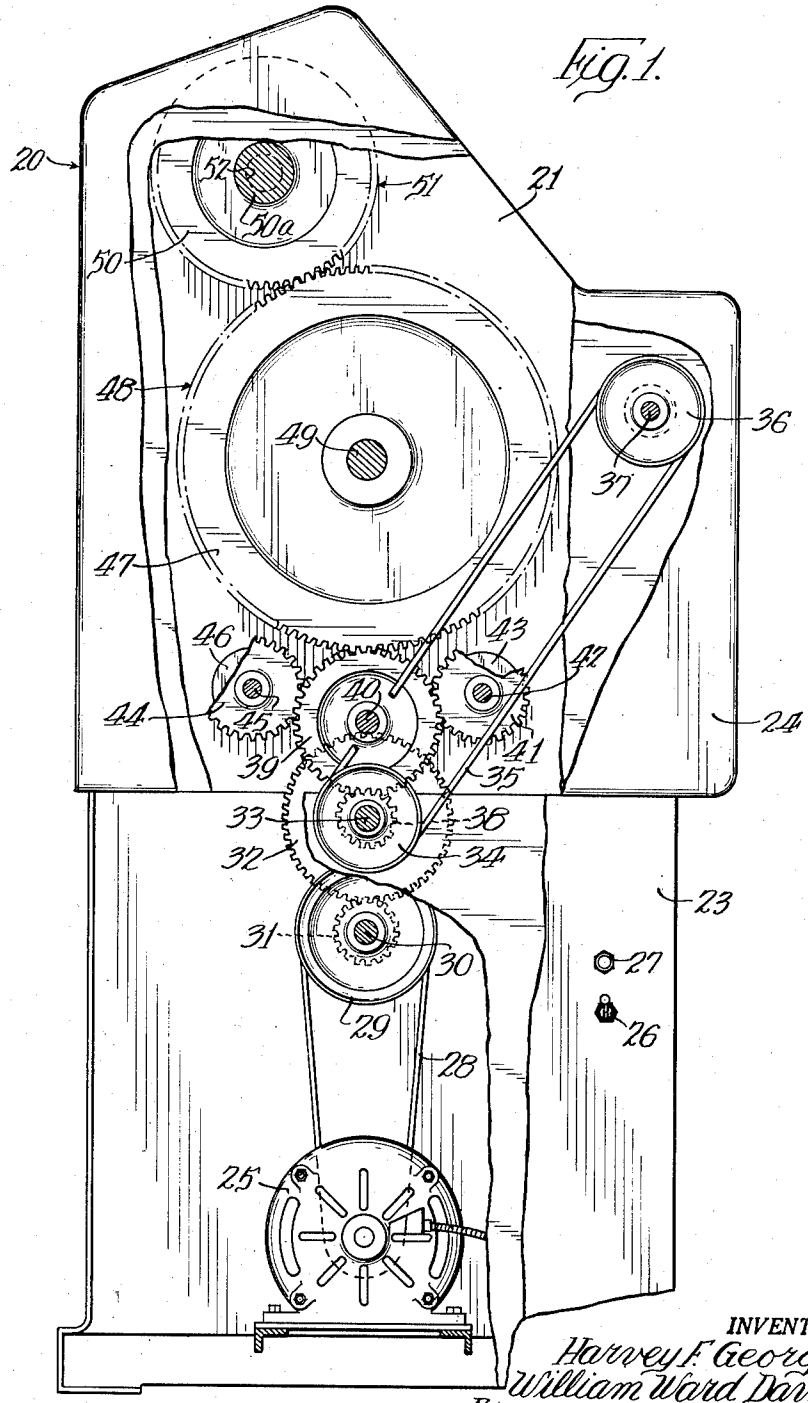
July 9, 1957 H. F. GEORGE ET AL 2,798,425

INKING AND DAMPENING MEANS FOR OFFSET PRESSES

Original Filed Feb. 24, 1953 3 Sheets-Sheet 1

Fig. 1.



