

March 15, 1955

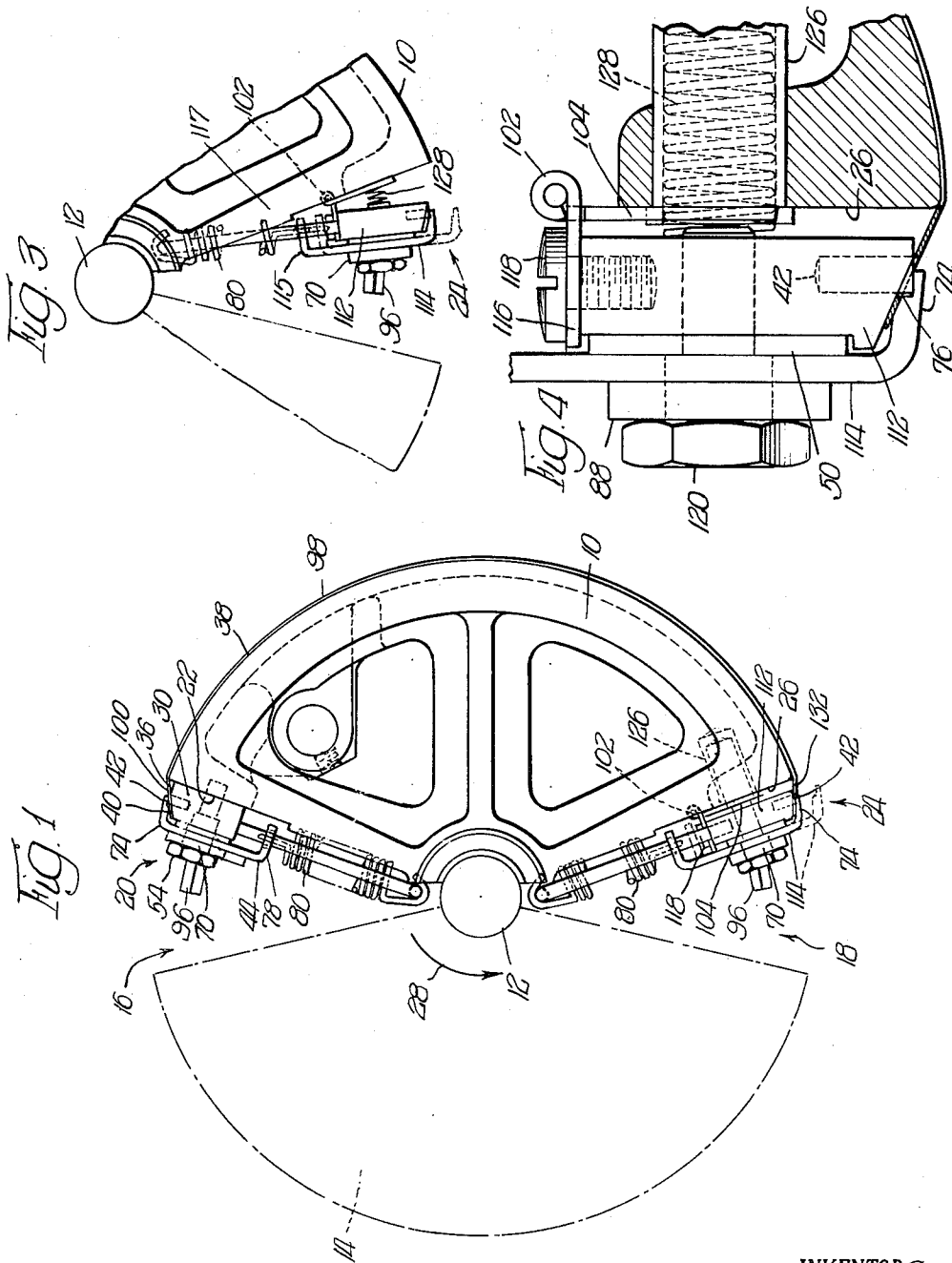
H. F. BRUNS ET AL

2,704,028

DUPLICATING MACHINE MASTER SHEET CLAMP

Filed June 6, 1952

3 Sheets-Sheet 1



INVENTORS:
Herbert F. Bruns
BY Bernard J. Golbeck,
Wilkinson, Hufley,
Byron + Hume attys.

