

APPLICATION FILED MAR. 6, 1908.

Patented May 7, 1912.

2 SHEETS--SHEET 1.

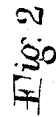


Fig: 1

Witnesses
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 DELIVERY MECHANISM FOR PLATEN PRESSES.
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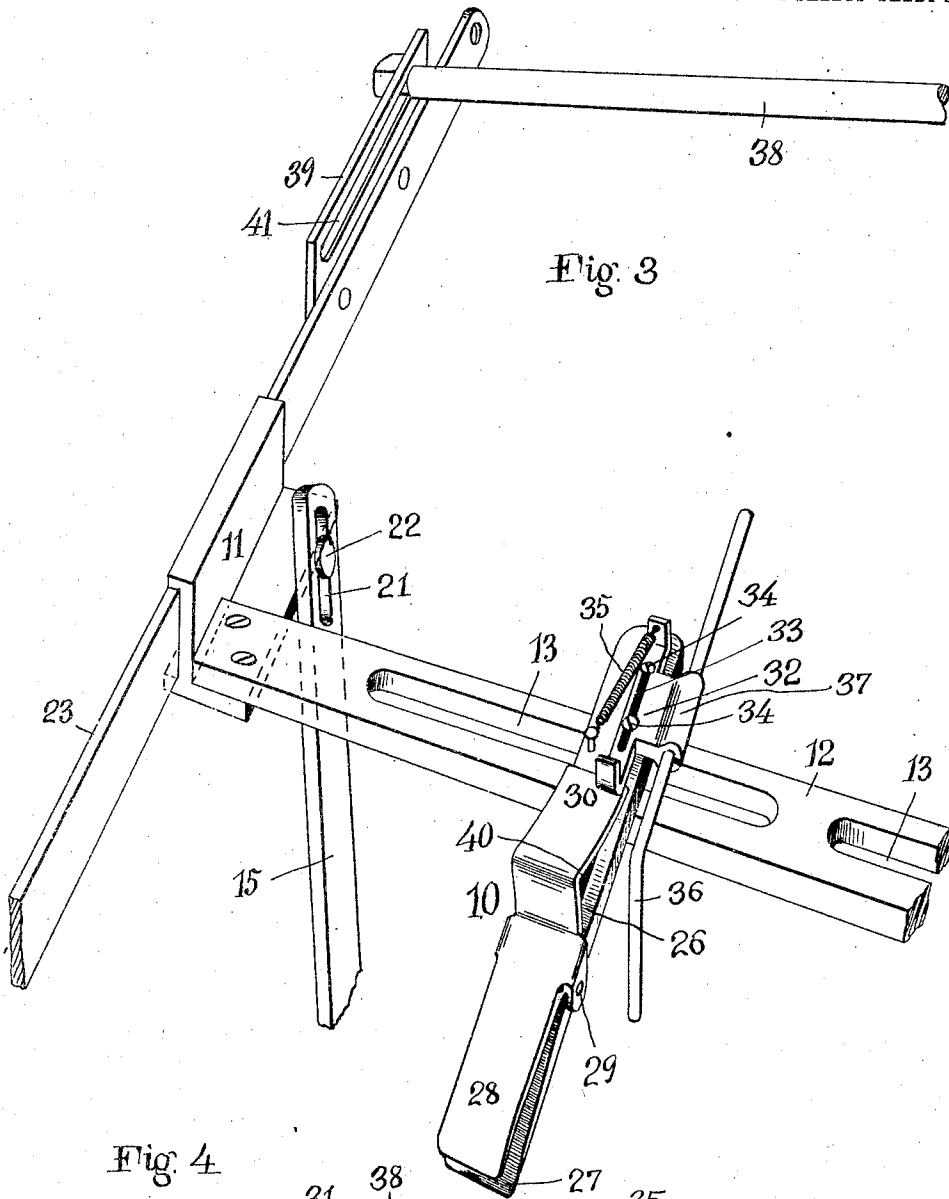


Fig. 3

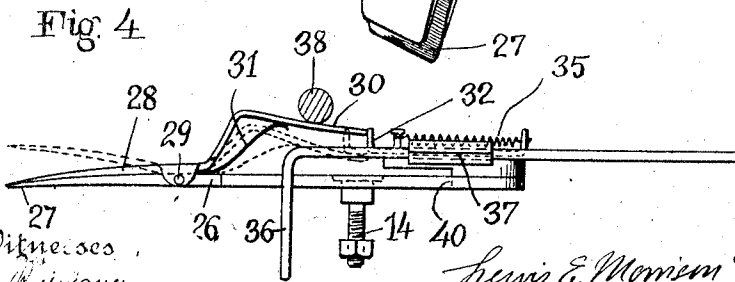


Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

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DELIVERY MECHANISM FOR PLATEN-PRESSES.

1,025,418.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed March 6, 1908. Serial No. 419,480.

To all whom it may concern.

Be it known that I, LEWIS E. MORRISON, a citizen of the United States of America, and a resident of Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Delivery Mechanism for Platen-Presses, of which the following is a specification.

This invention relates to delivery mechanism for printing machines and more particularly to a delivery mechanism for use on platen presses having a movable or oscillating platen. Such machines are generally called job presses and the sheet or other matter to be printed is fed to the platen by hand and also removed by hand, so that the speed of the press is dependent upon that of the operator.

