

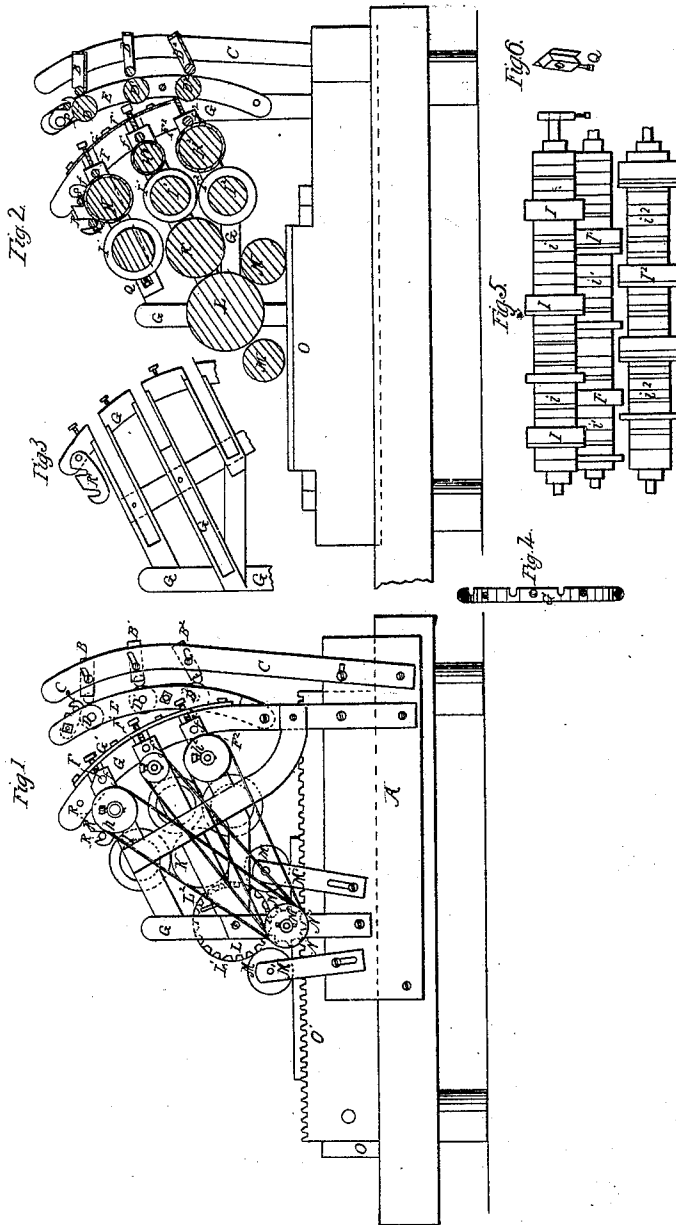
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Inking App's for Color Printg.

N^o 67400.

Patented Aug. 6. 1867.



Witnesses:

W. B. B.

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*The drawing for this patent
is not in print.*

United States Patent Office.

THOMAS L. BAYLIES AND GEORGE W. WOOD, OF RICHMOND, INDIANA.

Letters Patent No. 67,400, dated August 6, 1867.

INKING APPARATUS FOR PRINTING IN COLORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, GEORGE W. WOOD and THOMAS L. BAYLIES, of Richmond, in the county of Wayne, and State of Indiana, have invented a new and useful improvement in Inking Apparatus for Printing; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation.

Figure 2 is a vertical cross-section.

Figure 3 is a side elevation of the inside of the frame.

Figure 4 is an elevation of a plate used in adjusting the rollers.

Figure 5 is an elevation of the inking sections.

Figure 6 is a perspective view of the adjustable journal-boxes.

The same letters are employed in all the figures when indicating parts which are identical.

The following description will enable persons skilled in the art to construct and operate our improved inking apparatus.

A represents the frame of the press, to which the inking apparatus is attached. B B' B² are the fountains. I have shown three; there may be more or less. These are adjustably attached to the frames C, which are so attached to the frame that they may be removed if desired. The fountains are made adjustable, so that their relations to the oscillating soft rollers D may be regulated as required. E is an oscillating frame, so hinged that it may be swung backward and forwards automatically by familiar mechanism used in other inking apparatus for the purpose. To this frame the feed-rollers are attached, so as to turn freely on their journals. Metallic rollers P may be so placed as to press against the soft feed-rollers D D' D², and serve to break the globules of ink taken by the feed-rollers from the rollers in front of the fountains, the latter being made to turn automatically by ordinary mechanism, so arranged as to turn them part of a revolution when in contact with the feed-rollers. This mechanism being in common use, is not shown. Other mechanism in common use, and therefore not shown, is arranged to move the feed-rollers upon the oscillating frame E from the fountains to and against the metallic distributors F F' F², which are rollers, the journals of which pass through the frame G. The journal at one end of the distributors has a thread cut upon it, working in a corresponding female screw in the bearings, so that by the reciprocating revolution of distributors, they shall also have a longitudinal reciprocating motion, for the purpose of effecting a more perfect distribution of the ink. The bearings of the journals of the distributors are boxes f f' f², which are formed with double flanges upon each side, fitting against the sides of the frame G, which is formed with slots, into which the bearings f f' f² are made to slide, being adjustably held in position, when in place, by set-screws passing through the plate G', which is fastened by screws to the end of the frame G. The ink is transferred from the distributors to the transferring-rollers H. These rollers are made of wood and covered with cloth. Their journals turn in sliding-boxes, constructed with flanges on one side only, to rest against the inner faces of frame G. These bearings are slid into the same slot (extended) which receives the bearings for the distributors. One end of the journals of the transferring-rollers is extended beyond the frame to receive a driving-pulley. These pulleys are shown at h h' h². The wooden transferring-rollers transfer the ink from the distributors to the adjustable inking-cylinders I, which are placed upon a shaft revolving in boxes, constructed like those of the transferring-rollers, and sliding in grooves cut in the inner faces of the frame G in the extension of the line of the slots already mentioned. The width of these adjustable cylinders must be determined according to the breadth designed to be given to each color, and their positions on each shaft be fixed according to the relative position of each color on the finished job. The spaces between the inking-cylinders I I' I² on the shaft are filled adjustably by the collars i i' i², which are of less diameter than the inking-cylinders, and made of various thickness, so that the inking-cylinders may be adjustably arranged on each shaft, according to the requirements of the particular job. When they are all adjusted the whole roller is held in position by jam-nuts, turning on screws cut in the ends of the shafts. As each set of inking-cylinders I, I', and I² are intended to be applied to use in the transfer of a distinct color, they will of course be in such relative position that the cylinders of each set will come between the planes of those of the other sets, and they should project so far beyond the adjustable collars that the surface of the inking-cylinders

