Jan. 28, 1947. R. R. ROCKHILL 2,415,038

BLOCK-IN MECHANISM FOR DUPLICATING MACHINES

Filed May 27, 1943 4 Sheets-Sheet 1

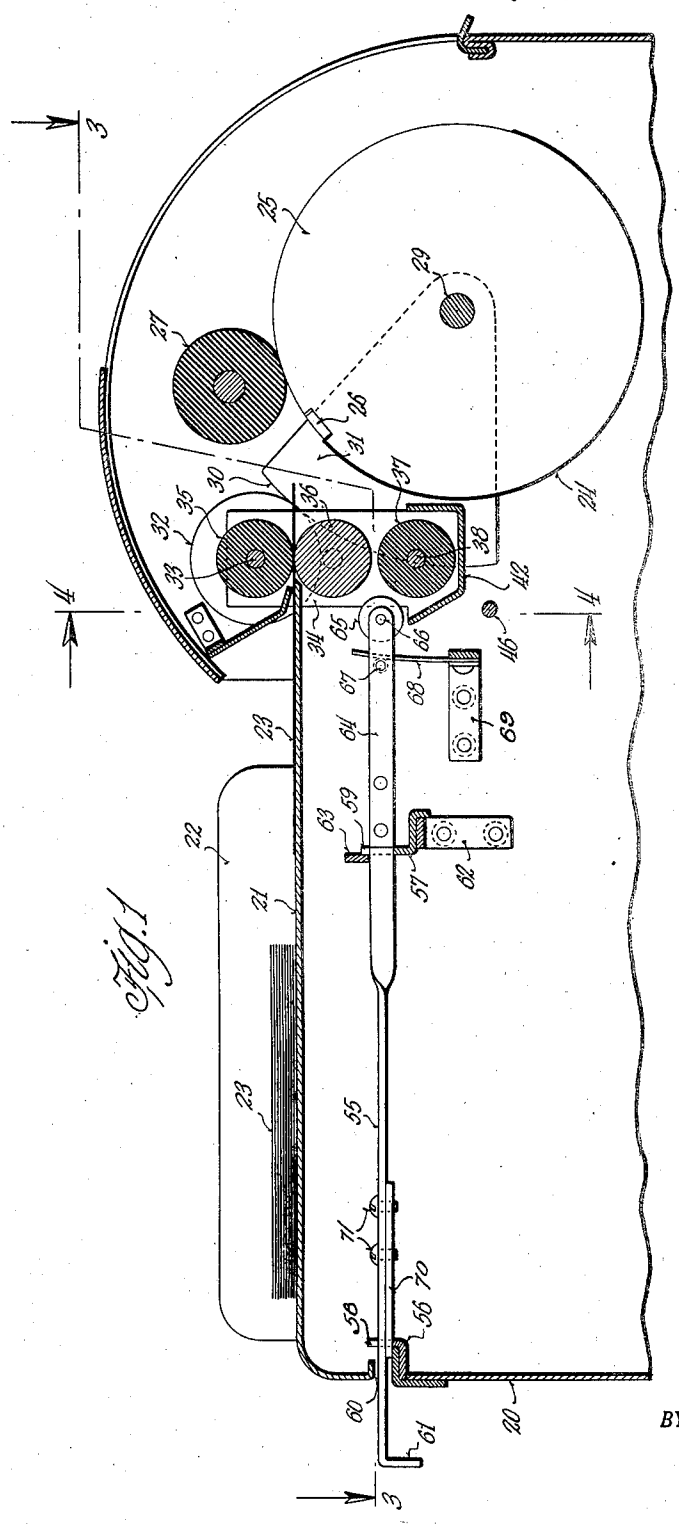


Fig. 1

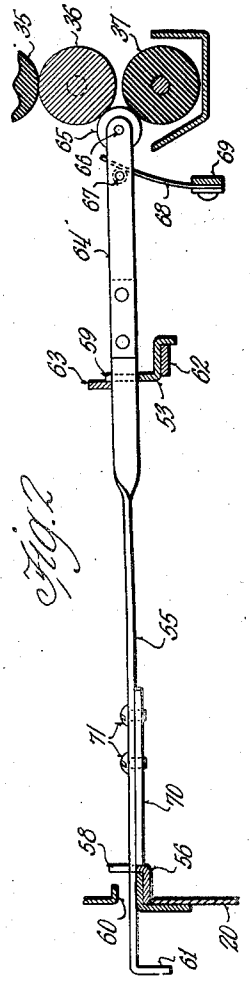


Fig. 2

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BLOCK-IN MECHANISM FOR DUPLICATING MACHINES

Filed May 27, 1943 4 Sheets-Sheet 2

