April 15, 1930. E. D. LAWRENCE 1,754,795

TRANSFER BOARD FOR PRINTING PRESSES

Filed Aug. 23, 1928

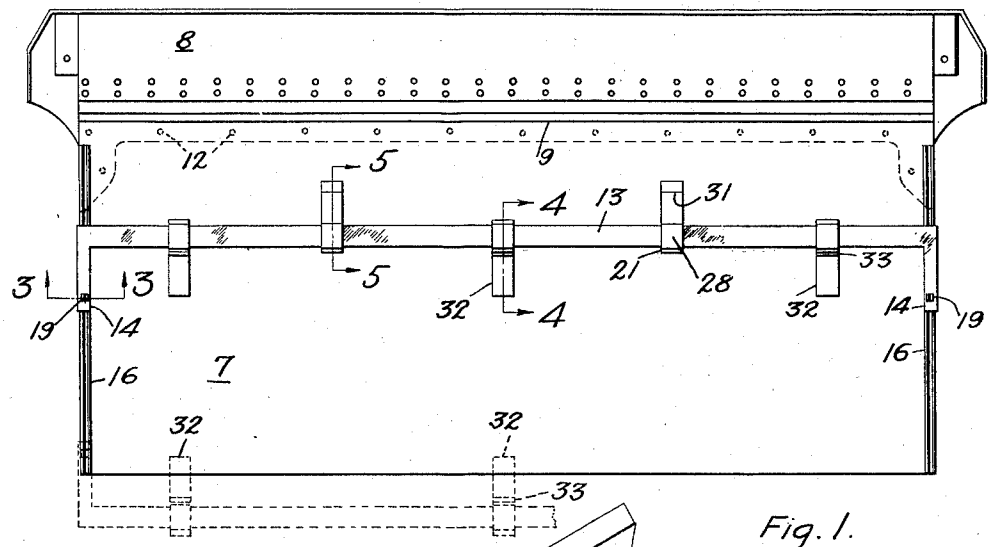

Fig. 1.

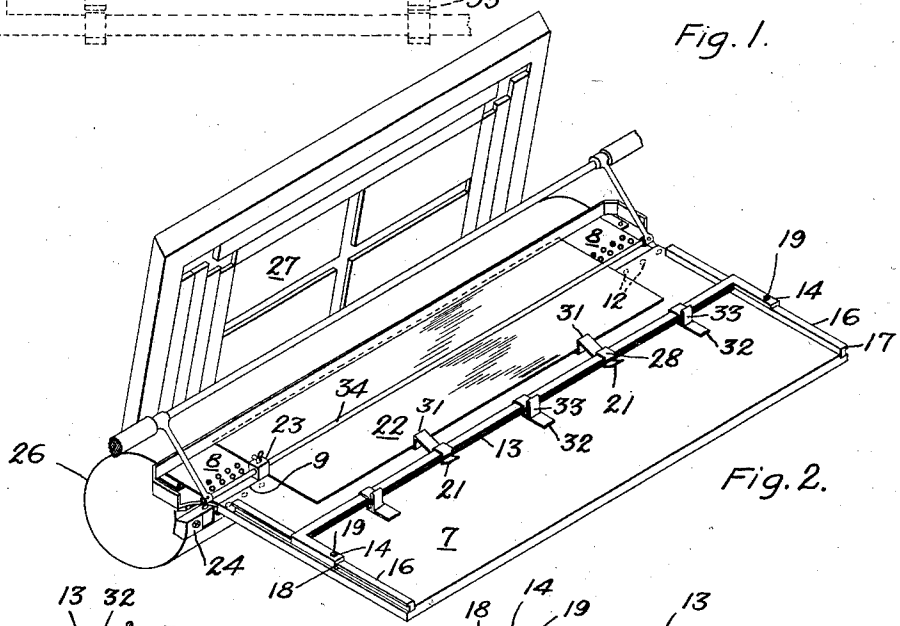

Fig. 2.

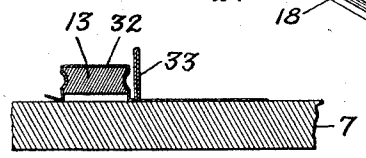

Fig. 4.

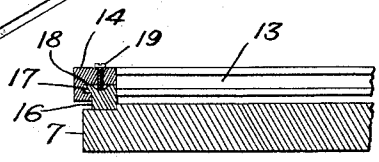

Fig. 3.

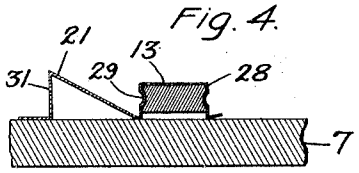

Fig. 5.

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UNITED STATES PATENT OFFICE

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TRANSFER BOARD FOR PRINTING PRESSES

Application filed August 23, 1928. Serial No. 301,573.

The invention relates to improvements in sheet positioning means of transfer boards such as are arranged to receive the sheets from the feed table for delivery to the cylinder and form, and relates more particularly in the present embodiment of the invention to improvements of the character described for use with presses generally known as the Miehle vertical.