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H. F. BRUNS ET AL

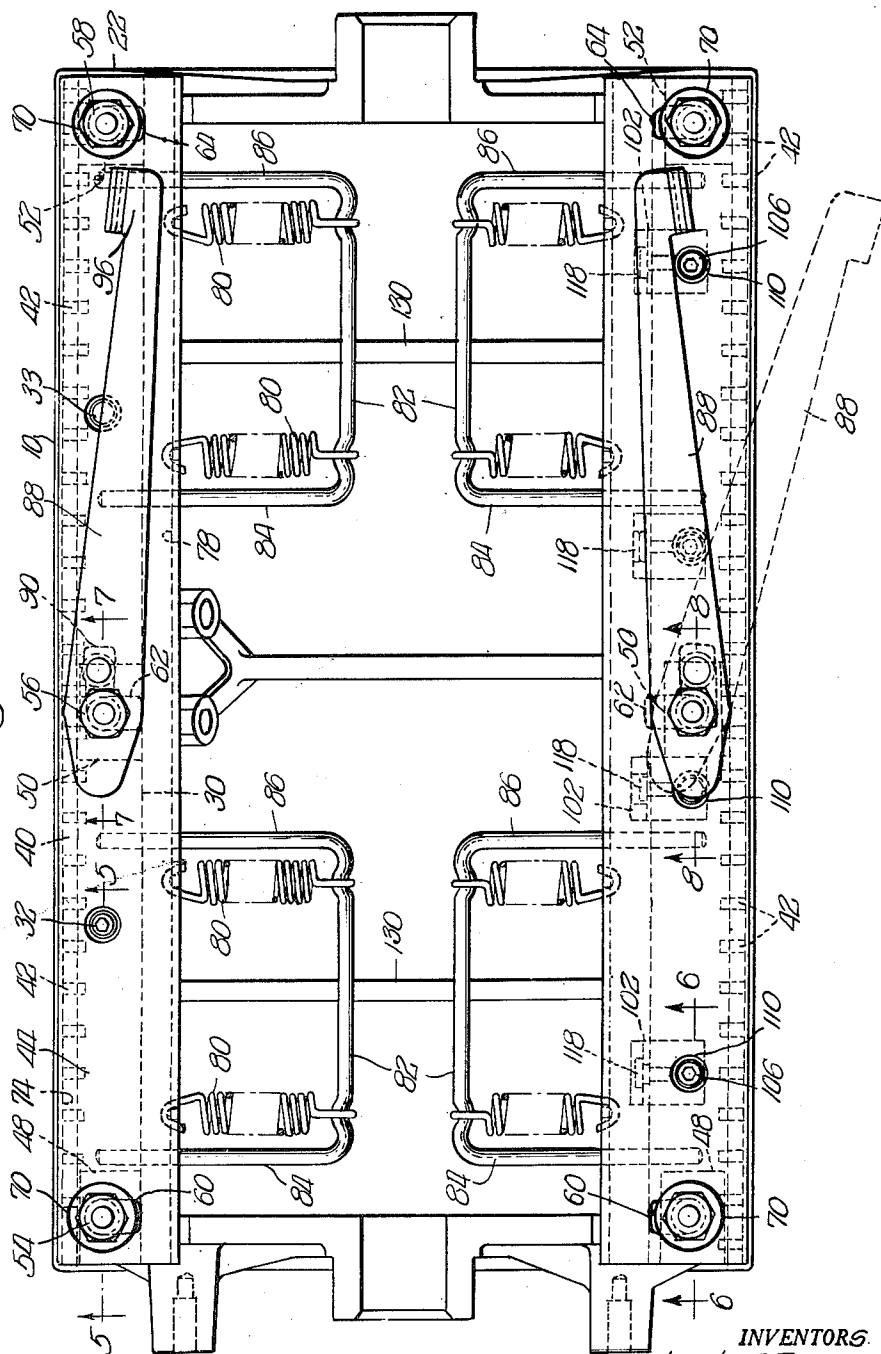
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3 Sheets-Sheet 2

Fig. 2.



INVENTORS:
Herbert F. Bruns,
BY Bernard J. Golbeck
Williamson, Hupley,
Byron & Hume

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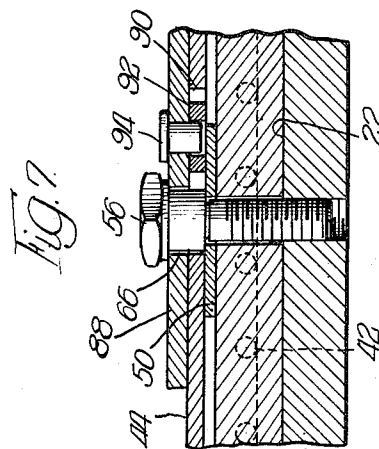
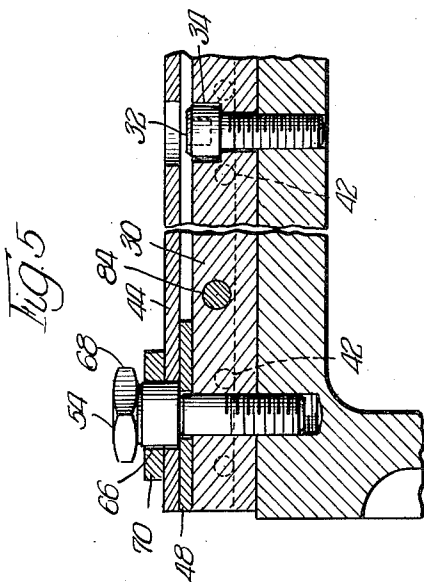
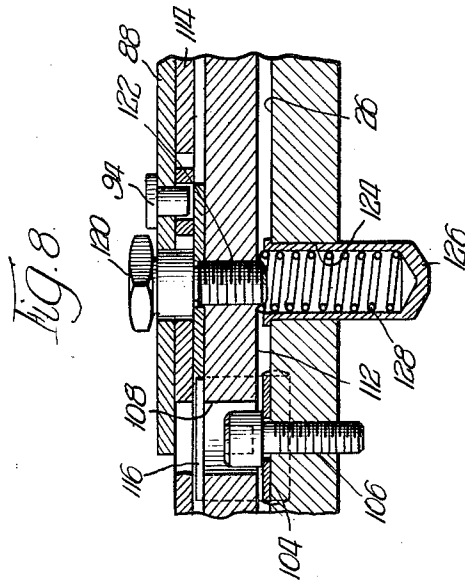
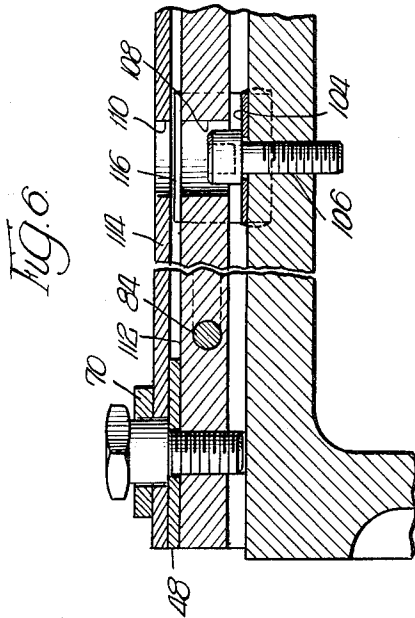
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DUPLICATING MACHINE MASTER SHEET CLAMP

