ROTARY DUPLICATING MACHINE

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Application August 21, 1937, Serial No. 160,226

11 Claims. (Cl. 101—132.5)

The invention relates to duplicating machines and is particularly adapted to be embodied in duplicating machines of the type wherein the copy sheets are moistened with a solvent which will dissolve carbon or ink upon a master sheet; the method practiced to produce the copy sheets being such that each moistened copy sheet is brought into contact with the master sheet, whereupon the solvent dissolves part of the ink or carbon of the data on the master sheet and the dissolved ink or carbon is transferred to the copy sheet. The master sheets have the data to be duplicated, written or typewritten thereon in reverse so that when a portion of the carbon or ink is dissolved and transferred to the moistened surface of a copy sheet, it will appear in correct readable form.

One form of the invention is embodied in a duplicating machine which comprises a drum adapted to carry a master sheet having data printed or typewritten in reverse thereon. The master sheet is aperture and a second master sheet; the form of a relatively long strip is adapted to be advanced past said aperture in the first-mentioned master sheet in a step by step manner so that the data on the second master sheet may be different each time a copy sheet is applied to the two master sheets. With this construction, the first master sheet may be a letter and the second master sheet may carry a plurality of addresses so that a different address may be imparted upon each copy sheet.

An object of the invention is to provide improved means for holding the first-mentioned master sheet and for guiding the second-mentioned master sheet.

Other objects and advantages will become apparent as the following detailed description progresses, reference being had to the accompanying drawings, wherein—

Fig. 1 is a side elevation of a duplicating machine which embodies the invention.

Fig. 2 is a plan view of the improved machine.

Fig. 3 is a fragmentary vertical longitudinal section taken on line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary section taken on the same line as Fig. 3.

Fig. 5 is a view of a master sheet adapted to be employed in the improved machine.

Fig. 6 is a view of a second master sheet adapted to co-operate with the master sheet shown in Fig. 5, and

Fig. 7 is a perspective view of a clip which is employed in the improved machine to secure the master sheet shown in Fig. 5 in the machine.

While the invention has been disclosed in a duplicating machine of the type wherein the copy sheets are moistened with solvent for the ink or carbon which is to be transferred to the copy sheets, it will be understood that the invention is limited to such use only to the extent indicated in the appended claims.

Referring to the drawings wherein a preferred embodiment of the invention is disclosed, the reference character 10 designates generally a frame which comprises side frames 11 and 12.

Rotatably journalled in the side frames 11 and 12 is a shaft 13 with which a duplicating drum or cylinder 14 is constrained to rotate. It will be noted that the duplicating drum 14 comprises an arcuate platen member 15 which, in this instance, is less than 180 degrees in angular length with respect to the axis of rotation of the drum. It will be noted that the drum 14 is open at its side except for the arcuate platen member 15, the platen member 15 being carried by end walls 16 of the drum. Constrained to rotate with the shaft 13 is a gear 18 which meshes with a pinion 19 fixed to a shaft 20 which is journalled in the side frame 12. At its outer end, the shaft 20 is provided with a crank lever 21 whereby the operator may rotate the pinion 19 and thus rotate the gear 18 so that the drum 14 will rotate. Meshing with the gear 18 is a gear 22 rotatably journalled on a stub shaft 23 mounted in the frame 10. The gear 22 meshes with a gear 25 rotatably journalled on a stub shaft 26 mounted in the frame 10. Meshing with the gear 25 is a pinion 28 constrained to rotate with a shaft 29 which has its ends rotatably journalled in the side frames 11 and 12. The shaft 28 has mounted thereon a roller 30 which co-operates with a second roller 31 to advance copy sheets toward the drum 14, the roller 31 being driven through its frictional engagement with the roller 30. Co-operating with the platen 15 is a platen roller 33 mounted on a shaft 34 which has its ends rotatably journalled in the free ends of the levers 35, 45 the levers being pivoted upon a shaft 36 mounted in the frame 10. Means is provided for bringing the platen roller 33 into an adjusted position with respect to the platen 15. This means comprises links 38, each of which has one of its ends pivoted to one of the levers 35 by a pin 39. The other end of each link 38 extends through an aperture 40 in one of two brackets 41. Each bracket 41 has one end pivoted to the frame 10 by a pin 44. Nuts 43 screw-threaded upon the last mentioned
ends of the links 38 may be manipulated to displace the roller 33 toward or away from the drum 14. Engaging the free ends of the brackets 41 are eccentrics 46 constrained to rotate with a shaft 47, which, at its outer end, is provided with a hand lever 48. When the lever 48 is rotated the roller 33 will be noted that angular displacement of the lever 48 is limited in a counterclockwise direction (Fig. 1) by a stop pin 50 which projects from the side frame 12.

