

Dec. 15, 1925.

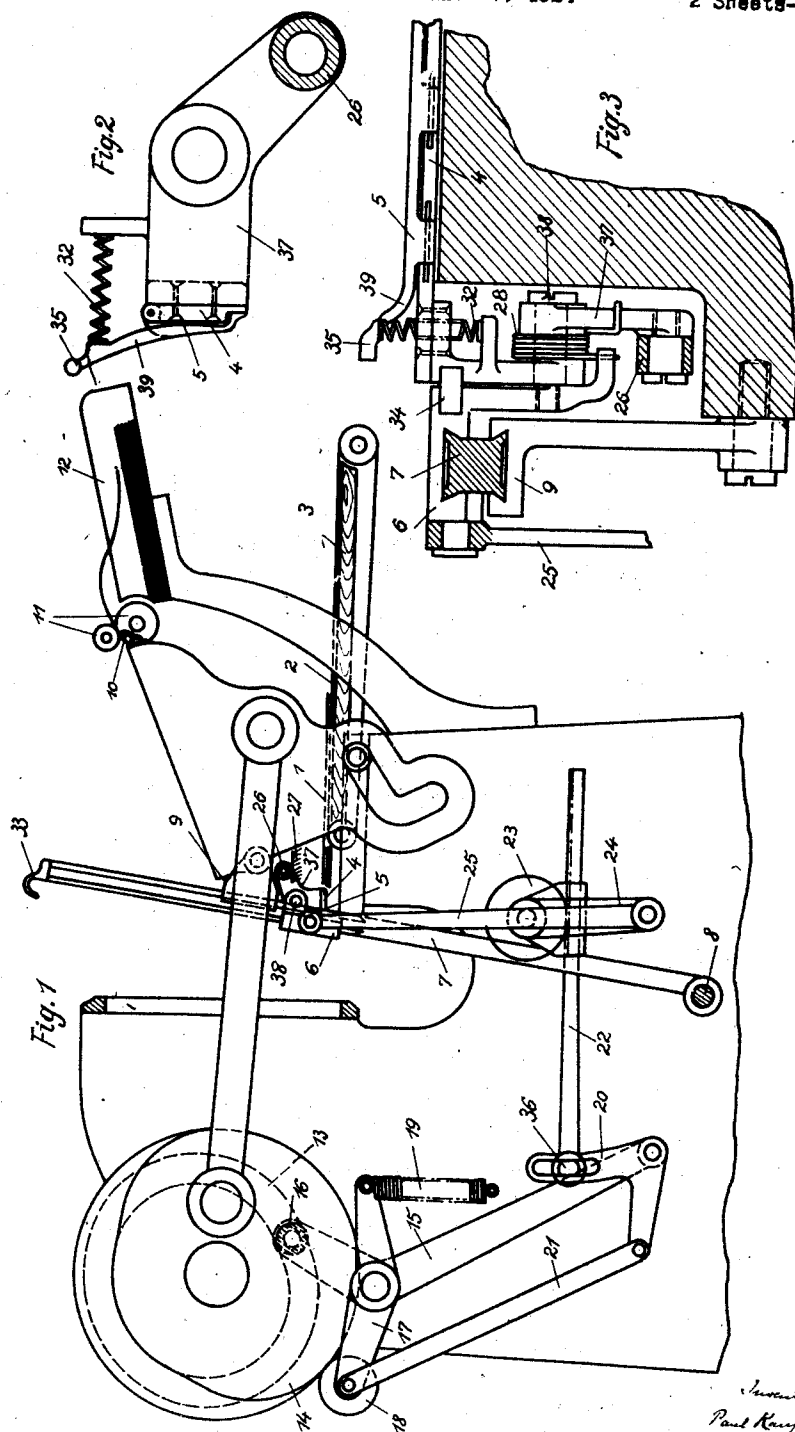
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FEEDING AND DELIVERING MECHANISM FOR PLATEN PRESSES