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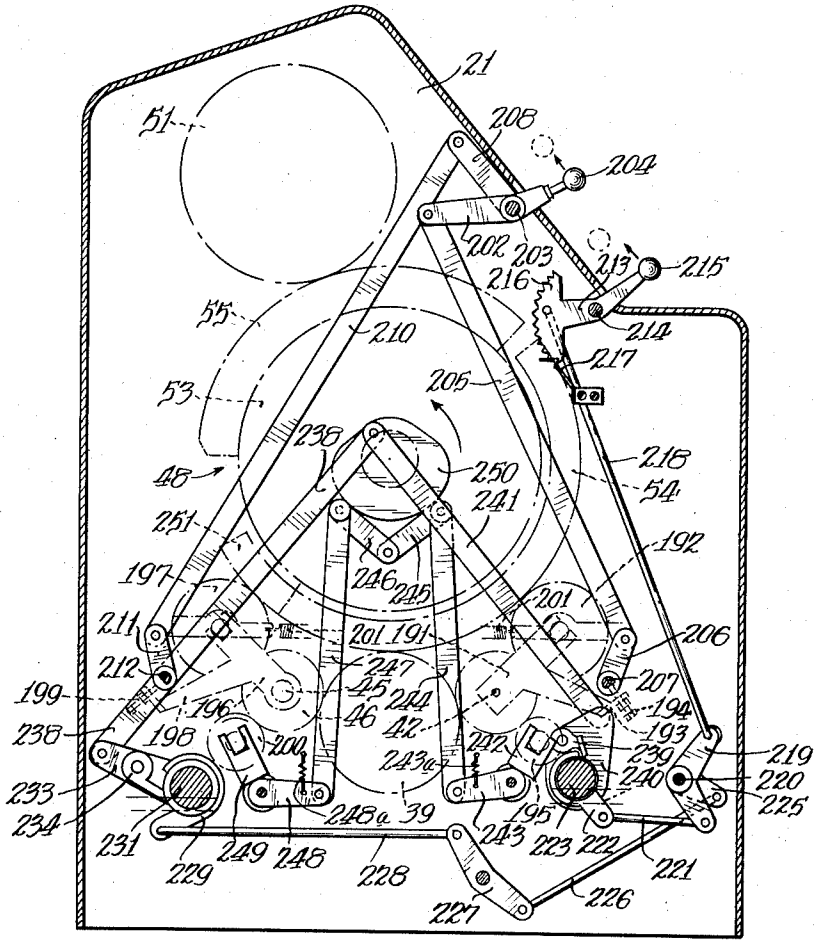
Original Filed Feb. 24, 1953 3 Sheets-Sheet 2

Fig. 2.



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Original Filed Feb. 24, 1953 3 Sheets-Sheet 3

Fig. 3.

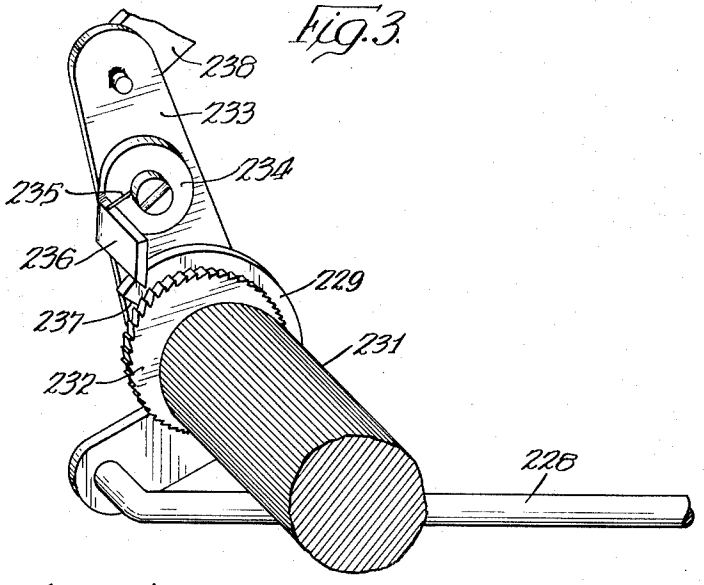
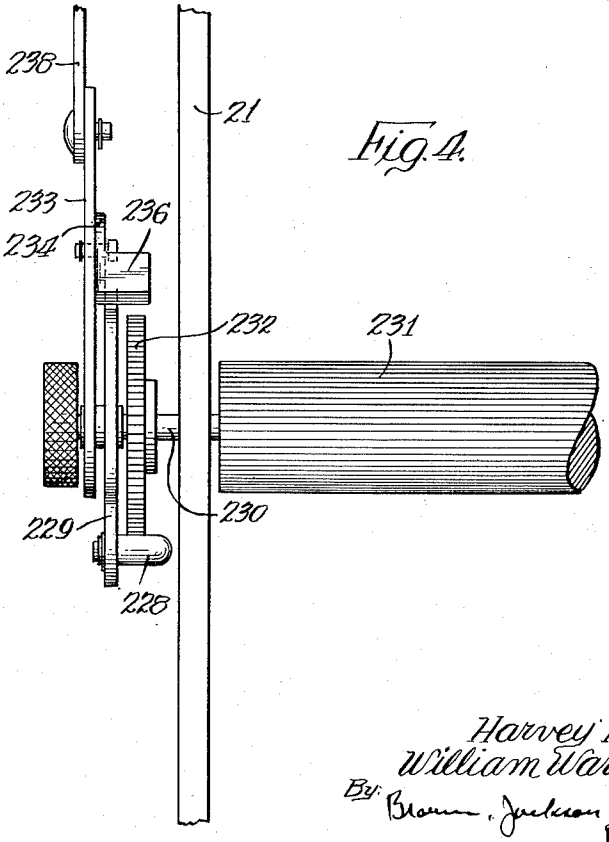


Fig. 4.



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INKING AND DAMPENING MEANS FOR OFFSET PRESSES

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Original application February 24, 1953, Serial No. 338,272, now Patent No. 2,759,416, dated August 21, 1956. Divided and this application March 19, 1954, Serial No. 417,273

4 Claims. (Cl. 101—144)

The present invention relates to printing machines, and it is a specific object of the invention to provide improved inking and dampening means for offset presses and the like.