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3 Sheets-Sheet 3



INVENTORS
Herbert F. Bruns,
BY Bernard J. Golbeck,
Wilkinson, Hufley,
Byron + Hume attys.

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DUPLICATING MACHINE MASTER SHEET CLAMP

Herbert F. Bruns, Chicago, and Bernard J. Golbeck, Crystal Lake, Ill., assignors to Ditto, Incorporated, Chicago, Ill., a corporation of West Virginia

Application June 6, 1952, Serial No. 292,175

12 Claims. (Cl. 101—415.1)

This invention relates to a sheet or plate clamping mechanism and more particularly to a device of that character which is adapted for use in association with the plate or master sheet holding segment of a duplicating machine cylinder. It should be understood that the invention is not confined to such a use, however, as it may readily be employed with other types of machines.

It is an object of this invention to provide clamps for the leading and trailing edges of a master sheet or plate, which clamps are adapted to positively and effectively grip and hold the marginal edges of such a master sheet or plate.

Another object is to provide a clamp which will hold a master sheet or plate in such fashion that there is no possibility of displacement in use, and yet which may be quickly and easily opened and closed when it is desired to insert or remove a sheet or plate.

Another object of the invention is to provide a clamping mechanism in which the jaws are normally maintained in a closed position by a spring action in gripping relation to the sheet or plate.

Still another object is to provide a clamp of the character described adapted to grip the trailing edge of a master sheet or plate, which clamp is so mounted that tension is normally applied to the sheet when it is placed in the printing position, which tension maintains the sheet or plate firmly in engagement with the adjacent surface of the cylinder or segment of a cylinder.

Yet another object of the invention is to provide improved means for opening the jaws of the plate or sheet clamp against the action of spring means, which normally tend to maintain the clamp in the closed position.

Another object of the invention is to provide a clamping mechanism which is adapted to receive and grip equally well both a perforated and imperforate plate or sheet.

Still another object is to provide a clamping mechanism which utilizes a relatively small portion of the marginal area of the sheet or plate in the clamping mechanism itself. This characteristic of the mechanism in turn leads to additional advantages, among which are a minimum amount of bending of the plate to accomplish the clamping and the ability to use a master sheet or plate of the same size as the sheets which are being printed which permits a direct reproduction of additional master sheets or plates without the necessity of first changing the relationship of the cylindrical segments of the cylinder.

An additional object is to provide a clamping mechanism which when utilized with perforated sheets will permit it to expand laterally as a result of the moistening without causing undesirable wrinkling or other distortion of the sheet.

Yet another object of this invention is to provide a clamping mechanism which may be used with sheets or plates of the perforated type which have an imperforate portion centrally located on the margin thereof, which imperforate portion will permit the normal operation of a suction feeder in picking up and feeding such a sheet through the duplicating machine.

A further object is to provide a clamping mechanism that can be installed on or removed from association with the plate segment of the cylinder as a unit which characteristic permits bench assembly of the tension springs, for example.

Further objects and advantages of this invention will become evident as the description proceeds and from an

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examination of the accompanying drawings which illustrate one embodiment of the invention and in which similar numerals refer to similar parts throughout the several views.

