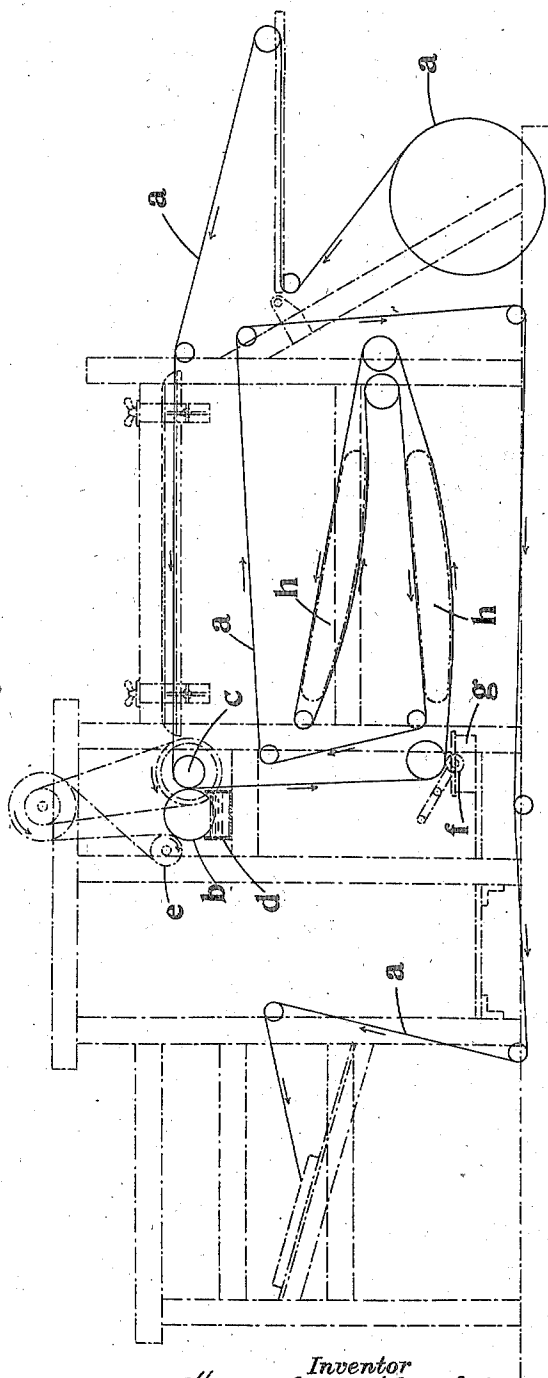


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DECORATIVE TREATMENT OF PAPER AND OTHER SUBSTANCES.
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UNITED STATES PATENT OFFICE.

HARRY CECIL MITCHELL, OF LONDON, ENGLAND.

DECORATIVE TREATMENT OF PAPER AND OTHER SUBSTANCES.

947,973.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed October 10, 1908. Serial No. 457,170.

To all whom it may concern:

Be it known that I, HARRY CECIL MITCHELL, a subject of the King of Great Britain and Ireland, residing at Ashmere House, Acre Lane, Brixton, London, S.W., England, have invented certain new and useful Improvements in and Relating to the Decorative Treatment of Paper and other Substances, of which the following is a specification.

This invention relates to the decorative treatment of paper and other substances and has for its object very simply and expeditiously to produce upon the surface of paper or other material in the web or in sheets certain color or decorative effects, such for example as an imitation graining, veining, or striping in any desired color by means of which the surface of the paper is rendered more effective and whereby its value is increased.

The apparatus for carrying the process into effect is illustrated diagrammatically in the accompanying drawing.

According to the invention I pass the paper *a* or other substance to be treated between rollers *b c* upon one *b* of which color is applied either by spraying, by causing to flow in a stream by means of brush or pad, by means of a ring or belt-pad, or in fact by any other suitable means operating continuously or intermittently.

The roller or rollers upon which the color is deposited rotates within a bath *d* of liquid such as water by which the surface of the roller is kept wet. By such means the color will "run" or spread upon the roller or rollers and then upon the paper and an impression will thus be made upon the paper *a*, resembling for example veins or graining; while as the roller *b* further rotates the color which has not been completely taken up by the paper *a* or other substance passing between the rollers *b c* may be taken up by the paper on again passing around, producing weaker impressions in the same color; or means such as an off set roller *e* may be employed to remove the color from the roller *b* after impression.