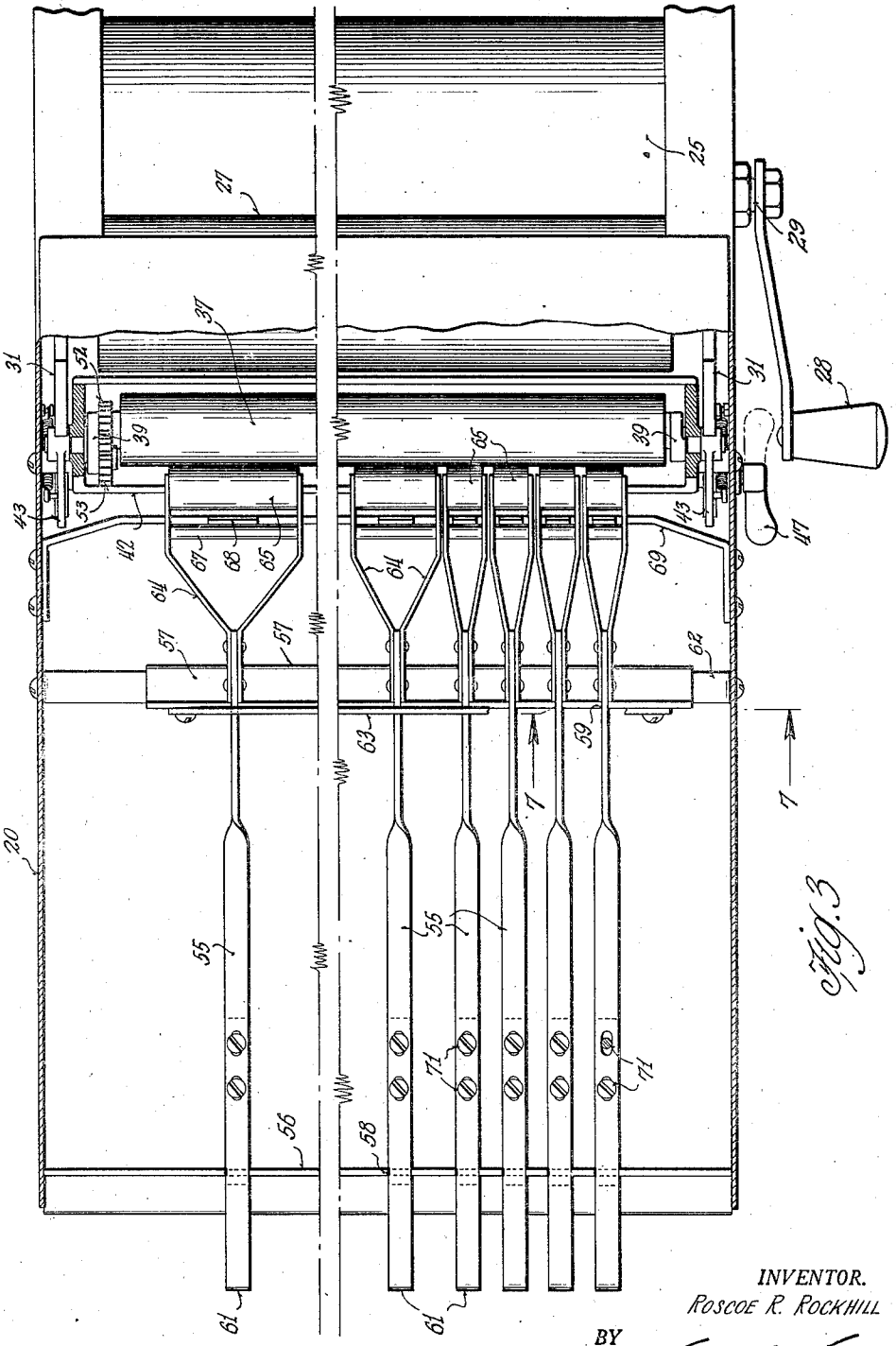


Fig. 3

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BLOCK-IN MECHANISM FOR DUPLICATING MACHINES

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Fig. 4

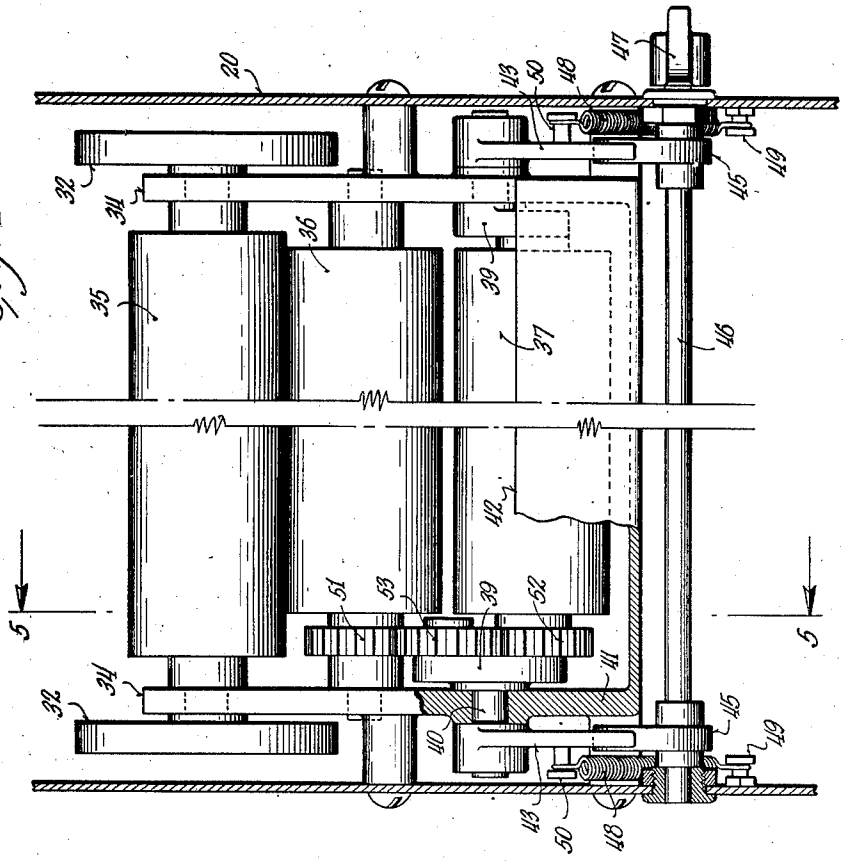


Fig. 5

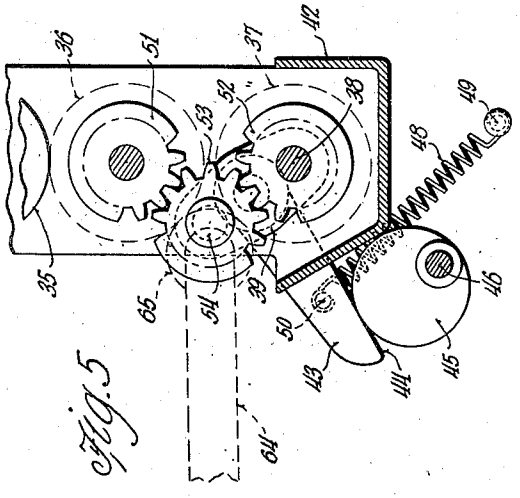
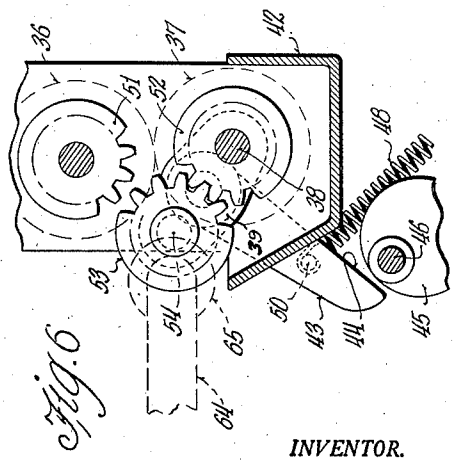