In the drawings:

Figure 1 is an end view in elevation of a plate segment of a duplicating machine cylinder having one form of the clamping mechanism mounted thereon, the impression segment of the cylinder being shown in dotted lines;

Figure 2 is a side view in elevation of the plate segment shown in Figure 1, the view being taken toward the right as viewed in Figure 1;

Figure 3 is a fragmentary view of the tail clamp shown in Figure 1 and the portion of the plate segment associated therewith, the tail clamp being shown in the position that it will normally be disposed in when no sheet or plate has been placed on the segment;

Figure 4 is an enlarged fragmentary view in elevation of a portion of the tail clamp shown in Figure 1 showing in more detail the construction of the clamping member of that tail clamp and the manner in which it is pivotally mounted;

Figure 5 is a view in horizontal section of a fragmentary portion of the clamping mechanism and the plate segment shown in Figure 2, the view being taken along the line 5—5 thereof;

Figure 6 is a view in horizontal section of a fragmentary portion of the tail clamp and the plate segment as shown in Figure 2, the view being taken along the line 6—6 thereof;

Figure 7 is a view in horizontal section of the central portion of the head clamp and the portion of the plate segment associated therewith, the view being taken along the line 7—7 as shown in Figure 2;

Figure 8 is a horizontal section of a fragmentary portion of the tail clamp, the view being taken along the line 8—8 in Figure 2.

Referring now to Figures 1 and 2, the plate holding segment 10 of a duplicating machine cylinder is there shown suitably mounted on the shaft 12. This shaft normally also has an impression segment 14 secured thereto, which segment is here shown in dotted lines. These two segments 10 and 14 in effect form an interrupted cylinder having the two gaps 16 and 18 disposed diametrically opposite thereon.

Obviously, the cylinder may also be of a type where only one such gap is provided, such as that normally utilized in a two-cylinder machine. In both cases the surface of the cylinder is interrupted and the clamping means, which are the subject of this invention, may be secured to the radially disposed end faces of the segment of the cylinder in the space provided by the interruption.

As shown in Figure 1 a head clamp 20 may be secured in association with the end face 22 in the gap 16, while the tail clamp 24 may be secured in association with the end face 26 in the gap 18. The clamp designated as the "head" clamp is that which is utilized to secure the leading edge of the master sheet or plate, and the clamp characterized as the "tail" clamp is adapted to secure the trailing edge of that sheet or plate. As the cylinder is shown in Figure 1, therefore, the normal direction of rotation of the cylinder will be in the direction indicated by the arrow 28.

The head clamp 20 is provided with an elongated pin bar 30 which is secured to the end face 22 of the plate segment 10 by the socket head cap screws 32 and 33, and the studs 54, 56 and 58. The cap screws are adapted to be received in appropriate recesses in the pin bar 30 such as the recess 34 best shown in Figure 5. The edge 36 of the pin bar which is disposed adjacent and substantially parallel to the cylindrical surface 38 of the plate segment 10 is also disposed slightly below the surface 38, as best shown in Figure 1, and is provided with a beveled area 40 along its outermost portion extending downwardly and away from the cylindrical surface 38. Disposed in this same edge 36 are the short pins 42 which extend upwardly from the beveled surface 40 but which are of such a length that the upper ends thereof are substantially flush with the edge 36. The

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inner sides of these pins 42 are substantially coincident with the upper edge of the beveled portion 40, also.

A clamping member in the form of a channel member 44 is also provided which is held in slidable engagement with the pin bar 30 as best shown in Figures 1, 2 and 5. The channel 44 is actually held in slight spaced relation to the pin bar 30 by the stud plates 48, 50 and 52 best shown in Figures 2, 5 and 7. These stud plates are interposed between the pin bar 30 and the channel 44 and have the studs 54, 56 and 58 extending therethrough, respectively. These three studs 54, 56 and 58 are all threadedly received in the end face 22 of the plate segment 10 and extend through the transversely disposed slot members 60, 62 and 64 in the channel member 44, as best shown in Figure 2. Each of these studs is provided with a shoulder 66 immediately below the head 68 thereof, which shoulder is adapted to be received in the transverse slots 60, 62 and 64, but which abuts the stud plates 48, 50 and 52. The shoulders 66 on the studs 54, 56 and 58 are also adapted to be received within the spacers 70 in the form of washers which are disposed between the head 68 of the studs and the channel member 44.

This manner of securing the channel member 44 with relation to the pin bar 30 and the plate segment 10 permits the channel member 44 to be slidably moved in a substantially radial direction (relative to the plate segment 10) along the outer surface of the stud plates 48, 50 and 52.

The channel member 44 is provided with an upper flange 74 which extends inwardly over the beveled edge 40 of the pin bar 30 normally into association with the pins 42. The surface of the flange 74 which is adjacent to the pins 42 is provided with a shoulder 76 which is normally disposed in adjacent relation to the outer edge of the pins 42. A similar shoulder is provided in the upper flange 74 of the channel member 44 of the tail clamp as best shown in Figure 4. The flange 74 is of a width such that it extends inwardly toward the end face 22 of the plate segment 10 a distance such that it partially covers the upper ends of the pins 42.

A lower flange 78 is also provided on the channel 44, which flange has suitable openings therein into which the upper ends of the spring members 80 are adapted to be secured. The lower ends of the spring members 80 are adapted to be hooked over the spring anchors 82 which may be substantially U-shaped, the two arms 84 and 86 thereof being adapted to be received within suitable openings provided in the pin bar 30 so that the spring anchors 82 extend downwardly from the pin bar 30 substantially in the same plane. The springs 80 are made of a length such that they normally exert a downward force on the channel 44 after they have been hooked over the spring anchors 82 and the lower flange 78 on the channel member 44. The channel member 44 therefore is normally urged in a direction such that the upper flange 74 thereof is brought into association with the pins 42 projecting upwardly from the pin bar 30.

