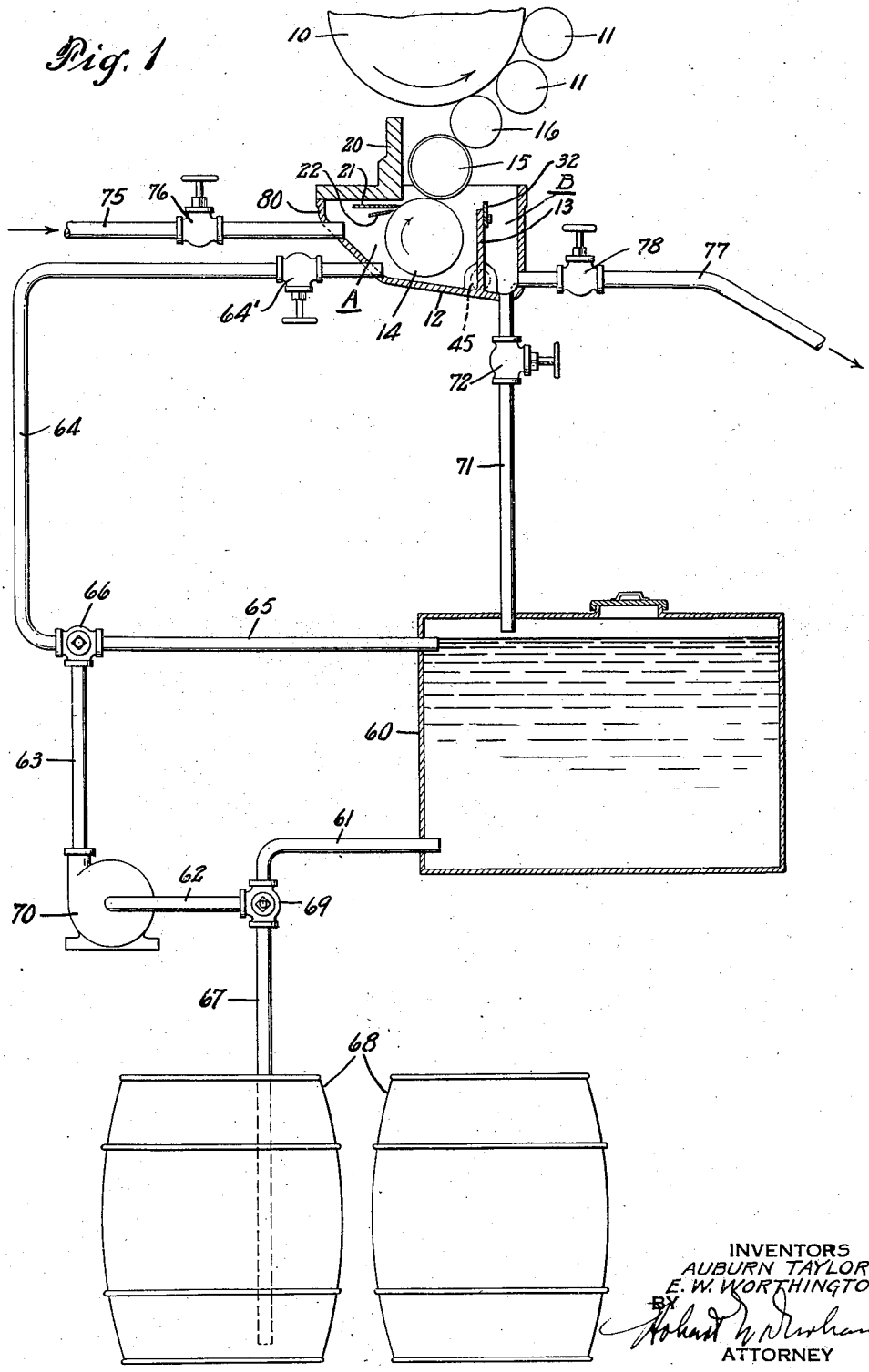
Jan. 30, 1945. A. TAYLOR ET AL 2,368,500

