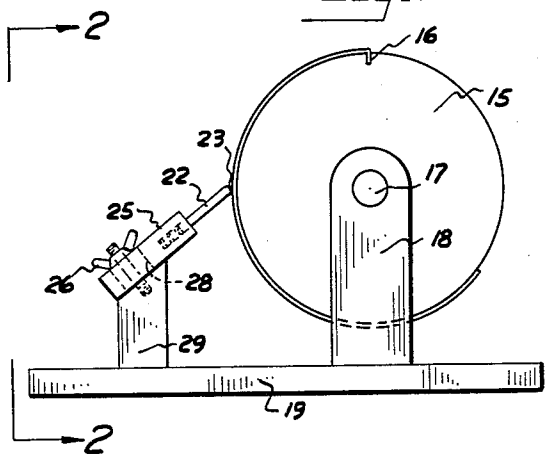
Feb. 25, 1964 J. T. LECLERC ETAL 3,122,094

METHOD FOR REPRODUCING IMAGES

Filed Oct. 22, 1962

Fig. 1



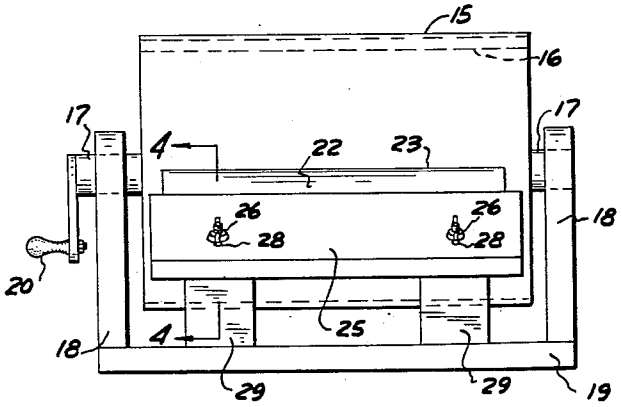


Fig. 2

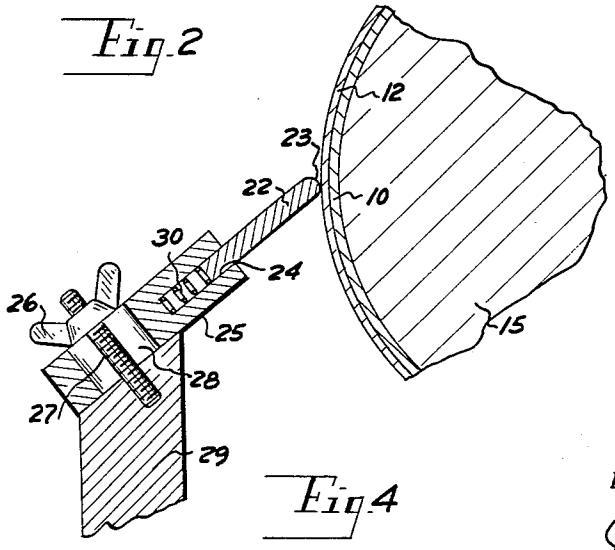


Fig. 3

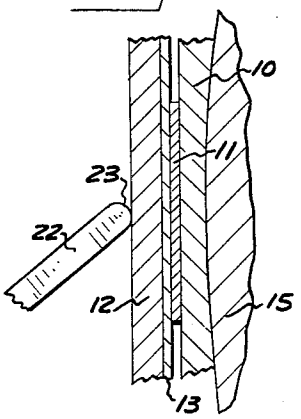


Fig. 4

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METHOD FOR REPRODUCING IMAGES

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1 Claim. (Cl. 101—149.4)

This invention relates to a method for reproducing images, and more particularly, to a method for reproducing a copy of a printed image formed upon an original paper upon a second sheet of paper or the like.

There are many methods and types of equipment available for reproducing images formed on paper and the like, but all of these require substantial equipment, special papers, etc., all of which is relatively complicated and expensive.

Hence, it is an object of this invention to provide a method for quickly reproducing images, formed on an original paper with carbon based inks and the like, with little or no equipment, rapidly, upon a sheet of ordinary untreated paper or upon a cloth surface, etc. Briefly, such method comprises placing a sheet of waxed paper upon the image surface, rubbing against the waxed paper towards the image surface to transfer a copy of the image upon the wax paper, then placing the wax paper upon any copy sheet and rubbing against it again to thus transfer the image to the copy sheet.

These and other objects and advantages of this invention will become apparent upon reading the following description, of which the attached drawings form a part.

In these drawings:

FIG. 1 illustrates a side elevational view of equipment useful for carrying out the process herein.

FIG. 2 is a front elevational view thereof, taken in the direction of arrows 2—2 of FIG. 1, and

FIG. 3 is an enlarged cross-sectional view illustrating a step in the process.

FIG. 4 is an enlarged cross-sectional view taken in the direction of arrows 4—4 of FIG. 2.

The Process

The process is applicable to reproductions of images which are formed with carbon based inks and the like upon paper, smooth surfaced cloth, etc. It will not work effectively in reproducing offset printing or images formed of inks which contain alcohol or ether as a base or in reproducing glossy photographs. Hence, the original image, which may be a picture, or writing or typing or printed material, must be formed of a carbon based ink, such as printer's inks, which never fully dry or oxidize completely, or ball point pen inks, typewriter inks, etc. If the image is colored, then the reproduction will also be in duplicate color.

