

E. MERTENS.
 APPARATUS FOR COATING PRINTING ROLLS.
 APPLICATION FILED OCT. 31, 1910.

983,743.

Patented Feb. 7, 1911.

Fig. 1.

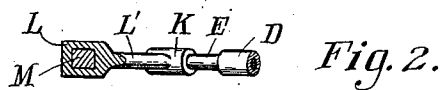
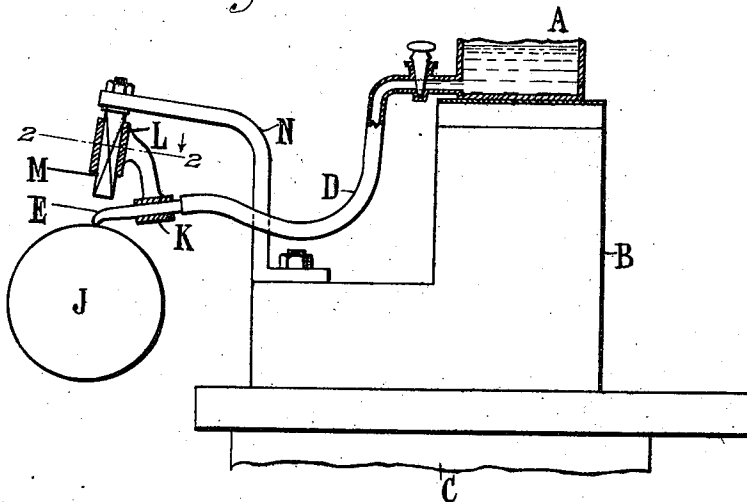
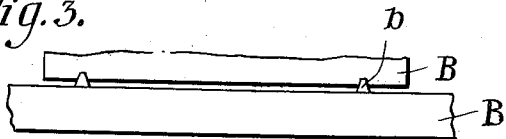


Fig. 3.



Witnesses.
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per-

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR COATING PRINTING-ROLLS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDUARD MERTENS, doctor of philosophy, a subject of the German Emperor, residing at Freiaustrasse 60, Freiberg, Breisgau, Germany, have invented a new and useful Improved Apparatus for Coating Printing-Rolls and the Like, of which the following is a specification.

This invention relates to improvements in apparatus for coating rolls with varnish or similar substance, and embraces certain features analogous to those set forth in my pending United States application, #537,830.

This device has for an object, to coat cylinders with a liquid substance, by applying the same through the medium of a nozzle, in a fine stream, upon the surface of the cylinder, while said cylinder is rotating and the nozzle is moving horizontally in the direction of the axis of the cylinder.

It has for a further object, to permit the nozzle to reciprocate in a plane vertical to the roller axis, in such a manner that it conforms to all the motions of the roller surface, but cannot move horizontally with relation to the carriage which supports the nozzle.

A still further object is to so dispose the outlet of the nozzle with relation to a guide on which it reciprocates, that, friction on said guide will be reduced to a minimum.

A still further object is to provide a flexible liquid supply means connecting said nozzle and a supply reservoir, whereby said nozzle will have minimum resistance to the reciprocative motion.

In the preferred form and embodiment of my invention, I attain the foregoing objects by the mechanism illustrated in Figure 1 of the accompanying drawings, in which the invention is shown by a view in side elevation partly in section. Fig. 2 is a horizontal sectional detail of the nozzle carrier and its adjuncts, taken on the line 2-2, Fig. 1. Fig. 3 is a detail view showing a modification in which a track is shown upon the bed plate.

In the drawings, A designates a reservoir, which is mounted upon a carriage B, which is adapted to be moved horizontally by any proper means over the base C. One of said means is illustrated in Fig. 3 in which the carriage B is slidably seated on a track b which is stationary on the bed plate. A cylinder J, which is to be coated with liquid,

is rotatably mounted under the end of a lateral extension of an arm N, the axis of the cylinder being parallel to the direction of motion of the carriage B. A flexible tube D having a nozzle E secured thereto, is connected to the reservoir and adapted to carry liquid from the reservoir to the cylinder, through an outlet in the down-turned end of the nozzle E. A guide M, which may be of prismatic cross section or of any proper form, is secured to the arm N and extends downward therefrom. This guide is shown slightly non-vertical and in radial alinement with the cylinder J; but the invention is not limited to the exact position of this guide, on which is slidably seated an apertured boss L, the aperture of which conforms to the sides of said guide. A nozzle carrier K is secured to said boss by a laterally and downwardly extending arm K'. The carrier K is apertured for receiving the nozzle, the aperture being of a proper relative size to provide a snug fit for the nozzle whereby the latter is normally held in position by frictional engagement, but is susceptible of adjustment by the application of sufficient force.

The relation of members M and L, as described, provides a means by which the nozzle may be raised and lowered to accommodate and coat cylinders of different sizes and to conform to cylinders of a concentric or uneven formation.

In practicing my invention, any proper means for rotating the cylinder J may be employed. The cylinder may be chucked in a lathe of ordinary construction and the carriage B may be moved by the usual lathe tool carriage; or the cylinder may be rotated and caused to simultaneously move in the direction of its axis while the tank A and nozzle E remain stationary.

The invention comprises a relative horizontal movement of the cylinder and nozzle, the exact manner or means of effecting this movement being no part of this invention, and not illustrated.

The outlet of the nozzle is preferably arranged under or in central alinement with the guide bar M, so that there will be no leverage which would cause undue friction due to binding or torque of the slide L on the guide bar M.

The down-turned end of the nozzle provides a means by which the outlet of the nozzle is sealed, being held against the sur-

face of the cylinder by the weight of the members E, L and K, and should the rotation of the cylinder cease, the liquid in the nozzle E and tube D would thus be prevented from flowing in excess upon said surface. Moreover, this feature provides a spreading means for the liquid being applied, as well as a means for removing dust, etc., from the surface immediately preceding the application of the liquid.

I claim:—

1. A liquid coating device comprising a reservoir, a nozzle connected with the reservoir by means of a flexible tube, a carrier for the nozzle, said nozzle having a downturned end provided with an outlet, a rotatable cylinder under said nozzle, the nozzle carrier being connected with reciprocative guiding means whereby the nozzle bears upon the surface of said cylinder and reciprocates in conformity with irregularities in said cylinder when the cylinder rotates, the said outlet being in central alinement with the guiding means, and means for causing relative horizontal movement of the nozzle and the cylinder.

2. A liquid coating device comprising a reservoir, a nozzle having a down-turned end provided with an outlet, a rotatable

cylinder under said nozzle, a nozzle carrier 30 connected with reciprocative guiding means over said cylinder, said nozzle extending between said guiding means and said cylinder, the outlet in said nozzle being in contact with said cylinder whereby said outlet 35 is normally closed, and means for causing relative horizontal movement of the nozzle and the cylinder.

3. In an attachment for a lathe or the like having a tool carriage and adapted to rotate 40 a cylinder, a device for coating rolls with liquid comprising a tank adapted to be moved horizontally by said tool carriage, a nozzle communicating with said tank 45 through a flexible tube, said nozzle having a down-turned end provided with an outlet, said nozzle being vertically reciprocative above the rotating cylinder, said outlet contacting the cylinder and conforming to irregular surfaces of said cylinder substantially as set forth. 50

In testimony whereof I have signed my name to this specification in the presence of the two subscribing witnesses.

EDUARD MERTENS.

Witnesses:

GEO. GIFFORD,
MAX ORTMANN.