No. 819,309. PATENTED MAY 1, 1906.

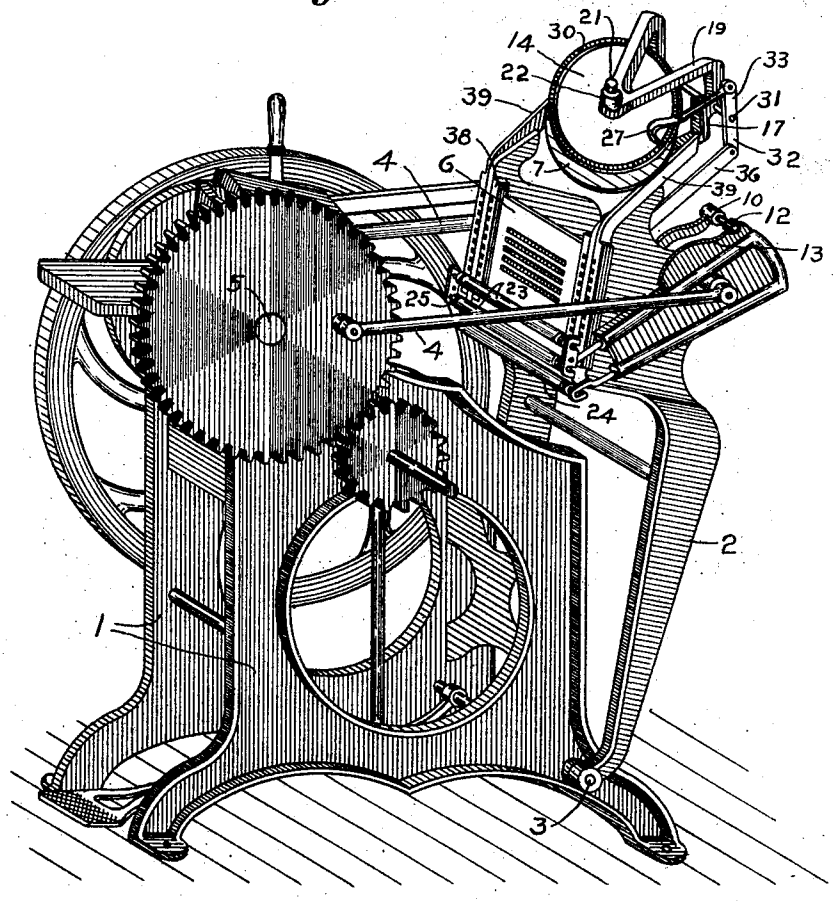
C. L. POST.

MULTICOLOR PRINTING PRESS.

APPLICATION FILED APR. 22, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
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William F. Grower.

Inventor.
Claude L. Post,
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3 SHEETS—SHEET 2.

Fig. 2.

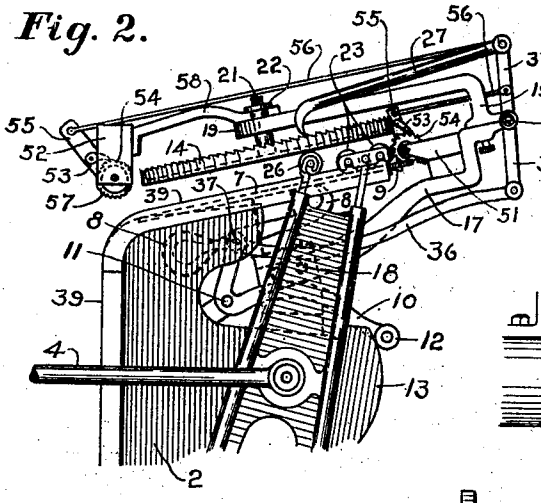


Fig. 3.

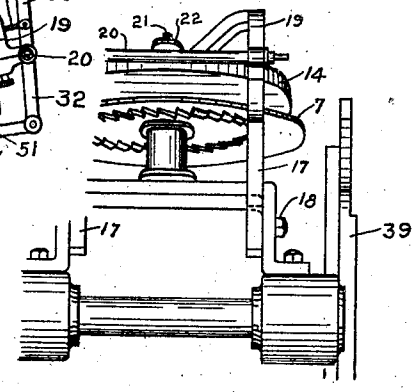


Fig. 4.