It will be understood that any desired effects may be secured according to the manner in which the color is deposited upon the roller *b*. The color may, for example, be reciprocated or it may be intermittently applied or various colors may be applied in

the same position or in different positions on the roller or rollers and in fact innumerable effects may be secured according to the manner in which the color or colors is or are applied.

The deposit of color upon the roller or rollers may be modified for example by means of a blade graining comb or by any other suitable means in order to modify the impression conveyed to the paper or other substance or to restrict the amount of color applied.

The paper *a* or other substance after having color applied upon it in the manner hereinbefore described may be coated with varnish or any other substance, by being brought into contact with a roller *f* which is partially immersed in a tank *g* containing the substance with which the paper is to be coated and it may be dried by being passed over steam pads *h*. From the steam pads the paper may be guided to a printing machine where it is printed upon or to a cutting machine where it is cut to any suitable size.

In some cases, as where the paper is already colored before being passed between the rollers, the substance applied may simply be a solvent as for example methylated spirit or water, that will act to remove some of the coloring agent from the paper and produce the desired colored or decorative effect. In this case, the markings produced on the paper may be white or nearly so, or of a very pale color. The substance applied may be applied to one or more points in the length of the roller so as to produce on the paper one of more continuous, interrupted or varied strips or markings the width or widths of which can be carried by varying the rate of supply of the color producing agent, or the speed of the roller, or both. The paper to be treated in the manner described may be passed between two or more pairs of rollers, one of the rollers of each pair having a color or other substance applied thereto as described.

I may apply color on webs of paper or other material subsequent to treatment according to the process described in my prior application for patent in the United Kingdom No. 22106/08, the coloring being effected before or after the application of lamp black upon the paper.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A process for the decorative treatment of paper and other substances consisting in
5 applying color upon a surface, moving this surface in a liquid bath for the purpose of spreading the color and then transferring the color from the surface to the paper or other substances to be treated substantially
10 as described.
2. A process for the decorative treatment of paper and other substances consisting in the application of color upon a surface, subjecting this surface to the treatment of
15 a liquid such as water for the purpose of spreading the color and then transferring the color to the paper or other substances substantially as described.
3. A process for the decorative treatment
20 of paper and other substances consisting in applying color upon a surface, then applying a liquid thereto for the purpose of spreading the color on the said surface and then taking the impression from the said
25 surface on to the paper or other substances substantially as described.
4. A process for the decorative treatment of paper and other substances consisting in the application of color upon a roller, the
30 rotation of the roller and the application of a liquid to the roller for the purpose of spreading the color thereon and then transferring the impression on to the paper or other substances to be treated substantially
35 as described.
5. A process for the decorative treatment of paper and other substances, consisting in applying color upon a roller, rotating the roller in a bath of liquid for the purpose of
40 spreading the color and then transferring the color on to the paper or other substances to be treated substantially as described.
6. A process for the decorative treatment of paper and other substances consisting in
45 the application of color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then passing the paper in contact with the roller for transferring the impression
50 thereon substantially as described.
7. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, moving this
55 surface in a liquid bath for the purpose of spreading the color and then transferring the color from the surface to the paper or other substances to be treated substantially as described.
8. A process for the decorative treatment
60 of paper and other substances consisting in dripping color upon a surface, subjecting this surface to the treatment of a liquid such as water for the purpose of spreading the color and then transferring the color to the
65 paper or other substances substantially as described.
9. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, then applying a liquid thereto for the purpose of
70 spreading the color on the said surface and then taking the impression from the said surface on to the paper or other substances substantially as described.
10. A process for the decorative treatment
75 of paper and other substances consisting in dripping color upon a roller the rotation of the roller and the application of a liquid to the roller for the purpose of spreading the color thereon and then transferring the
80 impression on to the paper or other substances to be treated substantially as described.
11. A process for the decorative treatment of paper and other substances, consisting in
85 dripping color upon a roller, rotating the roller in a bath of liquid for the purpose of spreading the color and then transferring the color on to the paper or other substances to be treated substantially as described.
90
12. A process for the decorative treatment of paper and other substances, consisting in dripping color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then
95 passing the paper in contact with the roller for transferring the impression thereon substantially as described.
13. A process for the decorative treatment of paper and other substances consisting in
100 the application of color upon a surface, subjecting this surface to the treatment of a liquid such as water for the purpose of spreading the color and then transferring the color to the paper or other substances
105 and drying the paper or other substance after treatment substantially as described.
14. A process for the decorative treatment of paper and other substances consisting in
110 applying color upon a surface, passing the surface through a liquid bath for the purpose of spreading the color and then transferring the color to the paper or other substances and drying the paper or other substance after treatment substantially as de-
115 scribed.
15. A process for the decorative treatment of paper and other substances consisting in the application of color upon a roller, the rotation of the roller and the application
120 of a liquid to the roller for the purpose of spreading the color thereon and then transferring the impression on to the paper or other substances to be treated and drying the paper or other substance after treatment
125 substantially as described.
16. A process for the decorative treatment of paper and other substances, consisting in

applying color upon a roller, rotating the roller in a bath of liquid for the purpose of spreading the color and then transferring the color on to the paper or other substances to be treated and drying the paper or other substance after treatment substantially as described.