PRINTING PRESS INKING MEANS AND MECHANISM

Filed May 21, 1942 2 Sheets-Sheet 1

Fig. 1



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PRINTING PRESS INKING MEANS AND MECHANISM

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Fig. 2

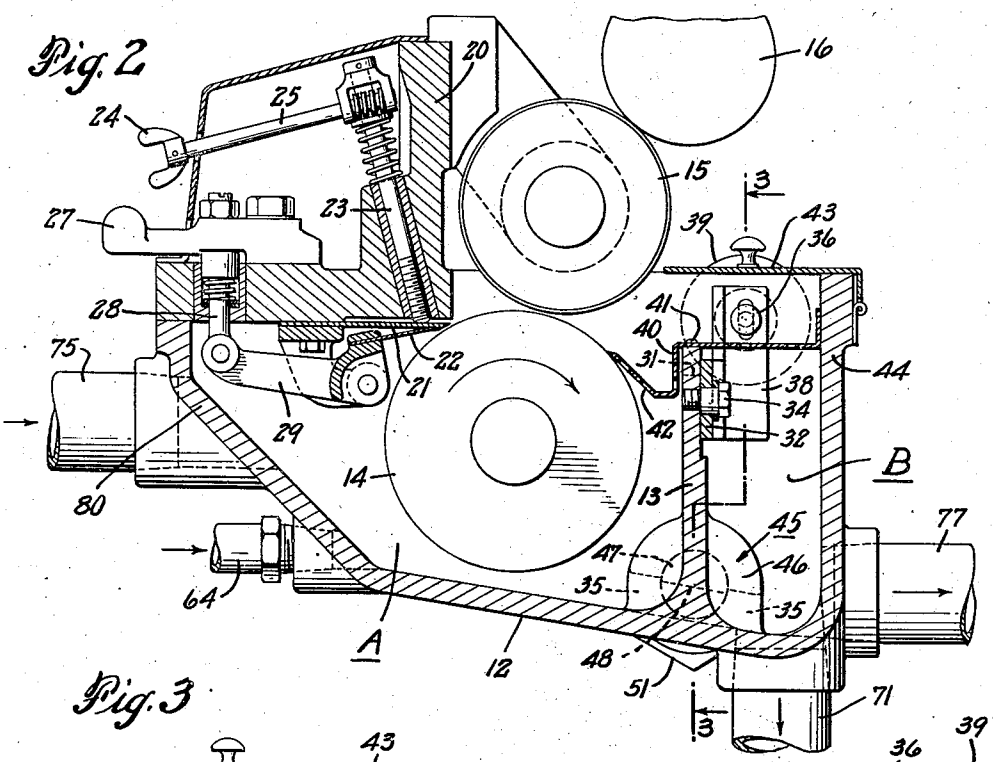


Fig. 3

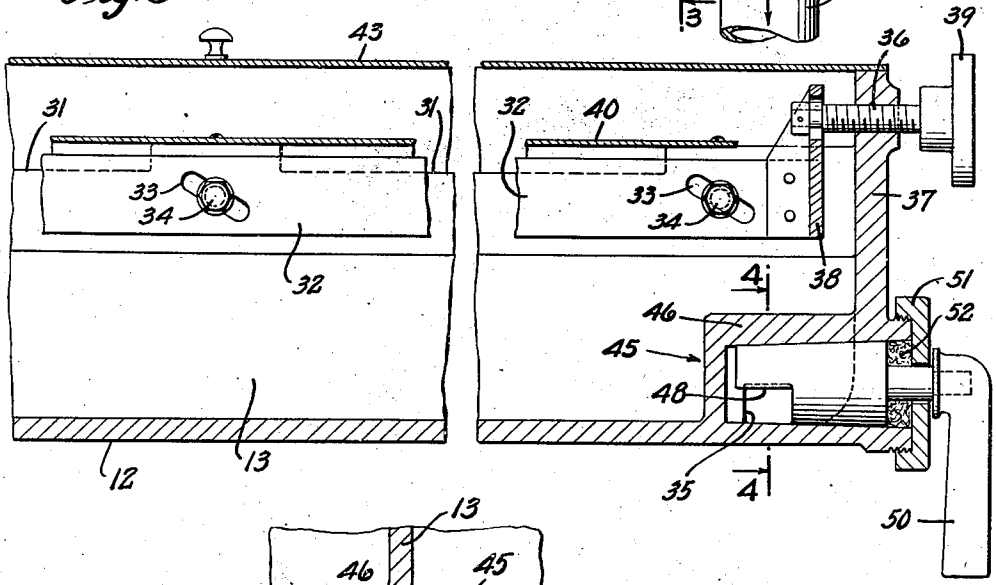
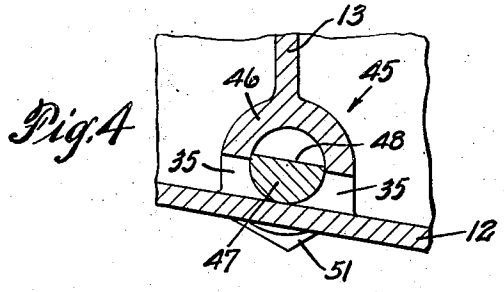