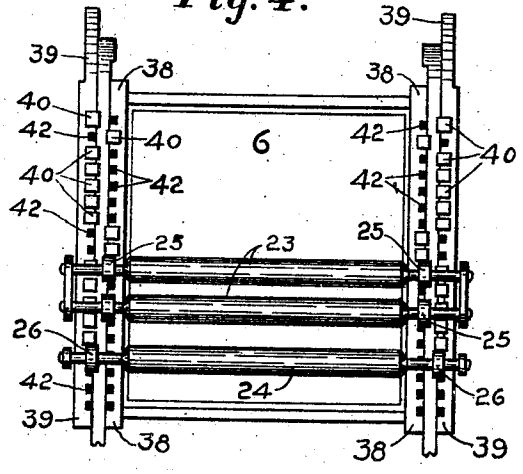


Fig. 6.

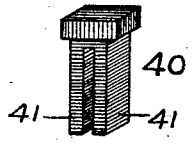
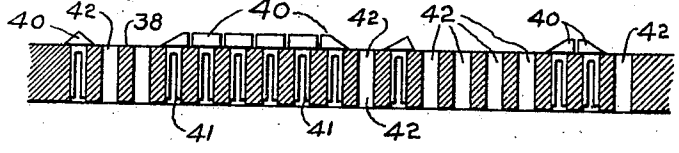


Fig. 5.



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3 SHEETS—SHEET 3

Fig. 7.

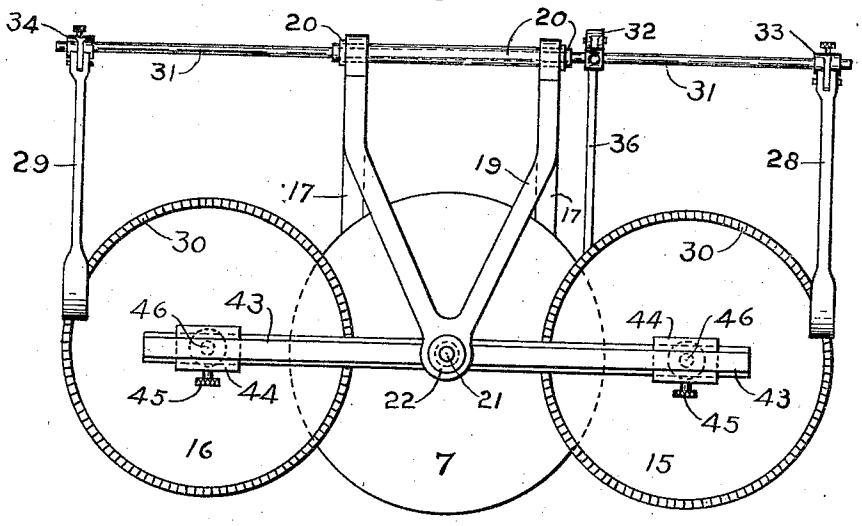


Fig. 8.

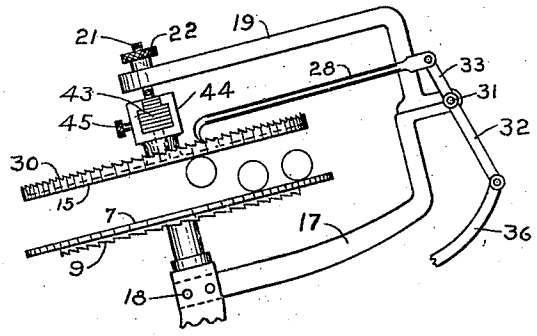
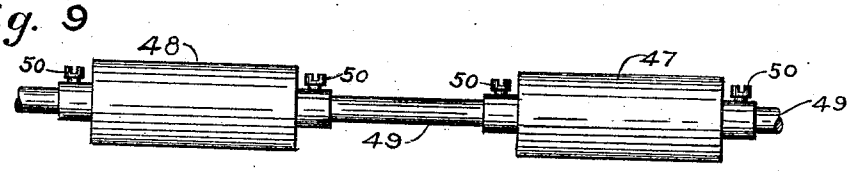


Fig. 9



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UNITED STATES PATENT OFFICE.

CLAUDE L. POST, OF CHICAGO, ILLINOIS.

MULTICOLOR-PRINTING PRESS.

No. 819,309. Specification of Letters Patent. Patented May 1, 1906.

Application filed April 22, 1905. Serial No. 256,865.

To all whom it may concern:

Be it known that I, CLAUDE L. POST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Multicolor-Printing Presses, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates particularly to presses provided with a flat bed, on which bed a type-form is placed and provided with a flat platen corresponding with the bed, on which platen the sheet of paper or cardboard to receive an impression from the type-form is placed.