It will be readily understood that when the improved machine is in operation and the drum 14 is being rotated, the platen 15, or anything carried on its outer surface, will bear against the platen roller 33 and tend to displace the roller 33 in a counter-clockwise direction (Fig. 1) around the shaft 36. It may be mentioned that the roller 33 is preferably formed from a yieldable material such as rubber and therefore may be compressed to some extent by the platen 15 or the material carried thereon. If it is desired to have the platen roller bear with greater force against a master sheet mounted on the platen 15, the nuts 43 may be manipulated to draw the links 38 to the right (Fig. 1) and if it is desired to have the platen roller bear with less force against the master sheet mounted on the platen 15, the nuts 43 may be manipulated to have the links 38 free to move to the left (Fig. 1).

The lever 48 is shown against the stop 50, in which position it holds the shaft 47 in a position wherein the eccentrics 46 have exerted their maximum throw against the free ends of the brackets 41. It will be readily understood that if the lever 48 is displaced in a clockwise direction (Fig. 1), the eccentrics 46 will rotate into positions wherein they will not exert their maximum throw upon the brackets 41 and the brackets 41 will be free to move a short angular distance in a clockwise direction (Fig. 1) around the pins 44 and the roller 33 will then exert less force upon the master sheet mounted upon the platen 15. In practice, the nuts 43 may be adjusted to bring the roller 33 into the desired position when the lever 48 is in an intermediate position so that thereafter the operator may vary the position of the roller 33 toward or away from the drum 14 by angularly displacing the lever 48 in a counter-clockwise direction or clockwise direction, respectively (Fig. 1).

As best shown in Fig. 3, the solvent for moistening the copy sheets, which will dissolve the ink or carbon on the master sheet, is preferably applied to the copy sheets by a felt strip 52 which is supplied with the solvent from a receptacle 53. A valve 54 is provided with a handle 55, controls the flow of solvent from the receptacle 53. When the valve 54 is opened, the solvent drops down upon one marginal portion of the felt strip 52 and then passes through the felt strip to another marginal portion thereof disposed adjacent the platen roller 33. The latter portion of the felt strip 52 projects from beneath an L-shaped member 57 formed integral with bracket members 57 which are pivoted to the side frames 11 and 12 by pins 56. The felt strip 52 is supported upon a sheet metal plate 60 carried by the brackets 57 and projecting upwardly from the plate 60 and from the brackets 57 is a plate 62, to the upper end of which plate 62 the receptacle 53 is secured. It will be noted that the felt strip 52, the brackets 57, the plates 60 and 62 and the receptacle 53 can all be oscillated as a unit around the coincident axes of the pins 56.

Rigidly secured to one of the brackets 57 is an arm 65 which carries a roller 66 engageable with a cam 67 constrained to rotate with the shaft 13. The construction of the cam 67 is such that once during each revolution of the drum 14, the cam 67 engages the roller 66 and acting through the arm 65 may be rotated together with the other apparatus pivoted by the pins 58, in a counter-clockwise direction (Figs. 1 and 3) around the pins 58 so that the portion of the strip 52 adjacent the roller 33 is lifted or displaced in a direction away from the roller 33.

Normally, this portion of the felt strip 52 rests upon one end of a plate 70, which end of the plate 70 is disposed between the felt strip 52 and the roller 33. The other end of the plate 70 is adjacent the bight of the rollers 30 and 31.

