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C. E. PATTBERG.

MEANS FOR PREVENTING OFFSET IN PRINTING MACHINES.

(Application filed Apr. 3, 1895. Renewed Aug. 2, 1897.)

(No Model.)

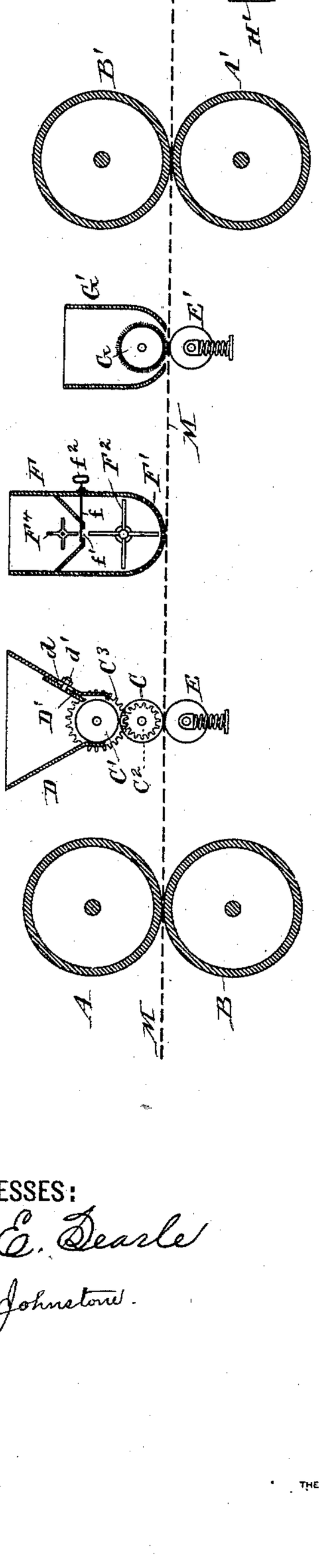

Fig. 1.

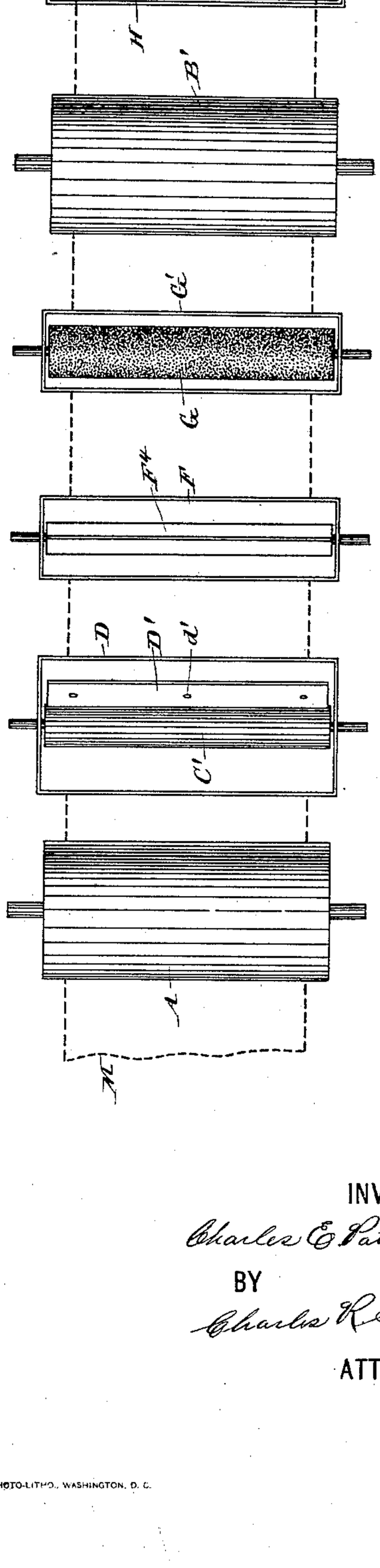

Fig. 2.

WITNESSES:

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CHARLES E. PATTBERG, OF NEW YORK, N. Y.

MEANS FOR PREVENTING OFFSET IN PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 613,045, dated October 25, 1898.

Application filed April 3, 1895. Renewed August 2, 1897. Serial No. 646,829. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. PATTBERG, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented a certain new and useful Improvement in Means for Preventing Offset in Printing-Machines, of which the following is a specification.

All the offsetting devices before known to me employ an offset-web or offset-roller, upon which the surplus ink on the freshly-printed surface is deposited. By the use of my invention these devices are dispensed with. I treat the freshly-printed surface by applying a coating to the ink which does not remove the surplus, but so conditions the surface that it will not offset.

The accompanying drawings form a part of this specification and show the novel features with so much of the ordinary parts as is necessary to show their relation thereto.

Figure 1 is a vertical section, and Fig. 2 is a corresponding plan view.

Similar letters of reference indicate the same parts in both the figures.

A is the type-cylinder, equipped, as will be understood, with inking-rollers and other usual accessories, (not shown,) and B the corresponding impression-cylinder on which the paper M (shown in dotted lines as a continuous web) travels and receives on its upper face the first impression.