The object of this invention is to obtain mechanism which may be applied to presses of the character set forth which are already in use, to thereby obtain a multicolor-printing press without going to the expense of building an entire press, as well as to obtain by the construction of a press of the kind named, in combination with the mechanism embodying this invention, a multicolor-printing press.

A further object of the invention is to obtain mechanism for the purpose described and applicable as set out, by means of which the work of making the press ready to print a given form in determined colors is comparatively simple and readily done by an ordinary pressman.

A further object of the invention is to obtain adjustable mechanism whereby automatic feeding of ink to and automatic distribution of such ink on the inking disk or disks used in combination with the inking-disk of an ordinary printing-press is secured, and whereby adjustment of the additional inking disk or disks relative to the inking-roll passing thereover may be obtained.

In the carrying out of this invention I retain and use the ordinary inking-disk of the press and not less than two of the ordinary inking-rolls of the press in connection with such disk to ink the principal parts or portion of the type-form, and I retain also the ordinary means of rotating the inking-disk for distribution of the ink employed.

In combination with the ordinary inking-disk and inking-rolls I employ one or more additional inking-disks, which are respectively set in opposite relation to the ordinary inking-disk, and I provide means whereby part of the inking-rolls will take ink from these additional inking-disks. I also provide adjustable means whereby determined ones of the inking-rolls are brought into contact with the type-form at determined places or parts of the form or with determined lines of the form to properly ink the form in the different colors which are to appear on the impression therefrom.

In the drawings referred to, Figure 1 is a perspective view of an ordinary printing-press with the apparatus embodying this invention attached thereto. Fig. 2 is a side elevation of the upper end of the part of an ordinary printing-press carrying the bed and inking-disks, with the apparatus embodying this invention attached thereto. Fig. 3 is a rear elevation of the upper end of the movable part of a press, showing particularly the manner in which the apparatus embodying this invention is attached thereto. Fig. 4 is a front elevation of the bed of an ordinary printing-press, showing a portion of the apparatus embodying this invention attached thereto. Fig. 5 is a vertical sectional view of a portion of a track or runway to extend along the sides of the bed of the press for the roller-bearings of the inking-rolls, a plurality of such tracks forming an element in the apparatus embodying this invention, and such figure showing in elevation detachable abutments used in combination with such runway or track. Fig. 6 is a perspective of the detachable abutment used in connection with the tracks or runways of the roller-bearings of the inking-rolls. Fig. 7 is a plan view of a modified form of the apparatus embodying this invention. Fig. 8 is a side elevation of the modification illustrated in Fig. 7, and Fig. 9 is a front elevation of a sectional inking-roll particularly applicable for use with the construction illustrated in Figs. 7 and 8.

A reference character, applied to designate a given part, is used to indicate such part throughout the several figures of the drawings wherever the same appears.

1 is the frame of a bed-and-platen press.

2 is the movable part of the press usually pivotally attached to frame 1, as by shaft 3,

and actuated by connecting-arms 4 4, which are attached thereto and to the crank-pins of the driving-shaft 5.

6 is a type-form secured in place on the bed of the press.

7 is the ordinary inking-disk of the press. Rotation of inking-disk 7 is obtained by means of the dog 8, (see Fig. 2,) engaging with the teeth 9. Dog 8 is mounted on lever 10, which is pivotally attached to part 2 of the frame, as at 11, and is actuated, in the operation of the press, by roller 12 coming in contact with the track 13. This method of actuating the disk 7 is usual in printing-presses, and the several parts are described by me merely to enable me to hereinafter set forth the means adopted to rotate the oppositely-placed inking-disks 14 or 15 and 16.

17 is a frame rigidly secured to the press, as by bolts 18 18, and 19 is a frame pivotally mounted on the frame 17, as by means of a rod or by means of tube 20. The inking-disk 14 is rotatably mounted on post 21. Post 21 is provided with screw-threads at the upper end thereof, and 22 is a hand-nut, having screw-threads therein corresponding with the screw-threads on post 21. By turning the hand-nut 22 the post 21 is moved longitudinally, thereby raising or lowering the disk 14.

23 23 are inking-rolls coming in contact with the surface of the inking-disk 7, and 24 is an inking-roll coming in contact with the surface of inking-disk 14. 25 25 are roller-bearings on the axles or cores of inking-rolls 23 23.