The frame 68 carries a feed table 72 upon which a stack of copy sheets may be placed and advanced one by one to the feed rollers 30 and 31. A copy sheet is shown at 73 with its leading edge at the bight of the rollers 30 and 31. When the machine is set in operation and the rollers 30 and 31 begin to draw the copy sheet over the table 70 to be engaged by the platen roller 33 and a master sheet disposed over the outer surface of the platen 15, and such copy sheet will be advanced between the platen roller 33 and the platen 15 and discharged into an empty tray 75 mounted in the frame 68 as the leading end of each copy sheet advances across the plate 70, the roller 66 is engaged by the cam 67 and the felt strip 52 is lifted so that the leading edge of the copy sheet may pass freely beneath the felt strip 52. However, as soon as the leading edge has been engaged by the platen roller 33 and the master sheet upon the platen 15 so that these members will continue advancing the copy sheet, the cam 67 passes from beneath the roller 66 and the felt strip 52 is lowered to contact the copy sheet and apply the solvent thereto. It will be readily understood that only a small portion at the leading end of each copy sheet will remain unmoistened. Obviously, no attempt is made in practice to have the master sheet imprint data upon the unmoistened ends of the copy sheet.

A master sheet is shown at 80 in Figs. 2, 3, 4 and 5. Referring to Fig. 5, it will be noted that the master sheet 80 is provided with a relatively large rectangular aperture 81 intermediate its upper and lower ends. At its upper end, the master sheet 80 is provided with a slot 82 and at its lower end it is provided with a slot 83. It will also be noted that the slots 82 are aligned with the aperture 81 and are of substantially the same length. The master sheet 80 has printed thereon with ink or carbon, data 84 in reverse, which data may be the body portion of a letter, or the equivalent. Obviously, when the data 84 is moistened with a solvent and a copy sheet is pressed against the data, a portion of the ink or carbon will be transferred to the copy sheet so that a duplicate of the master sheet will be made. However, the data on the copy sheet will not be in reverse 85 as on the master sheet.

A second master sheet 85 is shown in Fig. 6. The master sheet 85 is relatively narrow and is preferably of a width somewhat less than the length of the slots 82 and 83 and the length 70 of the aperture 81, the master sheet 85 being adapted to be threaded through the slots 82 and 83 in such manner that it may be drawn along that surface of the master sheet 80 opposite to that bearing the data 84. In this in-
... the master sheet 85 is provided with a plurality of addresses 87, 88 and 89 which are printed or typewritten upon the master sheet in reverse, preferably with the same ink or carbon employed in printing the data 84 upon the master sheet 80.

It will be noted that adjacent to one end of the platen 85, which end is designated by the reference numeral 90, there is a shaft 91 rotatably journaled in the end walls 16 of the drum 14. Secured to the shaft 91 is a plate 82 which has its free end disposed adjacent the end 90 of the platen 15 (Fig. 4). The construction is such that one end of the master sheet 85 may be folded over the end 90 of the platen 15 and the folded end may be clamped to the inner surface of the platen 15 by the free end of the plate 92. The master sheet 80 may then be trained over the outer surface of the platen 15 and may have its other end folded over the other end of the platen and attached thereto by means of a U-shaped clip 95 which is formed from sheet metal and is preferably from sheet metal having some spring in it so that the clip will clamp the last-mentioned end of the master sheet 85 to the platen 15. The clip 95 is provided with a slot 96 of substantially the same length as the slots 82 and 83, the slot 96 being aligned with the slots 82 and 83. In practice, the master sheet 85, which is in the form of a long strip of paper, or the equivalent, is threaded through the slots 96, 82 and 83 in such manner that a portion of it is disposed between the outer surface of the platen 15 and that portion of the master sheet 85 lying between the slots 82 and 83. It will be noted from Fig. 3 that the slots 82 and 83 are disposed in the master sheet 80 that they lie in the edges of the folded portions of the master sheet at the two ends of the platen 15.

One end of the master sheet 85 is wound in a roll upon a spindle 100 which is journaled by pins mounted in the lower ends of brackets 101 rigidly secured to the inner surfaces of the end discs or plates 16 of the drum 14. The other end of the master sheet 85 is wound upon a spindle 104 which has its ends mounted upon pins mounted, in turn, in the upper ends of the brackets 101. Intermediate the end 90 of the platen 15 and the spindle 104, the master sheet 85 is trained over a roller 106 and is also trained between the roller 106 and a roller 107. The roller 106 is mounted upon a shaft 108 which has its ends rotatably journaled in the end discs or plates 16. A pulley 110 with which the shaft 108 and the roller 106 are constrained to rotate, is connected operatively by a belt 111 to a pulley 112 mounted upon one of the pins which support the spindle 104. This pin is shown at 115 in Fig. 2, and by dotted lines in Fig. 3. The spindle 104 is constrained to rotate with the pin 115 and the pin is constrained to rotate with the pulley 112.

