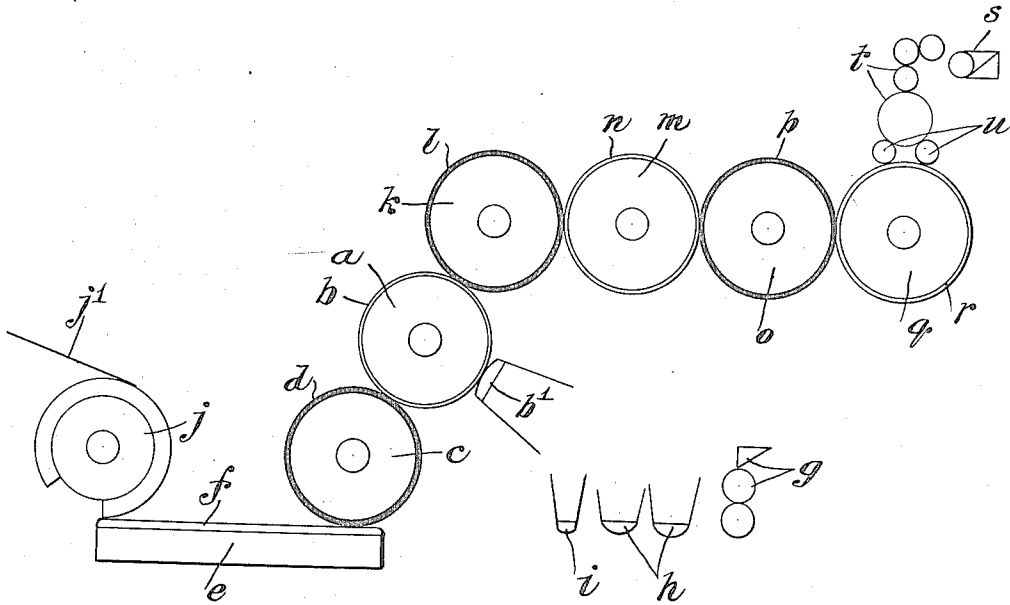


A. H. SMITH,
METHOD OF MAKING MULTICOLOR PRINTS.
APPLICATION FILED MAY 13, 1915.

1,294,720.

Patented Feb. 18, 1919.



Attest:
J. P. M. [Signature]
Judith Parker

Amos A. Smith Inventor:
by *Frank J. Wentworth*
his Atty.

UNITED STATES PATENT OFFICE.

AMOS H. SMITH, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN BANK NOTE COMPANY,
A CORPORATION OF NEW YORK.

METHOD OF MAKING MULTICOLOR PRINTS.

1,294,720.

Specification of Letters Patent.

Patented Feb. 18, 1919.

Application filed May 13, 1915. Serial No. 27,775.

To all whom it may concern:

Be it known that I, AMOS H. SMITH, a citizen of the United States, residing at the borough of Bronx, in the city of New York, county of Bronx, and State of New York, have invented certain new and useful Improvements in Methods or Art of Making Multicolor Prints, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to the method or art of making multi-color prints and more particularly to a method by which certain results secured by different printing methods may be secured upon a single impression.

My invention is particularly adapted for producing work having a background tint and other matter in a contrasting tone or color.

In U. S. Letters Patent No. 538,750, dated May 7, 1895, and No. 668,358, dated February 19, 1901, there was patented to me two methods of making prints of this character, the essential characteristic of which was the transfer of the tinted design upon the top or non-printing surface of an engraved, intaglio or undersurface plate and the making of a single impression from this plate. My present invention relates to an improvement in the method or art referred to in the said Letters Patent, its object being to improve the product secured by said patented methods by applying the ink to the elastic surface for transferring it to the engraved intaglio or undersurface printing plate in a manner to insure uniformity in the product even after a prolonged run. The object of the tinted background is to provide checks, drafts, bonds, stock certificates, bank notes, coupons and other negotiable instruments with a surface composed of a delicate design, light in tone, which will be readily destroyed in the event of an attempted alteration of the instrument as well as to give such a character to the instrument as will admit of its being readily identified as genuine. These conditions require uniformity in

the quality of the work and similarity in the depth of tone of different instruments of the same series.

When making impressions from an inked design, offset upon an elastic transfer surface there is a tendency of the ink, upon a prolonged run, to accumulate upon this surface in a manner to strengthen the impression, and in the methods referred to in my aforesaid Letters Patent this condition is present.

In my present invention, I aim to minimize the effects of this condition by providing in the mechanism by which the tinted design is applied to the non-printing surface of the engraved, intaglio or undersurface plate means whereby the strengthening of the design upon the transfer surface will be reduced to a minimum and the delicate tints of the tinted impression will thus be preserved in all of the impressions made. By this method, the presence of ink upon the non printing surface of the plate in excess of that quantity required to give the required depth of tone in the imprint is avoided.