Fig. 4



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PRINTING PRESS INKING MEANS AND MECHANISM

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Application May 21, 1942, Serial No. 443,866

9 Claims. Cl. 101—350)

The present invention relates to printing presses, and more particularly to improvements in inking means and mechanisms for printing presses.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations, and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Fig. 1 is a diagrammatic side view of an ink fountain, ink supply, reservoir and circulating means, and portions of the inking mechanism of a rotary printing press embodying the present invention;

Fig. 2 is a vertical cross sectional view of a rotary printing press ink fountain embodying the present invention;

Fig. 3 is a vertical cross sectional view taken along the line 3—3 of Fig. 2; and

Fig. 4 is a detail cross sectional view taken along line 4—4 of Fig. 3.

It is an object of the present invention to provide a rotary printing press with an improved mechanism and means for supplying printing ink to the press. Another object is the provision for such a printing press of an improved ink fountain and ink circulating means for the fountain. Still another object is the provision of an ink fountain for rotary printing presses which may be quickly, easily and thoroughly cleaned between operations of the printing press, and which also allows for a like cleaning of other parts of the printing press which are utilized in the inking process and necessarily become ink covered or stained during operation of the press. A further object of the invention is the provision of an ink fountain for a printing press which may be easily and quickly drained of ink after a printing operation in order to clean the fountain and other parts of the press which are touched by the ink, and may be quickly and easily again filled with ink when printing is to be resumed. Still another object is the provision of simple and efficient ink circulating means for circulating ink to and through the ink fountain of a rotary printing press in desired amounts, for circulating and agitating the printing ink before it is introduced into the ink fountain, and to conveniently remove the ink from storage, condition it for printing use and introduce it into the printing press inking mechanism. A further object is the provision of an improved ink fountain in which the printing ink may be maintained at desired and variable levels in order to obtain the desired intensity in the printed product. Another object is the provision of improved ink fountain and ink supply and circulating means for a rotary printing press which is adapted to the economical and efficient use of water base inks in the press.

With these and other objects in view there is provided in an illustrative embodiment of the present invention, in a rotary printing press an ink drum on the surface of which the printing ink is to be deposited in a uniform enveloping film preparatory to being conveyed therefrom to the printing member to be inked. An ink fountain is provided as a source for supplying printing ink to the press and has rotatably mounted therein a fountain roller positioned to lie at least partly submerged in the body of ink in the fountain. A suitable roller which may be helically ribbed or multiple disk roller is positioned to rotate out of peripheral contact with the fountain roller but in film interference with the ink thereon, and the printing ink is thereby conveyed to a transfer roller positioned to rotate in peripheral contact with the spiral or multiple ink roller and the ink drum. A fountain blade and page cut-off blade are positioned along the length of the fountain roller and adjacent the periphery thereof, and these blades may be of generally conventional construction and for the usual purpose of adjusting the printing effect at individual columns of the printed product and of blanking out page widths in the inking mechanism when less than capacity numbers of pages are being printed on the press. A refuse collector or blade is likewise positioned along the fountain roller adjacent the periphery thereof to prevent bits of paper and other debris from falling into the ink fountain and the ink therein.

