No. 746,950. PATENTED DEC. 15, 1903.

D. GESTETNER.

STENCIL PRINTING APPARATUS.

APPLICATION FILED SEPT. 2, 1903.

NO MODEL.

Fig. 1.

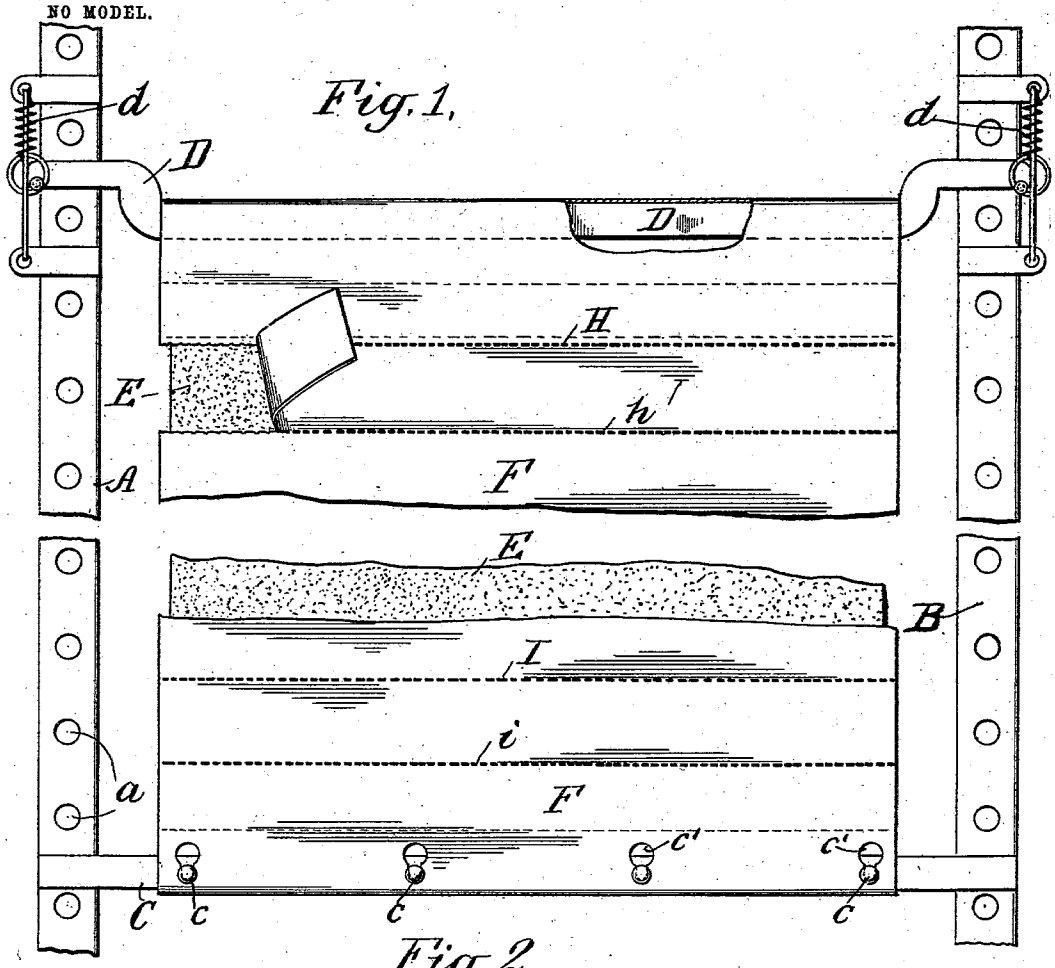
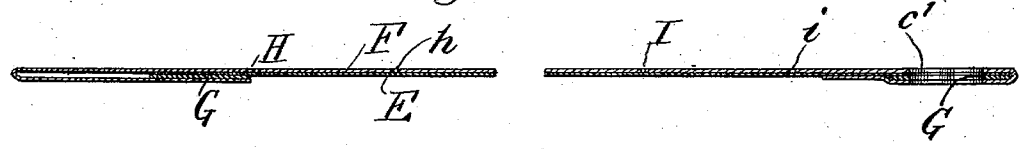


Fig. 2.