This application is a division of our copending parent application, Serial No. 338,272, filed February 24, 1953, now Patent No. 2,759,416, which application discloses a complete systems printing machine employing the inking and dampening means of the present invention in a highly efficient manner for systems duplication and other similar printing operations.

Systems duplication printing relates to the duplication of printed forms or the like used in filing, accounting and like systems. In this type of printing, the number of duplicates to be made from a single master or printing plate is relatively small, but a large variety or number of forms are required to be printed. In other words, relatively few copies are printed from each plate or master, but a large number of plates, as many as several hundred per day, must be handled. Heretofore, various machines have been proposed for the accomplishment of systems duplication and like printing, but these machines have failed to provide a satisfactory solution to the problems presented.

Machines of the character referred to must meet rigid specifications, among which are the following: The machine must provide for extreme ease or simplicity of operation due to the fact that the same will usually be operated by office personnel having little or no technical ability or mechanical aptitude; the machines must be designed to cope with or offset operator fatigue resulting from the repetitive nature of the work; all of the controls for the machine should be disposed within convenient reach of the operator's normal position, so that printing control can be constantly and efficiently maintained; the machine should be so constructed that the printing masters or plates can be readily attached and released; the printed copy should be delivered to a position within view of the operator, so that the operator can judge, without changing position, the controls that should be effected to produce good copy; and the machine should provide for as nearly full automatic operation as is possible to lessen the burden on the operator and to provide for efficient duplication. While the foregoing are only some of the requirements of a machine of the general character, it is to be pointed out that it is with respect to these requirements that prior developments in the art have failed particularly.

In our parent application above identified, an improved systems machine is disclosed which meets all of the foregoing specifications and provides an ease, simplicity and efficiency of operation heretofore unattained in the art.

As will be appreciated from the statement of specifications, an essential requirement in systems machines and like presses is the provision of controls accommodating ready and efficient adjustment with respect to the application of printing fluids to the printing plate or master.

It is an object of the present invention to afford improved means for applying and controlling the application of printing fluids to printing plates, which means are ideally suited for systems duplication, as well as for other types of printing.

Systems duplication is usually carried out on presses of the offset type, which presses require both dampening fluid and ink, and it is, therefore, as above stated, the specific object of the present invention to provide improved inking and dampening means for offset presses, although the said means is applicable, as will be appreciated by those skilled in the art, to other types of presses as well.

Another object of the invention is to provide improved inking and dampening means for printing presses wherein all operations to be performed by the machine operator with respect to the application of printing fluids may be readily and conveniently effected from a single position, the position from which the operator normally feeds paper to the machine.

A further object of the invention is the provision of improved inking and dampening means for presses adapted to be turned on and shut off at will and including means for readily controlling the amount of printing fluid to be applied to the printing plate.

A still further object of the present invention is the provision of improved inking and dampening means including instrumentalities, disposed within ready reach of the machine operator, for selectively turning the inking and dampening fluid on and off and for selectively varying the flow or application of ink and dampening fluid.

In addition to the foregoing, it is an object of the invention to provide improved inking and dampening means for offset presses and the like that is economical of manufacture and assembly, that is easily used or operated and that is highly efficient and capable of maintaining a high production rate in use.

Other objects and advantages of the present invention will become apparent in the following detailed description of a preferred embodiment of the invention.

Now, in order to acquaint those skilled in the art with the manner of constructing and using the inking and dampening means of the present invention, a preferred embodiment of the said means and the manner of constructing and using the same will be described hereinafter, in connection with the accompanying drawings.

In the drawings:

Figure 1 is a side view, partly in section and partly in elevation, of one side frame, the left hand side, of a printing machine embodying the inking and dampening means of the present invention, the view showing principally the drive means of the machine;

Figure 2 is a partial vertical cross sectional view taken through the other side frame, the right hand side, of the printing machine, the view showing the inking and dampening means and controls in elevation and the apparatus disposed inwardly of the view in phantom lines;

Figure 3 is a fragmentary perspective view of the means for controlling the amount of inking and/or dampening; and

Figure 4 is an elevational view of the apparatus shown in Figure 3.

Referring now to Figure 1, a machine embodying the inking and dampening means of the present invention is shown as including suitable framing comprising a pair of side frames 20 and 21. As shown, each side frame includes a lower frame portion or subframe 23 and an upper frame portion or subframe 24. Each of the frames described is preferably capable of ready detachment and the side frames 20 and 21 are each hollow for the reception of control mechanisms to be described hereinafter. To provide ready access to the control mechanisms dis-

posed therein, the side frames 20 and 21 are capable of ready disassembly, or are provided with access openings to facilitate repair and adjustment of the control and operating mechanisms disposed therein.

