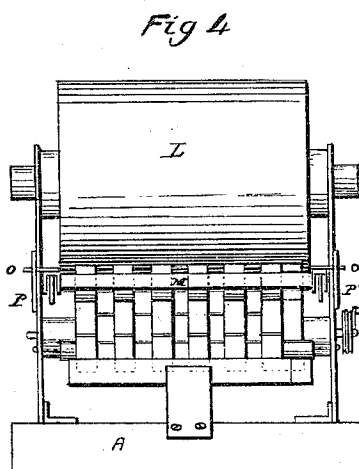
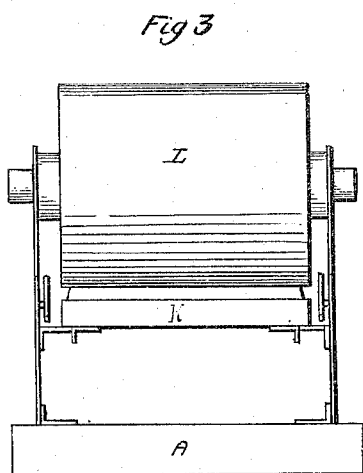
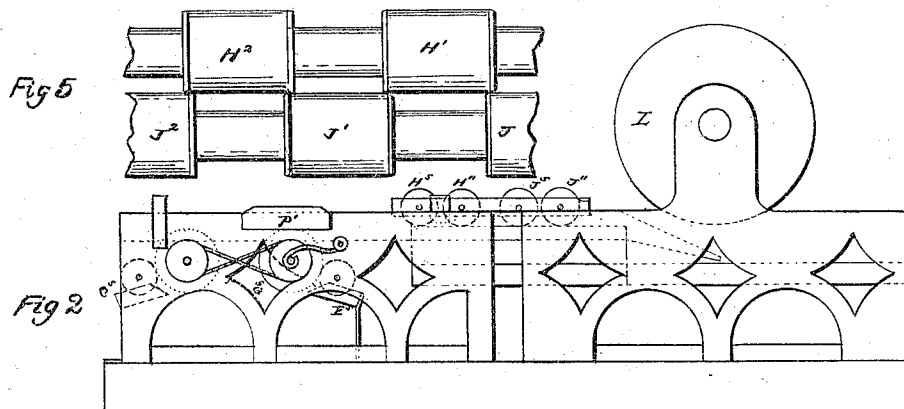
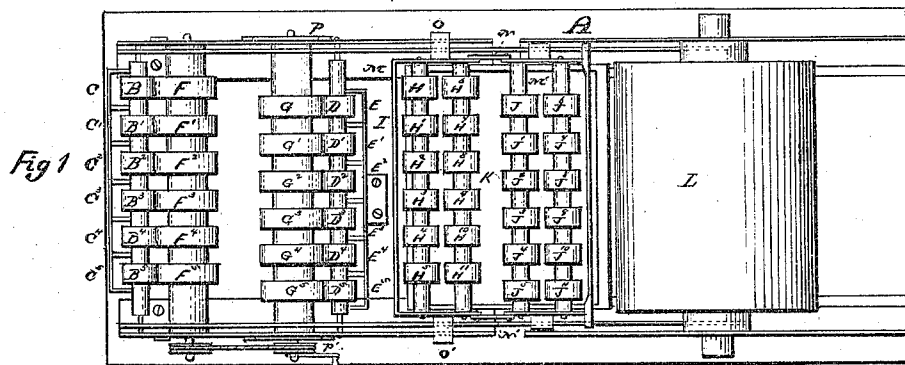


T. H. BURRIDGE & J. M. KERSHAW.

Chromatic Printing Presses.

No. 140,242.

Patented June 24, 1873.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS H. BURRIDGE AND JAMES M. KERSHAW, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN CHROMATIC PRINTING-PRESSES.

Specification forming part of Letters Patent No. **140,242**, dated June 24, 1873; application filed March 29, 1873.

To all whom it may concern:

Be it known that we, THOMAS H. BURRIDGE and JAMES M. KERSHAW, both of the city and county of St. Louis and State of Missouri, have invented new and useful Improvements in Chromatic Printing-Presses, of which the following is a full, clear, and exact description, reference being hereby had to the accompanying drawing, and to the letters of reference marked thereon, in which—

Figure 1 is a plan of the invention. Fig. 2 is a side elevation. Fig. 3 is an end elevation in front. Fig. 4 is an end elevation in rear; and Fig. 5 is a plan of the detail, on enlarged scale, showing the relative position, laterally considered, of the ends of the inking-rollers of different series.

Like letters of like kind indicate like parts.

The object of this invention is to enable an impression to be made simultaneously in different colors, the adjacent colors blending. It consists mainly in a novel method of distributing the different inks upon the surface from which the impression is to be taken, substantially as is hereinafter specified.

