

No. 623,629.

Patented Apr. 25, 1899.

J. A. SACKVILLE & J. H. SWALLOW.

PRINTING MACHINE.

(Application filed Sept. 27, 1898.)

(No Model.)

2 Sheets—Sheet 1.

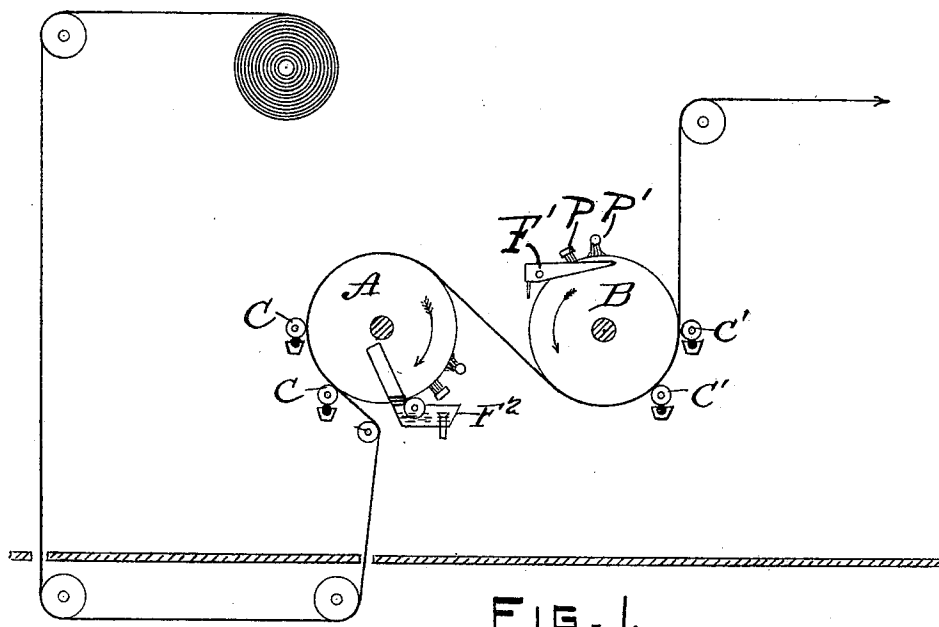


FIG. 1.

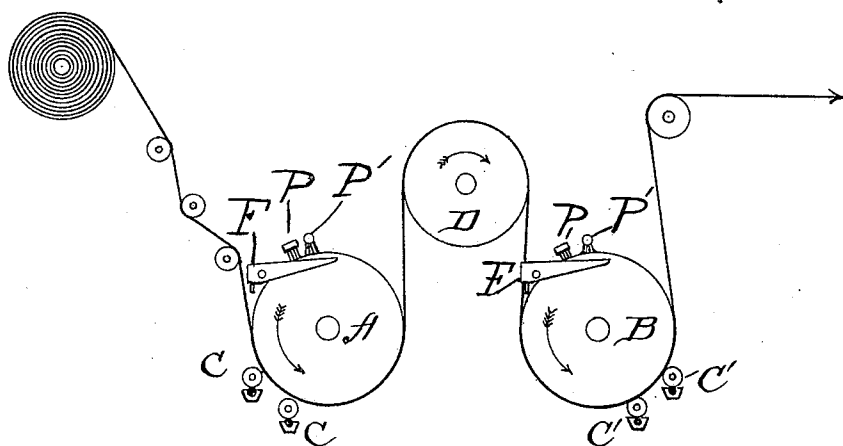


FIG. 2.

Witnesses:

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Inventors:

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By

[Signature]

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2 Sheets—Sheet 2.