The means for driving the various components of the printing machine is disposed intermediate the side frames 20 and 21 and comprises an electric motor 25 suitably controlled by an electric switch 26 mounted on the outside surface of the lower frame portion 23 of the left side frame 20. To provide a visual indication of motor operation, an electric light 27 is located adjacent the switch 26 and is suitably connected in the circuit of the switch and the motor so as to be illuminated when the motor is running.

The drive shaft of the motor 25 is suitably equipped with a pulley (not shown) over which an endless belt 28 is reaved for driving a pulley 29 suitably secured to a cross shaft 30, which is journalled in bearings in the side frames 20 and 21. The cross shaft 30 also carries a pinion 31 which meshes with a gear 32 mounted on a shaft 33 also journalled in the side frames 20 and 21. If desired, a centrifugal clutch (not shown) may be operatively associated with the gear 32 and shaft 33 to accommodate turning of the printing cylinders manually without turning the motor. The shaft 33 provides a mounting for a pulley 34 which is preferably disposed within the interior of the side frame 20. An endless belt 34 is suitably reaved over the pulley 34 to establish driving connection between the pulley 34 and a pulley 36 secured to a shaft 37, which shaft is journalled in bearings in the side frames and upon which the lower paper feed roller is mounted, as is described in our aforesaid parent application. The shaft 33 also carries a pinion 38 which meshes with a gear 39 fixed to a shaft 40. The shaft 40 is journalled in bearings in the upper side frames and the gear 39 carried thereby meshes at one side with a gear fixed to a shaft 42 upon which an ink distributing or transfer and drive roller 43 is mounted. At the other side thereof, the gear 39 meshes with a gear 44 secured to a shaft 45 upon which a dampening fluid distributing or transfer and drive roller 46 is mounted. As will be apparent, the shafts 42 and 45 are journalled for rotation in the side frames 20 and 21. At its upper side, the gear 39 meshes with a ring gear 47 secured to one side of a drum or cylinder 48 comprising one of the printing cylinders of the machine. The drum 48 is suitably mounted upon a cross shaft 49 which is journalled at its opposite ends in bearings in the side frames. The ring gear 47 meshes with a ring gear 50 which is disposed to one side of and has driving connection with a second drum or cylinder 51 comprising another printing cylinder of the press. The cylinder 51 is rotatably mounted on a shaft 52 which is supported at its opposite ends in the side frames 20 and 21 in the manner described in our parent application. The gear 50 is journalled for rotation on a shaft 50*a* which is mounted in the side frame 20.

Referring now to Figure 2, the cylinder 48 is shown in phantom lines as comprising the shaft 49, a pair of circular end plates or discs 53 and a pair of segments 54 and 55 secured to the peripheral margins of the end plates 53. The segments 54 and 55 are substantially semi-circular in form, but each is of less than 180° in circular extent so that the two segments are spaced apart at both ends thereof when secured to the end plates 53. The cylinder 51 may be constructed in various known manners and presents a circumferential surface adapted to engage the segments 54 and 55 as the cylinders are rotated.

While several aspects of the present invention are not restricted in application to printing presses of a particular type, the machine shown is of the offset type, wherein the invention is particularly well employed. Offset printing is conducted with the use of a direct reading master or plate that is inked to transfer a reverse or negative ink image to a surface, the blanket surface,

from which surface the ink negative is transferred as a positive to a sheet of paper. Accordingly, an offset press must provide a plate surface, a blanket surface and a platen surface, with the blanket surface engaging both the plate and platen surfaces in properly timed relation to effect printing. In the offset press shown, the segment cylinder 48 comprises a plate and platen cylinder in that the segments 54 and 55 comprise, respectively, a platen segment and a plate segment, which segments each provide an area or surface adapted for the reception of sheets of paper and printing masters or plates, respectively. The cylinder 51 comprises the blanket surface and, to provide for proper timing, is formed of one-half the size, or having a circumference one-half that of the segment cylinder 48.

In use, as the cylinders 48 and 51 are rotated, the plate segment 55 engages the blanket cylinder 51 for substantially one full turn of the blanket cylinder. Subsequently, the platen, impression, or paper segment 54 will engage the blanket cylinder for the same cycle of blanket cylinder movement so that an image transferred to the blanket surface from the plate surface or segment will be applied to the platen surface or the sheet of paper thereon. Then upon the next cycle of segment cylinder rotation, the plate segment will engage the blanket cylinder in perfect registry with the initial engagement between the two surfaces whereby perfect image registry is maintained at all times.

For a further disclosure of the machine as a whole and the operation and advantages of the same, reference is made to our copending parent application, above identified. Generally speaking, the machine is such that all of the necessary operating components of the machine are under the control of the machine operator from his or her normal operating position at the machine, so that active control of all machine operations is afforded from a single station or position. An essential part of this control, as will be appreciated, is that of the apparatus employed for inking and dampening the printing plate carried by the plate segment 55 during operation of the machine.