The ink fountain for the inking mechanism is divided into two sections or troughs by the presence of a baffle plate positioned lengthwise of the fountain, the fountain roller being located in one of the ink fountain sections thus formed. The baffle plate at its top is provided with means under the control of the printing press operator

for increasing or decreasing the effective height of the plate, so that the depth of the ink in the fountain which will overflow the baffle plate may be determined and varied. The outer walls of the ink fountain are sufficiently high so that the fountain blade, the page cut-off blade, the refuse collector, the baffle plate height varying means and the ink transfer level between the fountain roller and the spiral roller all lie beneath the top level of the ink fountain walls. Thus, the ink fountain may be filled with a cleansing fluid and the above mentioned component parts of the inking mechanism will be immersed.

The ink supply, conditioning and circulating system in accordance with the illustrative embodiment of the invention may comprise an ink reservoir for the printing ink and fluid lines between the reservoir and the fountain. One such line provides for fluid communication between the bottom of the reservoir and the first ink fountain section which contains the fountain roller, and another interconnects the bottom of the second section of the ink fountain and the reservoir. Thus ink may be introduced from the reservoir into the first ink fountain section, pumping means being placed in the line therebetween, flowing over the baffle plate when a sufficient ink depth is attained, and thereafter may be returned by gravity flow to the ink reservoir through the second line. Another ink conducting line may connect the top of the ink reservoir and the first ink line above mentioned which connects the bottom of the reservoir and the ink fountain, and the pump referred to is positioned in the first line in its length between the bottom of the reservoir and the connecting point of the ink line back to the top of the reservoir. A two way valve is positioned at this connection point of these lines, and it is apparent that by setting the valve as required the ink may be pumped out of the bottom of the reservoir and returned to the top of the reservoir, or may be pumped from the bottom of the reservoir into the section of the ink fountain in which the fountain roller is positioned.

A further ink conducting line may intersect the first line in its length between the pump and the bottom of the ink reservoir, and another two way valve is positioned at this intersection. The other terminus of this last line may be open so that it may be conveniently inserted into the barrels or other containers in which printing ink is supplied, whereby the ink may be withdrawn from such containers and pumped into the top of the ink reservoir or directly to the ink fountain by suitable adjustment of the two way valves which have been mentioned.

A fluid line from a water or other ink fountain cleansing agent source may also be introduced into the section or trough of the ink fountain in which the fountain roller is positioned, and a suitable draw-off line is lead from the bottom of the other section of the ink fountain to the sewer or other disposal place. A valve is located in the bottom of the baffle plate allowing for the flow of fluid from the section of the ink fountain having the fountain roller to the other section when that is desired for the complete draining of the fountain.

It will be understood that the foregoing general description and the following detailed description as well are exemplary and explanatory of the invention but are not restrictive thereof.

Referring now to the illustrative embodiment of the present invention shown in the accompanying drawings, and referring particularly to Fig. 1, a rotary printing press inking mechanism may comprise an ink drum 10 upon the outer cylindrical surface of which printing ink is to be distributed in a relatively thin and uniform enveloping film for transfer to the members of the printing press to be inked (not shown). A plurality of vibrating rollers 11 are mounted to have peripheral contact with the ink drum 10, and these rollers have axially reciprocatory movement, each out of phase with the others, in a conventional and well understood manner.

The inking mechanism for the press is provided with an ink fountain 12 as the ink source, and the interior of the fountain is divided into two sections or troughs, which are lettered A and B in Fig. 1, by means of the baffle plate 13 extending between the lateral walls of the fountain. The fountain roller 14 is mounted for rotation in the larger section or trough A of the ink fountain, and a spiral or multiple disk roller 15 as shown and described in prior U. S. Patent No. 2,154,544 is mounted to rotate with the fountain roller. The printing ink which is thus conveyed from the fountain 12 by the fountain roller 14 to the spiral roller 15 is transferred to the ink drum 10 by a transfer roller 16 which is mounted to rotate in peripheral contact with the ink drum 10 and spiral roller 15.

As shown in detail in Fig. 2, an L-shaped supporting member 20 is provided to overlie a portion of the top of section A of the ink fountain and to support in proximity to the fountain roller 14 the fountain blade 21 and the page cut-off blade 22. The construction and operation of these blades is conventional and comprises generally a plurality of adjusting rods 23 threaded into support 20 to engage fountain blade 21 at spaced intervals along its length with a desired pressure, the pressure being adjustable by the pressman by means of the wing nuts 24 which turn rods 25 to drive adjusting rod 23 further into the support 20 or to withdraw it somewhat. The distance of fountain blade 21 from fountain roller 14 determines the thickness of the ink film upon the fountain roller which is available for transfer by the spiral roller 15. The number of adjusting rods 23 will correspond to the number of column widths which may be printed on the printing press, one rod being provided for each column width, whereby the ink intensity for each column to be printed may be individually adjusted in the inking mechanism.

