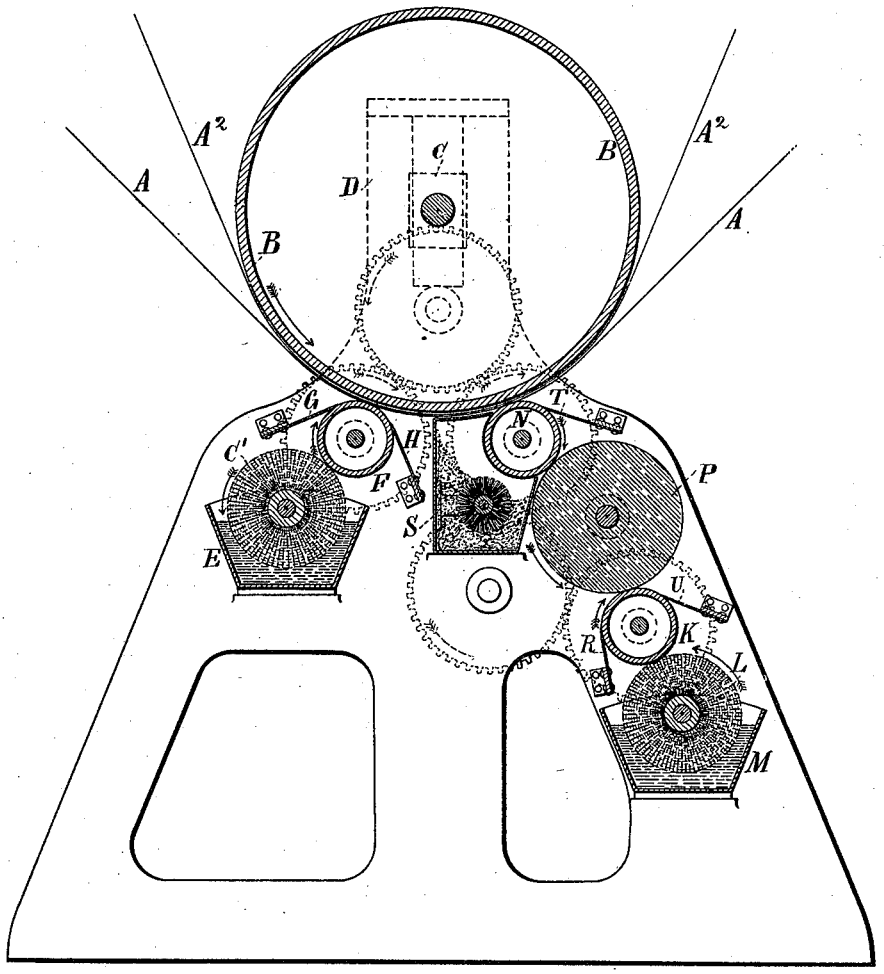
(No Model.) 2 Sheets—Sheet 1.

W. H. LOCKE, Jr.

METHOD OF PRINTING FABRICS WITH FLOCK.

No. 418,800. Patented Jan. 7, 1890.

Fig. 1.



Witnesses:
J. Stair
Chas. N. Smith

Inventor:
William H. Locke Jr.
per Samuel W. Ferrell atty.

(No Model.) 2 Sheets—Sheet 2.