The improved inking and dampening means and controls therefor afforded according to the present invention to meet the demands or objects above stated are shown in detail in Figures 2 to 4. Referring to Figures 2, we have shown the inking and dampening rollers and the drive means therefor in phantom lines and the mechanism for controlling the inking and dampening rollers in solid lines. As shown in phantom lines, the drive gear 39 effects rotation, in the manner described hereinbefore, of the ink distributing roll 43 and the dampening fluid distributing roll 46. Referring to the inking assemby, at the right side of the figure, the roller 43 is mounted upon a shaft 42 journalled in the side frames 20 and 21 and this shaft provides a pivotal mounting for a frame or bracket 191 which rotatably supports an inking form roll 192 which is adapted to engage the periphery of the plate and platen cylinder 48. The inking form roll 192 is in peripheral engagement with the roller 43 so that the same is driven and has ink transferred thereto by the roller 43. The frame 191 includes an outwardly extending arm 193, at the free end of which a stud or screw 194 is adjustably mounted for a purpose to be described hereinafter. The inking assembly also includes a ductor roll 195, the purpose and operation of which will be described hereinafter.

The dampening apparatus is substantially identical to the inking apparatus and includes the distributing roll 46 mounted on the shaft 45, a frame or bracket 196 pivoted on the shaft 45, a dampening form roll 197 journalled in the frame 196, the frame including an arm 198 carrying an adjusting stud or screw 199, and a dampening ductor roll 200. The inking and dampening form rolls 192 and 197 are normally biased into engagement with the peripheral surface of the plate and platen

cylinder by means of a spring 201 extending between the supporting frames for the two rolls.

Referring now to the apparatus for controlling inking and dampening, which apparatus is disposed within the right side frame 21, the present invention provides selectively operable on and off controls for the inking and dampening rollers and selectively operable means for controlling the amount of inking and dampening. The ink on-off control comprises a lever 202 disposed in the upper portion of the side frame 21 and pivotally mounted on a cross shaft 203. The lever 202 at one end thereof projects to the exterior of the inclined front face of the side frame 21 and at that point is provided with a handle 204 for manual actuation. At its opposite end, the lever 202 is pivotally connected to one end of a link or connecting lever 205 which is pivotally connected at its opposite end to a crank arm or lever 206 which is secured to a shaft 207 for oscillating the shaft. The shaft 207 may merely be mounted and journalled in the side frame 21, or the same may extend between the side frames and be journalled adjacent each end in the frames. At the portion thereof adjacent the stud 194 on the frame 191, the shaft 207 is provided at one side thereof with a flatted portion arranged to be engaged by the stud 194 mounted on the frame 191 of the inking form roll 192. Due to the bias of the spring 201, the stud 194 will engage the shaft 207. When the stud 194 engages the flatted portion of the shaft 207, as is shown in Figure 2, the adjustment of the stud is such that the inking form roll 192 will engage the peripheral surface of the plate segment 55 to ink the plate carried by the segment. However, when the shaft 207 is oscillated to bring the cylindrical portion thereof into engagement with the stud 194, the stud 194 will be moved outwardly to pivot the frame 191 about the shaft 42 to swing the inking form roll 192 away from the segment cylinder 48, whereby inking will be stopped or turned off. Accordingly, the flatted shaft 207 comprises cam means for on-off control of the inking form roll. As will be apparent from Figure 2, the on-off inking control is so arranged that the handle 204 is moved downwardly to the on position and is moved upwardly to the off position.

The on-off dampening control is substantially identical to the on-off inking control and includes a bell crank 208 pivotally mounted on the shaft 203 and having a handle (not visible) lying behind the handle 204 in Figure 2. The inner end of the bell crank 208 is pivotally connected to a link or connecting lever 210 which is pivotally connected at its lower end to a crank arm or lever 211 secured to a shaft 212 identical to the shaft 207 and comprising cam means adapted for cooperation with the stud 199 carried by the frame 196 of the dampening form roll 197. The operation of the on-off dampening control is the same as that described hereinbefore with respect to the on-off inking control.

As will be appreciated from Figure 2, the on-off inking and dampening control handles are conveniently disposed for ready access by the operator so that the inking and dampening operations may be readily turned on or off, selectively, by the operator without any necessity for change of position.

The means for controlling the amount of inking and/or dampening is shown in Figures 2 to 4, wherein the inking control includes a flow selector lever 213 pivotally mounted on a cross shaft 214 and having a handle portion 215 extending to the exterior of the inclined front wall of the right side frame 21. At its inner end, the lever 213 includes a toothed sector 216 adapted for cooperation with a spring finger 217, whereby a ratchet arrangement is provided for retaining the lever 213 in any position to which the same is adjusted. Operation of the selector lever handle 215 between the solid and dotted line positions thereof, as shown in Figure 2, provides full range control of the amount of fluid applied to the form roll. A linking rod 218 is pivotally connected at its upper end to the sector 216 of the lever 213 and at its lower end is pivotally connected to a bell crank lever 219 which is pivotally mounted on a cross shaft 220 within the side frame 21. The opposite end of the bell crank 219 is pivotally connected to a link 221 which is pivotally connected to the arm of a control cam 222 which is pivotally mounted on the shaft of an ink pickup or fountain roll 223. The purpose of the cam will become apparent in the following description of the corresponding dampening fluid control.

