

UNITED STATES PATENT OFFICE.

LEWIS R. KANTNER, OF HASBROUCK HEIGHTS, NEW JERSEY, ASSIGNOR OF ONE-THIRD
TO MAX L. MITCHELL, OF WILLIAMSPORT, PENNSYLVANIA.

ART OF PRINTING.

974,278.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, LEWIS R. KANTNER, of Hasbrouck Heights, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in the Art of Printing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in the art of printing, and more particularly to a process of treating printed impressions, such as half-tone and other prints and engravings produced upon paper or other material with the use of a printing press of any well known or approved construction.

The object of my present invention is to enrich a print, to develop its tonal values and secure depth and tint, without the necessity of resort to multiple printing in various colors.

Heretofore where a tint or color is desired in a print, it has been the practice to stamp or impress the same on paper or other material, with a specially engraved plate, known as a tint block or color plate, and over this color print is stamped the black or key plate. The method of printing is precisely the same in both cases, different inks and different engravings being used and two separate printings being had.

I have discovered that the coloring matter which is to produce the tint of the finished print may be mixed in and printed with the black ink and that it can be liquefied, after printing, so as to brighten and beautify the print to a much greater degree than has heretofore been accomplished by the multi-color printing processes. I have found also, that by so treating the print as to liquefy the coloring matter contained in the ink, the print will be materially improved by intensifying the solids, developing the detail of the picture or engraving, softening the lights and shades, and heightening the tonal value, without attacking the black ink, and rendering unnecessary, the use of special engravings and special printing for tint or tone.

In carrying my process into effect, I first mix with the black printers' ink the coloring matter or colored ink, in quantity according to the tint desired in the finished print. In

any case, however, the proportion of coloring matter or colored ink, to that of the body ink will be so small that it can be easily "worked," distributed, etc., without in any way detracting from the efficiency of the ink in producing a good, clear print. For instance, I have found that good results can be produced by mixing with commercial, black, printers' inks, a colored ink, the coloring matter in which will be soluble in certain oils, such colored ink being employed in the proportion of five (5) parts of the colored ink to ten (10) parts of black ink. These proportions may however, be varied in accordance with the final results desired. When red ink is mixed with black ink in approximately the proportions above stated, the ink will be dark brown in color, and the print will have a similar appearance. After having made or impressed a print in the ordinary way, the same will be treated with oil (preferably kerosene oil) which will not dissolve the coloring matter in the ink. A second impression with the same ink is then made. The print then consists of two superimposed impressions and an interposed film of oil. The oil may be applied by printing, stamping, brushing, flowing, spraying or in any other desired manner, and serves to prevent stretching or shrinking of the paper between the times of the first and second impressions, thereby insuring perfect register of the second impression. The film of kerosene oil will also prevent the ink of the first impression from drying on the paper before the second impression is made and to more thoroughly combine the two impressions with each other and with the fiber of the paper, thus eliminating flat effect of two separate and uncombined printings. Furthermore, the film of oil will act to spread the lines of the engraving or print as a first step to a fuller tone. I next subject the print to a treatment of a material, preferably an oil in which the coloring matter in the ink is soluble,—such for instance, as banana oil. This oil may be applied in any of the ways previously mentioned. The effect of the solvent oil will be to liquefy the coloring matter in the ink, giving to the print the desired tint, and serving to enrich the print; to develop excellent tonal value; to secure depth, and to generally improve and beautify the print.

In some cases, the first oil treatment and

the second printing may be omitted, and good results obtained by treating a print of a single impression, with a solvent oil,—the most essential feature of the invention being
5 the treatment of the print with a solvent which will produce liquefaction of the coloring matter in the ink to produce the tinted and tonal effects hereinbefore described.

Having fully described my invention
10 what I claim as new and desire to secure by Letters-Patent, is,—

1. The herein described process, consisting in making a print with ink containing coloring matter in addition to the body pigment
15 of the ink and incorporated therewith, and subsequently treating the print with an oil in which the added coloring matter is soluble and the body pigment insoluble.

2. The herein described process, consisting
20 in making a print with an ink containing coloring matter in addition to the body pig-

ment of the ink, and subsequently treating said print with banana oil to liquefy said coloring matter.

3. The herein described process consisting
25 in making a printed impression with ink containing coloring matter in addition to the body pigment of the ink; then treating the print with an oil in which said coloring matter is not soluble; then making a second
30 impression over the first with the same ink, and finally treating the print with a solvent which will liquefy the said coloring matter in the ink of the print.

In testimony whereof, I have signed this
35 specification in the presence of two subscribing witnesses.

LEWIS R. KANTNER.

Witnesses:

FRANK C. RAUBS,
JOSEPH H. JOY.