Fig. 6



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BLOCK-IN MECHANISM FOR DUPLICATING MACHINES

Filed May 27, 1943 4 Sheets-Sheet 4

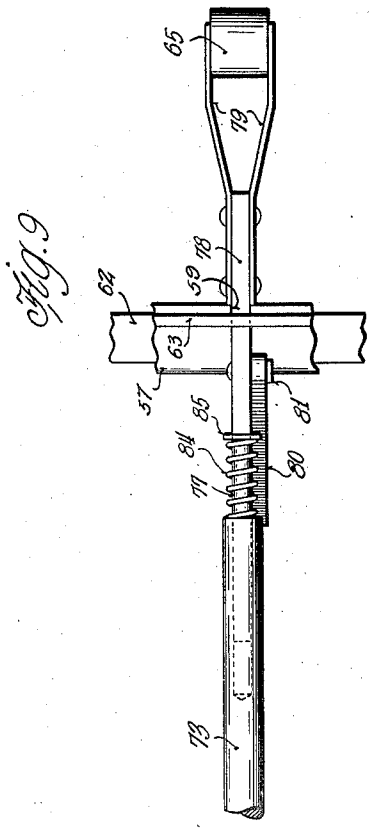


Fig. 9

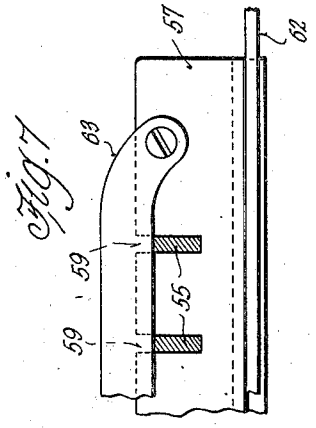


Fig. 7

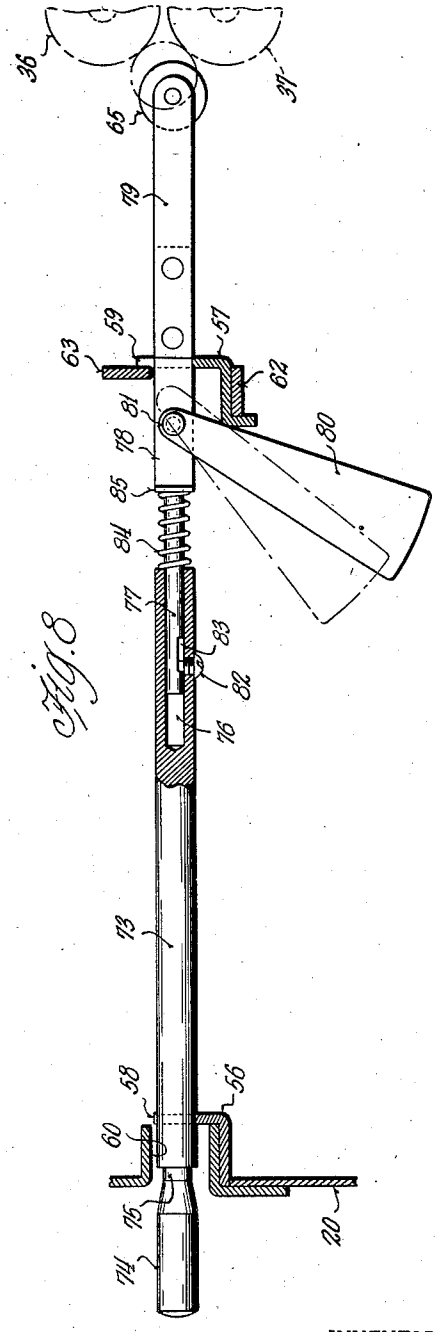


Fig. 8

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Patented Jan. 28, 1947

2,415,038

UNITED STATES PATENT OFFICE

2,415,038

BLOCK-IN MECHANISM FOR DUPLICATING MACHINES

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Application May 27, 1943, Serial No. 488,653

14 Claims. (Cl. 91—50)

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This invention relates to duplicating machines of the moistened roller type, and more particularly to a new and improved block-in mechanism therefor.

The primary object of the present invention resides in the provision in a duplicating machine of a new and improved block-in mechanism including a moveable transfer roller adapted to be selectively shifted into or out of cooperating relationship with a fluid and moistening roller to effect the transfer of liquid from the fluid roller to the moistening roller to insure the moistening of a selected portion of the moistening roller whereby a selected portion of a copy sheet may be moistened by being brought into pressure contact with the moistening roller to present a moistened surface to contact that portion of material contained on the master sheet to effect the blocking in of any selected portion of the material contained on the master sheet on the copies struck therefrom.

In general, the present invention partakes of the characteristics of applicant's copending patent application for Block-out mechanism for duplicating machine, filed November 19, 1941, under Serial No. 419,768; in so far as it provides a means for insuring the transfer of selected portions of material contained on a master sheet to copy sheets struck therefrom. In the above mentioned copending application, applicant effected the desired results by means of a squeegee or wiper element adapted to effect the removal of moisture from preselected portions of the moistening roller to preclude the moistening of a selected portion of a copy sheet whereby the cooperating portion of material contained on the master sheet is blocked out on copies struck thereform. In contradistinction to the above, applicant's present structure provides a method whereby moisture is applied only to the preselected portions of the moistening roller to effect the moistening of a selected portion of a copy sheet whereby the cooperating portion of material contained on the master sheet is blocked in on the copies made therefrom.

A further object of the present invention resides in the provision of a new and improved block-in mechanism including a plurality of independently operated transfer rollers adapted to be selectively manipulated in a manner to effect the moistening of preselected portions of the moistening roller with the result that moisture is delivered only to that portion of the copy sheet upon which the selected portion of material contained on the master sheet will be impressed when

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the copy sheet is brought into pressure contact with the master sheet in the process of producing the copy.

Another object of the invention resides in the provision of means for releasably retaining the individual transfer rollers in either operative or inoperative position with reference to the moistening roller.