Filed Jan. 26, 1924

2 Sheets-Sheet 1



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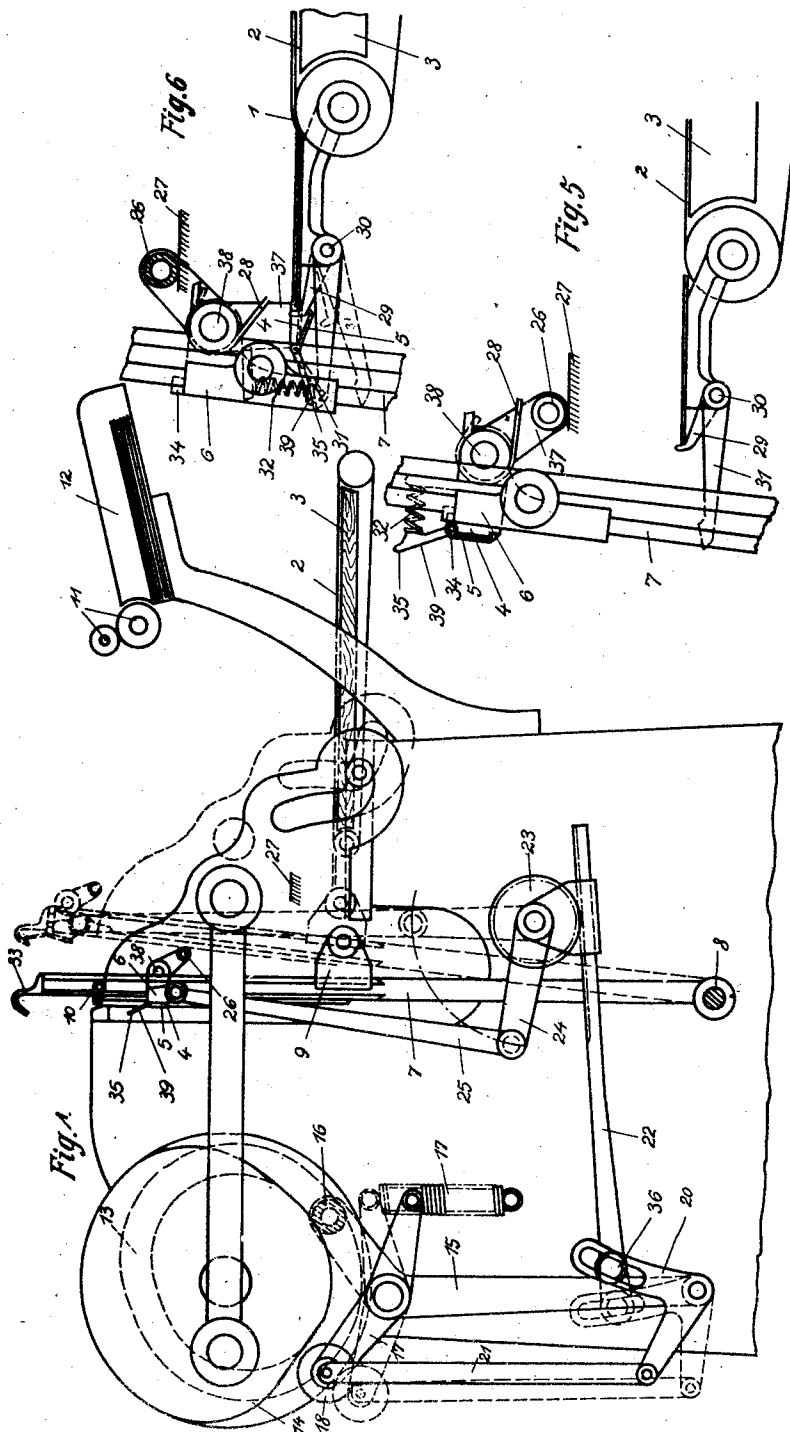
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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FEEDING AND DELIVERING MECHANISM FOR PLATEN PRESSES.

Application filed January 26, 1924. Serial No. 688,784.

To all whom it may concern:

Be it known that I, PAUL KAUFMANN, a citizen of the German Republic, residing at Dresden, Germany, have invented certain new and useful Improvements in Feeding and Delivering Mechanism for Platen Presses, of which the following is a specification.