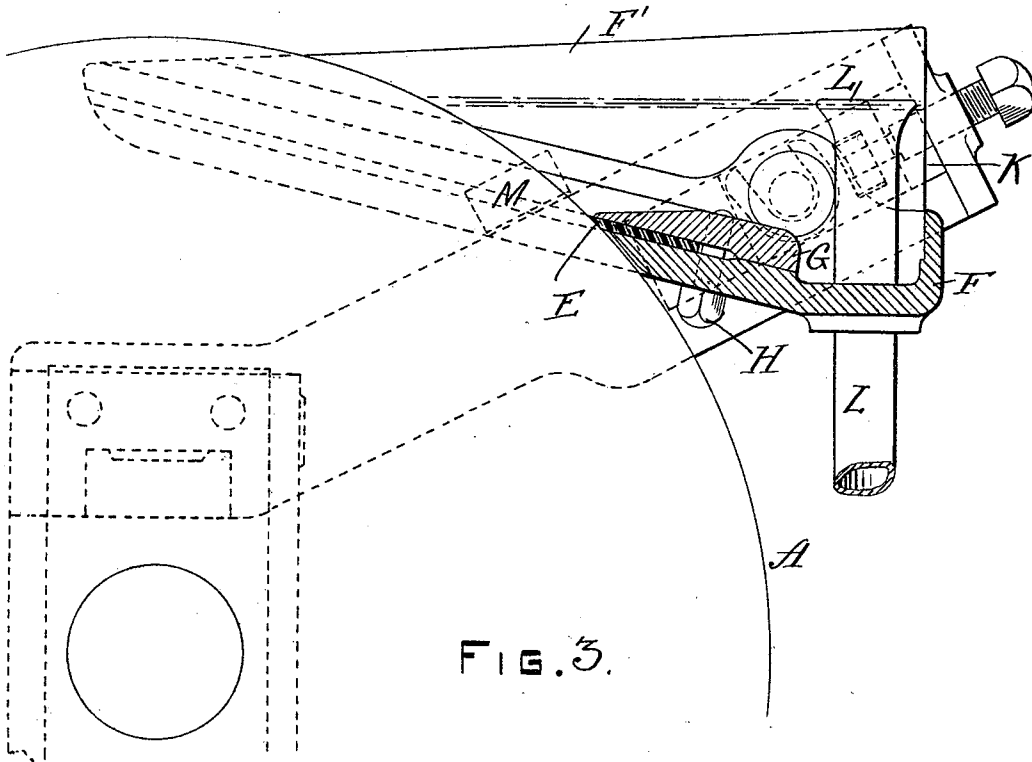


FIG. 3.

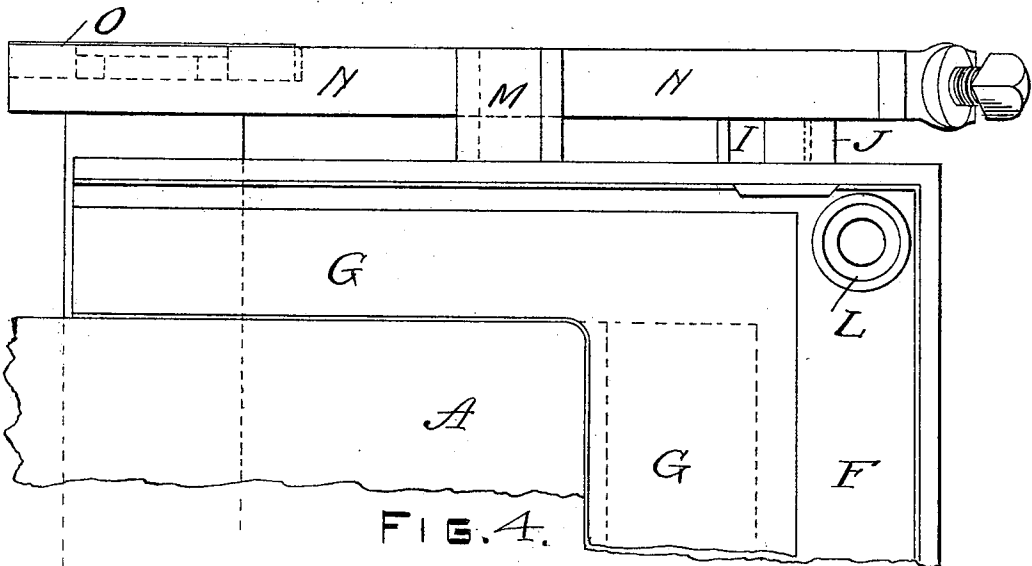


FIG. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES ALLAN SACKVILLE AND JOHN HENRY SWALLOW, OF PENDLEBURY,
ENGLAND.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 623,629, dated April 25, 1899.

Application filed September 27, 1898. Serial No. 692,003. (No model.)

To all whom it may concern:

Be it known that we, JAMES ALLAN SACKVILLE and JOHN HENRY SWALLOW, subjects of the Queen of Great Britain and Ireland, and residents of Pendlebury, near Manchester, England, have invented certain new and useful Improvements in or Relating to Calico-Printing and Like Machines, of which the following is a specification.

Our invention relates to a novel arrangement of "duplex" printing-machine, part of which is applicable to other printing-machines, and has reference to the invention for which we made application for Letters Patent, Serial No. 655,728, on the 19th day of October, 1897.

