April 7, 1931. J. W. MOON 1,799,760

APPARATUS FOR TREATING METAL COATED ARTICLES TO INSURE UNIFORMITY OF COATING

Filed Dec. 7, 1928

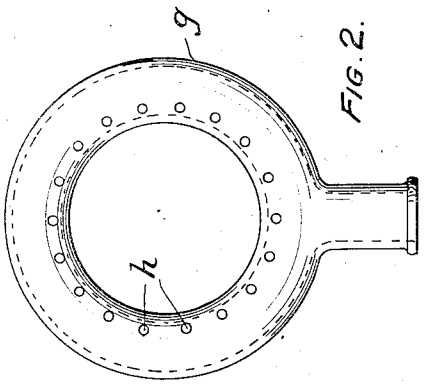


FIG. 2.

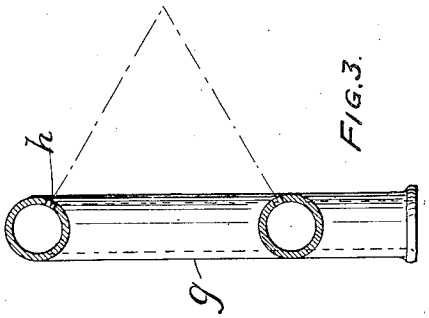


FIG. 3.

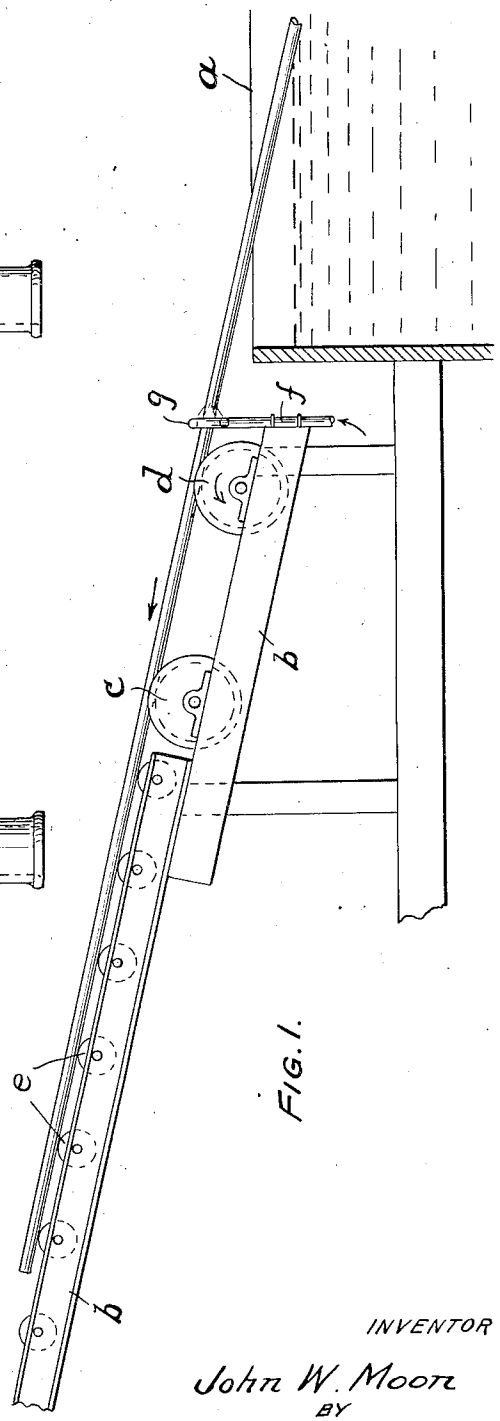


FIG. 1.

WITNESS:

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Patented Apr. 7, 1931 1,799,760

UNITED STATES PATENT OFFICE

JOHN W. MOON, OF BUTLER, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO FRETZ-MOON TUBE COMPANY, INC., OF BUTLER, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

APPARATUS FOR TREATING METAL-COATED ARTICLES TO INSURE UNIFORMITY OF COATING

Application filed December 7, 1928. Serial No. 324,467.

The object of my invention is to provide an improved means for removing surplus hot metal from pipes, tubes, rods, bars, etc., as they are pulled or conveyed from a galvanizing tank containing hot metal with which such articles have been coated while immersed therein, the specific object being to properly and automatically position the article during such operation and insure the removal of surplus metal from all parts of the surface of the article with resultant retention of a coating of uniform thickness.

An apparatus embodying the invention in a preferred form is disclosed in the drawings, in which Fig. 1 comprises a side elevation of a conveying apparatus, a partial sectional view of the tank, and an elevation of the surplus metal-removing device properly positioned relatively to the tank and the conveying means; Fig. 2 is an enlarged front view of the device from which air is blown onto the article as it is being delivered from the tank; and Fig. 3 is a vertical sectional view of the device of Fig. 2.

Beyond a tank *a*, containing the hot metal with which the pipes, tubes, rods, bars, or other articles of elongated contour, are coated while immersed therein, is a frame *b*, on which are supported a series of rollers. The first two rollers *c*, *d*, are preferably of relatively large diameter and one or both are positively driven. The remaining rollers *e* of the series are preferably idlers of relatively small diameter. The rolls are so arranged that a tangent common to their peripheries and which is coincident with the line of travel of the article extends through about the center of the ring *g* hereinafter described. By means of these rollers the pipes are positively conveyed from the tank to the cooling racks or other desired point of delivery.

Positioned on the frame *b*, between the tank *a* and the first roller *d* of the series, is an upright stationary pipe or tube *f*, which at its top supports, and communicates with the interior of, a hollow ring *g*. The ring is provided with a series of holes *h* arranged in a circle and whose axes meet at a common point back of the ring, such point being located about on the axis of the article while the same is being conveyed along the conveyor bed.

Through the pipe or tube *f* and hollow ring *g* is forced air or other suitable fluid, which is thereby forced out of the hole *h* onto the exterior of the traveling article and blows from its surface surplus metal, thereby insuring that the finished article will have a metal coating of uniform thickness.

The rollers *c*, *d*, are rendered magnetic by any suitable field winding (not shown) thus insuring that the article being conveyed, which functions as the armature of the magnet, will be held in such position, after it engages rollers *c* and *d*, that it will extend through about the center of the ring *g*.

Instead of arranging the rollers *c* and *d* below the line of travel of the articles, they may be above the line of travel of the articles, as disclosed in an application filed by me of even date herewith, Serial No. 324,466. The invention does not exclude the substitution of any arrangement of conveying rollers which will hold the article in the described relation with the ring, so as to secure the continuance of the proper blowing action until the travel of the article through the ring has been completed.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:

1. The combination, with a tank adapted to contain hot metal and to receive elongated articles to be coated with such metal, of a hollow ring through which such articles are adapted to be conveyed from the tank, said ring having a circular series of holes opening toward about a common point in about the line of travel of said articles from the tank, and conveying mechanism adapted to hold the article in the course of its travel in a line coinciding substantially with the center of the ring, whereby fluid forced out of the ring and discharged from the holes will be so directed that it will act with substantial uniformity on the circumference of the article being conveyed.

2. The combination, with a tank adapted to contain hot metal and to receive elongated

articles to be coated with such metal, of a conveying means comprising a series of rollers one or more of which are magnetized, and a hollow ring positioned between the tank and the conveying means, the ring being so positioned that a tangent common to the peripheries of the rolls extends through the space enclosed by said ring, the ring having holes arranged around it and opening approximately toward said tangent.

In testimony of which invention, I have hereunto set my hand at Butler, Pa., on this 3rd day of December, 1928.

JOHN W. MOON.