26 26 are roller-bearings on the axle or core of inking-roll 24.

The disks 14, 15, and 16 are respectively rotated by the pawls 27, 28, and 29 coming in contact with the ratchet-teeth 30 on such disks, respectively, to automatically distribute the ink on the disks.

To rotate the respective disks 14, 15, and 16 at the proper time relative to the position of the inking-rolls which contact therewith, I provide shaft 31 to turn freely in tube 20, place the adjustable arms or levers 32, 33, and 34 thereon, and connect arm 32 to the pivoted lever 10, so that movement of such pivoted lever will produce corresponding movement in such arm 32, shaft 31, and arms 33 and 34 and place thumb-nuts thereon to rigidly secure the several arms 32, 33, and 34 to shaft 31 in the adjusted position thereof.

The connecting-link 36 may be attached to the lever 10 by the same pin or bolt, 37, with which the dog or pawl 8 is secured thereto, if preferred, and I have in Fig. 2 of the drawings shown it as so attached.

The frame 19 may be turned on the tube 20 without affecting shaft 31. In such turning the several disks 14 and 15 and 16 may be turned on post 21 by the relative change of position of such disks and pawls 27, 28, and 29, respectively.

38 and 39 are respectively tracks for roller-bearings 25 and 26.

40 40 are adjustable abutments or cotter-pins, respectively, provided with spring ends 41 41. (See Figs. 4 and 5.)

42 42 are holes or recesses in the respective tracks 38 39. The abutments 40 40 are placed in the respective tracks 38 39 by forcing the spring ends 41 41 into one of the holes 42 42. The roller-bearings 25 of the rolls 23 run on the track 38, and when such roller-bearings come in contact with any of the abutments 40 40 in such track such roller-bearings, together with the inking-roll on the axle of which they are mounted, are raised so as not to ink the type standing on the bed of the press between such tracks. The roller-bearings 26 26 come in contact with the abutments 40, which are placed on track 39, and when such roller-bearings 26 26 pass over such abutments the roll 24 is raised above the type thereunder.

By making the ends of the abutments 40 of different shapes, as is illustrated in Fig. 5, and placing the holes 42 42 a given distance apart a selection of abutments can be made to raise the inking-rolls off any given line of type or off any desired number of lines. It is evident that when any inking-roll is raised in passing over type in the type-form such type will not be inked thereby and that by suitable adjustment of the abutments 40 in tracks 38 and 39 all the type in the type-form will be inked by an inking-roll having a desired color of ink thereon.

It will be observed that 39 is the outside track and is raised at its upper end above track 38 and continued beside the disks. By such raising of this track 39 roller-bearing 26 is raised and the roll 24 is raised therewith and brought into contact with the under surface of the disk 14.

In the modification illustrated in Figs. 7 and 8 bar 43 is secured to post 21 to extend transversely across the press, and the adjustable clamp 44 is placed on the bar 43. Clamp 44 is secured in an adjusted position on bar 43 by thumb-screw 45. 46 is a post on clamp 44, on which post the disks 15 and 16, respectively, rotate.

Where disks 15 and 16 are used, they may be moved toward or from the center of disk 7 by sliding the clamps 44 44, respectively, on bar 43, and either one of such disks may be moved directly over the disk 7. One of such disks 15 and 16 may be removed from bar 43. The principal purpose of having two disks 15 and 16 on the press (in place of a single disk 14) in combination with the disk 7 is to obtain a printing-press for printing of circulars wherein a business-card is usually desired to be printed of one or more colors at the head

of the circular with the body of the circular of a different color and the signature (with other matter) of a still different color or colors and to obtain this result I find it convenient to use an inking-roller composed of different sections, as 47 and 48, which may be adjustably attached to the shaft 49, as is illustrated on Fig. 9 of the drawings.

50 50 are set-screws securing sections 47 48 in place on shaft 49.

Where the press embodying this invention is used for a long run, and particularly where the portion of the type-form which is inked by roll 26 from disk 14 (see Fig. 2) is considerable, I find it advisable to place an inking-fountain on the machine for each of the inking-disks 7 and 14. 51 is the fountain for inking-disk 7, and 52 is the fountain for inking-disk 14. These fountains have an ordinary inking-roll attached thereto actuated by a pawl 53 and ratchet 54 in the usual manner. Pawl 53 is placed on a pivoted lever 55, which is actuated by link 56, connecting such lever, respectively, to arms secured on rod 31, as arm 33, Fig. 2, and 35, Fig. 3.