At one end, the shaft 108 is provided with a pinion 116 adapted to engage a short gear segment 117 rigidly secured to the side frame 12 (Figs. 1 and 2), the construction being such that each time the drum 14 is rotated through a complete revolution, the pinion 116 will engage the gear segment 117 and will be rotated by it in a counterclockwise direction (Fig. 1) so that the shaft 108 and the roller 106 will be rotated in a counterclockwise direction (Figs. 3 and 4) and the roller 106 will co-operate with the roller 107 to advance the master sheet 85 toward the spindle 104. It is understood, of course that a portion of the master sheet 85 is simultaneously unwound from the spindle 104.

The means for causing the plate 92 to clamp one end of the master sheet 80 against the end 90 of the platen 15 comprises a lever 120 which has one end secured to one end of the shaft 91. One end of a tension spring 121 is secured to the free end of the lever 120, the other end of the spring 121 being secured to a pin 122 projecting from the side frame 11. The spring yieldingly urges the lever 120 and the plate 92 in a clockwise direction (Fig. 4) to perform its clamping operation. When it is desired to remove the master sheet 80 from the drum 14, the operator displaces the lever 120 in a counterclockwise direction (Fig. 4) against the action of the spring 121 so that the plate 92 is disengaged from the master sheet 80.

The roller 107 is mounted upon a shaft 125 which has its ends journaled in levers 126 mounted upon hubs 127 formed integral with the end discs or plates 16 (Fig. 3). Attached to each of the levers 126 is one end of a plurality of springs 128, the other ends of the springs 128 being secured to pins 129 extending from the end discs or plates 16. The springs 128 tend to rotate the levers 126 in a clockwise direction (Fig. 3) around the shaft 123 so as to urge the roller 107 towards the roller 106. This construction ensures that the roller 106 will engage the master sheet 85 in such manner that when the roller 106 is rotated in the manner described above, the master sheet 85 will be advanced.

The operation of the above described apparatus is substantially as follows: If it is assumed that the master sheet 85 has been secured on the platen 15 by the plate 92 and that the master sheet 80, it will be readily understood that a small portion of the master sheet 85 will be exposed through the aperture 81 in the master sheet 80. It will be further understood that each time the master sheet 85 is advanced toward the spindle 104, another portion of the master sheet 85 will be exposed through the aperture 81. Obviously, the master sheet 85 will be advanced over the platen 15 in a step by step manner, the construction being such that each time the drum 14 is rotated through a complete revolution, the pinion 110 and the gear segment 117 will co-operate to rotate the roller 106 and it will pull the master sheet 85 a short distance toward the spindle 104. The spindle 104 is driven by the belt 111 and the pulley 112 and the advanced portion of the master sheet 85 will be wound upon the spindle 104. There will be sufficient slip between the belt 111 and the pulley 112 to compensate for the increase in diameter of the roll of the master sheet 85 being formed upon the spindle 104. Now if it is assumed that the data 84 on the master sheet 80 is a letter, or the equivalent, and that the data on the master sheet 85 are a plurality of addresses 87, 88 and 89, it will be readily understood that the master sheet may be brought into an adjusted position so that the first of these addresses will be exposed in the aperture 81 when the machine is to be operated. It will also be understood that the addresses may be spaced in such manner that each time the master sheet 85 is...
advanced, a new address will appear in the aperture 81. Now if the master sheet 85 has been advanced a new address has been brought into its proper position with respect to the platen roller 33, the operator may advance a copy sheet 73 to the rollers 30 and 31 and then operate the machine by the crank lever 21, whereupon, the feed rollers 30 and 31 will advance the copy sheet 73 so that it will be engaged by the roller 33 and the portion of the master sheet 80 which is clamped to the end 90 of the platen 15. The master sheet 80 and the roller 33 will then operate to advance the copy sheet between them. As described above, the felt strip 52 was raised momentarily while the leading edge of the copy sheet passed beneath it, but it is lowered into contact with the copy sheet as soon as the master sheet 80 co-operates with the roller 33 to advance the copy sheet. The upper surface of the copy sheet is then moistened with the solvent and as it comes into contact with the data on the master sheet 80 and the address exposed in the aperture 81, the data and the address will be duplicated upon the copy sheet in correct readable form. The copy sheet is discharged into the tray 75. After the address was copied on the copy sheet, the pinion 116 engaged the gear segment 117 and advanced the copy sheet 85 the required distance to have the following address appear in the aperture 81 so that during the next cycle of operations, the following address will appear on the next copy sheet.