17. A process for the decorative treatment of paper and other substances consisting in the application of color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then passing the paper in contact with the roller for transferring the impression thereon and drying the paper or other substance after treatment substantially as described.

18. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, moving this surface in a liquid bath for the purpose of spreading the color and then transferring the color from the surface to the paper or other substances to be treated and drying the paper or other substance after treatment substantially as described.

19. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, subjecting this surface to the treatment of a liquid such as water for the purpose of spreading the color and then transferring the color to the paper or other substances and drying the paper or other substance after treatment substantially as described.

20. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, then applying a liquid thereto for the purpose of spreading the color on the said surface and then taking the impression from the said surface on to the paper or other substances and drying the paper or other substance after treatment substantially as described.

21. A process for the decorative treatment of paper and other substances consisting in dripping color upon a roller the rotation of the roller and the application of a liquid to the roller for the purpose of spreading the color thereon and then transferring the impression on to the paper or other substances to be treated and drying the paper or other substance after treatment substantially as described.

22. A process for the decorative treatment of paper and other substances, consisting in dripping color upon a roller, rotating the roller in a bath of liquid for the purpose of spreading the color and then transferring the color on to the paper or other substances to be treated and drying the paper or other substance after treatment substantially as described.

23. A process for the decorative treatment of paper and other substances consisting in

dripping color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then passing the paper in contact with the roller for transferring the impression thereon and drying the paper or other substance after treatment substantially as described.

24. A process for the decorative treatment of paper and other substances consisting in applying color upon a surface, moving this surface in a liquid bath for the purpose of spreading the color and then transferring the color from the surface to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

25. A process for the decorative treatment of paper and other substances consisting in the application of color upon a surface, subjecting this surface to the treatment of a liquid such as water for the purpose of spreading the color and then transferring the color to the paper or other substances, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

26. A process for the decorative treatment of paper and other substances consisting in applying color upon a surface, then applying a liquid thereto for the purpose of spreading the color on the said surface and then taking the impression from the said surface on to the paper or other substances, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

27. A process for the decorative treatment of paper and other substances consisting in the application of color upon a roller, the rotation of the roller and the application of a liquid to the roller for the purpose of spreading the color thereon and then transferring the impression on to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

28. A process for the decorative treatment of paper and other substances, consisting in applying color upon a roller, rotating the roller in a bath of liquid for the purpose of spreading the color and then transferring the color on to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

29. A process for the decorative treatment of paper and other substances consisting in the application of color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then passing the paper in contact with the roller for transferring the impression thereon, drying the paper or other substance

after treatment and permanently fixing the impression substantially as described.

30. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, moving this surface in a liquid bath for the purpose of spreading the color and then transferring the color from the surface on to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

31. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, subjecting this surface to the treatment of a liquid such as water for the purpose of spreading the color and then transferring the color to the paper or other substances, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

32. A process for the decorative treatment of paper and other substances consisting in dripping color upon a surface, then applying a liquid thereto for the purpose of spreading the color on the said surface and then taking the impression from the said surface on to the paper or other substances, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

33. A process for the decorative treatment of paper and other substances, consisting in

dripping color upon a roller the rotation of the roller and the application of a liquid to the roller for the purpose of spreading the color thereon and then transferring the impression on to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

34. A process for the decorative treatment of paper and other substances, consisting in dripping color upon a roller, rotating the roller in a bath of liquid for the purpose of spreading the color and then transferring the color on to the paper or other substances to be treated, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

35. A process for the decorative treatment of paper and other substances consisting in dripping color upon a roller, rotating the roller in a bath of liquid such as water for the purpose of spreading the color and then passing the paper in contact with the roller for transferring the impression thereon, drying the paper or other substance after treatment and permanently fixing the impression substantially as described.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

HARRY CECIL MITCHELL.

Witnesses:

WILLIAM EDWARD EVANS,
R. WESTACOTT.