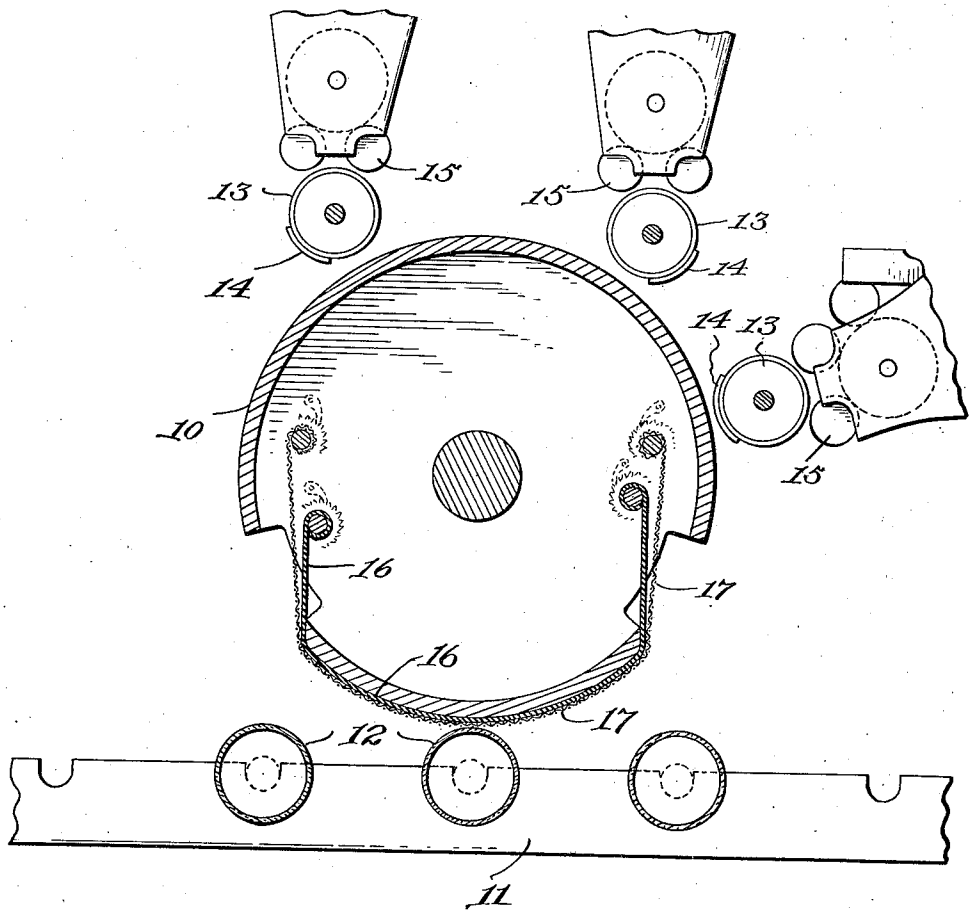
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APPARATUS FOR DECORATING GLASSWARE AND OTHER ARTICLES

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APPARATUS FOR DECORATING GLASSWARE AND OTHER ARTICLES

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4 Claims. (Cl. 101—217)

This invention relates generally to the art of printing, but more particularly it relates to the decoration of glass bottles, jars, or other containers.

The use of paper labels on bottles, jars, etc., is not entirely satisfactory, as such labels often become soiled and unsightly in use, and also are often lost. It has been proposed heretofore to print the labels directly on containers, and it has also been proposed to use ceramic paint in printing labels directly on glass containers, and then fire the glass containers to fix the enamel.

The present invention is concerned particularly with the last-mentioned type of decorating glassware. That is, a ceramic paint is employed in decorating the glassware, and the ware is subsequently fired. Methods heretofore suggested have not been successful, for the reason that the blanket of the transfer cylinder does not pick up sufficient ceramic paint from the plate cylinders. The result is that the color is thin, streaked and lifeless. The present invention overcomes this very serious difficulty.

The inventon will be clearly understood from the following description, when taken in connection with the accompanying drawing, in which,

The figure is a vertical transverse sectional view of the transfer cylinder; the associated conveyor and plate cylinders being illustrated more or less diagrammatically.

