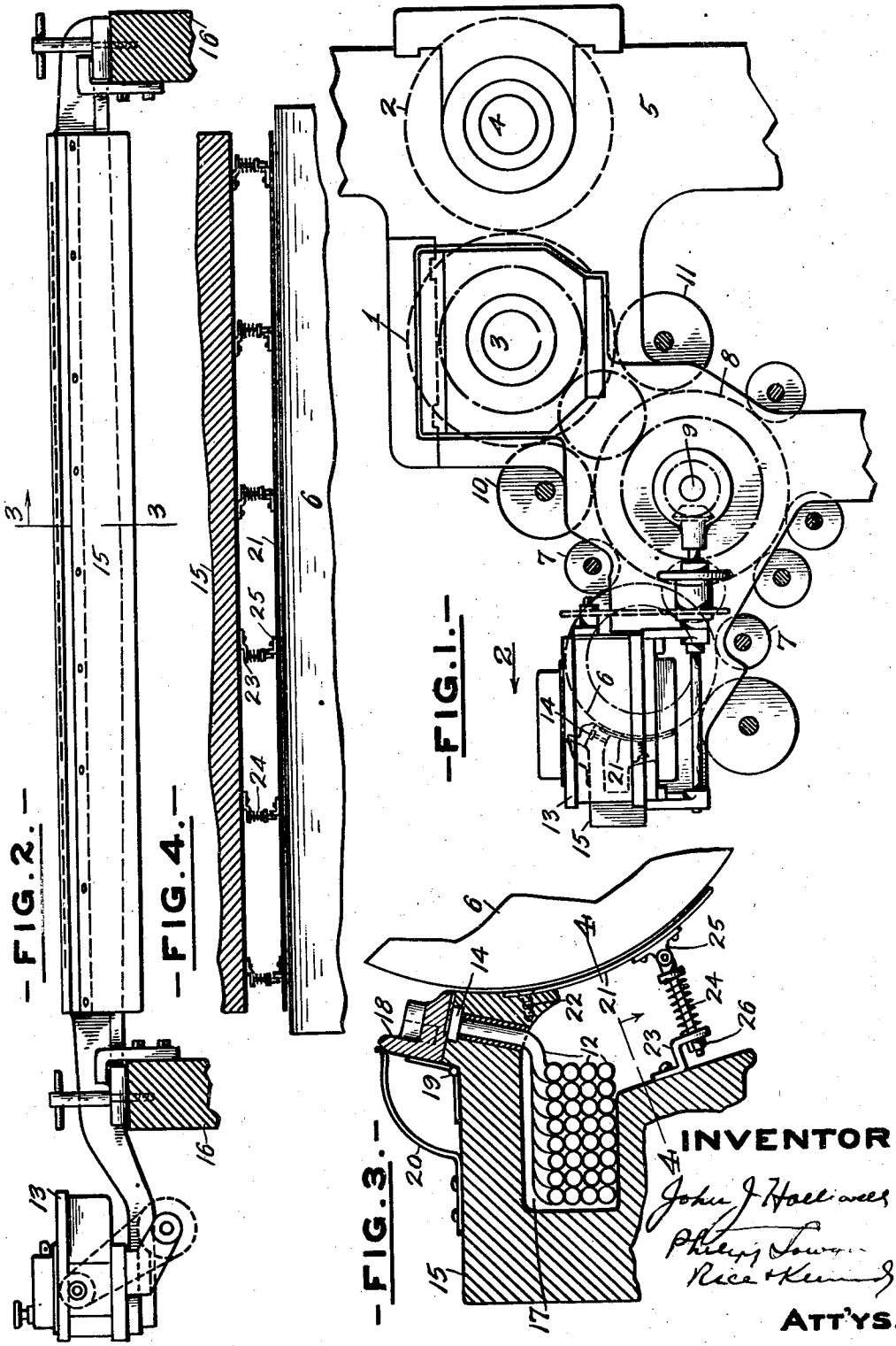
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J. J. HALLIWELL

INKING MECHANISM

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INVENTOR

John J. Halliwell

Philip Lowe
Rice & Kenny

ATT'YS.

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# UNITED STATES PATENT OFFICE.

JOHN J. HALLIWELL, OF TUCKAHOE, NEW YORK, ASSIGNOR TO R. HOE & CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## INKING MECHANISM.

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This invention relates to certain improvements in inking mechanism for printing machines.