In the operation of the type of press aforesaid, as is well understood in the art, the sheets are transferred from the feed table to the transfer board where they are held in the position in which they have been deposited thereon by suitable suction means. Thereafter the table is depressed with the forward end inclined downwardly, a final slight forward movement occurring to place the sheet in predetermined position, whereupon the gripper bar on the press cylinder withdraws the sheet from the board so that it will travel with the cylinder across the form. During the aforesaid downward and forward movement of the board, and before the gripper bar grasps the sheet, the suction impressed against the sheet to retain same on the board is cut off in order that means usually termed a side guide may move inwardly against the side edge of the sheet to effect the proper transverse positioning thereof. With the grip on the sheet thus released, quite frequently—especially when the press operates at a high rate of speed—the latter will partake of a variable slight rearward movement relative to the board. This irregular shifting of the sheet on the board is extremely undesirable, particularly in the case of multi-color work where each sheet passes through the press more than once, the shifting of the sheets bringing about a lack of proper registration of the different colored impressions. It is therefore an object of my invention to provide a transfer board which will have effective and yet relatively simple means incorporated therewith for preventing the aforesaid shifting of the sheet and which will be adaptable to accommodate any size sheet within the normal capacity of the press.

Another object of the invention is to provide a transfer board with the above mentioned feature, which may be installed on the press to replace the existing board without requiring special attaching means or the mutilation of any of the press parts.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Figure 1 is a plan view of the transfer board of my invention and a contiguous portion of the press.

Figure 2 is a perspective view of the board and associated parts of the press in operative relation.

Figures 3, 4, and 5 are fragmentary sectional views of the board parts taken respectively on lines 3—3, 4—4, and 5—5, of Figure 1.

As illustrated in the drawings the board of my invention comprises a sheet supporting plate 7 preferably made of wood and arranged for releasable attachment to the guard or trip-hole plate 8 provided on the press. When the board of my invention is designed to replace a board of the existing type, the forward edge 9 of the plate is made of a form to permit of its attachment to the plate 8 by the same means such as the screws 12 with which the replaced board was held in position.

Extending transversely across the plate 7 is a bar 13 arranged for adjustment to and from the plate 8. The end portions of the bar 13 are provided with bearings 14 which ride on parallel guides 16 disposed along the side edges of the plate 7 at right angles to the bar. Retention of the bearings on the guides is effected by means of flanges 17 provided on the guides and engaging in recesses 18 formed in the bearings 14. It will be noted that the bearings are relatively long so that the bar will always extend straight across the plate.

Locking of the bar in adjusted position is preferably effected by means of screws 19 which extend through the bearings and are arranged to press against the guides 16 whereby the flanges 17 will be firmly held against the lower face of the recesses 18 as clearly indicated in Figure 3. Attached to the bar and preferably slidably mounted thereon for movement transversely of the plate 7 are one or more guards 21 arranged to serve as a stop for the rear edge of a sheet 22 while the latter is supported on the plate and moved sidewise by the side guide 23 during the downward movement thereof and up to the period the gripper bar 24 grasps the sheet for travel with the cylinder 26 against the form 27. Each guard, as clearly shown in Figure 5, is formed with a yoke 28 straddling the bar and resiliently engaging the sides thereof, the yoke being formed with inward depressions 29 engaging in the recessed sides of the bar. Extending forwardly from the yoke is an upright stop 31 against which the sheet abuts as illustrated in Figure 2, during the transfer interval above noted so as to insure the uniform positioning of the sheet on the cylinder and form and thereby insure the registration of the different impressions. It will be clear that by adjusting the position of the bar and the guards, the transfer board may be adapted for sheets of a wide range of sizes. Furthermore, in the event it is desired to accommodate a sheet of the same size, or even larger than the board, the bar may be reversed as indicated by the dotted lines in Figure 1, and guards 32 used in place of the guards 21, the stop portions 33 of the former being much closer to the bar than are the stop portions 31 of the guards 21, thereby readily permitting the use of sheets which extend beyond the back edge of the board.

It is to be particularly noted that with the parts designed and positioned on the plate as described herein and illustrated in the drawing, the board will not interfere in any manner with the proper functioning of any of the mechanism on the press, since in the operation of the latter the sheet is to be delivered to the board from the feed table with the existing mechanism and placed under side guide bar 34 in the usual manner, the sheet readily passing over the bar 13 and guards with its rear edge coming in contact with the latter when the sheet is deposited on the board, and remaining in such contact until the gripper removes the sheet.

I claim:

1. A transfer board of the character described comprising a movable plate arranged to have a sheet for printing introduced thereon from over one edge of the plate and removed therefrom over another edge, and means adjustable bodily towards and away from and in a plane substantially parallel to the last named edge and arranged to serve as a stop for an edge of said sheet to prevent the reverse movement of said sheet during the movement of the plate and prior to the removal of the sheet therefrom.

2. A transfer board of the character described, a movable plate arranged to have a sheet deposited thereon and removed therefrom, a bar extending transversely across said plate, guide rails at the side edges of said plate at right angles to said bar, means adjacent the ends of the bar engaging said rails to permit the adjustment of said bar on the plate, and guards associated with said bar for adjustment transversely of the plate and arranged to engage an edge of the sheet on the plate to prevent the rearward displacement of the sheet during the movement thereof and prior to the removal of the sheet therefrom.

In testimony whereof, I have hereunto set my hand at Oakland, California, this 16th day of August, 1928.

EDWARD D. LAWRENCE.