WITNESSES:

S. McC. Intosh

L. Beach Stinchcomb

INVENTOR

David Gestetner

BY

J. C. Edmonds

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 746,950. Patented December 15, 1903.

UNITED STATES PATENT OFFICE.

DAVID GESTETNER, OF LONDON, ENGLAND.

STENCIL-PRINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 746,950, dated December 15, 1903.

Application filed September 2, 1903. Serial No. 171,654. (No model.)

To all whom it may concern:

Be it known that I, DAVID GESTETNER, a subject of the King of Great Britain, residing at London, in the county of Middlesex, England, have invented a certain new and useful Improvement in Stencil-Printing Apparatus, of which the following is a description.

This invention relates to stencil-printing apparatus generally, but is especially adapted for use in connection with apparatus of the general character disclosed in Letters Patent Nos. 700,031 and 707,579 heretofore granted to me. It will therefore be described in its application to apparatus of the general character so disclosed. In the construction set forth and described in said Letters Patent two inking-rolls are employed, one above the other, and these (or appurtenances thereof) are provided with endless bands, to which are detachably secured a porous sheet (preferably of the material known as "yoshino paper") and a stencil sheet, comprising a base of open porous material coated with a substance impervious to ink.

The present invention relates particularly to the porous sheet secured to the endless bands passing around said inking-rolls and through which the ink is transmitted to the stencil-sheet. Preferably this is securely fastened at one end to a fixed bar extending from one of said endless bands to the other, and at the other end to a bar acted upon by springs connected with said endless bands and serving, therefore, to take up slack in the porous sheet and keep the same taut. It is very desirable that the porous sheet be arranged upon the machine smoothly and without wrinkles. It is equally important that it be so held in place as to resist the effect of excessive wear. In view of the frail character of such sheet special means must be employed to meet these requirements, and it is to such means that the present invention is directed.

Under the invention I employ a porous sheet of any suitable character—as, for instance, the yoshino paper above referred to. Instead, however, of merely strengthening the ends of this porous sheet I combine the same with a backing, preferably of stouter and stronger material, adapted to adequately support the porous sheet and keep the same from wrinkling not only prior to attachment to the machine, but also during the operation of so attaching it. This backing of stronger material is so arranged as that a portion thereof intermediate of the ends may after attachment to the printing-machine be readily removed, leaving the porous sheet adequately strengthened and supported at its ends, but uncovered over that area from which a portion of the backing has been removed for cooperation with the stencil.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation illustrating the endless bands of a stencil-printing apparatus of the general character disclosed in one of my former patents with the porous sheet of the present application attached thereto, and Fig. 2 is a central section of said porous sheet on an enlarged scale.

Referring to the drawings, in which similar letters denote corresponding parts, A B designate endless bands adapted to pass around the ends of two vertically-arranged inking-rolls, (or sprocket-wheels secured to the ends of such rolls.) These bands may, if desired, be provided with holes *a*, coacting with teeth on such inking-rolls or sprocket-wheels. Connecting said endless bands A B is a bar C, here shown as rigidly secured to said bands. Also connecting said bands A B is a spring-pressed bar D, the ends whereof are acted upon by springs *d*, carried by said endless bands, so as to exert constant pressure on said bar D after the porous sheet has been secured in place.