A further object of the present invention resides in the provision in a duplicating machine of a plurality of separately controlled transfer rollers lying in side by side relationship so that by proper manipulation the individual rollers may be selectively actuated to be brought into contact with the surface of the moistening roller for the purpose of transferring moisture from a roller rotatably mounted in a bath of moistening liquid and applying the same to the surface of the moistening roller contacted by the transfer roller. By utilizing this method of applying moisture to the moistening roller it is possible, by proper manipulation of the individual transfer rollers, to select the desired lines of material contained on the master sheet to be transferred to copies made therefrom.

Another object of the present invention lies in the provision of new and improved means for rendering the block-in mechanisms operative or inoperative as a unit.

A further object resides in the provision of means for selectively positioning the roller rotatably mounted in a liquid bath either in contact with the moistening roller or in spaced relationship with the moistening roller. When the liquid bathed roller is positioned in contact with the moistening roller, the machine may be operated in the manner of a standard machine, wherein rotation of the duplicating drum will effect the moistening of the entire surface of the moistening roller with the result that all of the material contained on the master sheet will be transferred to copies struck therefrom. When the liquid bathed roller is in spaced relationship with the moistening roller selected portions of the material contained on the master sheet may be transferred to copies struck therefrom by the manipulation of the proper transfer rollers to effect the moistening of the selected portions of the moistening roller so that in the normal operation of the machine only those portions of the copy sheet that receive moisture from the moistened portions of the moistening roller will be capable of receiving an impression of the selected portion of the material contained on the master sheet.

Another object of the present invention resides in the provision of means operative to selectively change the machine from a standard machine to a special one capable of effecting the blocking in of any selected portion of material contained on a master sheet.

According to the present invention, a new and improved block-in mechanism has been provided for a duplicating machine of the moistened type, wherein selectively operable individual transfer means is provided to effect the application of moisture to selected portions of a moistening roller with the result that any number of lines or portions of material contained on a master sheet may be selectively transferred to a single or any number of copies struck from the master sheet. The particular advantage flowing from the use of a machine embodying the teaching of the present invention lies in the fact that a single complete master sheet may be utilized for the production of a plurality of copy sheets, each or any number of which may contain different selected portions of the material or data contained on the single master sheet. While the machine of the present invention partakes of the characteristics of a special machine, in so far as the individual requirements of separate business systems dictate, means is also provided for transferring the machine to standard form merely by shifting the position of the liquid bathed roller into pressure contact with the moistening roller.

Other objects and advantages of the present invention will become manifest from the following description of an illustrative embodiment of the present invention shown in the accompanying drawings.

In the drawings:

Figure 1 is a vertical longitudinal sectional view through a duplicating machine embodying the teachings of the present invention and showing the general structure and cooperating relationship between the block-in mechanism and the standard parts of the machine; with the block-in mechanism shown in inoperative position;

Fig. 2 is a fragmentary detailed sectional view showing the block-in mechanism in operative position wherein moisture is transferred from a liquid bathed roller to a portion of the moistening roller through pressure contact of a transfer roller disposed to cooperate with the liquid and moistening roller;

Fig. 3 is a fragmentary top plan view of a portion of the duplicating machine with portions broken away to more clearly dispose certain structural portions of the machine together with a showing of the relative position of the adjacent individual block-in mechanism; this view is taken substantially along the plane of line 3—3 of Fig. 1;

Fig. 4 is a vertical sectional view in enlarged scale taken transversely of the machine substantially along the plane of the line 4—4 of Fig. 1 and showing the relative positioning, driving and cooperating relationship between the fluid bathed roller, the moistening roller and the pressure feed roller;

Fig. 5 is a detailed sectional view taken on the line 5—5 of Fig. 4 and showing a driving means for effecting rotation of a liquid bathed roller when the block-in mechanism is utilized, this figure also shows suitable operating means in the form of a cam effective to establish driving relationship between the spaced moistening and liquid bathed rollers;

Fig. 6 is a view similar to Fig. 5 and showing the relative positioning of the liquid bathed and moistening rollers when they are in pressure contact with one another in the instance when the machine is utilized in standard form with the block-in mechanism in ineffective position wherein the entire surface of the moistening roller is moistened under the action of a fluid bathed roller;

Fig. 7 is a fragmentary detailed sectional view taken on the line 7—7 of Fig. 3 and showing the forward supporting means for the individual block-in mechanism;

Fig. 8 is an enlarged side elevational view of a block-in mechanism of modified form, the full line showing of which indicates its inoperative position and the dotted line showing indicating its operative position wherein the transfer roller is in pressure contact with the spaced liquid bathed and moistening roller; and

Fig. 9 is a top plan view of the forward end of the modified form of the block-in mechanism shown in Fig. 8.

The duplicating machine shown in the accompanying drawings comprises a body portion 20 composed of the usual side and end walls and including a copy sheet feed surface 21 provided with suitable sheet guide members 22, one of which is shown, that may be adjusted into proper relationship to align a stack of copy sheets 23 with a master sheet 24 releasably retained on a duplicating drum 25 in any approved manner such as by the operation of a clamping bar 26 embedded in the surface of the drum. An impression roller 27 preferably formed of resilient material is adjustably mounted in the usual manner to provide the necessary pressure contact between the individual copy sheets and the master sheet to produce copies of the material contained on the master sheet during the operation of the machine.

The machine shown in the accompanying drawings is hand operated by means of a crank handle 28 secured to the outer extremity of a drum shaft 29 suitably journaled in the side walls of the body portion 20 of the machine. As the drum 25 is rotated under the action of the handle 28, a roughened peripheral surface 30 of a cam member 31 secured to the shaft 29 engages a disc 32 preferably formed of resilient material, secured to a shaft 33 journaled in suitable bearing blocks 34 (one of which is shown). A pressure feed roller 35 preferably formed of resilient material is driven by the action of the disc 32 upon the shaft 33. A moistening roller 36 preferably formed of a hard material and having a polished surface is also journaled for free rotary movement in the bearing blocks 34. Any suitable means such as a coil spring (not shown) may be utilized to retain the rollers 35 and 36 in frictional driving contact. A roller 37, preferably formed of resilient material is carried by a shaft 38 that is journaled adjacent the free end of an arm 39 rockably mounted on a stub shaft 40 that extends through the end wall 41 of a fluid container 42. The fluid container 42 is so disposed around the roller 37 as to form a tank adapted to receive a sufficient amount of moistening liquid to partially submerge the roller 37 so that the same is rotated in a bath of moistening liquid. For the purpose of simplifying the description of the operation of this roller 37 it will hereinafter be termed the liquid roller due to the fact that it is constantly disposed in contact with the liquid in the container 42. The outer end of each stub shaft 40