The dampening fluid control is substantially identical to the inking control and includes a lever identical to the lever 213 pivoted on the shaft 214 and terminating at its outer end in a handle (not visible) disposed behind the lever and handle 213, 215 in Figure 2. The dampening control lever is pivotally connected to a linking rod that is identical to the rod 218 and that is pivotally connected at its lower end to a bell crank 225 pivotally mounted on the shaft 220. The bell crank 225 is pivotally connected to one end of a link 226 which is connected at its opposite end to a lever 227 pivotally mounted within the side frame 21. The lever 227 is pivotally connected to a link or connecting rod 228 which is pivotally connected at its opposite end to the arm of a dampening solution control cam 229. Referring to Figures 3 and 4, the control cam comprises a crank arm or lever embodying a peripheral surface defined by different radii taken from a common center so that the periphery of the same assumes a cam surface. The cam 229 is mounted on a bearing which is journalled on the shaft 230 of a dampening solution pickup or fountain roll 231. Secured to the shaft 230 of the dampening fluid fountain roll 231 is a ratchet wheel 232. In addition, a lever 233 is pivotally mounted on the bearing on the shaft 230 of the roll 231 and the lever carries a pawl 234 having a pivotal mounting thereon. A suitable spring 235 is associated with the pawl 234 for normally biasing the same in the direction of the ratchet 232. The pawl 234 includes a pawl arm 236 extending parallel to the axis of the fountain roll 231 and adapted for cooperation with the ratchet 232 and also with the cam 229. The cam 229 presents an outer circular surface having a diameter greater than that of the ratchet 232, but the cam is stepped, as at 237, to expose portions of the toothed periphery of the ratchet 232 for engagement by the pawl. In use, the lever 233 is oscillated, by means to be described hereinafter, to impart oscillating movement to the pawl 234. As the lever 233 is oscillated, the ratchet 232 and the pawl 234 comprise a one-way clutch or drive means between the lever 233 and the fountain roll 231, whereby rotary movement in one direction is imparted to the fountain roll by the oscillating lever. The control cam 229 provides means for varying the rotary movement imparted to the fountain roll on each oscillation of the lever 231, thus to vary the amount of fluid picked up by the fountain roll for transfer, by the ductor and distributing rolls, to the form roll 197, as will become apparent in the following description of the operation of the flow selector controls.

As viewed in Figure 3, upon clockwise movement of the lever 233, the pawl arm 236 will ride freely over the surface of the ratchet 232, due to the inclination of the teeth of the ratchet and will ride over the face 237 of the cam 229 and onto the outer circular surface of the cam wherein the pawl cannot engage the ratchet. Upon counterclockwise movement of the lever 233, the pawl arm 236 will ride upon the circular surface of the cam 229 until the same passes over the step 237 of the cam, at which time the pawl arm will be biased into engagement with the teeth of the ratchet 232 by the spring 235. Continued counterclockwise movement of the lever 233 will then impart driving movement to the ratchet wheel 232 and the serrated dampening fountain roll 231. The lever 233 has a predetermined and fixed path of oscillation and, accordingly, it will be appreciated that the

position of the cam 229 will control the amount of rotation of the fountain roll 231 and thus the amount of fluid pickup for transfer to the dampening fluid ductor roll 200. To oscillate the lever 233, a link 238 is provided which is pivotally connected at one end to the crank 233 and at its opposite end is pivotally connected to the shaft of the plate and platen cylinder 48 eccentrically of the axis of rotation of the cylinder.

The means for controlling the amount of inking is substantially the same as the means for controlling the amount of dampening. In particular, the inking control means includes a pawl 239 pivotally mounted on a lever 240, which lever is pivotally connected to one end of a link 241, which link is pivotally connected at its opposite end to the link 238 and eccentrically of the axis of rotation of the plate and platen cylinder 48.

Referring again to Figure 2, the means for driving the ductor rolls 195 and 200 includes a bracket 242 for supporting the ink ductor roll 195, the bracket 242 being pivotally mounted on the side frame 21, a crank arm 243 secured to the bracket 242 for oscillating the same, about its pivotal mounting between the fountain roll and the distributing roll, a link or lever 244 pivotally connected at one end to the crank arm 243 and at its opposite end to a lever 245, which lever is pivotally connected to an identical second lever 246, a second link or lever 247 pivotally connected at one end to the lever 246, a crank arm 248 pivotally connected to the opposite end of the link 247, and a bracket 249 pivotally mounted on the side frame 21 for supporting the dampening fluid ductor roll 200, the crank arm 248 being connected to the bracket 249 for oscillating the same between the fountain roll and the distributing roll. In use, the levers 245 and 246, or the pivotal connections between the levers 244 and 245 and the levers 246 and 247, comprise cam followers arranged to engage a cam 250 carried by the shaft of the segment cylinder 48, the followers being biased into engagement with the cam 250 by means of springs 243*a* and 248*a*, respectively. The cam 250 is so shaped as to impart reciprocatory movement to the links or levers 244 and 247 whereby the brackets 242 and 249 and the ductor rolls 195 and 200 will be oscillated between their fountain rolls 223 and 231, respectively, and their distributing rolls 43 and 46, respectively.