In certain types of inking mechanism the ink is delivered to the distributing member from a plurality of independent conduits, the ink being forced through these conduits under pressure, a separate conduit being provided for each column or other desired section of the form. In this type of inking mechanism the conduits deliver to the nozzles which are arranged to extend across and closely adjacent the ink rolls, these nozzles being carried in a frame which is generally known as the ink rail. To effect a good disposition of the ink, this ink rail must be closely adjacent the roll to which it delivers, and to obtain the correct adjustments should have substantially the same curvature as the roll. It is difficult to make the distributing surface of these ink rails even widthwise of the rail, irregularities occurring which frequently cause too much ink to be taken up at one part of the rail, with the result that the cylinder or ink roll will receive more ink than it delivers and ink is wasted by being thrown off the cylinder, and this in addition makes a dirty pressroom.

It is the especial object of the present invention to provide an ink rail which will act to smooth out any surplus ink that may gather on the cylinder, so that such ink is not thrown off the cylinder, and which will assist in distributing the ink and which can be made adjustable so that it will present a smooth even surface across the cylinder.

It is a further object of the invention to produce an ink rail of this character which can be adjusted to some extent according to the thickness or grade of ink that is being used and at any particular point across the cylinder to which the ink is delivered.

With these and other objects not specifically referred to in view, the invention consists in certain novel parts, arrangements and combinations which will be fully described in connection with the accompanying drawings, which show one embodiment of the invention, and the novel features then pointed out in the claims hereunto annexed.

In these drawings,—

Figure 1 is a more or less diagrammatic side elevation of a pair of printing cylinders showing the relation of the inking mechanism and the improved ink rail;

Figure 2 is a side view of the improved ink rail looking in the direction of arrow 2 of Fig. 1;

Figure 3 is a detail sectional view on an enlarged scale, the section being taken on the line 3—3 of Fig. 2, and

Figure 4 is a section taken on the line 4—4 of Fig. 3 looking in the direction of the arrow.

Referring now to these drawings, the invention has been shown as applied to a rotary machine in which both members of the printing couples are cylinders. It will be understood, however, that the invention is capable of use with printing machines in which both members of the couple are not cylinders, and the invention is not to be restricted to the machine shown.

For the purpose of illustration, there has been shown one couple of a rotary press, which includes a form cylinder 1 and an impression cylinder 2, these cylinders being mounted on shafts 3, 4 suitably journalled in side frames 5 of the machine. The form cylinder is inked from an ink or fountain roll 6 through a roll 7 which transfers ink to a distributing cylinder 8 mounted on the shaft 9, this cylinder 9 in turn supplying ink to two distributing rolls 10, 11 which ink the form. In the type of inking mechanism illustrated the ink is delivered to the fountain roll 6 through a plurality of conduits 12, one of these conduits being provided for each column or other desired section of the form or forms on the cylinders. In the particular construction shown, there are thirty-two of these conduits for supplying ink to four page wide plates, each page being eight columns wide. Ink is delivered to these conduits under pressure by means of a plurality of pumps, not shown, which are located in the ink fountain 13.

These conduits deliver the ink to the fountain rolls 6 through nozzles 14 in an ink frame or rail 15 which is suitably supported in side frames 16. The conduits are also carried on or in this rail, being shown as located in a recess 17 in the rail. The parts are so formed that the discharge ends of the nozzles lie closely adjacent the periphery of the fountain cylinder 6, and to afford ready access to the nozzles and the discharge

ends of the conduits the rail is provided with a spring seated cap plate 18, this plate being hinged at 19 to the rail and being held in closed position by springs 20.

In accordance with the invention the face of the ink rail is formed with a part which is flexible, so that it can be adjusted widthwise of the machine, and which has a smooth surface curved to correspond substantially to the periphery of the ink cylinder 6, this portion of the rail extending around the periphery of the cylinder for a sufficient distance to insure a good distribution of the ink and acting to prevent the ink from gathering in globules and being thrown off the cylinder in case of excessive supply of ink through the nozzles. While the specific construction of this ink rail may be varied to some extent, in the particular construction illustrated there is provided a curved plate of light metal which can be given a smooth polish and which can be made to have substantially the curvature of the periphery of the cylinder, this plate being marked 21. This plate forms a continuation of the ink rail itself, so that the solid part of the ink rail and that part which is difficult to form truly without uneven sections can be made very short. This plate at one end is secured to the ink rail in any suitable way, as by screws 22. This plate extends below the ink rail and around the periphery of the cylinder a sufficient distance to effect its functions, and the rail is mounted so that it can be adjusted widthwise of the machine at various points. Thus, if heavy ink is being supplied at one place across the form and lighter ink at another place, or the quantity of ink varies, the plate may be adjusted for this so that an even distribution of ink is effected throughout the width of the rail. While this adjustment may be of various characters, in the particular construction illustrated the rail is seated against springs which may be adjusted to bring the plate nearer to or farther from the periphery of the cylinder. As shown, the ink rail has secured thereto a bracket 23 which supports one end of a spring rod construction 24, the other end of this rod being secured to a bracket 25 fast on the back of the plate, and preferably toward its lower end. By adjusting a nut 26 of the spring rod construction, the plate may be moved toward or from the cylinder 6, a sufficient number of these springs, as indicated in Fig. 4, being provided to effect the desired adjustment of the plate widthwise of the machine.

