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BLOCKOUT MEANS FOR PRINTING PRESS

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Fig:1.

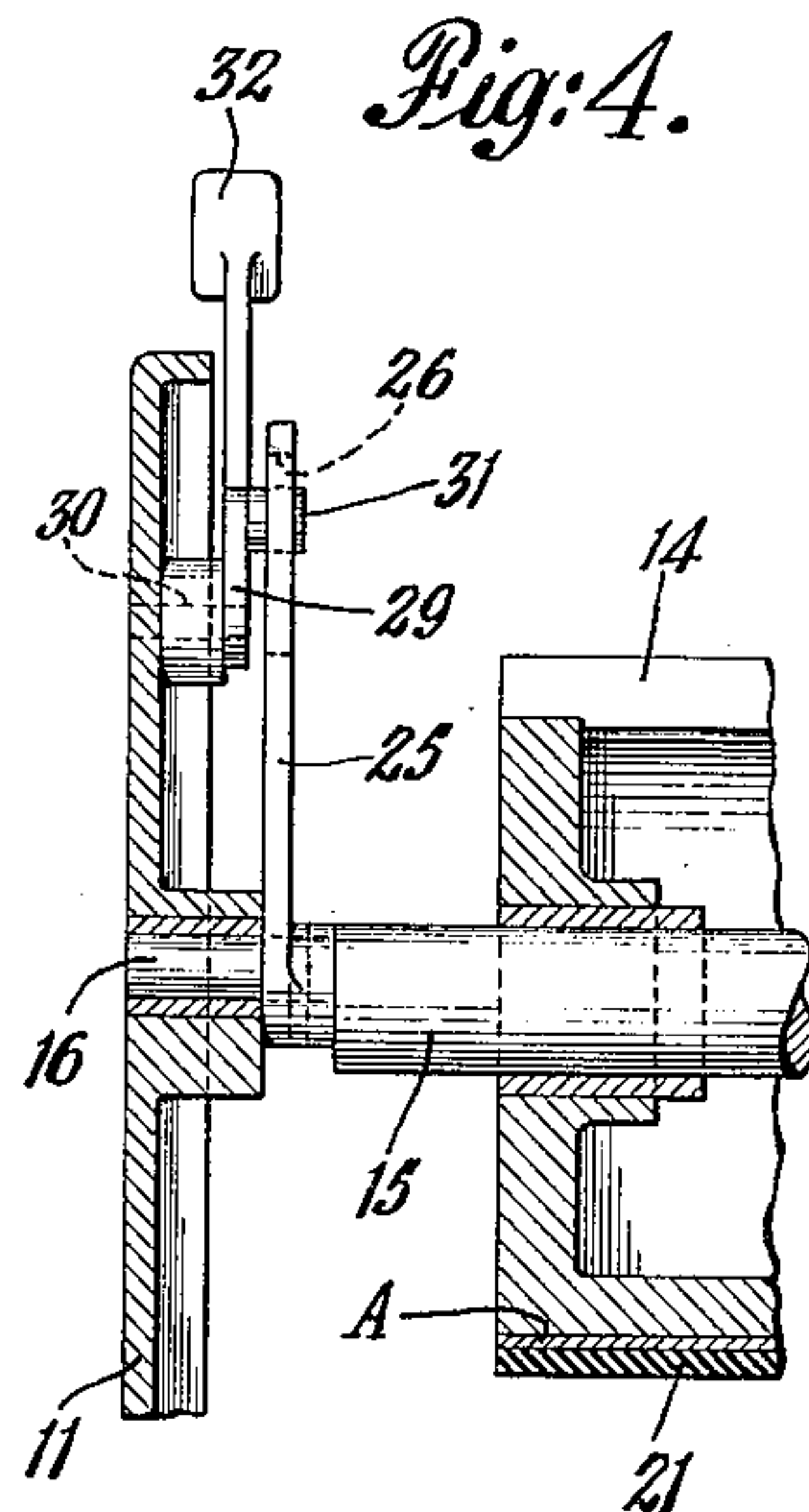
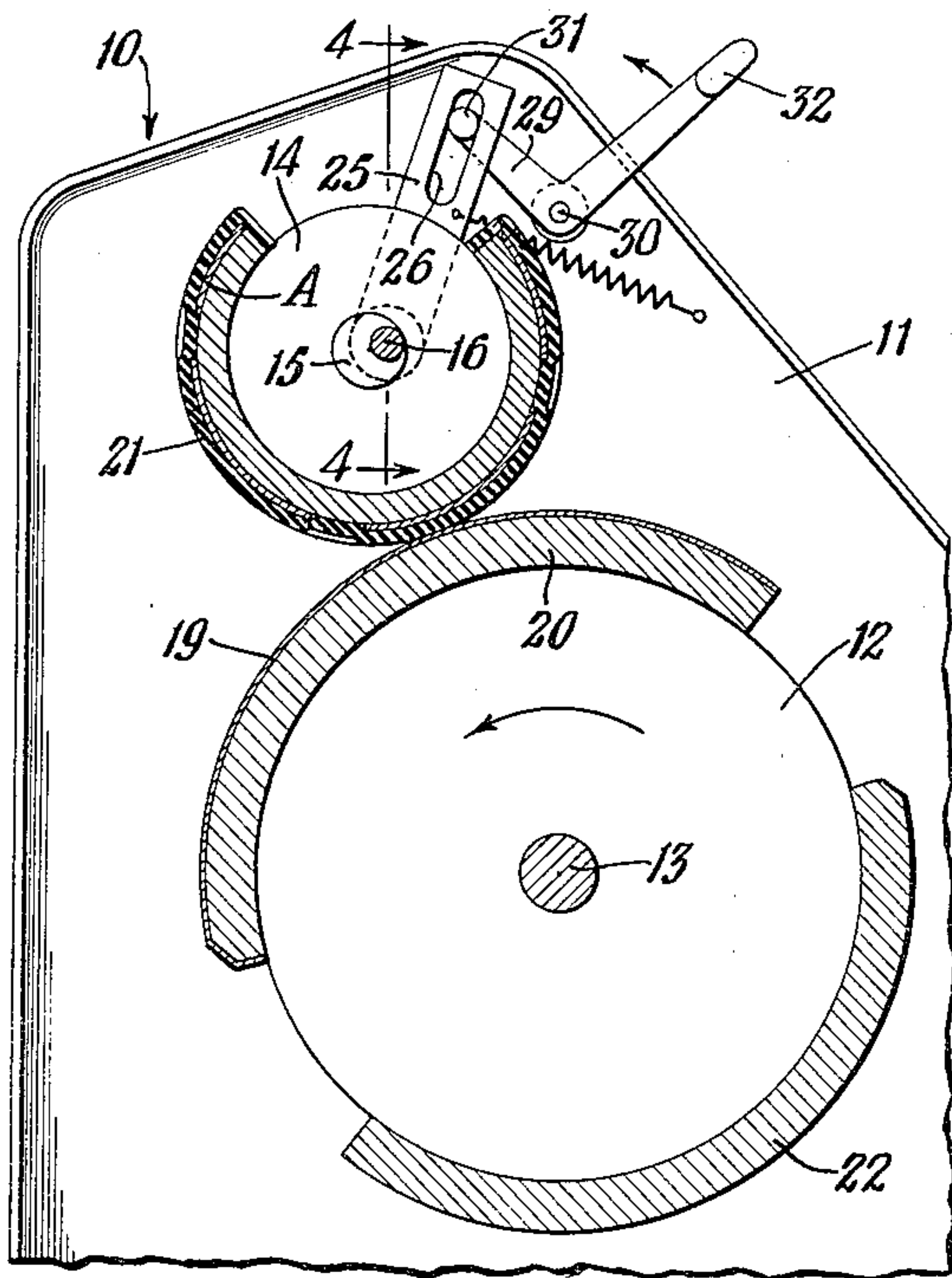