The first step of the process consists of placing the original on a hard, smooth surface and then placing on top of it a piece of waxed paper. Any conventional paraffin type waxed paper commonly available on the market and commonly used as an ordinary household item would be suitable here. The sheet of waxed paper is placed upon the copy with its waxed surface in face to face contact with the image area of the original sheet. Waxed paper is commonly waxed on both faces, however, if the waxed paper is of a type which has only one waxed face, then that face is placed against the image.

Then, the exposed surface of the wax paper is rubbed firmly, with long firm strokes, with a relatively hard object, such as a strip of wood, like a tongue depressor, commonly used by physicians, or a coin or a plastic disc, etc. The rubbing results in a transfer of particles of the

ink of a microscopic size to the surface of the waxed paper and thus reproduces upon the wax paper a negative or mirror image of the original.

Thereafter, a clean sheet of copy paper or smooth surfaced cloth or the like is substituted for the original sheet, with the waxed paper placed upon the copy sheet, and the rubbing step process is repeated, over the area of the waxed paper upon which the negative has been reproduced. The rubbing results in the transfer from the waxed paper to the copy sheet of a substantial part of the microscopic particles of ink which had originally been transferred to the waxed paper. Hence, a positive reproduction is produced upon the copy sheet in full color, corresponding to the original.

The waxed paper can be used for a number of reproductions. Usually the first two or three copies are of substantially the same quality, the quality then decreasing as more copies are made.

The process can be carried out simply by using any available hard surface, a sheet of waxed paper and some small hard object for rubbing. However, for commercial use it is desirable to have equipment available for quickly performing the steps of the process.

Apparatus for Reproducing Images

The drawings herein disclose one form of apparatus suitable for carrying out the process herein. Referring first to FIG. 3, the original sheet **10** has imprinted thereon an image **11** formed of a carbon base type of ink, such as printer's ink or typewriter ink or the like.

Placed upon the original sheet is a sheet of waxed paper **12** having at least one waxy film surface **13** placed in face to face contact with the image area **11**.

In FIG. 1, the apparatus comprises a cylindrical drum **15** having a paper edge receiving slot **16** formed therein for receiving one edge of the original sheet and the waxed paper. The drum is mounted on axles **17** journalled in upright supports **18** mounted on a flat base **19**. A handle **20** is secured to one of the axles **17** for manually rotating the drum. A long, narrow blade **22** is arranged with one edge **23** rubbing against the sheets placed upon the drum **15**. The blade is formed of a flat, stiff sheet of material such as wood, metal or plastic. The opposite edge of the blade is fitted into a slot **24** of an elongated blade carrier plate **25** fastened by wing nuts **26** to threaded studs **27** extending through adjustment slots **28** into vertical support posts **29**. Hence, by loosening and tightening the wing nuts, the blade can be adjusted towards or away from the drum surface. The blade is spring urged out of the slot, towards the drum by springs **30** which thus press the blade into rubbing contact with the paper arranged on the drum.

In operation, the user places the original printed sheet upon the drum with one edge inserted in the slot **16** and places upon the surface a sheet of waxed paper **12** with one edge also inserted in the slot **16**. Thereafter, manual rotation of the drum is affected by turning the handle **20** so that the edge **23** of blade **22** frictionally rubs or presses against the exposed surface of the waxed paper to reproduce the image thereon. After a few rotations, both papers are removed from the surface of the drum and a fresh, clean sheet of any conventional copy paper is substituted for the original sheet and the process is repeated, to thus produce the positive.

This invention may be further developed within the scope of the following attached claim. Accordingly, it is desired that the foregoing description be read as being merely illustrative of an operative embodiment of this invention and not in a strictly limiting sense.

In accordance with the present invention, it is contemplated that the present method may include the use of a waxed paper or paper having a waxed surface to

which has been imprinted an indicia or design using a carbon based ink or the like which may be in black or in color. This design already imprinted upon the waxed surface of the paper may be transferred to a second sheet by applying the imprinted and waxed surface directly to the second sheet surface in face to face relation and thereafter rubbing the said waxed paper exposed surface transferring the image on its waxed surface onto the surface of the second sheet.

The method hereinabove described contemplated the initial step of first transferring an image to a waxed surface and the second step of transmitting the waxed surface with image thereon to another sheet. It is contemplated in some situations that a waxed paper may be employed in the first instance onto which has been originally imprinted a design or image or color which may be sought to be reproduced thereafter. Accordingly, the present method contemplates that this sheet with waxed surface with design imprinted thereon in the first instance may be applied to a plain sheet by a rubbing action, the design transferred to the new sheet.

We now claim:

A method for reproducing the images formed upon an original paper with carbon based inks and the like, comprising essentially the steps of placing the original paper upon a cylindrical drum with its image side exposed, next placing a sheet of waxed paper upon the original paper with its waxed surface in face to face contact with the image area thereof, then rotating the drum bearing the two papers and simultaneously pressing a blade into tight surface contact with the exposed face of the waxed paper, thus providing a rubbing action against said exposed face to transform a negative of the image upon the waxed paper waxed surface; then replacing the original paper with a copy sheet and repeating the rotation and blade pressing step to transfer the image to a copy sheet in the form of a positive copy of the image.

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