The page cut-off blade 22 is divided along its length into separate blades, one for each page which may be printed on the press, and each page blade 22 is adapted to be positioned closely adjacent the periphery of fountain roller 14 or retracted to a distance therefrom by a stop arm 27 engageable with upwardly spring pressed rod 28 connected to arm 29. Each arm 29 has a rigid connection with a cut-off blade 22, and the blades may be individually adjusted to a position adjacent the periphery of fountain roller 14 a distance from the periphery less than the distance between the fountain roller 14 and roller 15 in order to blank out full page widths in the inking mechanism when the same are not to be printed in the press.

As shown in detail in Figs. 2 and 3 of the drawings the variable height means are provided at the top of the baffle plate 13. As illustratively shown, the upper edge of the baffle plate is formed with a plurality of rectangular notches 31 which are to be covered to a greater

or lesser extent by the plate 32 extending longitudinally of the baffle plate. The plate 32 has a plurality of inclined cam slots 33 spaced along its length, and cap screws 34 are positioned in these slots and securely threaded into the baffle plate 13. An adjusting screw 36 is threaded through the lateral wall 37 of the ink fountain 12 and engages a bracket 38 secured to the end of plate 32. Thus, by turning the hand wheel 39 the plate 32 may be made to cover off more or less of the depth of the slots 31, whereby the effective ink retaining height of the baffle plate may be varied as desired.

A refuse collector 40 may be affixed to the top of the baffle plate 13 by means of a plurality of screws 41, and this member extends along the width of the fountain cylinder 14 to strain the ink through a plurality of relatively small holes 42 in order to trap scraps of paper and other debris which otherwise would be picked up by the inking mechanism and make its operation imperfect. A cover plate 43 is hinged to the back wall 44 of the ink fountain to protect the ink from dust and dirt as well as to prevent splash and evaporation of the ink in the fountain.

A valve 45 is provided at the bottom of baffle plate 13 whereby free fluid communications may be had between the sections A and B of the ink fountain 12. As illustratively shown in Figs. 3 and 4 of the drawings this valve may comprise a cylindrical housing 46 integral with side wall 37 of the ink fountain and at the bottom thereof. An opening 35 extends through the housing for the passage of fluid, and a tapered valve core 47 is fitted into the housing for rotary movement. The valve core 47 has a rectangular recess 48 at its inner end, which may be made to register with the opening 35 in order to open the valve. The hand control member 50 is provided to open and close the valve as desired, and a threaded cap 51 is affixed to a projection of the valve casing 46 through side wall 37 to prevent external leakage of the valve, suitable packing 52 being provided for this purpose.

As shown in Fig. 1, a relatively large ink reservoir 60 is provided below the ink fountain 12, and ink communication from the bottom of the reservoir to section A of the ink fountain is allowed through a series of ink lines 61, 62, 63, 64. Ink line 65 establishes communication between the top of reservoir 60 and the junction of lines 63 and 64, at which point a two way valve 66 is positioned so that ink from line 63 may be directed either through line 64 to the ink fountain or through line 65 to the reservoir, as curcumstances require. Another ink line 67 meets the junction of lines 61 and 62 where another two way valve 69 is fitted, and this line is left open at its other end to pick up printing ink from barrels 68 or other containers in which the printing ink may be supplied to the printer. An electrically or otherwise conveniently driven pump 70 is placed between lines 62 and 63, and it is apparent that the pump is adapted to furnish ink to line 63 either from the bottom of the reservoir 60 through line 61 or from the barrels 68 through line 67, depending upon the setting effected upon two way valves 69.

A hand valve 64' is positioned in line 64 to control the flow of ink to the ink fountain 12. An ink return line 71 conducts ink from the bottom of the smaller section or trough B of the ink fountain back to the reservoir 60, and a valve 72 is inserted in the line to control the gravity flow of the ink.