Fig:4.

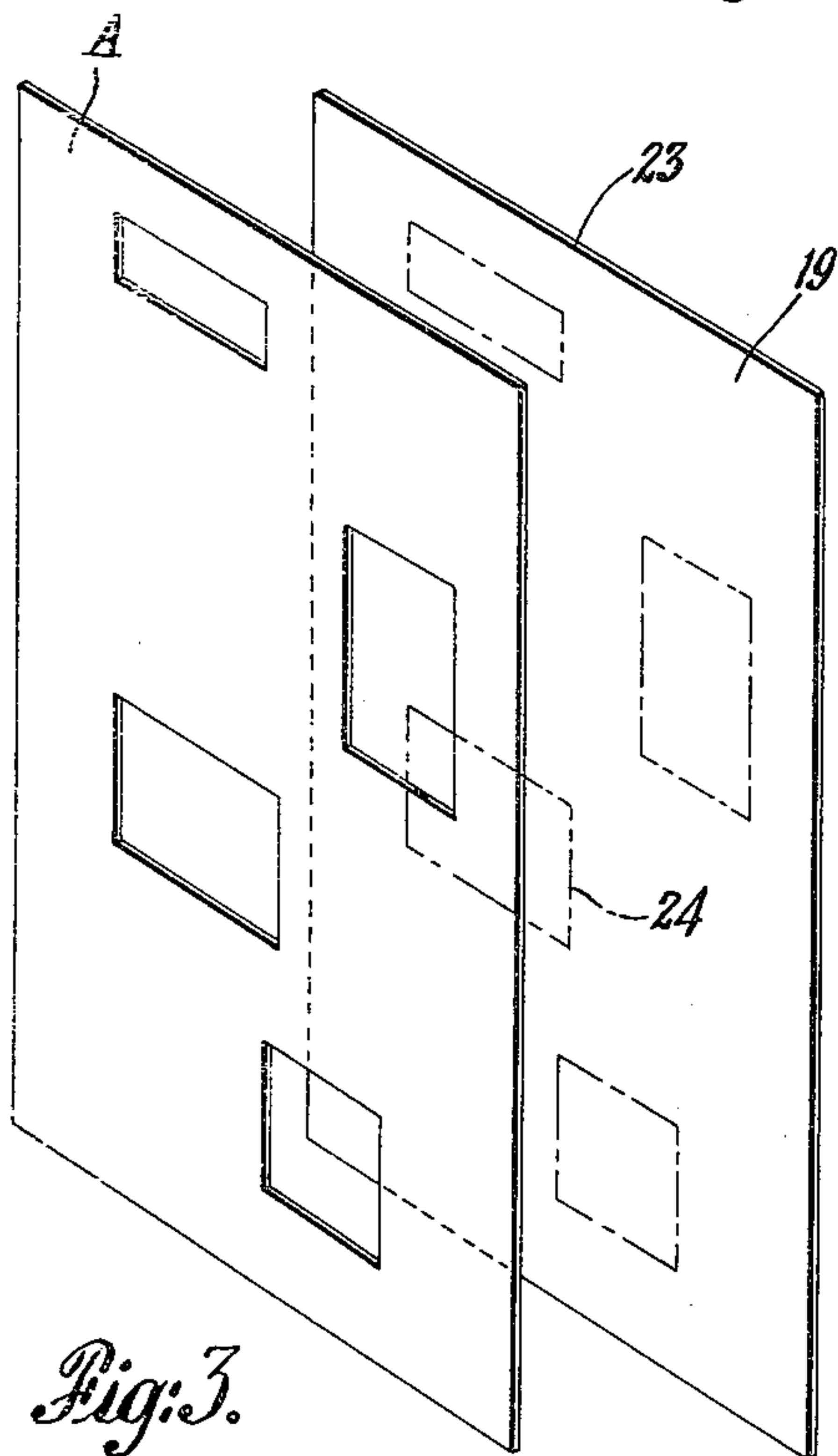


Fig:3.