In inking-fountain 51 one of the rolls 23 comes in contact with the inking-roll of the fountain. In inking-fountain 52 the inking-roll 26 is raised by track 39 into contact with the inking-roll 57 of the fountain in the same manner in which such roll is raised to contact with disk 15. The fountain 52 is held in position by means of the arm 58 connecting it to hinged base 19.

In the operation of the press the inking-rolls are respectively raised by the heads of the abutments or cotter-pins placed in the tracks of the roller-bearings of such rolls. Continuously-raised tracks of any desired length or tracks having a number of raised spots or places therein may be constructed by means of the abutments, and determined colors will be obtained in the impressions taken from the form.

The height of the heads of the abutments or cotter-pins 40 is so slight (say one-sixteenth of an inch) that the inking-rolls can be run over the tracks and type-form at the ordinary rate of speed of the press.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a printing-press, the combination with the bed thereof of oppositely-presented inking-disks thereon, inking-rolls for different colors movable over the bed and over type-form thereon and between the disks, a plurality of tracks at each side of the bed and a single track beside the inking-disks, adjustable abutments removably attached to the tracks along the sides of the bed, rollers carried on the different inking-rolls and traveling upon the tracks and abutments and arranged to cause the inking-rolls to contact with determined disks and with corresponding types on the bed, a plurality of ink-fountains respectively provided with ink-feed rollers, and means to cause part of the rolls to contact with the feed-roll of one fountain and part to contact with the feed-roll of another fountain.

2. In a printing-press, the combination with the bed thereof, of oppositely-presented inking-disks, inking-rolls for different colors movable over the bed and over a type-form thereon, and between the disks, a plurality of inking-fountains, each provided with an ink-feeding roll, means to cause part of the inking-rolls to contact with one disk, and part with the other, means to cause part of the inking-rolls to contact with some of the type on the bed of the press and a part to contact with others of such type, and means to cause one of the inking-rolls to contact with the ink-feeding roll of one fountain and another of the inking-rolls to contact with the ink-feeding roll of another fountain.

3. In a printing-press, the combination with the bed thereof and with an inking-disk, of a plurality of inking-disks oppositely presented to the first-named inking-disk, inking-rolls for different colors movable over the bed, over a type-form on such bed, and between the first-named disk and the oppositely-placed disks, a plurality of tracks at each side of the bed and a single track beside the inking-disks, adjustable abutments attached to the tracks along the sides of the bed, and rollers carried on the different inking-rolls and traveling upon the tracks and abutments, to cause the inking-rolls to contact with determined disks and with corresponding types on the bed.

4. The combination with the bed of a printing-press, of inking-rolls, oppositely-presented inking-disks, a plurality of tracks on each side of the bed, each of such tracks provided with recesses therein, abutments respectively provided with spring-arms arranged to fit in the recesses in the tracks and means to cause part of the rolls to contact with one disk and part with the other.

5. In a printing-press the combination with sectional inking-rolls and with means to distribute ink of different colors on different sections of the rolls, of a plurality of tracks on each side of the bed of the press, such tracks provided with holes therein, and abutments respectively provided with spring-arms arranged to fit the respective holes.

6. In a printing-press provided with a rotatable inking-disk, a lever and a pawl engageable with notches on the back of the disk, the combination of an oppositely-presented rotatably-mounted inking-disk provided with notches on the back thereof and means to turn the same, such means comprising a rocking shaft mounted in the frame on

which the oppositely-presented disk is mounted, arms attached to the rocking shaft, a connection between one of such arms and the lever and a pawl on one of such arms, such pawl engageable with the notches on such oppositely-presented disk.

7. In a printing-press provided with a rotatable inking-disk provided with notches on the back thereof and means comprising a lever and a pawl engageable with the notches, to rotate the disk, the combination of an oppositely-presented rotatably-mounted inking-disk also provided with notches on the back thereof, with means to rotate the oppositely-presented disk, the means for mounting such disk comprising a frame, bolts to attach the frame to the frame of the printing-press, and an additional frame hinged to the first-named frame, and the means for rotating such oppositely-presented disk comprising a rocking shaft mounted in the frame, arms on the rocking shaft, a link connecting one of such arms with the lever, and a pawl engageable with the notches on the back of the disk mounted on one of such arms.

CLAUDE L. POST.

In presence of—
CHARLES TURNER BROWN,
CORA A. ADAMS.