A fluid line 75, having hand valve 76, leads from a source of water or other suitable fountain cleansing agent into section A of ink fountain 12, and a lead-off line 77, having hand valve 78, from the bottom of section B of the ink fountain leads to the sewer or other place for disposal through the line. It is to be specifically noted that the four outer walls of the ink fountain 12 (the support 20 serving to some extent as a part of the front wall 80 of the fountain) are constructed sufficiently high so that they extend above the level of the fountain blade 21, the page cut-off blade 22, the refuse collector 40, the adjustable plate 32, and the ink transfer level between the fountain roller 14 and the spiral roller 15.

When the rotary printing press is to be put in operation, and at a time when the ink fountain 12 is empty, the printing ink may be withdrawn from storage barrels 68 through lines 67, 62, 63, 65 and pump 70 and introduced into the ink reservoir 60. Thereafter, if it is desired to actuate and stir the ink for some period of time before printing is begun with it, the valve 69 may be switched to its other position and pumping continued, the ink then circulating from the bottom of ink reservoir 60 through lines 61, 62, 63, 65 and back into the reservoir at the top thereof. The ink is thereby brought to a condition of uniform consistency and is well stirred and agitated. Thereafter the two way valve 66 may be switched to its other position and the larger section or trough A of the ink fountain 12 filled with the desired amount of ink, the baffle valve 45 of course being closed at this time. The ink may, of course, be supplied directly from the barrels 68 to section A of the ink fountain by pumping through lines 67, 62, 63 and 64, the reservoir 60 being cut out by adjustment of valves 66 and 69.

The printing press operation may now be commenced and ink has been provided about the fountain roller 14 for transfer to other parts of the inking mechanism. The ink may be caused to continuously circulate between the reservoir 60 and the ink fountain 12, section A of the ink fountain being sufficiently filled so that ink will flow over baffle 13 and plate 32 into the second section B and through line 71 and valve 72 into the reservoir, and the pumping continuing thereafter. The plate 32 covering off rectangular notches 31 in the baffle plate may be raised or lowered as desired to regulate the depth of ink in section A of the ink fountain. Thus the extent to which fountain roller 14 is immersed in the ink may be determined and varied, with a corresponding variation in the intensity of the color which is printed on the press product.

The ink fountain may be drained after operation of the press by terminating the introduction of ink into the fountain, and opening baffle valve 45, whereupon the ink in sections A and B will drain into reservoir 60 through line 71. Thereafter the ink fountain and portions of the inking mechanism may be thoroughly cleaned and flushed. For this purpose the ink supply and circulating system may be cut off by closing valves 64' and 72, and water or other suitable cleansing agent introduced through line 75. By closing baffle valve 45, as well as valve 78 in the waste line 77, the cleansing agent may be made to fill the ink fountain to the top of its

outer walls, and all parts of the inking mechanism within the fountain and below the level of the cleansing agent will be conveniently and thoroughly flushed. This action will include, of course, the fountain roller 14 and the lower portion of spiral roller 15, fountain blade 21, page cut-off blade 22, refuse collector 40 and the plate 32 adjacent the top of baffle 13. When the ink fountain is thus filled the printing press may be "turned over" or made to operate at a very slow speed, whereby the cleansing agent may be transferred by the spiral roller to other parts of the inking mechanism above the ink fountain. The cleansing agent may then be allowed to run off through line 77, and the cleansing process repeated as often as may be advantageous or desired.

The present invention has been found to be particularly useful when water base inks are to be used in the printing press. This type of ink has a particularly strong tendency to jell or set when it has stood undisturbed for some time, and the circulating, agitating and supply system of the present invention is adapted to break up this formation prior to printing and to maintain the ink in a properly fluid and uniform condition while the printing operation is continuing. Thus the water base ink is withdrawn from the supply barrels 68 and introduced into reservoir 60, where it is stirred and agitated by circulation through lines 61, 62, 63 and 65. The ink is likewise circulated in this manner and for the same purpose if the ink has been standing in the reservoir 60 for some time when the press is not in operation.