It should be mentioned that the drum 14 is rotated in a counter-clockwise direction (Fig. 3) so that the end 90 of the platen 15 is the leading edge of the platen. Intermediate the spindle 100 and the trailing edge of the platen, is a roller 140 which has its ends rotatably journaled in the end discs or plates 14. The copy sheet 85 is trained over the roller 140 so that it will readily enter the slot 96 in the clip 86. Obviously, the master sheet 85 can be termed a master strip 85 and it is obvious that a relatively large number of addresses, such as the addresses 87, 88 and 89 may be printed thereon in reverse. This will permit one to produce a relatively large number of letters having different addresses thereon.

To register the drum 14 in its correct position with respect to the roller 33 at the beginning of a cycle of operations, a mark (not shown) may be made upon the drum including the pinion 114, which may be registered with another mark or pointer (not shown) made on or projecting from the frame 10.

As best shown in Figures 1 and 2, a second gear segment 117a is pivotally mounted upon the said frame 12 by a pin 117b. In Figure 2 the gear segment 117a is shown in a functionally inoperative position, but it will be understood that it may be displaced into the position wherein it is shown in dotted lines in Figure 2. When the gear segment 117a is in the position wherein it is shown in dotted lines in Figure 2, the gear segment 117a co-operates with the gear segment 117 so that the pinion 116 is rotated by the segments each time the drum 14 makes a complete revolution. The angular distance through which the pinion 116 is rotated by the gear segments 117 and 117a is larger obviously than the distance through which the pinion is rotated when the gear segment 117 acts alone upon the pinion. It will be readily understood that the master sheet 80 will then be displaced through a greater distance, and it is obvious that additional data may be printed upon the master sheet 80 and will be transferred to the copy sheets.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelties inherent in my invention as broadly as permissible, in view of the prior art.

I claim:
1. In a duplicating machine, a frame, a duplicating drum rotatably journaled in the frame, said duplicating drum including an arcuate platen, means for clamping one end of an apertured master sheet to one end of said platen, an apertured U-shaped member for securing the other end of said master sheet to the other end of said platen, a pair of spindles rotatably journaled in said drum whereby a second master sheet in strip-like form may be trained from one of said spindles to lie between said platen and the first-mentioned master sheet and thence through the aperture in said U-shaped member to the other spindle, said second master passing beneath the end of the master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet, means for rotating said duplicating drum, a pinion with which one of said spindles is constrained to rotate and a gear segment on said frame and engageable with said pinion to rotate it once during each revolution of said duplicating drum whereby said second master sheet is advanced a predetermined distance on said arcuate platen each time the duplicating drum makes a complete revolution.
2. In a duplicating machine, a frame, a duplicating drum rotatably journaled in the frame, said frame including a drum including an arcuate platen, means for clamping one end of a master sheet to one end of said platen, an apertured U-shaped member for securing the other end of said master sheet to the other end of said platen, means for rotating said duplicating drum, a pinion with which one of said spindles is constrained to rotate and a gear segment on said frame and engageable with said pinion to rotate it once during each revolution of said duplicating drum whereby said second master sheet is advanced a predetermined distance on said arcuate platen each time the duplicating drum makes a complete revolution.

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time the duplicating drum makes a complete revolution.

3. In a duplicating machine, a frame, a duplicating drum rotatably journaled in the frame, said duplicating drum including an arcuate platen, means for clamping one end of an apertured master sheet to one end of said platen, an apertured U-shaped member for securing the other end of said master sheet to the other end of said platen, a pair of spindles rotatably journaled in said drum whereby a second master sheet in strip-like form may be clamped between said platen and the first-mentioned master sheet and hence through the aperture in said U-shaped member to the other spindle, said second master passing beneath the aperture in the first-mentioned master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet and hence through the aperture in said U-shaped member to the other spindle, said second master sheet passing through two apertures in the first-mentioned master sheet and beneath the third aperture in the first-mentioned master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, and a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet.

