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F. M. CARROLL

METHOD OF SENSITIZING CYLINDERS

Filed Aug. 21, 1924

Fig. 1.

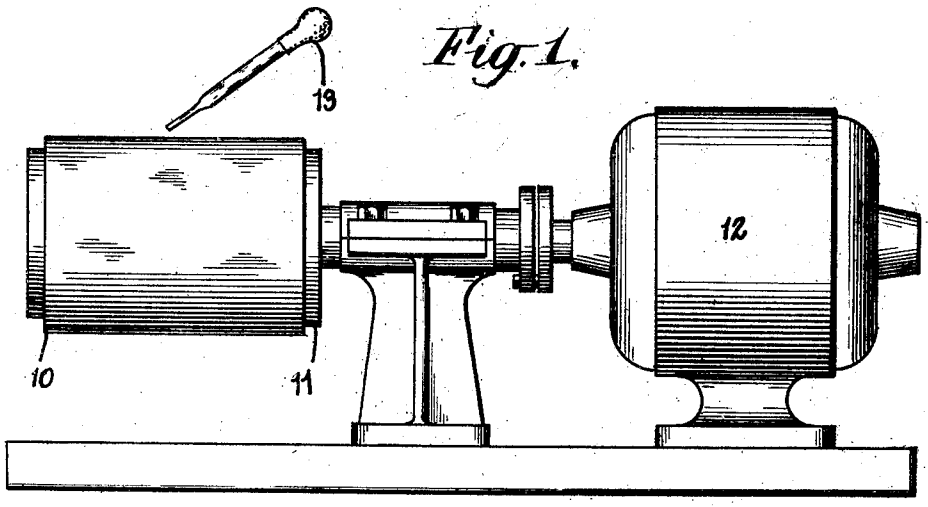
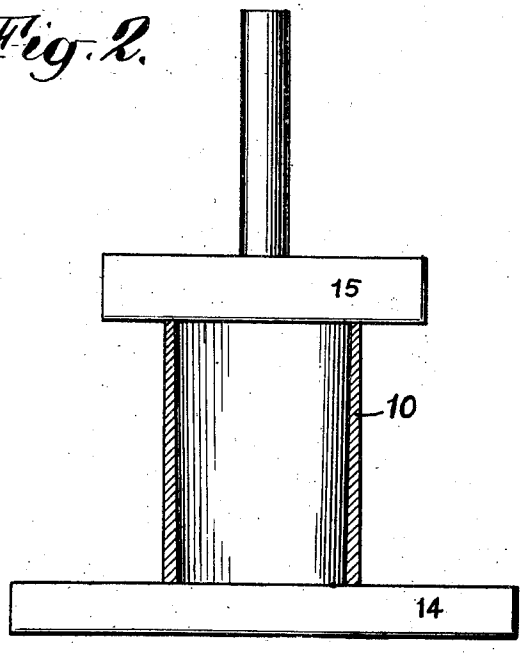


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRED M. CARROLL, OF ENDICOTT, NEW YORK, ASSIGNOR TO THE TABULATING MACHINE COMPANY, OF ENDICOTT, NEW YORK, A CORPORATION OF NEW JERSEY.

METHOD OF SENSITIZING CYLINDERS.

Application filed August 21, 1924. Serial No. 733,290.

To all whom it may concern:

Be it known that I, FRED M. CARROLL, a citizen of the United States of America, residing at Endicott, in the county of Broome and State of New York, have invented certain new and useful Improvements in Methods of Sensitizing Cylinders, of which the following is a full, clear, and exact description.

This invention relates to an improved method of applying a sensitizing medium to cylinders which are subsequently exposed to receive an image of data which is to be reproduced thereon by etching processes.

The present invention is particularly directed to an improved method of sensitizing the cylinders to the general end that the coating of sensitizing material may be distributed in a uniform manner upon the cylinder periphery.

In the drawings:

Fig. 1 is a view showing the first step of the method which comprises the application of the material to the cylinder and the distribution of the same thereon.

Fig. 2 shows the second step in the method. In this step heat is applied to the cylinder in a novel manner to cause the congealing hardening and drying of the material in a uniform distribution upon the cylinder.

In more detail, 10 represents a cylinder of copper, brass or like material. This cylinder is ground and polished to exact size and then applied to a mandrel 11 with its axis horizontal. After the cylinder is in place upon the mandrel, the cylinder is rotated or spun by any suitable means such as the electric motor 12. The operator then applies a small amount, usually eight or ten drops, of the sensitizing emulsion to the cylinder while the latter is rotating. This emulsion may be of various consistency, and may include albumen or collodion, together with any suitable reagent which is acted upon by light. Application of the emulsion to the cylinder may be conveniently effected by such means as the dropper 13.

The rotation of the cylinder is continued and the emulsion is spread by a suitable paddle. The emulsion is kept from flowing downwardly to a low point on the periphery of the cylinder by the forces which are set up by the rotation of the cylinder.

The cylinder rotation is then stopped, the cylinder removed and placed one end up (i. e. with its axis vertical) upon a suitable support or table 14.

The operator then applies a heated iron block 15 to the upper end of the cylinder as shown in Fig. 2. The subsequent effect may be explained as follows: When the cylinder is placed end up upon the table the emulsion starts to run down the periphery of the cylinder lengthwise thereof and thus evens out any irregularities in the emulsion that may have been formed therein during the rotation or spinning of the cylinder. Obviously if this flow of the emulsion were unimpeded the coating would be very thin at the top and thicker at points lower down. This is undesirable. The transfer of heat from the heated block to the cylinder proceeds and the heat thus imparted causes the emulsion to congeal upon the periphery of the cylinder immediately after it has started to flow downward thereon.

The transfer of heat along the cylinder is found to be quite rapid and when the emulsion is completely congealed it is found that the coating is uniform in thickness and free from undesired irregularities or ridges.

What I claim is—

1. The method of coating cylinders with a sensitized emulsion which comprises applying the emulsion to a cylinder and distributing the same over the surface thereof and thereafter placing the cylinder with its axis disposed vertically and then applying heat to one end of the cylinder to congeal the emulsion after the latter has flowed slightly downwardly upon the periphery of the cylinder.

2. The method of coating cylinders with a sensitizing emulsion, which comprises first rotating the cylinder about a horizontal axis, then applying and spreading emulsion thereto and thereon while the cylinder is rotating and thereby maintaining the distribution of emulsion about the periphery of the cylinder, then disposing the cylinder with its axis vertical to cause a slight downward flow of the emulsion and thereafter congealing the

emulsion by applying heat to the cylinder.

3. The method of coating a cylinder with a sensitizing emulsion which comprises rotating a cylinder with its axis horizontal, then applying the sensitized emulsion thereto and distributing the same thereon by spreading aided by spinning of the cylinder, thereafter placing the cylinder with its axis in a vertical position, and subsequently congealing the emulsion by the application of heat derived from a heated body upon the upper end of said cylinder.

In testimony whereof I hereto affix my signature.

FRED M. CARROLL.