In the drawing, the transfer cylinder or drum is referred to by numeral 10. A conveyor 11 for presenting the bottles 12 or other containers to the transfer cylinder, is diagrammatically illustrated. The present invention is not concerned with any particular apparatus for transporting the ware to be decorated or for maintaining the ware in proper relation with the transfer cylinder while the ware is being decorated, etc., and hence it is unnecessary to illustrate any particular apparatus for these ordinary purposes, for which purposes any desirable apparatus may be employed.

Arranged around the transfer roll are a number of cylinders 13 carrying the plates 14. The present invention is particularly adapted for multi-color work, and of course there may be any desired number of the plate cylinders; three being shown in the present instance. Of course the usual inking rollers 15 are associated with the plate cylinders. These inking rollers contact only with the plates 14, and the plates 14 contact only with the blanket of the transfer cylinder, to be later described. No driving apparatus is shown in connection with the plate cylinders and the transfer cylinder, as obviously any desired mechanism may be employed. The arrangement of the transfer cylinder and the associated plate cylinders is old and well known, as shown by the patent to A. J. Ford, No. 1,092,830, granted April 14, 1914.

In an apparatus as thus far described, the blanket of the transfer cylinder receives a design impression from each of the plates 14, and the transfer blanket then applies the complete design to the article to be decorated. As mentioned hereinbefore, when ceramic paints are employed, the transfer blanket does not pick up a sufficient amount of such paint from the plates, with the result that the finished design is thin, streaked and lifeless.

A transfer blanket, which has long been known, and which is unsatisfactory for use with ceramic paints for the reasons mentioned above, is referred to by numeral 16. In the particular form illustrated herein the blanket is stretched over a portion of the metal drum 10 in exactly the same manner as shown in the above-mentioned patent to A. J. Ford, but of course the blanket can be mounted on the drum in any desired manner. And as mentioned in said patent, the blanket is usually made of rubber.

The yielding surface of the blanket made of rubber or other substances such as gelatin, is adapted to receive the ink or paint impressions from the plates 14. But in the use of ceramic paints the blanket does not pick up sufficient paint from the plates, to satisfactorily carry out the process of decorating glass or other surfaces.

In accordance with the present invention, this objection is overcome by the provision of means for causing the blanket to pick up ample quantities of the ceramic paint. In the specific embodiment illustrated I stretch a silk screen 17 over the blanket 16. Of course this silk screen may be mounted on the blanket in any desired manner, but I have shown it mounted in the same manner as the blanket. That is, the ends of the silk screen are attached to rods or shafts carried by the transfer drum 10, just as the ends of the blanket are attached to similar rods or shafts. These rods are preferably rotatably adjustable, as shown in the above-mentioned Ford patent. Of course the present invention is not concerned with any particular manner of mounting either the blanket or the silk screen.

It will be understood that the silk screen will assist in taking the ceramic paint from the plates 14, and the result is that the transfer blanket carries sufficient paint from the plates to the

article to be decorated, thereby overcoming the difficulties previously encountered in attempting to decorate glass surfaces with ceramic paints.

The use of a silk screen in combination with a transfer blanket, to aid in picking up more paint from the plates, is believed to be entirely new, and while I prefer to use a silk screen, yet the invention contemplates the use of other porous materials for this purpose.

Having fully described the invention, what I claim is:

1. An apparatus for printing on glass surfaces with ceramic paint, including a plate cylinder, a transfer cylinder, a transfer blanket carried by the transfer cylinder, said transfer blanket including means for increasing the amount of ceramic paint picked up by the blanket from the plate cylinder and transferred to the glass surface.

2. An apparatus for printing on glass surfaces with ceramic paint, including a plate cylinder, a transfer cylinder, a transfer blanket carried by the transfer cylinder, and a sheet of porous material on the surface of said blanket for increasing the amount of ceramic paint picked up by the blanket and transferred to the glass surface.

3. An apparatus for printing on glass surfaces with ceramic paint, including a plate cylinder, a transfer cylinder, a transfer blanket carried by the transfer cylinder, and a silk screen on the surface of said blanket for increasing the amount of ceramic paint picked up by the blanket and transferred to the glass surface.

4. A transfer cylinder for printing on glass surfaces with ceramic paint, including a transfer blanket of resilient material, and a silk screen stretched across said blanket, said screen increasing the amount of ceramic paint which is delivered to the glass surface.

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