When the machine is operated, the ink and dampening solution controls are turned on by moving the respective control handles (204) to their lowermost positions. Thereafter, the amount of ink and/or dampening fluid applied to the plate surface is controlled by suitable adjustment of the respective handles (215). Then, as the plate and platen or segment cylinder 48 is rotated, and the transfer rolls 43 and 46 are rotated, all through the gear 39, the inking and dampening form rolls 192 and 197, respectively, will be suitably driven to apply dampening fluid and ink to the plate segment 55 of the cylinder 48. The cam 250 imparts oscillatory movement to the ductor rolls 195 and 200, so that the same are moved between their respective fountain and distributing rolls. At the same time, the eccentric mounting of the links 238 and 241 will result in imparting partial rotations to the fountain rolls 223 and 231 so that fluid will be present on the surface thereof to be picked up by the ductor rolls 195 and 200, respectively. After picking up fluid from the rolls 223 and 231, the respective ductor rolls will transfer the same to the distributing rolls 43 and 46, respectively, whereupon the fluids will be transferred to the form rolls 192 and 197, respectively, and thus will be applied to the surface of the plate segment 55.

As will be obvious, fluids should not be applied to the platen segment 54 and to prevent the possibility of such application, the segment cylinder 48 is provided with a half moon cam 251 which is substantially coextensive with the platen segment 54 and is adapted to engage the inking and dampening form rolls 192 and 197, respectively, during passage of the platen segment 54 thereover so as to bias the rollers 192 and 197 out of engagement with the platen surface. In actual construction, the cam 251 engages suitable discs or the like, not shown, carried at the ends of the form rolls to prevent contact between the form rolls and the platen surface.

In use and operation of the machine, a printing plate is first applied to the plate segment 55 of the cylinder 48, after which the operator will turn the dampening on-off control lever (204) to on position and set the dampening flow selector (215) to approximately a midpoint. Thereafter, the inking control is turned on in much the same manner. When the machine operator moves the inking and dampening control handles to their on positions, the shafts or cam means 207 and 212, respectively, are rotated by their associated linkages to move the flatted portions of the respective shafts into alignment with the studs 194 and 199, respectively, carried by the frame work for the inking and dampening form rollers 192 and 197, respectively, so that the inking and dampening rollers are disposed for engagement with the plate carried on the plate surface 55. As pointed out hereinbefore, the half moon cam 251 will prevent engagement of the rollers 192 and 197 with the platen surface 54. Adjustment of the amount of inking and dampening, through the medium of the control handles, will result in operation of the control cams 222 and 229 to expose more or less of the surface of the ratchets 232 for engagement by the pawls 234 and 239, whereby a desired rotation of the fountain rolls 223 and 231, respectively, is established to effect the transfer of a determined amount of fluid to the respective form rolls 192 and 197, as has been described.

To stop operation, it is merely necessary to turn the ink and dampening solution on-off controls (204) off and to turn the switch 26 to its off position.

From the foregoing, it will be appreciated that the present invention affords novel and improved means for effecting and controlling the application of printing fluids to the printing plate. As will be apparent, the machine operator has selective control of inking and dampening within ready reach of his or her right hand and, during the complete operation of printing, is able to vary the inking and dampening at various times as may be required to produce good legible copy.

In view of the above, it will be appreciated that the present invention meets all of the specifications set forth hereinbefore and provides novel capabilities heretofore unattained in the art.

While a preferred embodiment of the invention has been described hereinbefore, it will be apparent to those skilled in the art that various changes, rearrangements and modifications may be made therein without departing from the scope of the invention, as defined by the appended claims.

What is claimed is:

1. In a systems printing machine, a housing, a printing plate member movably mounted in said housing, drive means for moving said plate member through a printing cycle, said housing including a feed table adjacent said plate member, means disposed in said housing remotely of said feed table for applying fluid to said plate member, said means including a fountain, a fountain roll at least partly immersed in said fountain, a form roll, a control instrumentality accommodating engagement of said form roll with said plate member and operable to move said form roll away from said plate member, a drive connection between said plate member and said fountain roll for imparting a controlled degree of rotation to said fountain roll during each cycle of movement of said plate member and a second control instrumentality interposed between said drive connection and said fountain roll for varying the degree of rotation imparted to said fountain roll during each cycle of movement of said plate member, a pair of control levers movably mounted on said housing and projecting to the exterior of said housing

adjacent said feed table, and independent linkage connections between one of said control instrumentalities and one of said control levers and between the other of said control instrumentalities and the other of said control levers, whereby the amount of fluid to be applied to said plate member may be adjusted directly from the feed table by adjustment of one lever, and whereby the fluid applying means may be turned off and on directly from the feed table by movement of the other lever irrespective of the adjustment of the one lever and without interfering with the adjustment of the one lever.