This invention relates to a feeding and delivering mechanism for platen presses in which the sheet, when being in the lowest position, is gripped by a gripper bar, printed when being in the median position and conveyed to the deliverer when being in the upper position.

This mechanism differs from other mechanisms of this type essentially in that sheets of any size can be printed on the central part of the platen. A further advantage is, that the gripper band does not interfere with the getting ready of the form as it comes in contact with the platen only shortly before the printing above the point of getting ready.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding that while on the drawings one embodiment of the invention is disclosed, the invention is not confined to any strict conformity with the showing of the drawings, but may be embodied in any manner which does not make a material departure from the salient features of the invention.

In the drawings:—

Fig. 1 shows in side elevation the machine in open position.

Figs. 2 and 3 show in side elevation on larger scale the gripper band and elements working together with the same, Fig. 3 shows the gripper bar only on one side of the press, the arrangement being identical on the other side.

Fig. 4 shows the platen press in the printing position.

Figs. 5 and 6 illustrate how the sheet is gripped by the gripper band.

The sheet 1 (Fig. 1), which has been conveyed by a band conveyor 2 up to the front end of the table 3, is gripped at this point

by a gripper band 4 which is guided in two prism-rods 7. The prism rods 7 have their fulcrum 8 in the frame and are pushed away from the printing form by means of catches 9 pivotally fixed on the platen so that the gripper band 4 gliding in the prism rods 7 can grip the sheet 1. This takes place, when the machine is in the open position (Fig. 1), in the manner which will be hereinafter described. If the platen goes now back towards the bed the gripper band 4 with the sheet 1 glides in a direction to a position which corresponds with the size of the sheet (Fig. 4). The sheet 1, which hangs securely in the gripper band 4, is now printed, the printing taking place always at the centre of the platen for any size of the sheet from the smallest to the largest folio size. After the printing the gripper bar 4 with the sheet 1 slides for a certain distance beyond the upper edge of the platen. In this position, which is shown in Fig. 4 in broken lines, the upper gripper 5, pivotally mounted on the gripper band 4, opens as its stud 35 runs up on nose 33. The sheet, which is thus released, is held by the hook 10 arranged on the platen. The platen oscillates now with the sheet 1, in the well known manner, away from the gripper band 4 which is already sliding back. The sheet 1 projecting over the edge of the platen is then pushed by the platen between several rapidly revolving rollers 11 which push the sheet 1, after it has been released by the turning over of the hook 10, into the delivering box 12. This takes place during the open position of the machine (Fig. 1). The transfer of the sheet to the gripper band 4 is effected in the following manner.

The gripper 5 is pivotally mounted on the gripper band 4 (Figs. 2 and 3). The two ends of the gripper band 4 are each riveted on an elbow lever 37. Each elbow lever 37 carries a roller 26 and is pivotally mounted on a slide block 6 by means of a screw 38. A spring 28 serves for pressing the elbow lever 37 with the gripper band 4 permanently against the slide block 6. A lever 39 is hingedly connected with both ends of gripper 5. This lever 39 has a stud 35, a spring 32 maintaining the gripper 5 in the closed position. When the gripper band

4 is gliding by means of the slide blocks 6 along the prism rods the roller 26 strikes against the fixed abutment 27, and, as the slide blocks 6 continue to move, the angle lever 37 executes, together with the gripper band 4 and the gripper 5, an oscillating movement (Figs. 5 and 6). The stud 35 of the lever 39 runs consequently up a surface on a lever 31 so that the gripper 5 is opened. In this position the slide block 6 does not move. This takes place after the commonly used front stops 29, on the axle 30 of which the lever 31 carrying the contact surface is also mounted, have been lowered by any convenient mechanism known per se together with said lever 31 (Fig. 6 position indicated in broken lines). The gripper 5 having been consequently closed by the action of spring 32 the slide block 6 begins its upward movement which causes the gripper band 4 with sheet 1 to go back to the initial position from which it slides on for the printing (Fig. 5).