As previously explained, the channel member 44 is adapted to slidably move in a radial direction along the pin bar 30. The transverse slots 60, 62 and 64 in the channel member 44 permit this radial movement to occur, which displaces the channel laterally with respect to the pin bar 30, but the channel member 44 is maintained in substantial longitudinal alignment with the pin bar 30 when such movement is taking place. In order to provide for the ready movement of the channel member 44 in this manner, a lever or handle member 88 may be provided, which handle member is pivotally mounted on the shoulder 66 of the stud 56 as best shown in Figure 7. This is the same relative position that is occupied on the studs 54 and 58 by the spacer or washer 70. The centrally disposed slot 62 is substantially L-shaped, the stud 56 extending through the transverse arm thereof. As best shown in Figure 7 the handle member 88 has secured thereto a roller 92 by the stud 94, the roller being positioned so that it is normally snugly disposed within the longitudinal arm 90 of the L-shaped slot 62. When the handle 88 is in the substantially horizontal position shown in Figure 2 the channel member 44 is permitted to be completely retracted by the springs 80 and the flange 74 therefore abuts the pins 42. However, upward movement of the outer end 96 of the handle 88 will likewise cause upward movement of the stud 94 and the roller 92 so that the roller 92 will bear against

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the upper edge of the arm 90 of the slot 62 in the channel 44. Continued upward movement of the handle 88 will cause the channel 44 to be moved upwardly so that the flange 74 is moved out of association with the pins 42.

When the handle 88 is moved upwardly, the inner extremities of the slots 60, 62 and 64 will move against the shoulders 66 of the studs 54, 56 and 58 and limit the travel of both the channel 44 and the arm 88. This prevents the handle 88 from attaining a dead center or locking position so that the springs 80 will always close the clamp automatically when a lifting force is no longer applied to the handle. This arrangement prevents accidental damage to the machine or clamp since the clamp cannot remain open unless it is actually held in that position.

A master sheet or plate member 98 is shown disposed in the operative position on the plate segment 10 in Figure 1. The upper margin 100 of the plate 98 has been inserted between the upper flange 74 on the channel member 44 and the pin bar 30, and is held in clamped relation in that position. The portions of the pins 42, which extend above the beveled surface of the pin bar 30, together with the shoulder 76 on the flange 74 on the channel member 44, (best shown in Figure 4), form a clamping mechanism which is effective in gripping and holding the margin 100 of the plate 98. This clamping is equally effective with a metal plate or a paper sheet, of either the perforated or imperforate type. If the plate or sheet has a perforated margin, the pins 42, of course, will be received in those perforations, assuming that they are properly spaced. The flange 74, together with the shoulder 76 thereon, will insure that the margin of the sheet held in such fashion cannot slip over the top of the pins 42. If on the other hand the sheet or plate has an imperforate margin, the margin will be distorted sufficiently by the pressure of the flange 74 so that it will conform substantially to the configuration of the projecting portion of the pins 42, and this distortion of the margin will cause it to be equally firmly locked in the clamped position. If a metal plate of the imperforate variety is being utilized, the plate by the cooperative clamping action of the flange 74 and the pins 42 will be distorted in such a fashion that a plurality of small arcuate indentations will be formed along the margin. If a paper sheet is being utilized of the imperforate variety, it may be that the pins 42 will actually perforate the paper and leave a row of arcuate slits in the paper formed by the edge of the pins 42 which abut the flange 74 and the shoulder 76. In any case a very firm clamping will be accomplished with either the metal plates or paper sheet masters, of both the perforated and imperforate varieties.

The tail clamp 24 is similar in all respects to the head clamp 20 with the one exception that it is pivotally mounted on the end face 26 of the plate segment rather than being immovably secured thereto. This pivotal mounting is accomplished through the medium of a plurality of hinges 102 which have one plate 104 thereof secured to the end face 26 by the socket head cap screws 106, best shown in Figures 2 and 6. These cap screws 106 are made accessible through the openings 108 and 110 which are aligned therewith in the pin bar 112 and the channel member 114, respectively. The other plate 116 of each hinge 102 is secured to the bottom edge of the pin bar 112, as best shown in Figures 1 and 4 by the screws 118.

As best shown in Figure 8, the central stud 120 in the tail clamp replaces the stud 56 previously described in the description of the head clamp. The stud 120 is very similar to the stud 56 except that it is shorter and is not threadedly received in the end face 26 of the plate segment but is instead threadedly received in the opening 122 in the pin bar 112, as best shown in Figure 8. The arm or handle member 88 for the tail clamp is pivotally mounted on the stud 120 in substantially the same fashion as it is mounted on the stud 56 in the head clamp. An opening 124 is provided in the end face 26 of the plate segment, which opening is in alignment with the stud 120. This opening 124 is adapted to receive a spring barrel 126, which barrel in turn is adapted to have the spring 128 disposed therein, which spring at one end encircles the inner extremity of the stud 120, and has its opposite end seated in the base of the spring barrel 126. This spring 128 is adapted to be compressed when the tail clamp 24 is in the position shown in Figures 1

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and 8. The length of the spring is such that it will normally exert a force on the tail clamp 24 which will cause it to pivot outwardly on the hinges 102 away from the end face 26 of the plate segment. The normal position of the tail clamp 24 in the gap 18 is substantially as shown in Figure 3, the clamp pivoting in the manner described until the lower flange 115 of channel 114 comes into contact with the end spokes 117 of the plate segment casting.