W. H. LOCKE, Jr.

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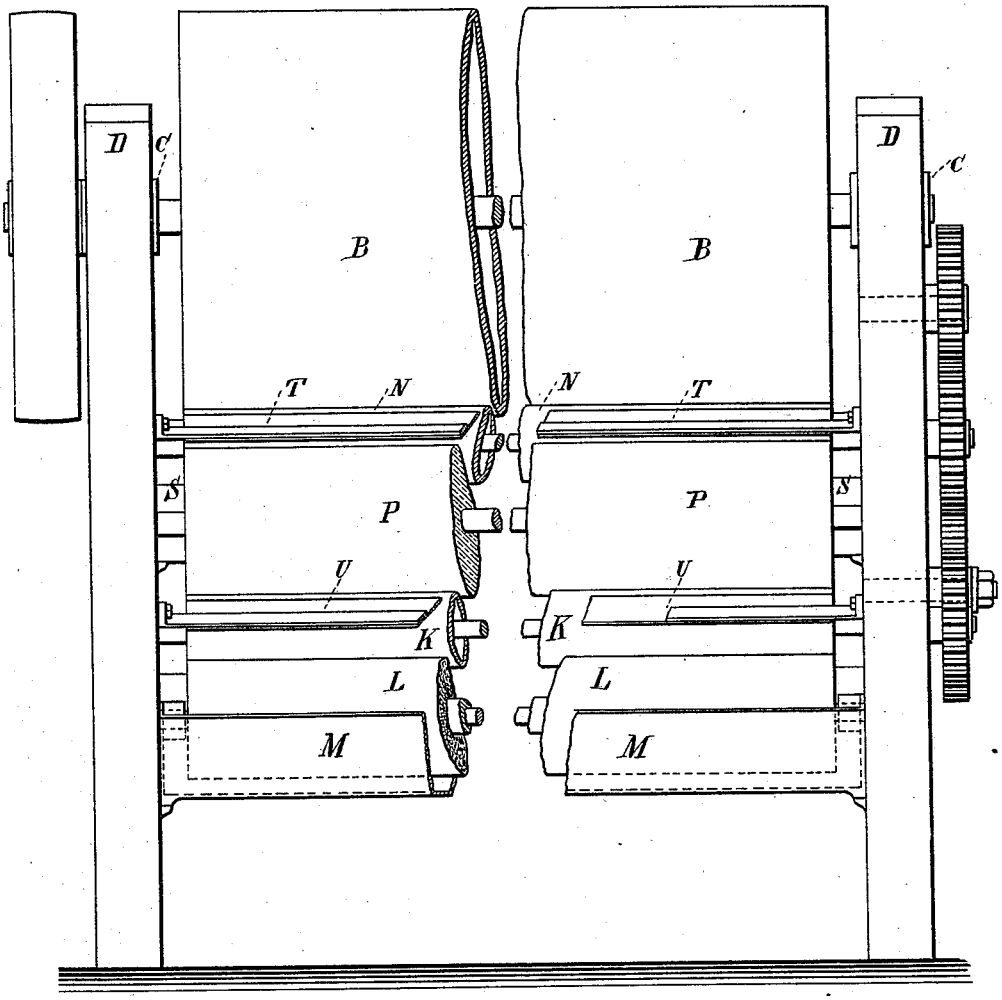
Fig. 2.



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Inventor:
William H. Locke Jr.
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UNITED STATES PATENT OFFICE.

WILLIAM H. LOCKE, JR., OF BROOKLYN, NEW YORK.

METHOD OF PRINTING FABRICS WITH FLOCK.

SPECIFICATION forming part of Letters Patent No. 418,800, dated January 7, 1890.

Application filed January 18, 1889. Serial No. 296,740. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM H. LOCKE, Jr., of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Methods of Printing Fabrics with Flock, of which the following is a specification.

Both woven fabrics and paper have received upon their surfaces designs or patterns in ink or adhesive material, and the flock or similar material in a finely-comminuted condition has been sprinkled upon the surface, so as to adhere to the pattern, the surplus being brushed off or otherwise removed. In this operation two difficulties are experienced. The first arises from the flock adhering more or less to the entire surface of the material or entering crevices in the same and requiring to be removed by a brush or otherwise, and, second, in removing the surplus flock from the surface of the fabric the quantity of flock adhering to the patterns is often lessened and the beauty thereof injured.

The object of my invention is to transfer a layer of flock to the previously-prepared pattern upon the fabric, so that the layer of flock may be uniform or nearly so, and can remain upon the pattern on the fabric until the same is firmly connected therewith by the drying of the ink or adhesive material, thus overcoming the two difficulties before mentioned.

In the drawings, Figure 1 is a vertical section of the machine made use of by me, and Fig. 2 is an elevation at right angles to Fig. 1.

The web A of woolen or other fabric is passed along beneath and in contact with the impression-cylinder B, which cylinder B has a shaft mounted in suitable journal-boxes C within the frame D, and this frame is of a suitable size and shape, preferably triangular, so as to receive the other parts of the apparatus.