The invention consists primarily in the method or art of making multi-color prints consisting in applying a tinted design in ink to a smooth, polished, non-elastic, metallic surface, offsetting said design from said surface to an elastic transfer surface, inking, wiping and polishing an engraved, intaglio or undersurface printing plate, thereafter offsetting the design upon said elastic transfer surface to the non-printing or top surface of said plate and making a single impression from said plate; and in such other novel steps and practices, as are hereinafter set forth and described and more particularly pointed out in the claims hereto appended.

In the accompanying drawings, I have shown diagrammatically an apparatus which may be used in the practice of my method or art.

While in the drawing I have illustrated the engraved, intaglio or undersurface printing surface as being a flat plate, if desired,

a curved plate upon a form cylinder may be used instead of this flat plate and its horizontally movable bed.

In the practice of my improved art or method I first prepare an engraved, intaglio or undersurface printing plate by inking, wiping and polishing in the usual manner to present a perfectly clean top or non-printing surface thereon. I then apply to a smooth, polished, non-elastic, metallic surface a design having a tinted effect and offset this design upon an elastic transfer surface. I then offset the design from this elastic surface upon the top or non-printing surface of the engraved, intaglio or undersurface printing plate and making an impression from this plate upon a dampened sheet of paper, impressing thereon two designs, that formed by the lines upon the engraved, intaglio or undersurface printing plate and the tinted design impressed upon the top or non-printing surface of said plate.

In this manner, I secure in a single impression the body of the instrument having all of the characteristics common to an impression from an engraved, intaglio or undersurface plate and a tinted background in a contrasting tone or color having all those characteristics present in tint impressions from a cameo or planographic printing surface.

After each transfer of the tinted design from the smooth, polished, non-elastic, metallic printing surface to the elastic surface for applying the design to the engraved, intaglio or undersurface plate, I thoroughly cleanse said smooth, polished, non-elastic, metallic surface so as to prevent the accumulation of ink thereon and preserve a condition in this surface which will insure uniformity in the sharpness and strength of the design transferred therefrom to the elastic transfer surface.

The manner of preparing said smooth, polished, non-elastic, metallic surface preferably consists of inking a printing surface having thereon a silhouette design corresponding in outline to the tinted background. This silhouette design I offset upon an elastic transfer surface which surface I use for inking a plate having a tinted effect upon the surface thereof. The inked portion of said tinted plate is then offset upon an elastic transfer surface from which the design is, in turn, offset upon said smooth, polished, non-elastic, metallic surface.

Other methods of applying the inked design of the tinted background to the said smooth, polished, non-elastic, metallic surface may be employed if desired, although the method above referred to has the advantages of securing uniformity in the product and effecting a distribution of the ink in a

manner to result in the desired delicacy in the tone value of the impression.

In the accompanying drawings, I have shown at *a* a cylinder having thereon a smooth, polished, non-elastic, metallic surface *b*. At *c* is a cylinder having an elastic transfer surface *d* upon which the surface *b* is adapted to offset the tinted design in ink. Adjacent the cylinder *c* is a movable support *e* adapted to carry an engraved, intaglio or undersurface printing plate *f* associated with the support *e* is an inking mechanism *g*, a wiping mechanism and a polishing mechanism *i*. I also employ associated with the support *e* an ordinary impression cylinder or D-roll *j*.

Acting upon the surface *b* is a wiping mechanism *b'* operative upon said surface after each time when the design has been offset therefrom to the transfer surface *d*. This thoroughly cleanses said surface and prevents the accumulation of ink thereon in a manner to broaden, or otherwise strengthen the tone of, the lines.

The tinted design in ink is applied to the surface *b* by a cylinder *k* having thereon an elastic transfer surface *l*. Associated with the cylinder *k* is a cylinder *m* adapted to carry a plate *n* having thereon a surface having a tinted effect; a second cylinder *o* having thereon an elastic transfer surface *p* and a cylinder *q* adapted to carry a plate *r* having a silhouette design corresponding with the outline of the tinted background and an inking mechanism consisting of an ink fountain *s*, distributing rollers *t* and inking rollers *u*. Associated with the D-roll *j* is a feed shelf *j'*.

By means of the apparatus above described, the silhouette design is inked and offset upon the transfer surface *p* which inks the plate *n* having the tinted effect. The tinted design is then transferred in ink, to the transfer surface *l* upon the cylinder *k*, from which surface it is transferred to the smooth, polished, surface *b*. From this surface the ink is offset upon the elastic transfer surface *d* by which it is applied to the polished top or non-printing surface of the engraved, intaglio or undersurface printing plate *f*.

In this manner the quantity of ink applied to the tinted surface is reduced to a minimum and the rapid fouling of this surface is prevented. At the same time the transfer rollers will, with a prolonged run, gather and maintain sufficient strength to insure uniformity in the tone value applied to the surface *p*, the accumulation of ink upon the surface *b* being prevented by the wiping mechanism *b'*.