that supports the arms 39 disposed at opposite ends of the liquid roller 37 each are provided with an arm 43 that extends outwardly and downwardly from the shaft 40 to which each is secured. Each arm 43 is provided with a surface 44 adapted to contact the peripheral surface of an eccentric or cam 45 secured to an operating shaft 46 journaled for rockable mounting in the side walls of the body portion 20 of the machine. An operating handle 47 is secured to one end of the shaft 46 to provide a simple and effective means for adjusting the position of the liquid roller 37 either into or out of contact with the moistening roller 36 in accordance with the instant use of the machine respectively, as a standard machine or a special machine utilizing the block-in mechanism forming a part of the present invention. A coil spring 48 provides a yieldable means for normally retaining the liquid roller 37 in pressure contact with the moistening roller 36 when the machine is used as a standard machine. It also serves to retain the arms 43 in pressure contact with the cams 45 when the liquid roller 37 is moved to a position out of contact with the surface of the moistening roller 36. The action of the individual coil springs 48 is obtained by connecting their respective ends to pins 49 secured in the walls of the body portion 20 and pins 50 secured in the arms 43.

With the liquid roller 37 in pressure contact with the moistening roller 36 it will readily be understood that the liquid roller 37 will be rotated under the action of a moistening roller 36 to effect the continuous delivery of moisture to the entire surface of the moistening roller 36 when the same is rotated under the action of the cam member 31 in the manner previously described. However, when the liquid roller 37 assumes its position out of contact with the moistening roller 36 means must be provided to effect its rotation. The means for effecting rotation of the liquid roller 37, when it is out of contact with the moistening roller 36 comprises a train of gears including, a gear 51 secured to the shaft on which the moistening roller 36 is fixed and a gear 52 mounted on the liquid roller shaft 38. A third gear 53 disposed in constant meshing engagement with the gear 52 is mounted on a pin 54 carried by the arm 39 which is movable under the action of the operating handle 47. When the handle 47 is in such position that the liquid roller 37 is out of contact with the moistening roller 36, the gear 53 will also mesh with the gear 51 to transmit rotary movement of the moistening roller 36 to the liquid roller 37 through the gears 51, 52 and 53. When the operating handle 47 is in such position that the liquid and moistening rollers 37 and 36 respectively are in pressure contact with each other, the gear 53 will be displaced to a position wherein it is out of mesh with the gear 51 and hence ineffective.

Referring to the structure comprising the block-in mechanism, it will be noted that each of the individual elements that cooperate to form the mechanism comprises a bar 55 supported for longitudinal movement toward and from the rollers 36 and 37. The several bars 55 are disposed in parallel relationship and are supported on a pair of spaced supporting elements 56 and 57 which are disposed transversely of the machine and are respectively provided with bar receiving slots 58 and 59 which serve to retain the bars 55 in proper spaced relationship. The outer or rear extremity of each bar 55 passes through a horizontally disposed slot 60 formed in the sheet

feed end wall of the body portion 20 of the machine. The outer extremity of each bar 55 is turned downwardly to provide a finger engaging surface 61 by which the bars may be individually manipulated. The supporting element 57 is mounted adjacent the inner end of the bars 55 and is secured upon a bracket 62 anchored in any suitable manner to the side walls of the machine. A retaining bar 63 provides a means for limiting the vertical displacement of the several bars 55 to insure the proper action of the block-in rollers against the moistening and liquid rollers 36 and 37. The retaining bar 63 is secured to the supporting element 57 in a manner to overlie the tops of the bars 55 to form a closure for the slots 59. A pair of spaced arms 64 secured adjacent the inner end of the bars 55 extend forwardly therefrom to form a fork adapted to provide a mounting means for a transfer roller 65 journaled for free rotation on a pin 66 secured adjacent the free ends of the arms 64. A spacing bar 67 also disposed between the arms 64 serves a dual purpose in that it provides a means for retaining the arms 64 in proper spaced relationship and it also provides an abutment against which the free end of a spring finger 68 may act to urge the transfer roller and bar 55 away from their inner or operating position. The spring finger 68 is secured to a supporting bracket 69 having its ends anchored in the side walls of the machine. Since the spring finger 68 normally tends to urge the operating bar 55 and transfer roller 65 into their inoperative position, latching means is provided to effect the releasable retention of the bar and transfer roller in their operative position. This latching means comprises the application of a bar 70 to the lower face of the bar 55 adjacent its manually operable end. The bar 70 is secured to the bar 55 by the application of cap screws 71 that extend through slots 72 formed in the bars 55 for the purpose of providing a means for adjusting the pressure of the transfer roller 65 against the liquid and moistening rollers 37 and 36 respectively when the block-in mechanism is in operative position. The outer end of the bar 70 is adapted to engage the forward bottom edge of the slot 58 formed in the supporting element 56 to releasably retain the bar 55 and transfer roller 65 in its forward or operating position. It will be noted from the showing in Fig. 2 that the retaining bar 63 serves to insure the proper operation of a latching bar 70 by reason of the fact that it precludes vertical displacement of the bar 55 lying within the slot 59. In order to release the latching engagement between the bar 70 and the bottom of the slot 58 it is necessary to lift the finger engaging surface 61 to raise the bar 55 to a position wherein the contact between the latching bar 70 and the bottom of the slot 58 is broken whereupon, the spring finger 68 will act to return the particular block-in element to its inactive position wherein the transfer roller 65 is free from contact with either the moistening roller 36 or the liquid roller 37.