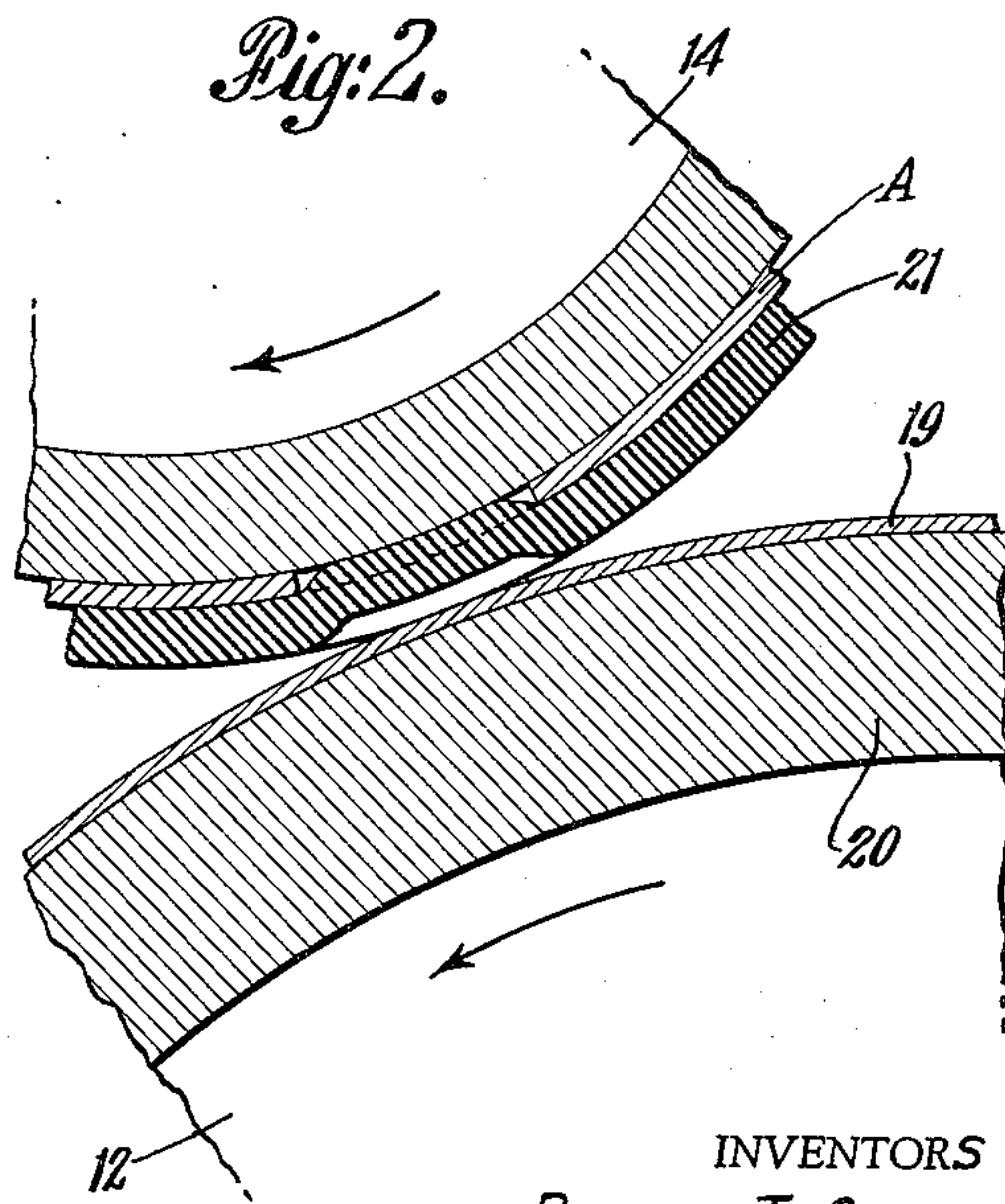


Fig:2.

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## BLOCKOUT MEANS FOR PRINTING PRESS

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5 Claims. (Cl. 101-91)

This invention relates to offset lithographic printing presses and more particularly to means for selectively printing and deleting portions of an image contained on a lithographic printing plate.

As is well known in the printing art, many applications exist in which it is desired to reproduce, on certain copies, only a portion of the image carried on the printing plate being employed. In such cases it is customary to block out, on the plate, the information which is to be deleted so that this information will not be reproduced as the remainder of the copy on the plate is reproduced during the normal printing operation. Although it is realized that two separate printing plates might be used to accomplish the same result as is achieved by blocking out, the cost of preparing more than one plate and the machine down time involved while plates are changed makes the use of more than one plate inefficient. Therefore, many systems have been put forth in an effort to achieve a satisfactory way of blocking out unwanted information on a printing plate, but all of these systems have shortcomings of one type or another.

One widely used procedure for blocking out is that of overlaying the information which is to be omitted by a strip of non-printing material, such as blank paper master material, which strip is held in place by being clamped in the plate gripper. The difficulty presented is that all the information on the plate from the gripper to the bottom of the overlay material is blocked out. Therefore, should it be desired to eliminate only certain information disposed in the center of the body of the copy on the plate, an overlay would obviously be unsuitable.

Another popular blockout procedure has been that of pasting paper master material over the portions of the copy to be omitted, however, this has proven unsatisfactory since after a blocked out plate has been used it is often desirable to remove the blockouts and reproduce the plate in its entirety, and it has been found that after removal of the "paste ons," the copy which was covered thereby is difficult to reproduce satisfactorily. In addition, skill is required in placing the "paste on" properly on the plate and, furthermore, the press must be stopped to affix and remove the "paste on."

The present invention is intended to permit a center portion, or any other portion, of the copy carried by a printing plate to be blocked out when desired without the attendant difficulties mentioned above. Toward this end, the invention provides means whereby merely varying the contact pressure between the printing or platen surface and blanket surface, the portion of the copy which is to be omitted will or will not be blocked out.

