M. A. T. GILLBEE.

PROCESS OF ORNAMENTING COATED PAPER.

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1,212,934. Patented Jan. 16, 1917.

Fig. 1.

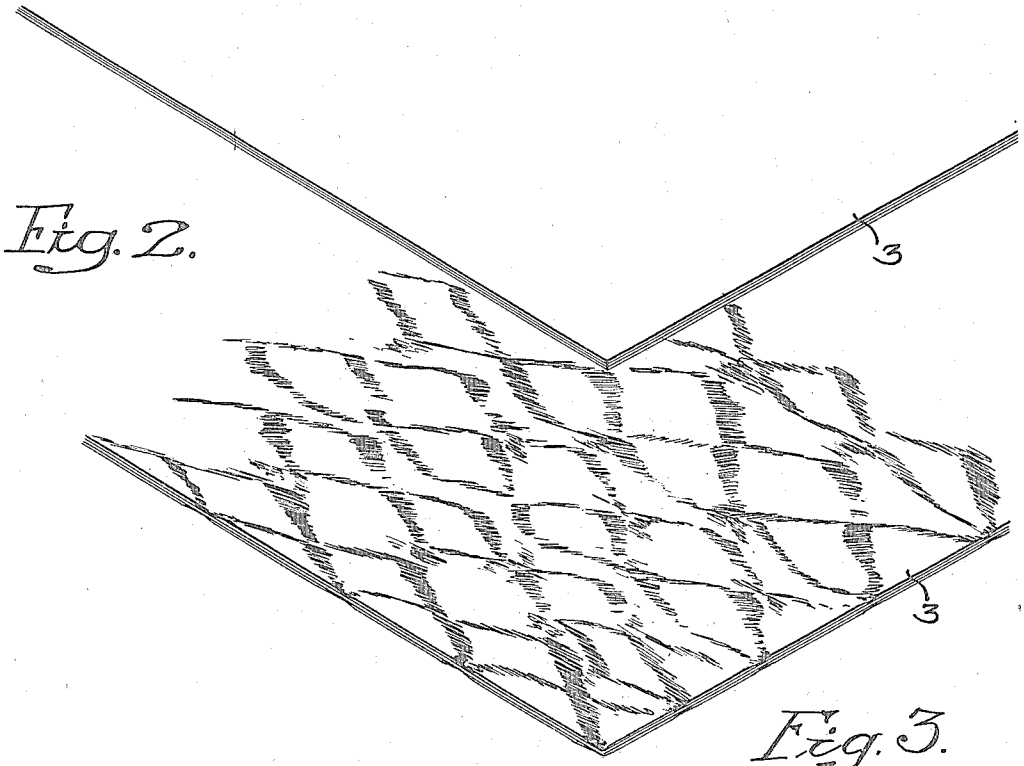


Fig. 2.



Fig. 3.

Fig. 4.

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PROCESS OF ORNAMENTING COATED PAPER.

1,212,934. Specification of Letters Patent. Patented Jan. 16, 1917.

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To all whom it may concern:

Be it known that I, MANUEL A. T. GILLBEE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented a Process of Ornamenting Coated Paper, of which the following is a specification.

My invention relates to the manufacture of coated paper, cardboard and products of a similar nature, and the object of my invention is to produce a highly ornamental surface effect upon such coated paper, cardboard, and the like.

Coated papers are, of course, well known; the character of the coating is a matter that has engaged the attention of many inventors, and the embossing of paper, whether coated or not, has been carried out in many ways. The process forming the subject of my invention, however, while it partakes somewhat of the nature of an embossing of the coated paper, has an additional function distinguishing it from anything heretofore accomplished along this line, which is the compression of portions of the coating so that when a light coating is applied to a sheet of dark colored stock, indefinite gradations of color or tone are produced; the darker stock showing through the thinner or more highly compressed areas of the coating. These and other features of my invention are more fully described hereinafter, reference being had to the accompanying drawing in which I have endeavored to illustrate, more or less diagrammatically, one of the many designs which may be produced in carrying out the process forming the subject of my invention, in which:

Figure 1, is a perspective view of a section of coated paper or cardboard; Fig. 2, is a similar perspective view showing one effect which may be produced upon the coating in carrying out my invention; Fig. 3, is an enlarged sectional view of part of an impression pad, and Fig. 4, is a diagrammatic view illustrating one form of means for producing my improved product.

In carrying my invention into effect, I preferably proceed as follows: I take coated stock, as it is termed, which may be thin paper of any color, preferably of a dark tone or shade, and of substantially any character, or any stock made of rags, straw, esparto or any of the materials employed in the manufacture of paper, cardboard or the like and of any desired tone, shade or color that such material happens to be. This paper is coated in the usual manner by a wet coating material, which may be of any color, preferably lighter than the stock or paper to which it is applied and which contains a certain proportion of clay or its equivalent, which clay or equivalent material is in a finely divided state, substantially in solution. The wet coating applied to the sheet is dried in any usual or well known manner common in the art.