With the construction described, the ink on the cylinder 6 is smoothed out and evenly distributed on the surface of the cylinder, the ink rail forming a mixing surface or area of substantial extent. The formation of globules which will tend to fly off the cylinder is prevented and the rail can be adjusted widthwise of the machine to accommodate any quality or grade of ink supplied at different points on the cylinder. While the invention has been shown in a practical and effective form, it will be understood that it is not to be restricted to the exact construction of the plate or the means for seating the plate as shown, but that changes and variations may be made in this without departing from the invention as defined in the claims annexed hereto.

What I claim is:

1. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a member to which ink is fed from the openings, and means extending a substantial distance along the ink receiving face of the member for smoothing out and distributing the ink on the member and forming a mixing surface or area as it is fed from the openings.

2. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a member to which ink is fed from the openings, and means extending a substantial distance along the ink receiving face of the member and adjustable to and from the member for smoothing out and distributing the ink on the member as it is fed from the openings.

3. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a member to which ink is fed from the openings, means for smoothing out and distributing the ink on the member as it is fed from the openings, and means extending a substantial distance along the ink receiving face of the member and adjustable at a plurality of points to and from the member for smoothing out and distributing the ink on the member as it is fed from the openings.

4. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is feed from the openings, and a feeding and distributing member adjacent the roll curved to correspond with the periphery of the roll and forming a mixing surface or area.

5. In an inking mechanism for printing machines feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is fed from the openings, and an ink rail in which the openings are located, said ink rail having an adjustable portion located below the openings.

6. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is fed through the openings, an ink rail in which the openings are located, and an adjustable plate secured to the rail below the openings and having a distributing face curved to correspond with the periphery of the roll.

7. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is fed through the openings, and an ink rail in which the openings are located, said ink rail having a spring seated distributing part below the openings.

8. In an inking mechanism for printing machines, feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is fed through the openings, an ink rail in which the openings are located, and a spring seated plate secured to the rail and having a distributing fase curved to correspond with the periphery of the roll.

9. In an inking mechanism for printing machines feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, a roll to which the ink is fed from the openings, an ink rail in which the feeding openings are located, and a distributing plate carried by the rail below the openings and adjustable toward and from the roll at a plurality of points along the roll.

10. An ink rail for the inking mechanism of printing machines, having a plurality of feeding openings through which ink is fed under pressure for different colums or sections of the matter to be printed, and an adjustable part located to one side of the openings extending a substantial distance therefrom.

11. An ink rail for the inking mechanism of printing machines, having feeding openings through which ink is fed under pressure for different columns or sections of the matter to be printed, and an adjustable plate having a curved distributing surface carried by the rail below the openings.

12. In an inking mechanism for printing machines, feeding openings through which ink is feed under pressure for different columns or sections of the matter to be printed, a roll to which ink is fed from the openings, an ink rail in which the openings are located, an adjustable distributing plate carried by the rail below the openings, and a removable cap plate secured on the rail above the openings.

13. In an inking mechanism for printing machines, a distributor roll means for feeding ink to the roll, and a feeding and distributing member forming a mixing surface or area adjacent the roll and curved to correspond with the curvature thereof.

14. An ink rail for the inking mechanism of printing machines, having feeding openings through which ink is fed, and an adjustable curved plate having a curved distributing surface located below the openings.

15. In an inking mechanism for printing machines, a distributor roll, means for feeding ink to the roll, and a two part ink rail having feeding openings and curved to correspond to the curvature of the roll and forming a mixing surface or area adjacent the roll.

16. In an inking mechanism for printing machines, a distributor roll, means for feeding ink to the roll, and an ink roll having a fixed portion and an adjustable portion, said portions being curved to correspond to the curvature of the roll and forming a mixing surface or area adjacent the roll.

In testimony whereof, I have hereunto set my hand.

JOHN J. HALLIWELL.