4. In a duplicating machine, a frame, a duplicating drum rotatably journaled in the frame, said duplicating drum including an arcuate platen, means for clamping one end of a master sheet to one end of said platen, an apertured U-shaped member for securing the other end of said master sheet to said platen, said master sheet having three apertures therein, a pair of spindles rotatably journaled in said drum whereby a second master sheet in strip-like form may be clamped between said platen and a portion of the first-mentioned master sheet and hence through the aperture in said U-shaped member to the other spindle, said second master passing between two apertures in the first-mentioned master sheet and beneath the third aperture in the first-mentioned master sheet, means for advancing copy sheets to the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet, means for applying a solvent to said copy sheets, a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet and hence through the aperture in said U-shaped member to the other spindle, said second master passing through two apertures in the first-mentioned master sheet and beneath the third aperture in the first-mentioned master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, and a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet.

5. In a duplicating machine, a frame, a rotatably journaled, said duplicating drum including an arcuate platen, means for clamping one end of an apertured master sheet to one end of said platen, an apertured U-shaped member for securing the other end of said master sheet to the other end of said platen, a pair of spindles rotatably journaled in said drum whereby a second master sheet in strip-like form may be clamped between said platen and the first-mentioned master sheet and hence through the aperture in said U-shaped member to the other spindle, said second master passing beneath the aperture in the first-mentioned master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, and a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the aperture in the first-mentioned master sheet.
master sheet appearing through the last-mentioned aperture in the first-mentioned master sheet, and means for rotating said duplicating drum.

9. In a duplicating machine, a frame, a duplicating drum rotatably journaled in the frame, said duplicating drum including an arcuate platen, means for securing a master sheet to said platen, said master sheet having three apertures therein, a pair of spindles rotatably journaled in said drum whereby a second master sheet in strip-like form may be trained from one of said spindles to lie between said platen and a portion of the first-mentioned master sheet and thence to the other spindle, said second master passing through two apertures in the first-mentioned master and beneath the third aperture in the first-mentioned master sheet, means for advancing copy sheets to said duplicating drum, means for applying a solvent to said copy sheets, a platen roller for pressing said copy sheets against the first-mentioned master sheet and that part of the second master sheet appearing through the third aperture in the first-mentioned master sheet, means for rotating one of said spindles each time the drum makes a complete revolution whereby said second master sheet is advanced a predetermined distance relative to the first-mentioned master sheet, and a second means movable into a position to co-operate with said means for rotating one of said spindles to rotate said spindle through an additional angular distance.

10. In a duplicating machine, the combination of a frame, a drum rotatably mounted on said frame, means for releasably securing on said drum a flexible form member extending only partially about the drum and having an opening therethrough at an intermediate point therealong, means for movably mounting a flexible form strip on the face of said drum underneath said first-named form member so as to be movable circumferentially of the drum underneath said opening in the first-named form member and between said first-named form member and the face of the drum, means for rotating said drum, means for giving said form strip a sliding movement about a portion of the face of the drum upon each revolution of the drum for shifting the strip with respect to said first-named form member, and means for causing a copy sheet to be brought into operative duplicating relationship with said form member and with the portion of said form strip exposed through said opening as said drum rotates.

11. In a duplicating machine, the combination of a frame, a drum rotatably mounted on said frame, means for releasably securing on said drum a flexible master sheet extending only partially about the drum with its end portions turned into reverse position about the wall of the drum and having an opening therethrough at an intermediate point therealong and other openings therethrough at the points where the end portions are turned back, means for movably mounting a second flexible master sheet in the form of a strip on the face of said drum underneath said first-named master sheet and extending through said second-named openings so as to be movable circumferentially of the drum underneath said first-named opening in the first-named master sheet, means for rotating said drum, means for giving said second master sheet a longitudinal movement with respect to the drum upon each revolution of the drum, means for pressing a copy sheet into face engagement with said first-named master sheet and with the portion of the second master sheet exposed through said opening as said drum rotates, and means for applying a solvent to said copy sheets in advance of their engagement with said master sheet for enabling the sheets to take copies from said master sheet.

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