In practice, I have treated sheets substantially twenty-two by twenty-eight inches; the same being one of the standard paper sizes, although other sizes may be employed, and this treatment, according to my invention, is as follows: I build up a pile of smooth metal plates 1, impression pads 2, and sheets of coated paper or coated cardboard sheets 3 upon which I desire to show patterns from such impression pads. A pile so prepared is then passed a number of times between a pair of smooth rolls 4 and 5, back and forth, and as this pile has interspersed through it a number of the smooth metal plates 1, the repeated movement between the rolls will have the effect of causing a certain amount of slip between the impression pads and the coated surface of the paper or card with which they are in contact, with the consequent result that the varying heights of the surface of the patterns or designs of such impression pads will impart varying degrees of pressure to various portions of the coating, polishing the same to a certain extent and condensing portions thereof. The final result will be indefinite areas of gradations of tone in the coating, the character of which will depend upon the character of design carried by the impression pads. It will be understood that the amount of slip is slight and that its extent may be regulated within certain limits by the amount of pressure imparted to the piles of sheets and the number of metal plates employed.

The result is an ornamental coated paper having a most peculiar mottling or surface effect, rarely partaking of the exact pattern of the impression pads, although having certain features of the same.

The impression pads which I employ consist preferably of a sheet of press-board as

it is called, upon one or both surfaces of which a sheet fabric may be secured by a suitable adhesive, and over this fabric I secure, preferably by an adhesive, a thin sheet of paper or fabric. If the latter material is employed, silk, or linen, or thin muslin may be used. In some instances, the placing of a section of fabric on one side of the press-board support with the predominant threads running in one direction may be combined with a sheet of fabric on the opposite side of such press-board with the predominant threads running in the opposite direction, so that the effect of the impression imparted by such pad will be to give lines or gradation of tone or color in both directions upon the finished coated and treated stock. The sheets of fabric may be of many kinds and characters, preferably those in which the design is produced by raised threads or by damask weaving, or any of the many weaves in which various fabrics are produced. I have also used sand paper of various degrees of fineness with admirable results.

In treating both sides of a sheet of paper, cardboard and the like previously coated, it can be accomplished at one operation by employing suitable impression pads on opposite sides of the same, which pad may have the same or different designs. When it is desired to treat sheets coated on one side only, two sheets may be placed back to back with the coated surfaces in contact with the impression pads. In all instances, there appears to be a displacement of a portion of the coating by the higher portions of the impression pads.

In lieu of employing paper stock of a shade darker than the coating material, I may take plain stock of any character and color, and apply to the same a coating of a dark shade or tone which is allowed to dry, and then apply to the dark coated stock coloring material of a lighter shade or tone. The double coated sheets thus prepared are then subjected to pressure in the manner described with reference to the other form of coated sheets.

It will be understood, of course, that light colored stock may be covered with dark coating material and that stock may be first covered with a light coating material and then with a dark coating material and subjected to pressure that will compress the final coating layer and show indefinite areas of the lighter stock or coating layer through the same.

I claim:—

1. The process of ornamenting paper sheets, which consists in coating the same, drying the coating, subjecting the coated sheets to pressure, and effecting slip of the sheets while undergoing such pressure whereby indefinite areas of the coated surface are impressed or compressed in varying degrees of depth.

2. The process of ornamenting paper sheets, which consists in coating the same, drying the coating, subjecting the coated sheets to rolling pressure, and effecting slip of the sheets while undergoing such rolling pressure whereby indefinite areas of the coated surface are impressed or compressed in varying degrees of depth.

3. The process of ornamenting paper sheets, which consists in coating the same, drying the coating, placing impression pads in contact with the coated surface, subjecting the coated sheets to pressure, and effecting slip of the pads and sheets while undergoing such pressure whereby indefinite areas of the coated surface are impressed or compressed in varying degrees of depth.

4. The process of ornamenting paper sheets, which consists in coating the same, drying the coating, placing impression pads in contact with the coated surface, subjecting the coated sheets to rolling pressure, and effecting slip of the pads and sheets while undergoing such rolling pressure whereby indefinite areas of the coated surface are impressed or compressed in varying degrees of depth.

5. The process of ornamenting paper sheets, which consists in coating paper stock of a dark shade or tone with a coating material of a light shade or tone, drying the coating, then subjecting the coated sheets to pressure between sheets or pads of fabric having an irregular or uneven surface, and effecting slip of the coated sheets while undergoing such pressure.

6. The process of ornamenting paper sheets, which consists in preliminarily coating paper stock with a coating material, drying the same, then applying a second layer of coating material of a shade or tone differing from the first, drying the second coating, then subjecting the coated sheets to a rolling pressure between sheets or pads of fabric having an irregular or uneven surface, and effecting slip of the coated sheets while undergoing such pressure.

7. The process of ornamenting paper sheets, which consists in preliminarily coating paper stock with a dark coating material, drying the same, applying a layer of lighter coating material to the first coat, drying the second coating, then subjecting the coated sheets to a rolling pressure between sheets or pads of fabric having an irregular or uneven surface, and effecting slip of the sheets while undergoing such pressure whereby indefinite areas of the second coated surface are impressed or compressed in varying degrees of depth.

8. The process herein described of ornamenting paper sheets, which process consists in supplying a sheet of one color with a

coating of a contrasting color; then drying the coating; then subjecting the coated sheet to contact with an impression pad having high and low points on its surface and subjecting the pad to pressure to cause the varying heights of the surface of the pad to impart varying degrees of pressure to various parts of the coating and to thereby produce indefinite gradations of color or tone on the sheet.

9. The process herein described of ornamenting paper sheets, which consists in supplying a paper sheet of one color with a coating of a contrasting color; then drying the coating; then subjecting the coated sheet to contact with an impression pad having high and low points on its surface and subjecting the pad to a rolling pressure to cause the varying heights of the surface of the pad to impart varying degrees of pressure to various parts of the coating to displace and spread the latter and produce indefinite gradations of color or tone on the sheet.

MANUEL A. T. GILLBEE.