In the construction of the porous sheet and backing the latter is made somewhat longer than the former and preferably somewhat wider. The porous sheet E is then laid on the backing F and the ends of the latter lapped upon the ends of the former and cemented in place. Preferably a strip G of any suitable strong and stiff material is included in each of the folds. That end of the composite sheet adapted to be secured to the studs *c* of the fixed bar C is then provided with keyhole-slots *c'*, passing, preferably, through both thicknesses of the backing F, the strengthening-strip G, and the porous sheet E. The opposite end of the composite sheet is formed with a loop or pocket in or-

der that after the sheet has been secured in position by means of the keyhole-slots c' and studs c the spring-pressed bar D may be passed through such loop or pocket and the ends connected with the springs d secured to the endless bands A B. In so adjusting the composite sheet in position the backing F will be toward the outside. Consequently before operating the machine it is necessary to remove a portion of such backing intermediate of the ends. The porous sheet having been desirably strengthened by the overlapping ends of said backing F and prevented from buckling or wrinkling, both prior to its attachment to the machine and during the operation of such attachment, the intermediate portion of said backing has no further utility. Means are therefore provided for the ready removal of such intermediate portion. In the present instance I have shown the backing-sheet F as provided near its ends with two parallel rows of perforations H h and I i. After the sheet has been attached in position and drawn taut by the action of the springs d the edge of the backing between either of the parallel rows of perforations may be grasped by the fingers and readily torn out, whereupon the loose flap of the intermediate section may be torn at the line of the distant row of perforations. Thus if the material of the backing-sheet between the rows of perforations H h be removed the intermediate portion of such backing may be removed at the row of perforations i, thereby exposing the entire operative area of said porous sheet E.

It should be understood that I have used the word "perforation" herein in a broad sense to indicate any means—as, for instance, mere indentations, &c.—whereby the backing may be weakened at suitable points to facilitate its removal. It will also be obvious that it is not entirely essential that there should be two parallel rows of such perforations near each end of the composite sheet, but that substantially the same result may be obtained where but a single row of perforations are arranged at each of such ends. I consider the use of two rows of perforations at each end desirable, however, since the removal of the material between such rows may be readily effected to detach the intermediate portion of the sheet, whereas if but one row of perforations were employed the risk would be incurred of wrinkling the subjacent porous sheet in the effort to remove the intermediate portions of the backing. It is also obvious that I may employ two rows of perforations at one end of the backing and but a single row at the other end. These and other modifications will readily suggest themselves to one skilled in the art and need not be further referred to.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. In stencil-printing apparatus, the combination with a porous sheet and means for strengthening the ends of the same, of a backing secured to the ends of such porous sheet, and means for removing a portion of said backing after attachment of said backing and porous sheet to said apparatus, substantially as set forth.

2. In stencil-printing apparatus, the combination with a porous sheet, of a backing, said porous sheet and backing being attached adjacent to their ends, substantially as set forth.

3. In stencil-printing apparatus, the combination with a porous sheet, of a backing, the ends of said backing being lapped on the ends of said porous sheet and attached thereto, substantially as set forth.

4. In stencil-printing apparatus, the combination with a porous sheet, of a backing, said sheet and backing being attached adjacent to their ends and there provided with means for attaching said sheet and backing to said apparatus, substantially as set forth.

5. In stencil-printing apparatus, the combination with a porous sheet, of a backing secured thereto, and means, including perforations, for facilitating the removal of a portion of said backing, substantially as set forth.

6. In stencil-printing apparatus, the combination with a porous sheet, of a backing the ends whereof are lapped upon and secured to the ends of said porous sheet, and means, including perforations, for removing a portion of said backing intermediate of its ends, substantially as set forth.

7. In stencil-printing apparatus, the combination with a porous sheet, of a backing the ends whereof are attached to said porous sheet, and a line of perforations formed in said backing adjacent to one end thereof, substantially as set forth.

8. In stencil-printing apparatus, the combination with a porous sheet, of a backing the ends whereof are secured to said porous sheet, and two substantially parallel lines of perforations formed in said backing adjacent to one end thereof, substantially as set forth.

9. In stencil-printing apparatus, the combination with a porous sheet, of a backing the ends whereof are attached to said porous sheet, and lines of perforations formed in said backing adjacent to the ends thereof, substantially as set forth.

This specification signed and witnessed this 20th day of August, 1903.

DAVID GESTETNER.

Witnesses:

JONHHEER JOHAN LODEWIH STERN,

WILLEM MARLINUS DE HEUNEL.