side of the wire strands, as shown at 21, and also to secure a more even distribution of the coating metal upon the surface of the wire. I attain these results by imparting a lateral motion to the wire product as it passes through the mass of pulverized charcoal, preferably, in a line at right angles with the fabric itself, as shown in Fig. 1, thereby causing the pulverized charcoal to be forced through the meshes of the wire cloth or netting, to exert a scraping action upon the under side of the transverse wires 22 of the woven fabric. The vertical wires 23 and the upper surfaces of the wires 22 are likewise subjected to the attrition of the pulverized charcoal, by which a more uniform distribution of the molten metal upon the surfaces of the wire is secured.

In place of the frame 14, to which a reciprocating motion is given at right angles to the axes of the rolls 12 and 13, a frame 24 may be employed having rolls 25 and 26, between which the wire product is passed as between the rolls 12 and 13, and a reciprocating motion may be given to the frame 24 by means of a rotating crank shaft 27 and links 28 in a direction parallel with the axes of the rolls 25 and 26, by which a longitudinal sliding movement through the mass of charcoal will be imparted to the transverse wires 22.

I do not confine myself to any particular direction in the lateral movement of the wire product through the mass of charcoal, neither do I confine myself to the specific mechanism shown for accomplishing such

a movement. My invention consists broadly in imparting a lateral movement to galvanized or other metal coated products as they are passed through a mass of charcoal or similar material.

I claim,

1. In a metal coating apparatus, the combination of a bed of stripping material for removing the surplus coating material from the metal, after it has passed through a bath of coating material, means for advancing said metal through said bed, and means engaging said coated metal outside said bed for imparting a reciprocating lateral movement to said metal as it advances through said bed.

2. In a metal coating apparatus, the combination of a bed of stripping material for removing the surplus coating material from the metal, after it has passed through a bath of coating material, means for moving said metal longitudinally through said bed, and means for imparting a reciprocating movement to said metal in said bed at right angles to said longitudinal movement.

3. In a metal coating apparatus, adapted to coat wire netting or similar material, the combination with a bed of stripping material for removing the surplus of coating material from said wire netting, after it has passed through a bath of coating material, of means for advancing said wire netting through said bed, and means acting simultaneously with said advancing means for imparting a reciprocating movement to said netting at right angles to the line of advancement.

4. In a metal coating apparatus, the combination with a receptacle for the coating material, of a bed of stripping material above said receptacle to receive the coated metal, rolls above said bed to receive the metal from said bed, means for advancing said metal through said receptacle, bed and rolls, a frame carrying said rolls, and means for reciprocating said frame.

5. A metal coating apparatus, comprising a material for removing the surplus from said coated metal, a reciprocating frame above said material arranged to engage said metal, means for moving said metal longitudinally, and means for reciprocating said frame transversely to the movement of said metal.

6. In a metal coating apparatus, adapted to coat wire netting or similar material, the combination of a bed of pulverized material for removing the surplus of coating material from said wire netting, means for moving said wire netting lengthwise through said pulverized material, and means acting simultaneously with said lengthwise moving means for moving said netting laterally in said pulverized material.

Dated this twenty-ninth day of July, 1909.

GEORGE M. WRIGHT.

Witnesses:
HARRY GREENWOOD,
FRANK E. METCALF.