C is a roller, of soft roller composition, revolving in the direction of the travel of the web and at the same speed. Above and in contact with it is mounted a similar roller C′, turned in the opposite direction at a slower rate of speed by the gears C^2 C^3.

A hopper D, suitably supported over and partially inclosing the roller C′, is supplied with finely-ground talc in the form of a dry powder. The roller C′ takes up the powdered talc and transfers it to the roller C, which in turn applies it to the freshly-printed surface of the web. A knife D′, mounted adjustably by means of slots *d* and screw-bolts *d′*, lies with its edge almost in contact with the surface of the roller C′ and limits the quantity of talc delivered to the roller C.

E is a spring-roller, which may be hard-surfaced, held in yielding contact with the unprinted under face of the web M immediately below the roller C to insure a uniform distribution of the talc to the printed surface. The wet ink of each printed letter removes a small quantity of the powder from the roller C without offsetting upon the latter and forms an imperceptible but efficient dry coating over the wet surface.

To further lessen the liability of any portion of the printed surface passing off without treatment, I provide an auxiliary reservoir F, supplied with the same material fed to the surface of the web M through a sieve F′, of wire-gauze or finely-perforated sheet metal, forming the semicylindrical bottom of the reservoir. An agitator F^2, which may be an open frame of wire revolved continuously in close proximity to the interior surface of the sieve, prevents clogging and forces out the talc. The quantity supplied to the sieve is regulated by the sliding door *f*, controlling the opening *f′* and adjusted by the handle f^2 on the outside. F^4 is an agitator mounted above the opening *f′* and serving to break up any lumps which may form in the powdered talc.

G is a drum or brush mounted in a casing G′, of light metal. It is surfaced with plush or other pile fabric and revolves in the direction opposite to the travel of the paper. Its duty is to brush the surface of the web and remove the surplus talc. A spring-roller E′ holds the paper against the drum. If the reverse side of the web is to be printed upon, it is led between the type-cylinder A′ and impression-cylinder B′ and receives the second impression. It is next led over a roller H, turning in the same direction, and in contact with a feed-roller H′, revolving in a reservoir H^2, supplied with the pulverized talc. The fresh ink deposited by the second impression here receives a coating sufficient to prevent offsetting during the subsequent operations of cutting, folding, &c.

My experiments indicate that finely-ground talc produces the best results. Its effect is immediate. It is imperceptible in the finished work and does not blur the letters or in any way deface the unprinted portions of the paper. I believe the brilliancy of the ink is enhanced by the addition of the talc, due to the lustrous qualities of the latter.

I attach importance to the fact that the

coating is applied directly to the freshly-printed surface of the web instead of to the top sheet of the second impression-cylinder, thus avoiding frequent renewal of the sheet, due to soiling and to the fact that the coating piles up on the inked portions, making the sheet thicker at those places, and thereby marring the work.

Modifications may be made in the method of applying the material. The auxiliary reservoir F may be dispensed with, in which case the brush or drum G may be unnecessary, or the reservoir F may be substituted for the hopper D and its rollers C and C′, if preferred. Instead of finely-ground talc other material, as powdered French chalk, may be employed and will serve successfully. The web may be led around a suitable reverser and returned, as usual, to the first type-cylinder instead of using the second type-cylinder and impression-cylinder shown, as will be readily understood.

The invention may be applied to other forms of printing-machines than the web-press shown.

It is to be understood that the means for applying an offset-preventing medium to the sheet is located on the same side of the sheet as the second impression-cylinder.

No claim is made in this application to the means whereby the offset-preventing medium is applied to the second printing-surface of the web, as this subject-matter is covered by my companion application, Serial No. 621,147.

I claim as my invention—

1. In a perfecting printing-machine, the combination of two impression-cylinders, one on each side of the web or sheet to be printed, and means located on the same side of the web or sheet as the second impression-cylinder for applying an offset-preventing medium to the first printed surface of the sheet or web before the same reaches the second impression-cylinder, as set forth.

2. In a printing-machine, the type-cylinder, the first impression-cylinder, the second impression-cylinder arranged on the opposite side of the web or sheet from the first impression-cylinder, in combination with a distributing device located on the same side of the web or sheet as the second impression-cylinder in the path of the web or sheet between the impression-cylinders and adapted to apply non-offsetting material, as finely-ground talc, directly to the freshly-printed surface before printing the second side, substantially as specified.

3. In a printing-machine, the type-cylinder, the first impression-surface, the second impression-surface arranged on the opposite side of the web or sheet from the first impression-surface, in combination with a distributing device located on the same side of the web or sheet between the impression-surfaces, and adapted to apply a non-offsetting material to the freshly-printed surface before printing the second side, and means for removing the material from the uninked portion of the surface before printing the second side, substantially as specified.

4. In a printing-machine, the first impression-surface and second impression-surface, in combination with the hopper D and rollers C and C′ for applying a material as finely-ground talc to the freshly-printed first side of the web or sheet, the auxiliary reservoir F and sieve F′ supplying additional material, and the brush G for removing the surplus before printing the second side, and with the reservoir H^2 and rollers H H′ for applying the material to the freshly-printed second side, all substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

CHAS. E. PATTBERG.

Witnesses:
CHAS. E. SEARLE,
H. A. JOHNSTONE.