After the ink is in proper condition for printing it is pumped into section A of the ink fountain 12, flows over baffle 13 and plate 32 when that height is reached, and flows from section B of the ink fountain back into reservoir 60. The ink is thus continuously circulated during operation of the press and the ink is maintained in a properly fluid and uniform condition. Furthermore, by this continuous circulation the ink in section A of the fountain will be maintained at a constant depth about the fountain roller 14, the ink used in the printing process being constantly and simultaneously replaced. Variations in the depth to which the fountain roller is immersed in ink are accompanied by variations in the intensity of the color printed on the final product, and this is particularly true in the use of water base inks. The present invention therefore provides a means for maintaining the ink at the desired level to effect color intensity in the printed product without recourse to adjustment of the fountain blade 21. The depth of the ink about fountain roller 14 may be conveniently varied from time to time while the press is in operation by raising or lowering plate 32 by adjusting wheel 39.

When operation of the press is terminated the fountain may be drained of ink through baffle valve 45 and pipe 71 to reservoir 60. The ink fountain and inking mechanism may then be flushed and cleaned by the introduction of cleansing fluid through line 75. When water base inks are used water has been found to be an economical and efficient cleansing agent, and the fountain 12 may be filled to capacity therewith. The fountain blade 21, page cut-off blade 22, refuse collector 40, baffle 13 and plate 32, the fountain roller 14 and part of spiral roller 15 are then immersed in water, which will remove deposits of ink from the members and prevent caking. The press may also be operated slowly so that water will be conveyed by the spiral roller 15 to transfer roller 16 and thence to other portions of the inking mechanism and thus loosen up and clean off hardened bits of ink in the inking mechanism.

When water base inks are used it has been found desirable to provide non-rusting surfaces for the interior of the ink fountain, and baked enamel, galvanized zinc, or the "Vinylite" base coatings are among the materials suitable for this purpose.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What we claim is:

1. Inking means for a rotary printing press comprising, in combination, an ink fountain having an inclined bottom and divided by a baffle plate into two liquid retaining sections, valve means at the bottom of the plate allowing liquid communication between the sections through the plate, adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of said baffle plate being below the level of the lowest outer wall of the ink fountain, an ink reservoir below the fountain, means including a pump for continuously introducing ink from the bottom of the reservoir into the first section of the ink fountain whereby the first section becomes full and the ink overflows the baffle plate and into the second section, means for continuously returning the ink by gravity flow from the bottom of the second section to the reservoir, and a fountain roller mounted for rotation in the first section, whereby the depth of immersion of the fountain roller in the ink in the first section may be determined and varied by said means for varying the effective ink retaining height of the baffle plate and said depth remains constant for any particular adjusted position of said means, and both sections may be drained into the ink reservoir.

2. In an ink fountain for a rotary printing press, a baffle plate joining two outer walls and the bottom of the fountain whereby the fountain is divided into two liquid containing sections, the bottom of the fountain being inclined, valve means at the bottom of the plate allowing liquid communication between the sections through the plate and adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of the baffle plate being below the level of the lowest outer wall of the fountain.

3. In an ink fountain for a rotary printing press, a baffle plate joining two outer walls and the bottom of the fountain whereby the fountain is divided into two liquid containing sections the bottom of the fountain being inclined, adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of the baffle plate being below the level of the lowest outer wall of the fountain, a port in an outer wall of the ink fountain for the introduction of ink into one section of the ink fountain, another port in an outer wall of the fountain for the withdrawal of ink from the other section of the ink fountain and a valve at the bottom of the

baffle plate openable and closable to permit and restrict liquid communication between the two ink fountain sections.

4. Inking means for a rotary printing press comprising, in combination, an ink fountain divided by a baffle plate into two liquid retaining sections, the top of the baffle plate being below the level of the lowest outer wall of the ink fountain, an ink reservoir, a first liquid line for liquid communication between the bottom of the ink reservoir and one of said ink fountain sections, a second liquid line for liquid communications between the bottom of the other ink fountain section and the ink reservoir, a third liquid line for liquid communication between the first line and the top of the ink reservoir, a two way valve at the intersection of the first and third liquid lines, and a pump in the first liquid line between the two way valve and the ink reservoir for selectively pumping ink from the bottom of the ink reservoir into the top of the ink reservoir and into the ink fountain.