In the event that the machine is to be used for blocking in selected portions of the material contained on a master sheet the operating handle 47 is moved to the position shown in Fig. 2 wherein the liquid roller 37 will lie in spaced relationship with the moistening roller 36 so that no surface contact will exist between the rollers 36 and 37 as indicated in Figs. 1, 2, 4 and 5 of the drawings. With the several rollers in the positions indicated in these figures, the machine

is in order to be used for the purpose of blocking in selected portions of material contained on the master sheet on copies struck therefrom. With the master sheet positioned on the duplicating drum 25 in any approved manner, the stack guide plates 22 may be positioned upon the copy sheet feed surface 21 of the machine in a manner to properly align a stack of copy sheets 23 with the master sheet 24 on the duplicating drum 25. With the machine set up in the above manner, the selected portions of the master sheet which are to be transferred to the copy or copies to be struck therefrom are selected. The individual block-in elements which are aligned with the selected material to be transferred to the copy sheets are then selected and the several operating bars 55 connected with the aligned elements are manually urged inwardly to their last position wherein the transfer roller 65 of each is urged into pressure contact with the surfaces of both the moistening roller 36 and the liquid roller 37. With the several selected block-in mechanisms latched in their operating positions the machine is ready to produce a single or any number of copies containing only the desired portions of the material or data appearing upon the complete master sheet. As the hand crank 28 is rotated in a clockwise direction, copy sheets 23 may be fed either manually or automatically into the bight between the pressure feed roller 35 and the moistening roller 36. As the duplicating drum 25 is rotated, the cam 31 effects rotation of the several rollers 35, 36 and 37 through the action of the driving disc 32 and the gear train composed of gears 51, 52 and 53. The roller 36 being in pressure contact with the roller 35 is frictionally driven therefrom, however, the gear train above mentioned is required to effect the rotation of the liquid roller 37 since its surface is in spaced relationship with the surface of the moistening roller 36. In the absence of pressure contact between the transfer roller 65 of any of the block-in mechanisms and the liquid roller 37 and moistening roller 36 of the moistening mechanism no liquid will be transferred from the liquid roller 37 to the moistening roller 36 and hence a copy sheet passing in pressure contact with the moistening roller will not receive any moisture which is essential to reproducing material contained on the master sheet.

In view of the above stated condition it will readily be apparent that the transferring of moisture from the liquid roller 37 to the moistening roller 36 may be definitely controlled by the manipulation of selected operating bars 55 to insure the delivery of moisture to only selected portions of the moistening roller 36 by the operation of the active transfer rollers 65 which serve, by reason of their pressure contact with both liquid and moistening rollers to transfer moisture from the liquid roller 37 to that portion of the moistening roller 36 which they contact during the course of rotation of the rollers 36 and 37. As indicated more particularly in Fig. 3 of the drawings it will be noted that the individual transfer rollers 65 of the several individual block-in mechanisms may be of selected widths dictated by the particular requirements of the business system being utilized in connection with the material contained on the master sheet. Obviously, the machine may be set up with any number of block-in elements of required widths and positioning to satisfy the needs on any chosen business system.

The extreme flexibility of the present block-in

mechanism can easily be appreciated with the realization that a single master sheet containing complete data or materials may be utilized for the production of a single or any number of copies containing any one or any number or combination of lines of material contained upon the complete master sheet. This change over from one set up to another requires only the manipulation of selected block-in elements to render their transfer roller 65 either operative to transfer moisture from the fluid roller 37 to the moistening roller 36 or to release the latched position of the individual block-in mechanism to render their transfer roller 65 incapable of transferring moisture from the liquid roller 37 to the moistening roller 36.

While the block-in method of operation of the machine above described would indicate the necessity of having a special machine capable of effecting this highly specialized manner of use, it will be noted that any desired number of adjacent elements may be manipulated to effect the operation of the machine substantially in the manner of a standard machine. To further the idea of combining in a single machine one capable of effecting both standard and highly specialized uses, applicant has provided a simple and effective means operative to effect instantaneous change over from one form to the other without requiring alteration of any of the operating mechanisms.

In the present machine, the liquid roller 37 is mounted in a manner to permit its being selectively moved into or out of surface contact with the moistening roller 36 merely by shifting the position of the operating handle 47 which is positioned on the side of the machine adjacent the crank handle 28 by which the machine proper is operated. With the operating handle 47 moved from the full line position shown in Fig. 3 to the dotted line position there indicated the liquid roller 37 will be moved from spaced relationship with the moistening roller 36 (as indicated in Fig. 5) in the surface contact therewith (as indicated in Fig. 6). With the rollers 36 and 37 in pressure contact, operation of the machine will effect the transfer of moisture from the liquid roller 37 to the entire surface of the moistening roller 36 to provide a machine of standard form. When the rollers 36 and 37 are in contact with each other, the block-in mechanism will be completely ineffective to alter the standard operation of the machine wherein all of the material contained on the master sheet will be transferred to copies struck therefrom. However, with the moistening roller 36 and liquid roller 37 positioned in spaced relationship by manipulation of the operating handle 47, the machine will be ineffective to transfer any material from the master sheet to the copy sheets except when one or more of the block-in mechanisms have been moved to their operative position wherein the transfer roller 65 will be effective to convey moisture from the liquid roller 37 to that portion of the moistening roller 36 which contacts the transfer roller 65.

A modified form of block-in mechanism is illustrated in Figs. 8 and 9 of the accompanying drawings. While the operation of this form of block-in mechanism is identical with that previously described it differs somewhat structurally therefrom. In the block-in mechanism previously described, the pressure for retaining the transfer roller 65 in contact with the spaced liquid and moistening rollers 37 and 36 was obtained