As shown in Figure 1, however, and also in Figure 4, when a plate 98 is correctly in place upon the plate segment 10, the tail clamp 24 is normally substantially parallel to the end face 26, although a pressure is still exerted thereon by the spring 128 and the tail clamp, in turn, exerts a pull on the plate 98 due to this pressure from the spring 128. This pull on the plate 98 insures that the latter is held in close association with the cylindrical surface 38 of the plate segment 10 at all times and prevents undesirable distortion of the plate from occurring.

When it is desired to put a master sheet or plate in the operative position on the plate segment 10, the channel 44 is moved in a direction such that the flange 74 is moved out of association with the pin bar 30 and the pins 42 (as shown in dotted lines in Figure 1 in connection with channel 114 in the tail clamp) by a pivotal movement of the handle 88, as previously described. When the channel has been so moved, the margin 100 of the plate 98 may then be inserted between the flange 74 and the pin bar 30 until the outer edge of the margin 100 abuts the central portion of the channel member 44. If the plate being inserted is of the perforated type, the perforations therein are, of course, aligned with the pins 42 so that the pins are received therein. If the plate is of the imperforate type it is only necessary to see that the edge of the margin 100 is properly aligned so that the sheet or plate is, in turn, properly aligned on the cylindrical surface 38 of the plate segment 10. The handle member 88 is then dropped to the horizontal position, as shown in Figure 2, which in turn causes the channel member 44 to be moved downwardly toward the shaft 12 bringing the flange 74 into abutting relation with the upper ends of the pins 42. In the case of the perforated type sheet or plate, the shoulder 76 together with the outer extremity of the flange 74 forms a lock which prevents the perforations from slipping over the top of the pins 42. As previously mentioned, if the plate is of the imperforate type the shoulder 76 and the inner extremity of the flange 74 cause the plate to be distorted over the outer edge of the pins 42 and firmly clamped thereto in such a way that the margin 100 will not move under any conditions of operation.

After the margin 100 has been so clamped in position, the drum or cylinder is rotated to bring the tail clamp 24 into easy reach of the operator so that the trailing edge or margin 132 of the plate 98 may be properly clamped in place. By appropriate movement of the arm 88, which is associated with the tail clamp 24, the channel member 114 on the tail clamp may be moved in substantially the same fashion as just described for the channel member 44 on the head clamp 20, the position of the flange 74 when the handle 88 is in the raised position being shown in dotted lines.

In addition to the movement imparted to the channel 114, however, the handle member 88 may also be utilized to bring the entire tail clamp assembly into close association with the end face 26 of the plate segment 10, as shown in Figures 1 and 4. When the tail clamp assembly has been so moved, the trailing margin 132 of the plate 98 may be inserted between the flange 74 and the pins 42 on the pin bar 112 in substantially the same fashion as previously described in connection with the head clamp 20. The handle 88 may then be returned to the horizontal position as shown in Figure 2 which will in turn cause the flange 74 on the channel member 114 to move into abutting relation with the pins 42 clamping the margin 132 of the plate 98 in substantially the same fashion as previously described in connection with the clamping of the margin 100. As soon as the arm 88 has been moved so as to achieve this clamping action and has been released, the spring 128 will immediately urge the pin bar 112 and the entire tail clamp assembly in a direction such that it will cause the assembly to pivot about the hinges 102 as previously described. This will exert a pull on the plate 98, as mentioned before, which

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of course is very desirable in helping to maintain the plate in the proper operative position on the plate segment 10.

It should be noted that the control of the tail clamp 24, both with respect to the movement of the flange 74 on the channel 114 and the pivotal movement of the entire tail clamp assembly, may be accomplished with the handle member 88 using only one hand. This frees the other hand for maneuvering the plate or sheet and inserting it in the proper position in the tail clamp. The tail clamp 24 can be moved to the open position in which it is ready to receive the marginal end 132 of the plate 98 and pivoted into close association with the end face 26 of the plate segment 10 in either two distinct movements of the arm 88 or in one compound movement, as desired.

It has previously been briefly mentioned that the use of the unusually short pins in the clamping mechanism, which is the subject matter of this application, leads to certain distinct advantages in the performance of the clamping device. One of the biggest difficulties in obtaining a satisfactory form of plate clamp is to obtain the maximum amount of clamping action with the use of a minimum amount of the margin of the master plate or sheet itself. When a minimum amount of plate or sheet material is utilized for the clamping action, this, of course, in turn means that the portion of the plate which is unavailable for use in printing is reduced to a minimum. This not only accomplishes a saving of materials, but also permits the use of a master sheet or plate which has the same circumferential dimension as the sheets which will normally be printed with such a master. For example, if an 11 inch sheet of paper to be printed with not more than 10 inches of copy, an 11 inch master may be utilized. This, as will be pointed out below, is a very distinct advantage.