While the impression is made under conditions such as are required in undersurface printing, the manner of applying the ink

to the top surface of the engraved, intaglio or undersurface plate, is such as to admit of these printing methods being employed in making the tinted background without
 5 likelihood of the spreading of the line by reason of the fact that the pressure at which the impression is made is greater than that ordinarily employed in making a tinted background.

10 Having described the invention, what I claim as new and desire to have protected by Letters Patent is:—

1. The method or art of making multi-color prints consisting in applying a tinted
 15 design in ink to a smooth, polished, non-elastic surface, offsetting said design from said surface to an elastic transfer surface, inking, wiping and polishing an engraved, intaglio or undersurface printing plate,
 20 thereafter offsetting the design upon said elastic transfer surface to the non-printing or top surface of said plate and making a single impression from said plate.

2. The method or art of making multi-color prints consisting in inking, wiping and polishing an engraved, intaglio or undersurface printing plate, applying to an elastic transfer surface a design in ink having a tinted effect, offsetting said design
 25 from said surface to a smooth, polished, non-elastic, metallic surface, offsetting the design from said surface to an elastic transfer surface, offsetting the design upon said last
 30 named elastic transfer surface to the non-printing or top surface of said plate and making a single impression from the said plate.

3. The method or art of making multi-color prints consisting in inking, wiping and
 40 polishing an engraved, intaglio or undersurface printing plate, applying ink to a plate, the surface of which has a tinted effect, offsetting the design from said plate to an elastic transfer surface, offsetting said
 45 design from said surface to a smooth, polished, non-elastic, metallic surface, offsetting the design from said surface to an elastic transfer surface, offsetting the design upon
 50 said last named elastic transfer surface to the non-printing or top surface of said plate and making a single impression from the said plate.

4. The method or art of making multi-color prints consisting in inking, wiping and
 55 polishing an engraved, intaglio or undersurface printing plate, applying to an elastic transfer surface an ink design in silhouette, transferring said silhouette design to a plate, the surface of which has a tinted effect, off-
 60 setting the design from said plate to an elastic transfer surface, offsetting said design from said surface to a smooth, polished, non-elastic, metallic surface, offsetting the design from said surface to an elastic trans-

fer surface, offsetting the design upon said
 65 last named elastic transfer surface to the non-printing or top surface of said plate and making a single impression from the said plate.

5. The method or art of making multi-color prints consisting in applying a tinted
 70 design in ink to a smooth, polished, non-elastic surface, offsetting said design from said surface to an elastic transfer surface, wiping said smooth, polished, non-elastic,
 75 metallic surface after each transfer to said elastic surface, inking, wiping and polishing an engraved, intaglio or undersurface printing plate, thereafter offsetting the design upon said elastic transfer surface to the
 80 non-printing or top surface of said plate and making a single impression from said plate.

6. The method or art of making multi-color prints consisting in inking, wiping
 85 and polishing an engraved, intaglio or undersurface printing plate, applying to an elastic transfer surface a design in ink having a tinted effect, offsetting said design from said surface to a smooth, polished, non-
 90 elastic, metallic surface, offsetting the design from said surface to an elastic transfer surface, wiping said smooth, polished, non-elastic, metallic surface after each transfer to said elastic surface, offsetting the de-
 95 sign upon said last named elastic transfer surface to the non-printing or top surface of said plate and making a single impression from the said plate.

7. The method or art of making multi-color prints consisting in inking, wiping and
 100 polishing an engraved, intaglio or undersurface printing plate, applying ink to a plate, the surface of which has a tinted effect, offsetting the design from said plate
 105 to an elastic transfer surface, offsetting said design from said surface to a smooth, polished, non-elastic, metallic surface, offsetting the design from said surface to an elastic transfer surface, wiping said smooth,
 110 polished, non-elastic, metallic surface after each transfer to said elastic surface, offsetting the design upon said last named elastic transfer surface to the non-printing or top surface of said plate and making a single
 115 impression from the said plate.

8. The method or art of making multi-color prints consisting in inking, wiping
 120 and polishing an engraved, intaglio or undersurface printing plate, applying to an elastic transfer surface an ink design in silhouette, transferring said silhouette design to a plate, the surface of which has a tinted effect, offsetting the design from said plate
 125 to an elastic transfer surface, offsetting said design from said surface to a smooth, polished, non-elastic, metallic surface, offsetting the design from said surface to an elastic

transfer surface, wiping said smooth, polished, non-elastic, metallic surface after each transfer to said elastic surface, offsetting the design upon said last named elastic
5 transfer surface to the non-printing or top surface of said plate and making a single impression from said plate.

In witness whereof I hereunto affix my signature in the presence of two subscribing witnesses, this 23rd day of April, 1915.

AMOS H. SMITH.

Witnesses:

JUDITH PARDEE,
CLARICE FRANCK.