through a slight bending of the bar 55 adjusted by the proper positioning of the locking bar 70 upon the bar 55. Resilient means in the form of the spring finger 68 served to normally retain the transfer roller 65 out of contact with the rollers 36 and 37 when the particular block-in mechanism was not latched in operating position. The modified form of block-in mechanism, about to be described, differs structurally from the preceding form in that spring means is provided for adjusting the pressure on the transfer rollers 65 against the moistening and liquid rollers 36 and 37 and also in that gravity means is provided for normally retaining the transfer roller 65 out of contact with the rollers 36 and 37 when the block-in mechanism is not latched in operative position. The present block-in mechanism is supported for movement within the frame of the machine in the identical manner previously described, however, the operating bar 55 is replaced with a rod 73 provided with a manipulating handle 74 on its outer extremity and having a groove 75 adapted to cooperate with the bottom of the slot 58 formed in the supporting element 56 to effect latching of the block-in mechanism in its operating position. The rod 73 is provided with an axial bore 76 at its inner extremity adapted to receive a reduced end 77 of a bar 78 that is guided for longitudinal movement in a slot 59 formed in the supporting element 57. A pair of arms 79 are disposed on opposite sides of the bar 78 and attached thereto in any approved manner. The arms 79 are provided with aligned holes adjacent their free extremity adapted to receive the pin 66 upon which the transfer roller 65 is rotatably mounted. A counter weight 80 is pivotally mounted on a pin 81 carried by the bar 78 and disposed in such position that the counter weight normally acts against a portion of the supporting element 57 to normally urge the transfer roller 65 to its inactive position where it is free from contact with either the moistening roller 36 or the liquid roller 37. The reduced end 77 of the bar 78 is telescopically arranged for sliding movement within the bore 76 of the rod 73. Relative movement between the rod 73 and bar 78 is limited by the action of a set screw 82 extending through the side wall of the rod 73 and terminating within an axially disposed groove 83 formed in the reduced end of the rod 77. A coil spring 84 surrounding the reduced portion 77 of the bar 78 serves to normally retain the element 73 and 78 in extended position with respect to each other. The action of the coil spring is limited by contact of the set screw 82 with one end of the groove 83. As will be noted from the drawings, one end of the coil spring 84 abuts the extremity of the rod 73 while the other end thereof is adapted to contact a washer 85 surrounding the rod 77 and abutting the shoulder formed at the junction of the portion 77 with the body portion of the bar 78. Referring specifically to Fig. 8 it will be noted that the transfer roller 65 is retained out of contact with the rollers 36 and 37 under action of the counter weight 80 which normally acts to retain the block-in element in its inoperative position. When it is desired to move the block-in mechanism to its operative position wherein the transfer roller 65 is moved into pressure contact with the rollers 36 and 37, the handle portion 74 of the rod 73 may be pushed inwardly until such time as the groove 75 passes over the slot 58 formed in the supporting element 56. At this time the handle may be pushed downwardly to engage the face of the groove 75 with the bottom edge of the slot 58 to releasably retain the block-in mechanism in its operative position, wherein, the bar 78 has been urged forwardly under the action of the coil spring 84 to position the transfer roller 65 in contact with both the liquid roller 37 and moistening roller 36, the pressure contact of the transfer roller 65 being maintained under the action of the coil spring 84. Upon completion of the required number of copies of the material contained on the master sheet and lying in alignment with the particular block-in mechanism that has been operative, the block-in mechanism may be released by raising the handle portion 74 of the rod 73 to free the groove 75 from latching engagement with the bottom of the slot 58 formed in the supporting element 56. Upon release of the latching engagement that releasably retains the transfer roller 65 in contact with the liquid and moistening rollers 37 and 36, the counterweight 80 operating upon the supporting element 57 will effect the retraction of the entire block-in mechanism to a position wherein the transfer roller 65 is free from contact with both of the spaced liquid and moistening rollers 37 and 36.

From the foregoing description it will readily be understood that a new and improved duplicating machine has been provided whereby selected portions of the material contained on a master sheet may be selectively blocked in to be reproduced on copy sheets struck therefrom while the remainder of the material contained upon the master sheet will be completely omitted from these copies. The blocking in of preselected desired portions of the material contained on the master sheet is effected by manipulating the several selected block-in mechanisms to move them to operative position wherein they are effective to transfer moisture from a liquid roller to a moistening roller whereby portions of the copy sheet may receive the moisture necessary to effect the transfer of material contained on the master sheet to the copy sheet in the process of machine operation. In addition to providing a new and improved block-in mechanism for duplicating machines, applicant has provided a simple and effective means for combining the operating elements of the machine in a manner to selectively obtain the benefits of both a standard and special machine in a single installation.

While the invention has been described in considerable detail in the foregoing specifications, it is understood that various changes may be made in its embodiments without departing from or sacrificing any of the advantages hereinafter claimed.

I claim:

1. In a duplicating machine of the moistened roller type including copy sheet feeding and moistening rollers disposed in frictional driving relationship, the combination of a moistening roller, a liquid bathed roller rotatably mounted in spaced relationship with said moistening roller, driving means operative to effect rotation of said liquid bathed roller from said moistening roller, a block-in mechanism including a plurality of independently mounted movable transfer rollers, supporting means for said movable transfer rollers, means for normally retaining said individual transfer rollers out of contact with said moistening and liquid bathed rollers, operating means for selectively moving any of said transfer rollers into pressure contact with both said liquid bathed and moistening rollers to effect the

delivery and application of moisture to a selected portion or portions of said moistening roller whereby a block-in of a selected portion of material contained on the master sheet is effected when the moistened portion of the copy sheet contacts the master sheet.

2. In a duplicating machine of the moistened roller type including sheet feeding and moistening rollers disposed in frictional driving relationship, the combination of a moistening roller, a rotatably mounted liquid bathed roller positioned in spaced relationship with said moistening roller, driving means operative to effect rotation of said liquid bathed roller from said moistening roller, a block-in mechanism including a transfer roller supported for movement toward and from said spaced moistening and liquid bathed rollers, means for normally retaining said transfer roller out of contact with said moistening and liquid bathed rollers, and operating means for moving said transfer roller into pressure contact with said moistening and liquid bathed rollers wherein said transfer roller is effective to deliver moisture to a selected portion of said moistening roller whereby a block-in of a selected portion of the material contained on the master sheet is effected when the moistened portion of the copy sheet contacts the master sheet during the operation of the duplicating machine.

3. In a duplicating machine of the moistened roller type including copy sheet feeding and moistening rollers, the combination of a moistening roller, a movably mounted rotatable liquid bathed roller, means operative to selectively position said movable liquid bathed roller into or out of contact with said moistening roller, a block-in mechanism including a plurality of independently operable transfer rollers, and operating means for selectively moving individual transfer rollers into contact with both of said liquid bathed and moistening rollers when they are in spaced relationship to render selected transfer rollers effective to deliver moisture to selected portions of said moistening roller whereby a block-in of a selected portion of the material contained on the master sheet is effected when the moistened portion of the copy sheet contacts the master sheet.