5. Inking means for a rotary printing press comprising, in combination, an ink fountain divided by a baffle plate into two liquid retaining sections, adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of the baffle plate being below the level of the lowest outer wall of the ink fountain, a fountain roller mounted for rotation in one of the ink fountain sections, an ink reservoir, a first liquid line for liquid communication between the bottom of the ink reservoir and the ink fountain section having the fountain roller, a second liquid line for liquid communication between the bottom of the other ink fountain section and the ink reservoir, a third liquid line for liquid communication between the first line and the top of the ink reservoir, a two way valve at the intersection of the first and third liquid lines, and a pump in the first liquid line between the two way valve and the ink reservoir for selectively pumping ink from the bottom of the ink reservoir into the top of the ink reservoir and into the section of the ink fountain having the fountain roller.

6. Printing ink supply, circulation and agitation means for a rotary printing press fountain comprising, in combination, an ink reservoir, a first liquid line for liquid communication between the bottom of the reservoir and the ink fountain, a second liquid line for liquid communication between the bottom of the ink fountain and the ink reservoir, a third liquid line for liquid communication between the top of the ink reservoir and the first liquid line, a first two way valve at the intersection of the first and third liquid lines, a fourth liquid line intersecting the first liquid line between the first two way valve and the reservoir, a second two way valve at the intersection of the first and fourth liquid lines, the other end of the fourth liquid line being open for insertion into a printing ink supply, and a pump in the first liquid line between the first and second two way valves, whereby printing ink may be selectively pumped from a printing ink supply to the ink fountain and the top of the ink reservoir and from the bottom of the ink reservoir to the top of the ink reservoir and from the bottom of the ink reservoir to the ink fountain.

7. Inking means for a rotary printing press comprising, in combination, an ink fountain divided by a baffle plate into two liquid retaining sections, adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of the baffle plate being below the level of the lowest outer wall of the ink fountain, a fountain roller mounted for rotation in one ink fountain section, an ink reservoir, a first liquid line for liquid communication between the bottom of the ink reservoir and the ink fountain section having the fountain roller, a second liquid line for liquid communication between the bottom of the other ink fountain section and the ink reservoir, a third liquid line for liquid communication between the first liquid line and the top of the ink reservoir, a first two way valve at the intersection of the first and third liquid lines, a fourth liquid line intersecting the first liquid line between the first two way valve and the ink reservoir, a second two way valve at the intersection of the first and fourth liquid lines, the other end of the fourth liquid line being open for insertion into a printing ink supply, and a pump in the first liquid line between the first and second two way valves, whereby printing ink may be selectively pumped from a printing ink supply to the section of the ink fountain having the fountain roller and the top of the ink reservoir and from the bottom of the ink reservoir to the top of the ink reservoir and to the section of the ink fountain having the fountain roller and the ink may be returned to the ink reservoir from the other section of the ink fountain.

8. Inking means for a rotary printing press comprising, in combination, an ink fountain, a fountain roller mounted for rotation in the ink fountain, a transfer roller adjacent the fountain roller to transfer ink therefrom, a fountain blade and a page cut-off blade adjacent the periphery of the fountain roller, said blades and the ink transfer level between the fountain roller and the transfer roller being beneath the level of the lowest outer wall of the ink fountain, liquid conducting means for introducing cleansing fluid to the ink fountain and other liquid conducting means for drawing off cleansing fluid from the bottom of the fountain.

9. Inking means for a rotary printing press comprising, in combination, an ink fountain divided by a baffle plate into two liquid retaining sections, adjustable means at the top of the baffle plate for varying the effective ink retaining height of the baffle plate, the maximum ink retaining height of the baffle plate being below the level of the lowest outer wall of the ink fountain, a fountain roller mounted for rotation in one ink fountain section, a transfer roller adjacent the fountain roller to receive and transfer ink therefrom, a fountain blade and a page cut-off blade adjacent the periphery of the fountain roller, said blades and the ink transfer level between the fountain roller and the transfer roller and the adjustable means at the top of the baffle plate being beneath the level of the lowest outer wall of the ink fountain, means for introducing ink into the ink fountain section having the fountain roller, means for removing ink from the other ink fountain section, means for introducing cleansing liquid into the ink fountain section having the fountain roller and means for removing said cleansing liquid from the other ink fountain section.

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