In the accompanying drawing, A represents a frame, which supports the various parts of the apparatus. B B¹ B² B³ B⁴ B⁵ represent a series of fountain-rollers of uniform size and shape, attached to a common shaft, journaled transversely in the frame A near its rear end. These rollers draw their supply of ink from a series of independent fountains, C C¹ C² C³ C⁴ C⁵. D D¹ D² D³ D⁴ D⁵ represent another series of fountain-rollers, similarly journaled, and similarly supplied from a corresponding series of independent fountains, E E¹ E² E³ E⁴ E⁵. Opposite and against these two series of fountain-rollers, respectively, are two series, F F¹ F² F³ F⁴ F⁵, and G G¹ G² G³ G⁴ G⁵, of distributing-rollers, similarly attached to shafts, similarly hung, and so arranged that each fountain-roller has a corresponding distributor. H H¹ H² H³ H⁴ H⁵ H⁶ H⁷ H⁸ H⁹ H¹⁰ H¹¹ represent a duplicate series of inking-rollers, attached to a duplicate set of shafts, arranged transversely as to the frame A, but journaled in a carriage, I, that travels along the upper part of the frame A in manner afterward specified. J J¹ J² J³ J⁴ J⁵ J⁶ J⁷ J⁸ J⁹ J¹⁰ J¹¹ represent another duplicate series of inking-rollers,

similarly arranged in the carriage I at the same level. Their relative lateral arrangement, however, is such as to bring the rollers in either series successively opposite the intervals between the rollers in the other series. The intervals in either series are shorter than the rollers in the other.

As shown in Fig. 5, the inking-rollers are rounded off slightly at their ends.

K represents a platen, and L a cylinder, both of ordinary construction and arrangement.

The fountain-rollers B, &c., and D, &c., take up the ink in the customary way from independent fountains C, &c., and E, &c., which contain differently-colored inks. From the fountain-rollers the ink is transferred to the distributing-rollers F, &c., and G, &c. From the distributing-rollers the different inks are transferred to the inking-rollers H, &c., and J, &c., in the following manner, viz: The F series of distributors transfer to the H series of inking-rollers, and the G series of distributors to the J series of inking-rollers. To enable this to be done the distributing-rollers in the F and G series are respectively arranged laterally so as to correspond in position with the H and J series, respectively, of the inking-rollers.

Both series of distributors being arranged at the same level provision must be made for the clearance of the G series of distributors, by the H series of inking-rollers, in the traverse of the carriage I to and fro between the distributors and the platen K. To accomplish this the carriage is made in two similar parts, M M', which are hinged together by a double joint, N N'. The part M, on either side, is provided with a projecting ear, O O', that strikes against an elevation, P P', on either side of the frame A, respectively, opposite the ends of the G series of distributors and outside the lines of the track in which the main part of the carriage runs. The elevations P P' being suitably beveled at their ends, the projections O O' on meeting them are caused to rise and carry up with them the M part of the carriage sufficiently to clear the G series of distributors. Having passed the elevations at the inking-end of the frame A, the part M, containing the H series of inking-rollers, falls

against the F series of distributors. In the other direction, having passed the elevations P P', both parts of the carriage assume the same level and equally come against the platen K.

Owing to the lateral adjustment, above described, of the H and J series of inking-rollers, the H series, in their movement over the platen, not only travel over the spaces untouched by the J series, but lap slightly over onto the places already inked by the J series. This causes an impression at the lapping places to be made of a neutral tint, or of a different shade from that of either of the adjoining shades.

Further, owing to the peculiar shape of the ends of the inking-rollers, as shown in Fig. 5, and the elastic nature of the inking-rollers, a blending of adjacent colors is accomplished, the H series not merely super-imposing an additional shade at the lapping places on the surface being inked, but super-imposing it in such a way as to gradually shade one color into another.

The different series of inking-rollers are arranged in duplicate merely for the purpose of

more effectually inking the places to be inked.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the frame A, the carriage I, the inking-rollers H, &c., and J, &c., the elevations P P', the distributing-rollers F, &c., and G, &c., the fountain-rollers B, &c., and D, &c., and the fountains C, &c., and E, &c., the separate series of inking-rollers being arranged relatively to each other, as and for the purpose specified and shown.

2. The combination of the frame A, the carriage I, the inking-rollers H, &c., and J, &c., the elevations P P', the distributing-rollers F, &c., and G, &c., the fountain-rollers B, &c., and D, &c., the fountains C, &c., and E, &c., the platen K and cylinder L, the various parts being arranged and operating in relation to each other, substantially as and for the purpose shown and specified.

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Witnesses:

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