The vat or trough E is provided for holding the adhesive material—such, for instance, as a plain or colored size—and there is a roller C′ within the trough for transferring the size to the pattern-cylinder F, which pattern-cylinder F is usually of copper engraved with the pattern, so that the size or ink passes into the lines or recesses engraved in the copper, and there is a doctor or scraper G for removing the surplus adhesive material, so that the unengraved portion of the copper cylinder will be clean and free from ink or adhesive material, and as the parts are revolved in the direction of the arrow the pattern from the cylinder F will be printed upon the web of fabric A, and I provide a doctor or scraper H for removing any lint or other foreign material that may adhere to the surface of the pattern-cylinder F. This portion of my apparatus is similar to that heretofore made use of in printing upon fabrics. A tympan-sheet A^2 may be introduced between the cylinder B and the fabric A.

I make use of the second pattern-cylinder K, corresponding in all particulars to the pattern-cylinder F, and to this ink or adhesive material is supplied by the roller L in the trough or vat M, and by suitable train of gearing (represented by dotted lines in Fig. 1) the proper movement is communicated to the roller K, so that it revolves in harmony with the roller F.

I provide a cylinder N, preferably of copper, running in contact with the surface of the web of fabric A, and between this cylinder N and the cylinder K is a transfer-cylinder P, preferably of india-rubber, with a smooth surface, and this transfer-cylinder P is in intimate contact with the surfaces of the pattern-cylinder K and the plain cylinder N. The operation of this part is as follows: As the machine is revolved the surplus ink or adhesive material is removed from the pattern-cylinder K by the doctor or scraper R, and the pattern that remains upon the surface of the cylinder K is transferred to the elastic cylinder P, and I remark that this cylinder P may be of the same diameter as the cylinder K, or it may be twice or three times the diameter, so that the patterns that are printed upon the same may come in exactly the same position at each impression, and as the pattern is carried upon this elastic cylinder P it is transferred from the same to the surface of the smooth or plain cylinder N, and at this point I apply the flock or similar material, so that it adheres to the pattern upon the cylinder N. To accomplish this object any suitable device for scattering the flock and causing it to adhere to the pattern

upon this cylinder N may be made use of. I, however, prefer to make use of a closely-fitting box S, within which is a revolving brush or other device for scattering the flock and directing it against the surface of the cylinder N, and the parts are so set or registered that the pattern upon the cylinder N will coincide with the pattern previously printed upon the web A by the pattern-cylinder F, and this pattern upon the fabric being adhesive the flock will be transferred from the cylinder N to the fabric and lie thereon in a smooth and uniform layer, and the pressure will insure a proper adhesion of the flock to the pattern.

It is generally preferable to employ a scraper or doctor T, for keeping the surface of the transfer-cylinder N clean after the flock has been transferred from the same, and also to make use of a scraper or doctor U upon the pattern-cylinder K, for removing any foreign substance from the surface thereof, and I remark that the elastic transfer-cylinder P, receiving the pattern in the same place each time, usually does not require to be cleaned; but, if desired, a scraper or doctor may be employed in connection therewith.

I claim as my invention—

1. The method herein specified of printing flock or similar finely-comminuted material upon the surface of the web, consisting in printing upon such web a pattern in ink, size, or other adhesive material, printing a similar pattern upon the transfer-cylinder, applying the finely-comminuted material to such pattern upon the cylinder, and transferring such flock or comminuted material from the cylinder to the previously-printed surface upon the web by pressure, substantially as set forth.

2. The method herein specified of printing flock or similar finely-comminuted material upon the web of muslin or other material, consisting in printing upon such web the design or pattern, printing the corresponding design or pattern upon an elastic transfer-roller, transferring the second pattern from the elastic roller to a plain smooth cylinder, applying the flock to the pattern upon the surface of that cylinder, and transferring the same from the cylinder to the web of fabric by pressure, substantially as set forth.

3. The method herein specified of printing flock or similar finely-comminuted material upon a web of fabric, consisting in printing upon such fabric the design or pattern in adhesive material, printing upon the transfer-cylinder the second impression corresponding to the pattern upon the fabric, applying to the second impression the flock or similar finely-comminuted material, and transferring the same to the web by pressure and then cleaning the surface of the transfer-cylinder to prepare it for the reception of the next pattern, substantially as set forth.

Signed by me this 16th day of January, 1889.

WILLIAM H. LOCKE, JR.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.