The invention will now be more fully described with reference to the accompanying drawings. In the drawings:

FIG. 1 is a side elevational view of a two cylinder offset duplicator;

FIG. 2 is an enlarged fragmentary view of a portion of the cylinders of the duplicator;

FIG. 3 is a perspective view of a printing plate and a blanket underlay sheet; and

FIG. 4 is a vertical cross-sectional view taken on line 4-4 of FIG. 1.

The offset duplicator 10 of FIG. 1 comprises a pair of side frames 11, a plate-platen cylinder 12, fast to the shaft 13 rotatably mounted in the side frame 11, and a

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blanket cylinder 14, rotatably mounted on the shaft 15, which shaft is itself pivotally mounted in the side frames 11 by means of the eccentric stub shaft 16 projecting from each end of the shaft 15. As the cylinders 12 and 14 are rotated, through suitable gearing, a printing plate 19, mounted on the plate segment 20 of the cylinder 12, is inked by the usual apparatus (not shown) and thereafter the inked image is offset on to the rubber blanket 21 carried by the cylinder 14 (see FIG. 1).

As the cylinders continue to rotate, a sheet of paper is fed into the printing couple and the image on the blanket is transferred to the sheet which is pressed against the blanket by the platen segment 22. The printed sheet is then delivered in some suitable manner and the process is repeated until the desired number of copies have been printed.

The above described apparatus and procedure are, of course, well known to those familiar with the printing art.

As was mentioned before, it is sometimes desirable to produce a certain number of copies which do not contain some of the information which is already on the printing plate. Referring to FIG. 3, for example, sheet 19 represents a printing plate whereon the information outlined by the dot-dash lines is to be blocked out when reproducing a certain number of copies from the plate. Naturally, on other copies, all the information on the plate is to be reproduced. It is now apparent that if, as usual, the leading edge 23 of the plate 19 were held in a plate gripper, and if the information outlined by the box 24 were to be blocked out by an overlay, all the information directly thereabove from the box 24 to the leading edge 23 would be blocked out as well. This is obviously an undesirable situation.

The present invention employs a sheet A (FIG. 3) having cutout windows sized, shaped, and positioned in accordance with the size, shape, and position of the area on the printing plate occupied by the information to be blocked out. The sheet A is utilized by placing it under the blanket 21, as an underlay or packing sheet, in such a position that the window cutouts are in exact registry with the information which is to be blocked out when that information is offset on to the blanket. As can be seen clearly in FIG. 2, in the areas where the windows are cut in the underlay sheet A, the blanket 21 is unsupported, causing that portion of the blanket surface to be depressed below the periphery of the remainder of the blanket. Therefore, at the normal contact pressure between plate and blanket an image will not be offset from the plate to the blanket in the unsupported areas, and consequently the information which is not to be reproduced on a certain number of copies is effectively blocked out. Furthermore, it should be pointed out that at the normal contact pressure between platen and blanket, even if the unsupported areas of the blanket carried an image which had been offset thereon, the image would not be transferred to a sheet passing through the printing couple, due to the difference in elevation between the unsupported blanket areas and the remainder of the blanket. Notice, therefore, that the present invention permits information positioned anywhere on the printing plate to be blocked out without disturbing the surrounding image.

As was mentioned above, at normal contact pressures employment of the underlay sheet described will result in the blocking out of certain information. Now, when it is desired to produce copies containing all the information on the printing plate, the contact pressure between the cylinders 12 and 14 is increased causing the plate image to be offset on the unsupported areas of the blanket as well as the remainder of the blanket, following which the entire image is transferred to a sheet of paper. In order to control the contact pressure between the cylinders, a mechanism shown in FIGS. 1 and 4 is



provided. A link 25, having an elongated slot 26, is fixed to one of the eccentric stub shafts 16 projecting from the ends of the shaft 15. A lever 29 fixed to a pivotal pin 30 carries a pin 31 which travels in the slot 26. Also fixed to the pin 30 is a manually operable handle 32. It may readily be seen that by moving the handle 32 forward, in the direction of the arrow, the lever 25 is moved forward thereby pivoting the eccentric pin 16, whereby the blanket cylinder 14 will be urged toward the cylinder 12 thus increasing the contact pressure between the two cylinders. In this way, the contact pressure may be increased sufficiently to permit copies of the entire image on the printing plate to be produced, including that portion of the image whose position corresponds to the cutout windows of the underlay sheet A. In practice, the operator holds the handle 32 in forward position until the desired number of copies of the entire plate image have been produced.