The movement of the gripper band 4 is independent of the platen and is effected in the following manner: Two curves 13 and 14 are arranged on the cam disk (Figs. 1 and 4). Curve 13 operates the lever 15 through the intermediary of roller 16. Lever 17 with roller 18 is pressed by spring 19 on the curve 14 and consequently operated from the same. The slotted lever 20 is hingedly mounted on the lever 15 and connected with the lever 17 by means of rod 21. When the platen goes from the open position into the printing position curve 13 has brought the lever 15 into the position shown in Fig. 4.

The rack 22, which is adjustably hinged by a bolt 36 on the slotted lever 20 has also travelled the same path and transmitted its movement to the toothed wheel 23. This wheel is keyed on a shaft which has brought the gripper band 4 through the intermediary of crank 24 and crank rod 25 (arranged at the right and left sides of the machine) into the position shown in Fig. 4. After this the printing curve 14 begins to operate in bringing the slotted lever 20, with the aid of rod 21, roller 18 and lever 17, into the position indicated in Fig. 4 in broken lines. The gripper band 4 has thus been moved into the upper position in which the sheet is delivered on the edge of the platen.

By the action of the curves 13 and 14 the slotted lever 20 is brought into three positions, in the first of which the gripper band 4 grips first the sheet (Fig. 1), secondly brings the sheet to the position for printing (Fig. 4), thirdly delivers the sheet (Fig. 4 in broken lines) above the edge of the platen. In the open position of the machine (Fig. 1) in which the gripper band 4 grips the sheet, the slotted lever 20 is in a position in which the rack 22, indifferently in which

position it is in the slot lever, does not transmit any movement upon the gripper band 4. In the printing position (Fig. 4) the gripper band 4 has moved, in accordance with the position of the rack 22 in the slotted lever 20, into a position which corresponds with the size of the sheet. In this position the gripper band 4 is at rest, as no movement is communicated to the slotted lever 20 by the curves 13 and 14.

After the printing the slotted lever 20 is brought by curve 13 into the third position (Fig. 4 in broken lines), in which the sheet 1 is delivered above the edge of the platen. This position is again selected in such a manner that the slotted lever 20 is in a position, in which the rack 22 adjustably hinged on the same can oscillate in the radius around the point at which it engages with wheel 23, without influencing the gripper band 4. In this manner it is ensured that the sheet 1 is delivered always at the same point above the platen. After the sheet 1 has been delivered the curves 13 and 14 make the slot lever 20 and with it the gripper bar 4 return to the position shown in Fig. 1 in which the next following sheet is gripped.

I claim:—

1. A feeding and delivering mechanism for platen presses in which the sheet is taken from the table situated below the platen and conveyed after the printing in upward direction to the delivering mechanism comprising in combination with the machine frame and with the platen, a gripper band designed to grip the sheet, two prism rods mounted on the base frame a base frame designed to guide said gripper band, and means on the platen for controlling said prism rods.

2. A feeding and delivering mechanism of the type described comprising in combination a gripper band, a lever mechanism for bringing said gripper band first into a position for gripping the sheet, secondly into the printing position, thirdly into the position of delivering the sheet, and in said lever mechanism an elbow lever having a slot in one arm by means of which said gripper band when being brought into the printing position is adjusted according to the size of the sheet without influencing the total stroke.

3. A feeding and delivering mechanism of the type described comprising in combination with the frame and with the platen, two prism rods oscillably mounted on a stationary point of the frame, catches on the platen, and means connecting said catches with said prism rods for oscillating said prism rods approximately parallel to the surface of the platen shortly before and after the printing.

4. In a feeding and delivering mechanism

of the type described, means for adjusting the gripper band in accordance with the size of the sheet to be printed consisting of an elbow lever having an arc-shaped slot, a bolt of the gripper bar engaging with said slot, a cam disk with two cams, a system of rods and levers operated from said cams and hinged to said elbow lever so that by the adjusting of said bolt neither the initial position of the gripper bar at the taking over of the sheet nor the end position of said gripper band are altered. 10

In testimony whereof I affix my signature.

PAUL KAUFMANN.