of one set cannot touch the surface of the collars in another set. Set-screws Q working into the boxes of the inking-cylinder shaft are made to regulate the position of the respective boxes in the grooves in which they are respectively placed. The ink is transferred from the several sets of inking-cylinders forming various colored bands, at proper intervals and relative position upon the soft roller K, with the surface of which all the inking-cylinders I I' I² are in close contact. This soft intermediate roller runs upon journals in boxes, arranged like those of the transferring-rollers and inking-cylinders, and serves to take up the ink from the adjustable inking-cylinders I I' I², and transfer it to the hard wooden or metallic roller L. The journals of the latter roller are sustained in bearings similar to those last-described, and attached to the frame G in the same manner. From the hard roller L the bands of ink are taken up by the composition type-rollers M M. O is the bed upon which the forms of type are placed, and which, sliding under the rollers M M, brings the face of the type in contact with the appropriate colors, and inks them, and prepares for making the desired impression. The mechanism in the form of press herein designated is actuated by a rack, O', on the side of the bed O, the teeth of which engage those of the pinion N, placed on a wrist passing through a suitable bearing, attached to the frame G, and intermediately between the type-rollers M M. This wrist passes through its bearings, and bears upon its opposite end a pulley, N', from which belts are carried over the pulleys h h' h². The pinion N drives a spur-wheel, L', upon the journal of the hard roller L. The reciprocal motion of the bed O and rack O' gives a corresponding reciprocal revolution to the several rollers, and also gives a longitudinal reciprocal movement to the distributors. The rollers M are adjustably attached to the press by the standards M'. For the purpose of effecting a more perfect distribution, we place metallic rollers, R, running upon bearings R', in contact with the faces of the transferring-rollers, which are intended to perform the same functions assigned to the rollers P. The rollers are intended to be applied to all the transferring-rollers, though in the drawings we have shown them only in connection with the upper one.

We have described the apparatus as it would be applied to the ordinary cylinder job press. Some modifications would be necessary where it is to be applied to a platen press, and other presses where the bed is stationary. In such cases the several rollers would have a continuous revolution in one direction, and the longitudinal reciprocating motion of the distributing-rollers F F' F² be derived from the ordinary right and left double-threaded screws and crescent-formed bearings in common use for that purpose. The hard roller L would be substituted by the roller ordinarily accompanying such presses, and the type-rollers M M would be attached to a frame having a reciprocating motion over the face of the type. In a press in which the distribution takes place upon a table, the intermediate soft roller K would be applied immediately to that table. All these necessary modifications could be easily arranged by any experienced workman, and we do not limit our claims to the application of our apparatus to any particular kind of press.

The inking-cylinders I, &c., may be made of rubber or other suitable soft substance, and in such case the intermediate soft roller K may be dispensed with, and the ink be transferred directly from the soft inking-cylinders to the hard roller L. While we prefer the use of the transferring-rollers H H' H² as effecting a more perfect distribution, they are not absolutely necessary, but the ink may be given from the distributors directly to the inking-cylinders I I' I². When the elastic intermediate roller K is used, and also when the inking-cylinders I I' I² are elastic, these surfaces pressing against the hard roller L, may yield and throw the spur-wheel L' out of gear with the pinion. To obviate this difficulty the bearings of journals of the roller L should be locked so as to restrict their play within a space which will not permit the gearing to slip. This we effect by means of the pin L² passing through the frame, or by any other convenient device. Instead of the collars i i' i², the adjustable cylinders I I' I² may be formed with sleeves, through which set-screws may pass, fastening them to the shaft.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Two or more separate continuous inking fountains, B B' B², in combination with two or more intermediate adjustable sectional rollers, I I' I², and other distributing-rollers, by which the ink of different colors is transferred from the fountains to, and properly arranged in bands upon, a common roller, substantially as set forth.
2. The combination of two or more adjustable sectional inking-cylinders with the soft intermediate roller K, and the hard roller L, substantially as set forth.
3. The arrangement of two or more sets of adjustable sectional inking-cylinders in relation to each other and to the roller to which they transfer their colors, substantially as set forth.
4. The combination of the distributing-rollers, the transferring-rollers, and adjustable inking-cylinders, with the roller K, substantially as set forth.
5. In combination with an elastic roller for transferring the ink to the hard roller L, and the hard roller, we claim so arranging the boxes of the latter that they may be locked so as to regulate the play thereof, substantially as set forth.
6. The arrangement of the frame G, rack O' pinion N, pulleys N' h h' h², and the connecting belts, substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS L. BAYLIES,
GEO. W. WOOD.

Witnesses:

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