4. In a duplicating machine of the moistened roller type including sheet feeding and moistening rollers positioned in frictional driving relationship, the combination of a moistening roller, a rotatably mounted liquid bathed roller positioned in spaced relationship with the surface of said moistening roller, a block-in mechanism including a plurality of independently supported movable transfer rollers, separate means for normally retaining each of said transfer rollers out of contact with the surfaces of said spaced moistening and liquid bathed rollers, manually operable means for moving any of said transfer rollers selectively into pressure contact with both said liquid bathed and moistening rollers, latching means for releasably retaining said rollers in active position wherein said transfer roller is effective to deliver moisture from said liquid bathed roller to selected portions of said moistening roller whereby a block-in of any selected portion or portions of the material contained on the master sheet is effected when the moistened portion of the copy sheet contacts the master sheet.

5. In a duplicating machine of the moistened roller type including sheet feeding and moistening rollers, the combination of a moistening roller, a rotatably mounted liquid bathed roller positioned in spaced relationship with said moistening roller, a block-in mechanism including a plurality of transfer rollers disposed in end to end relationship with each other and having their peripheral surfaces in spaced relationship with both of said liquid bathed and moistening rollers, and manually operable means effective to move said transfer rollers selectively into pressure contact with both said liquid bathed and moistening rollers whereby moisture may be transferred from said liquid bathed roller to said moistening roller through the operation of said selected transfer rollers to effect the blocking-in of desired material contained on a master sheet on copies struck therefrom.

6. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a liquid bathed roller rotatably mounted in spaced relationship with said moistening roller, a movable liquid carrying element disposed adjacent said moistening roller and said liquid bathed roller, guide and supporting means for said movable liquid carrying element, means operative to normally retain said liquid carrying element out of contact with both of said rollers, manually operable means for effecting movement of said liquid carrying element into pressure contact with said rollers to effect the application of moisture to a selected portion of said moistening roller, and latching means operative to releasably retain said liquid carrying element in pressure contact with said rollers.

7. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a liquid bathed roller rotatably mounted in spaced relationship with said moistening roller, a plurality of movable moisture carrying elements disposed in side by side relationship with each other and in spaced relationship with the surface of said moistening roller and said liquid bathed roller, and operating means associated with each of said moisture carrying elements for selectively effecting movement of its associated element into pressure contact with said moistening roller and said liquid bathed roller to effect the application of moisture to a selected portion of said moistening roller.

8. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a movable rotatably mounted transfer roller disposed adjacent said moistening roller, a liquid bathed roller rotatably mounted in spaced relationship with said moistening roller, means operative to effect movement of said transfer roller into pressure contact with said liquid bathed roller and said moistening roller whereby moisture may be transferred from said liquid bathed roller to said moistening roller through the operation of said transfer roller to effect the moistening of a selected portion of said moistening roller, latching means operative to releasably retain said transfer roller in pressure contact with said moistening and liquid bathed rollers, and spring means operable upon release of said latching means to effect withdrawal of said transfer roller from contact with said moistening and liquid bathed rollers.

9. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a plurality of rotatably mounted transfer rollers disposed in end to end relationship with each other and having their peripheral surfaces in spaced relationship with the

surface of said moistening roller, means for normally retaining each individual transfer roller out of contact with said moistening roller, a liquid bathed roller rotatably mounted in spaced relationship with said moistening roller and said transfer rollers, and operating means associated with each of said transfer rollers for selectively effecting movement of individual transfer rollers into pressure contact with the surfaces of both of said liquid bathed and moistening rollers whereby moisture may be transferred from said liquid bathed roller to said moistening roller through the operation of said transfer rollers that are in pressure contact with said liquid bathed and moistening rollers to effect the moistening of any selected portion or portions of said moistening roller.

10. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a plurality of movable moisture carrying transfer rollers disposed in end to end relationship with each other and in spaced relationship with the surface of said moistening roller, guide and supporting means for said moisture carrying transfer rollers, means operative to normally retain each of said transfer rollers out of contact with said moistening roller, manually operable means associated with each of said transfer rollers to effect movement of any selected transfer rollers into pressure contact with said moistening roller to render it operative to apply moisture to a selected portion of said moistening roller, and latching means operative to releasably retain said transfer roller in pressure contact with said moistening roller.

11. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a liquid bathed roller mounted in spaced relationship with said moistening roller, a plurality of movable rotatably mounted transfer rollers disposed in end to end relationship and positioned adjacent said moistening roller, a support for said movably mounted transfer rollers, and means operative to effect movement of selected transfer rollers into pressure contact with said moistening roller whereby moisture may be transferred to a selected portion of said moistening roller against which said selected transfer rollers are in pressure contact.

12. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a plurality of rotatable transfer rollers mounted in end to end relationship and having their peripheral surfaces disposed adjacent said moistening roller, guide and supporting means for said rotatable transfer rollers, means operative to normally retain said transfer rollers out of contact with said moistening roller, manually operable means for effecting movement of selected transfer rollers into pressure contact with the surface of a portion of said moistening roller, means for delivering moisture to said selected transfer rollers whereby the contacted portion of said moistening roller may be moistened, and latching means operative to releaseably retain said selected transfer rollers in pressure contact with said moistening roller.

13. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a plurality of rotatably mounted transfer rollers disposed in side by side relationship with each other and in spaced relationship with the surface of said moistening roller, means for normally retaining each individual transfer roller out of contact with said moistening roller, and operating means associated with each of said transfer rollers for selectively effecting movement of its associated transfer roller into pressure contact with said moistening roller to effect the application of moisture carried by said transfer roller to a selected portion of said moistening roller.

14. A block-in mechanism for duplicating machines of the moistened roller type comprising a moistening roller, a plurality of rotatably mounted movable transfer rollers disposed in side by side relationship with each other and having their surfaces in spaced relationship with the surface of said moistening roller, guide and supporting means for said transfer roller, means operative to normally retain each individual transfer roller out of contact with the surface of said moistening roller, manually operable means associated with each of said elements to effect movement of any selected transfer roller or rollers into pressure contact with the surface of said moistening roller, means for supplying liquid to the surface of each of said transfer rollers when they are in pressure contact with said moistening roller, and latching means operative to releasably retain the selected transfer roller or rollers in pressure contact with selected portions of said moistening roller whereby moisture is applied to only selected portions of said moistening roller under the action of the selected transfer roller or rollers.

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