In order to obtain a clamping device which will successfully clamp a master plate or sheet and which will utilize only a relatively small margin in doing so, it is necessary to have any elements such as holding pins or the like disposed as close to the end face of the plate segment of the cylinder as possible. At the same time, the clamping mechanism as a whole must always be disposed below the periphery of the plate segment so that it does not come into contact with either the inking mechanism or the blanket roll. In most conventional devices which utilize such elements, if they are moved into close association with the end face of the plate segment, it causes them to project above the peripheral edge of that segment. If in order to correct this, the pins or other similar clamping means are moved in a radial direction toward the axis of rotation of the plate segment, then the amount of bending necessary to place the edge of the master sheet or plate in the clamping mechanism becomes undesirably large. Excessive bending which may be required to put the plate in position on the plate segment is undesirable because when such plates are stored the bent edges thereof must be straightened. Repeated straightening of these edges will quickly cause the edge of the master plate to crack and it will no longer be useful.

By incorporating extremely short pins in association with a beveled surface in the present clamping mechanism, it has been possible to bring them into relatively close association with the end face of the plate segment and at the same time it has also been possible to place them in unusually close association with the periphery of the plate segment so that a minimum amount of material is utilized in the clamping operation.

It was stated above that it was a distinct advantage to be able to utilize a master plate or sheet having a circumferential dimension substantially equal to the dimension of the sheets being printed. For example, if 11 inch sheets of paper are being printed and an 11 inch master, which provides roughly 10 inches of reproduction surface, is also being utilized, at the end of a run a new master may be printed directly on the machine by running a master sheet through the machine in the same fashion as a sheet of paper being printed from the original master. This operation can be accomplished without the necessity of changing the relationship of the cylindrical segments of the cylinder, which adjustment is ordinarily required on a conventional machine when a master plate or sheet of a size greater than the sheets being printed, with respect to the circumferential dimension, is being used.

This feature is particularly advantageous in the storing of master sheets for additional use since once a paper master sheet has been moistened in the printing process it becomes difficult to keep it in good condition for reproduction work. This stems from the fact that a paper master is capable of rather easy distortion when it is wet. Thus when it is being removed from the machine, for example, it may be so distorted that it cannot thereafter be utilized successfully. A new master sheet which has just been printed in the same fashion as the sheets which have been run through the machine of course has not been subjected to the moistening of the character given a master sheet when it is actually used in the printing operation and it therefore is not subject to these undesirable distortions previously mentioned.

In the case of master sheets, for example, of 12 inches circumferential dimension rather than 11 inches, which is the normal length of a letter-size sheet of paper, without an adjustment being made between the relative positions of the plate segment and the paper segment a master printed in the manner just described will not have the copy aligned on the newly printed master sheet in the same fashion as the copy on the original master. Therefore the newly printed master if utilized would place the copy on the sheets being printed in a manner which would differ from the original alignment of the copy.

An additional advantage can be gained by the use of the clamping mechanism which is the subject of this application in that the perforations in perforated master plates or sheets which are to be used with this type of clamping mechanism may be made sufficiently large relative to the diameter of the pins in the clamping mechanism so that when a sheet is clamped into position it is not tightly held but portions thereof may be moved slightly in a lateral direction. Because of this feature, the over-size perforations in the master plate can be placed on each half of the sheet on opposite sides of a circumferential center line so that the outer edges of the perforations on each side thereof are in abutment with the outer sides of the projecting pins. This arrangement permits the master plate to expand during use without becoming distorted in an undesirable fashion since expansion may take place to an extent such that the inner edges of the perforations come into abutment with the inner edges of the pins and the outer edges of the perforations are moved away from the outer edges of the pins. Providing for such expansion is particularly important in the case of paper master sheets which, when they have been moistened, ordinarily have a tendency to expand laterally in both directions from a center line. If the marginal edges of the master sheet are rigidly held the forces exerted by this expansion will eventually cause the master sheet to wrinkle in a very undesirable fashion. Obviously such a distortion of the sheet will in turn cause imperfections in the printed material being reproduced.

Still another advantage of this type of clamping mechanism follows from the fact that it is capable of clamping both perforated and imperforate types of master sheets and plates. In printing new masters at the end of a run as described above it may be that the duplicating machine utilizes a suction feeder of such a character that a master sheet or plate having perforations in its leading edge cannot be successfully fed into the machine. The existence of the perforations may break the vacuum necessary for lifting and conveying the sheets into the duplicating machine and therefore it will be impossible to satisfactorily feed a master sheet. This difficulty can be avoided if the present form of clamping mechanism is utilized by providing a master sheet or plate with an imperforate center section, having perforated marginal areas on either side thereof. Since the suction feeder will operate on the central section of the sheet being fed, the absence of perforations in the central portion of the sheet will permit the feeding to take place in a normal fashion. At the same time the remainder of the sheet or plate can be held in place through the use of the perforations which are adapted to receive the pins. Obviously the imperforate central section of the margin will be clamped in the same fashion as previously described for the margin of a master sheet or plate of the imperforate type.