The object of our invention is to enable textile fabrics to be printed on both sides at one operation or to be printed in "resist" colors and immediately afterward be "slop-padded" or slop-padded first and immediately afterward printed with "discharge" colors at one run of the machine.

On the accompanying drawings, Figure 1 represents in diagram a side elevation of our improved perfecting printing-machine adapted for printing on both sides of the piece of fabric. Fig. 2 represents a similar view of the same machine adapted for printing a piece of fabric first in resist and then slop-padding or slop-padding and then printing a discharge. Figs. 3 and 4 represent a transverse section and part plan, respectively, of the cleaning apparatus used with our improved machine, which is also applicable for use with any other construction of printing-machine.

In accordance with our invention we employ two printing bowls or cylinders A B, covered with india-rubber, (after the manner of the printing-bowl described in our former specification,) between which and the printing-rollers *c' c'* the piece to be printed on both sides passes in the manner shown in Fig. 1. The said bowls rotate in opposite directions, as indicated by the arrows. Hence as the piece passes around them the printing-rollers *c* print on one side and the printing-rollers *c'* print on the other side at one run of the piece through the machine.

When it is required to print with a resist

color and then slop-pad or slop-pad first and then print with a discharge, we employ a carrying-roller or drying-drum D in addition to the rubber or like covered bowls A B, and we pass the piece to be printed between the said bowls and the printing-rollers *c c'* in the manner shown in Fig. 2, the printing-rollers *c* in the one case imparting the resist and the printing-rollers *c'* slop-padding and in the other case the printing-rollers *c* slop-padding and the printing-rollers *c'* applying the discharge.

No endless blankets, lappings, or back-greys are used with our improved machine, and any excess color getting onto the printing-cylinders is washed off by means of brushes P and P' and a squeegee apparatus F'. (Shown more clearly in Figs. 3 and 4.)

In practice we find that the excess color will readily leave the cylinder by the use of a squeegee and water alone, provided there is an abundance of water to lubricate the working edge of the squeegee and the squeegee is held at or about the angle shown in Fig. 3. Accordingly we employ a squeegee E, with which we combine a trough F', which, in conjunction with plate G and bolts H, also constitutes a holder for the squeegee, as illustrated. The trough is supported at each end by a trunnion I in an adjustable bearing-block J, mounted in slot K of a bracket which extends from and is secured to the top brass or bearing cap of the printing-bowl axle. At one end of the trough is an overflow-pipe L, and surrounding the top edge is a sheet-metal extension F'. The squeegee and trough extend along each end of the printing-bowl, as shown in Fig. 4, and the ends are inclined upward toward the bowl periphery. Into the trough direct or onto the bowl from which it runs into the trough water is sprayed, and in due time the trough is filled to the level of overflow-pipe L, through which any excess finds its way and the height of which causes the working edge of the squeegee to be submerged in water, the working edge being lower than the remaining walls of the trough, as illustrated in Fig. 3. Consequently as the bowl rotates the squeegee is most effective in removing the color, all of which (whether on the face or ends) flows into the trough and

passes through the overflow-pipe L. The pressure of the squeegee on the bowl may be determined by the leverage and the weight of end parts of the trough or by stops M (adjustable or otherwise) on the ends of the trough, which rest upon the brackets N and which may be set to allow the squeegee to rest upon the bowl at varying pressures or degrees of contact.

10 If desired, we may use the brush in our former specification, as well as the combined trough and squeegee, and in Figs. 1 and 2 we show the full equipment.

15 In the case of bowl A in Fig. 1 we provide a trough F² to catch the excess color and water, and show a roller instead of a squeegee for removing the color after being operated upon by the brush.

20 By mounting the trough upon brackets N, carried by bearing-caps O, the cleaning apparatus is able to rise and fall with the vertical movements of the bowl or to readily fit different sizes of bowls and be always in working contact.

Having thus particularly described and as- 25
certained the nature of our said invention and in what manner the same is to be performed, what we claim is--

1. In a printing-machine, the combination with the impression-cylinder, of a water- 30
trough located parallel therewith, said trough having an inclined wall extending toward said cylinder, a squeegee clamped upon said inclined wall and lying parallel therewith and forming a working edge, said edge and squee- 35
gee being lower than the remaining walls of the trough, substantially as described.

2. The combination of squeegee E, trough F, plate G and bolts H, overflow L, extension F', trunnions I, adjustable bearing-blocks J, 40
slotted bracket N, substantially as set forth.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

JAMES ALLAN SACKVILLE.

JOHN HENRY SWALLOW.

Witnesses:

WALTER GUNN,
ARTHUR GREY.