2. In a systems printing machine, a housing, printing members movably mounted in and defining a printing couple therebetween in said housing, said housing including a feed table adjacent said printing couple, said printing members including a movable plate surface, drive means for moving said plate surface through a printing cycle, a pair of means disposed in said housing remotely of said printing couple and said feed table for applying ink and dampening fluid respectively to said plate surface, said means each including a fountain, a fountain roll at least partly immersed in said fountain, a form roll and control means for each of said rolls, said housing including a hollow side frame, said control means being disposed in said side frame and each comprising a control instrumentality accommodating engagement of the respective form roll with said plate surface and operable to move said form roll away from said plate surface, a drive connection between said plate surface and the respective fountain roll for imparting a controlled degree of rotation to said fountain roll during each cycle of movement of said plate surface and a second control instrumentality interposed between said drive connection and said fountain roll for varying the degree of rotation imparted to said fountain roll during each cycle of movement of said plate surface, four control levers movably mounted in said hollow side frame and projecting to the exterior of said housing adjacent said feed table, and independent linkage connections between each of said control instrumentalities and one of said control levers.

3. In a systems printing machine, a housing, printing members movably mounted in and defining a printing couple therebetween in the upper region of said housing, said printing members including a plate surface movable from the upper to the lower regions of said housing, drive means for effecting such movement of said plate surface through a printing cycle, a pair of means disposed in the lower region of said housing for applying ink and dampening fluid respectively to said plate surface, said means each including a fountain, a fountain roll at least partly immersed in said fountain, a form roll, a control instrumentality accommodating engagement of said form roll with said plate surface and operable to move said form roll away from said plate surface, a drive connection between said plate surface and said fountain roll for imparting a controlled degree of rotation to said fountain roll during each cycle of movement of said plate surface and a second control instrumentality interposed between said drive connection and said fountain roll for varying the degree of rotation imparted to said fountain roll during each cycle of movement of said plate surface, said housing including a feed table adjacent said printing couple, four control levers movably mounted on said housing and projecting to the exterior of said housing adjacent said feed table, and an independent linkage connection between each of said control instrumentalities and one of said levers, whereby independent control of the amount of inking and dampening fluid applied to said plate surface is accommodated directly from the feed table, and whereby independent on-off control for inking and dampening is accommodated directly from the feed table without interfering with the adjustment of the amount of ink and dampening fluid to be applied.

4. In a systems printing machine, a housing, a plate and platen cylinder mounted for rotation in said housing, a blanket cylinder rotatably mounted in said housing above said plate and platen cylinder, said housing including a feed table adjacent the upper region of said plate and platen cylinder, means for applying ink and dampening fluid to the plate surface of said plate and platen cylinder, said ink and dampening fluid applying means each being located adjacent the lower region of said plate and platen cylinder and each comprising a fountain roll, a ductor roll, a distributing roll, a form roll, a fountain into which a portion of said fountain roll extends, said ductor roll being engageable with said fountain roll and said distributing roll, said distributing roll engaging said form roll, said form roll being engageable with said plate surface, a pivotally mounted carriage for said form and distributing rolls, said carriage being pivoted to move said form roll into and out of engagement with said plate surface, a rotatable shaft having a flatted surface, said carriage including a portion engaging said shaft, means for rotating said shaft to move the flatted surface thereof into and out of engagement with said portion of said carriage, means biasing said carriage into engagement with said shaft, said form roll engaging said plate surface when said portion of said carriage engages the flatted surface of said shaft and being moved away from said plate surface when said flatted surface is moved out of engagement with said portion of said carriage, said means for rotating said shaft including a crank arm on said shaft, a crank arm pivoted on said housing adjacent said feed table and a link pivotally connected at the opposite ends thereof to said crank arms, a ratchet surface on said fountain roll, a pawl engageable with said ratchet surface, a cam movably associated with said ratchet surface covering and exposing portions of said ratchet surface to prevent and accommodate, respectively, engagement of said pawl and said ratchet surface, drive means operatively connecting said plate and platen cylinder and said pawl for moving said pawl in sequence with the rotation of said plate surface to impart rotation to said fountain roll through said ratchet surface, means for adjusting said cam with respect to said ratchet surface including a crank arm connected to said cam, a crank arm pivoted on said housing adjacent said feed table and link and lever means extending between said crank arms, the last-named arm being movable to adjust said cam to vary the portion of said ratchet surface exposed for engagement by said pawl, whereby the amount of rotation imparted to said fountain roll is adjustable to vary the amount of fluid applied to said plate surface, and cam means carried by said plate and platen cylinder in coextensive relation to the platen surface thereof to engage and move the said form rolls of said ink and dampening fluid applying means away from said platen surface to prevent application of fluid to said platen surface, said crank arms pivoted on said housing adjacent said feed table each including a control handle projecting to the exterior of said housing adjacent said feed table to facilitate the performance of four independent control functions by the machine operator directly from the feed table, namely, on-off control of the dampening fluid, on-off control of the ink, adjustment of the amount of dampening fluid applied to said plate surface at each revolution thereof and adjustment of the amount of ink applied to said plate surface at each revolution thereof.

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