It should be mentioned that the present invention is as applicable to three cylinder presses as to two cylinder presses. In addition, note that the underlay sheet need not necessarily have cutout windows, as such, but that any manner of producing an underlay sheet having an uneven surface will suffice, as long as the unevenness of the underlay sheet is such that the proper portions of the blanket will be depressed below the periphery of the remainder of the blanket. Furthermore, it is anticipated that an underlay sheet might be employed having varying depths of unevenness thereby permitting certain information to be blocked out at one contact pressure, and certain additional information to be blocked out at some other contact pressure. What is more, it is contemplated that the printing plate or the platen of a printing press might be resiliently mounted and a sheet having an uneven surface could then be employed to underlay such plate or platen with the same advantageous results as is obtained by underlaying the blanket. It follows, therefore, that the present invention may be utilized as effectively with a direct lithographic press as with an offset press.

It is apparent, then, that the present invention not only permits information anywhere on the printing plate to be blocked out without blocking out any other information on the plate, but in addition, with the present invention the machine need not be stopped between running copies of the entire plate image and running copies which do not contain all the information on the plate, thus eliminating the machine down time mentioned above.

The invention has been shown and described in preferred form only and by way of example, and many variations and modifications may be made therein and in its mode of application which will still be comprised within its spirit. It is understood, therefore, that the invention is not limited to any specific form or embodiment, except insofar as such limitations are specified in the appended claims.

What is claimed is:

1. A printing press adapted to selectively print or not to print predetermined areas of an image contained on a lithographic printing plate, said press comprising a plate member to which a lithographic plate may be attached, the plate having image areas which are not printed from during selected printing cycles, means cooperating with said plate member for receiving an offset image from the lithographic plate, said means being mounted for movement between a first and a second cooperative relationship with said plate member, an underlay sheet positioned under said last named means and having cut-out sections in registry with image areas that are not to be printed from during selected printing cycles, said underlay sheet being of a thickness to cause an image to be transferred from the lithographic plate to said offset receiving means except in the areas in registry with the cut-out sections of the sheet when said plate member and said offset receiving means are in a first cooperative relationship and to cause an image to be transferred from the lithographic plate to said offset receiving means including an

image from the areas in registry with the cut-out sections of the sheet when said plate member and said offset receiving means are in a second cooperative relationship, and manually controlled means for moving said plate member and said offset receiving means into a first or second cooperative relationship during continued rotation of said plate member and said offset receiving means whereby an image selectively excluding or including the image from the area in registry with the cut-out section of said underlay sheet is transferred to said offset receiving means without arresting rotation of the press.

2. A printing press according to claim 1 wherein the offset receiving means is a blanket member and the underlay sheet is positioned under the blanket thereof.

3. A printing press according to claim 2 wherein the press is of the two cylinder type and wherein the blanket member is eccentrically mounted so that it can be moved by the manually controlled means into a first or second cooperative relationship with said plate member.

4. A printing press according to claim 3 including means for maintaining said blanket member in one cooperative relationship and wherein said manually controlled means is operable to move said blanket member to the other cooperative relationship with said plate member.

5. A printing press adapted to selectively print or not to print predetermined areas of an image contained on a lithographic printing plate, said press comprising a plate member to which a lithographic plate may be attached, the plate having image areas which are not printed from during selected printing cycles, means cooperating with said plate member for receiving an offset image from the lithographic plate, said means being mounted for movement between a first and a second cooperative relationship with said plate member, an underlay sheet positioned under said last named means and having cut-out sections in registry with image areas that are not to be printed from during selected printing cycles, said underlay sheet being of a thickness to cause an image to be transferred from the lithographic plate to said offset receiving means except in the areas in registry with the cut-out sections of the sheet when said plate member and said offset receiving means are in a first cooperative relationship and to cause an image to be transferred from the lithographic plate to said offset receiving means including an image from the areas in registry with the cut-out sections of the sheet when said plate member and said offset receiving means are in a second cooperative relationship, and manually controlled means for moving said plate member and said offset receiving means into said first or second cooperative relationship during continued rotation of said plate member and said offset receiving means, wherein said last named means comprises a manually operated bell crank mechanism, a first shaft on which is mounted said offset receiving means, a slotted link engaging said bell crank mechanism and affixed to one of a pair of eccentric stub shafts, and a pair of eccentric stub shafts mounted on said first shaft whereby pivotal movement of said bell crank mechanism increases or decreases the contact pressure between said offset receiving means and said plate member without arresting rotation of the press.

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