In the drawing and specification, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in

a generic and descriptive sense only and not for purposes of limitation. Changes in form and in the proportion of parts, as well as the substitution of equivalents are contemplated, as circumstances may suggest or render expedient, without departing from the spirit or scope of this invention as further defined in the following claims.

It is claimed:

1. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, a plurality of short pins projecting from said clamping base in a radial plane of the cylinder, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins, and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

2. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, a plurality of short pins projecting from said clamping base in a radial plane of the cylinder, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins, and a lever for moving said clamping member outwardly against the force of said resilient means, said lever being pivotally connected to the plate supporting means for movement in a substantially radial plane.

3. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins, and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

4. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of cylindrical holding pins disposed in said clamping base substantially in a radial plane of said cylinder with the inner sides thereof in substantial alignment with the inner edge of said beveled edge, a clamping member slidably supported for movement in its own plane in a direction transverse to its own length, resilient means normally urging said clamping member inwardly to abut said pins to clamp the margin of a sheet therebetween, means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet and said pins being of such a length that the upper ends thereof are substantially flush with the upper surface of said clamping base.

5. A clamp for securing a master sheet upon the sur-

face of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, a plurality of short pins projecting from said clamping base in a radial plane of the cylinder, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins, additional resilient means normally urging said clamping base and said clamping member to pivot on said cylinder on a plurality of hinges disposed intermediate the transverse edges of said interrupted portion so that the upper surface of said clamping base moves away from said cylinder in a substantially circumferential direction and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

6. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, a plurality of short pins projecting from said clamping base in a radial plane of the cylinder, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins, additional resilient means normally urging said clamping base and said clamping member to pivot on said cylinder on a plurality of hinges disposed intermediate the transverse edges of said interrupted portion so that the upper surface of said clamping base moves away from said cylinder in a substantially circumferential direction and a lever for moving said clamping member outwardly against the force of said resilient means, said lever being pivotally connected to the plate supporting means for movement in a substantially radial plane.

7. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a channel-shaped clamping member slidably supported for movement in its own plane in a direction transverse to its length, a shoulder formed in one transverse edge of said clamping member, resilient means normally urging said clamping member inwardly to abut said pins at the shoulder thereof to clamp the margin of a sheet therebetween, whereby the flange in which said shoulder is formed is disposed in substantially perpendicular relationship to said pins and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

8. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a clamping member slidably supported for movement in its own plane in a direction transverse to its length, resilient means normally urging said clamping member inwardly to abut said pins to clamp the margin of a sheet therebetween, means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet and said pins being of such a length that the upper ends thereof are substantially flush with the upper surface of said clamping base.

9. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a clamping member slidably supported on said clamping base for movement in its own plane in a direction transverse to its length, a flange on said clamping member extending into association with said pins, a shoulder formed in the transverse edge of said flange, resilient means normally urging said clamping member inwardly toward the axis of rotation of said cylinder so that said shoulder abuts the outer edges of said pins, said flange being thereby disposed in perpendicular relationship to said pins and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

10. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a clamping member slidably supported on said clamping base for movement in its own plane in a direction transverse to its length, a flange on said clamping member extending into association with said pins, a shoulder formed in said flange adapted to be disposed in adjacent relation to the outer edge of said pins, anchoring means secured to said clamping base, resilient means secured between said anchoring means and said clamping member so as to normally urge said clamping member inwardly toward the axis of rotation of said cylinder so that said flange abuts the outer ends of said pins, and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

11. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a clamping member slidably supported on said clamping base for movement in its own plane in a direction transverse to its length, a flange on said clamping member adapted to extend into association with said pins, a shoulder formed in said flange adapted to abut said pins when said flange is extended into association therewith, resilient means normally urging said clamping member inwardly toward the axis of rotation of said cylinder so that said flange abuts the outer ends of said pins, additional resilient means normally urging said clamping base and said clamping member to pivot on said cylinder on a plurality of hinges disposed intermediate the transverse edges of said interrupted portion so that the upper surface of said clamping base moves away from said cylinder in a substantially circumferential direction, and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet.

12. A clamp for securing a master sheet upon the surface of an interrupted cylinder of a duplicating machine or the like comprising an elongated clamping base pivotally disposed inwardly of the surface of said cylinder and within the interrupted portion, the outer edge of the upper surface of said clamping base being beveled, a plurality of short pins projecting from said outer edge, a clamping member slidably supported on said clamping base for movement in its own plane in a direction transverse to its length, a flange on said clamping member adapted to extend into association with said pins, a shoulder formed in said flange adapted to abut said pins when said flange is extended into association with said pins, anchoring means secured to said clamping base, resilient means secured between said anchor-

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ing means and said clamping member so as to normally urge said clamping member inwardly toward the axis of rotation of said cylinder so that said flange abuts the outer ends of said pins, and means for moving said clamping member outwardly against the force of said resilient means when desired to permit the movement of said margin of said sheet. 5

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