The present invention enables the operator to confine his attention to the feed only, hence the machine can be run faster and accidents are not so liable to occur, as when the operator is compelled to put both hands on the platen at the same time.

The invention comprises a gripper mechanism for seizing and removing the printed sheet from the platen, and such other elements or parts as are necessary to operate the grippers; it should be noted, however, that one of the main advantages and features of this invention resides in the fact, that it can be applied to the press very quickly, and does not demand any changes in the original construction thereof.

In the following specification this invention is fully disclosed, and the accompanying drawings illustrate the preferred form thereof.

In the said drawings Figure 1 is a side view of a platen press with one of the side frames removed and equipped with a delivery mechanism embodying my invention; Fig. 2 is a front view showing the gripping mechanism; Fig. 3 is an enlarged perspective view of one of the grippers and adjacent parts; and Fig. 4 is a side view of one of the grippers detached.

Referring more particularly to Fig. 1, the reference numeral 1 indicates the side frame of the press, 2 is the oscillating form carrier, which is operated by connecting rod 3 pivoted to gear 4, which is driven by pinion 5 on the driving shaft 6.

7 is the platen which is oscillated in the usual manner to coöperate with the form member.

In Fig. 1 the press is shown "open" or ready to receive the sheet in full lines; and in dotted lines are shown the positions of the different parts when the impression is on.

The parts so far described are found on all presses of this type and I need not go into detail about the various parts or their operation, as these things are well known in the art and form no part of my invention.

On the frame of the press are mounted two brackets 8, 8 which support a feed table 9 upon which are placed the sheets to be printed.

In order to remove the printed sheet from the platen, I provide the grippers 10. These are moved toward and onto the platen where they seize the sheet, and are then moved away from the platen toward the front of the press where they are opened by suitable means and the sheet is dropped into the receptacle 50. I will now describe the means for causing this reciprocating motion of the grippers; see Fig. 3 for details. The grippers, in this instance two, are carried by a gripper carriage which comprises the slides 11, one on each side, which are joined by the gripper bar 12. This latter is provided with slots 13 so that the grippers can be adjusted transversely and fastened by bolts 14, see Fig. 4. The carriage is reciprocated by means of the oscillating arms 15, 15 pivoted on shaft 16, which is mounted in brackets 17. One of the arms 15 carries a short arm 18 which is connected at 19 to the connecting rod 3 by the lever 20, so that as the connecting rod reciprocates the arms 15 oscillate on the shaft 16, and the gripper carriage is reciprocated toward and away from the platen. The arms 15 are connected to the slides 11 by slots 21 and studs 22; see Fig. 3. The grippers are guided by having the slides 11 slide on the arms 23, 23, which are pivoted at 24 on the brackets 8 and which follow the movements of the platen by resting on the rollers 25 fastened on the latter, one on each side.

The illustration shown in Fig. 1 of the gripper motion can now be understood. The grippers are there shown in full lines as having closed on a sheet on the platen and in

dotted lines is shown the extreme forward position of the arm 15 and the gripper carriage and grippers. The short arm 18 is bent as shown in Fig. 2 to escape contact with the gear 4.

I will now describe the grippers proper and the manner in which they are opened and closed, prefacing the explanation with the remark, that the grippers are always open except when removing a sheet from the platen and until it is deposited in the receptacle 50. Referring now to Fig. 4 it will be seen that the gripper comprises the lower gripper jaw 26 which rear end is thinned down as at 27 to enable it to pass close over the surface of the platen and under the printed sheet, it being understood, that the latter is usually raised slightly from the platen by pasting a piece of paper or cardboard on the latter. The upper gripper jaw 28 is pivoted on the lower one at 29 and is also thinned as shown. The tail portion 30 of the upper gripper jaw is raised above the lower jaw and a spring 31 presses against this raised portion and tends to keep the grippers closed. At the rear of the lower jaw is mounted a sliding member 32 provided with a slot 33 and guided in its movements by the pins 34, which latter are fast in the lower jaw and which limit the motion of the slide 32. A spring 35 exerts a steady pull on the slide toward the upper gripper jaw. A gripper closing member 36 is carried by the slide 32 by being held by friction in the split sleeve 37 of the slide. The lower gripper jaw is provided with a slot 40 to admit of adjustment at right angles to the bar 12.

The grippers are opened by means of a rod 38 which extends across the machine and is carried by lugs 39 having slots 41 so that the position of the rod 38 may be adjusted. See Fig. 3. The lugs 39 are fastened to the arms 23 and move therewith; only the parts on the one side are shown, as they are alike on both sides. Attention is called to the positions of the upper gripper jaw in Figs. 3 and 4. In the former the gripper is shown open, in the latter the gripper is closed.

The operation is as follows: Suppose that the press is open and that the operator is placing a sheet upon the platen,—the positions of the various parts will then be as shown in full lines in Fig. 1. The platen now moves down, coacts with the form and the sheet is printed,—see dotted lines Fig. 1. As the platen returns with the printed sheet, the grippers are moved toward it, each gripper being in the position shown in Fig. 3, in which it should be noted that the upper jaw 28 is held open by reason of the fact that the slide 32 overlaps the tail 30 of the upper jaw, the spring 35 holding the slide in this position. In other words, when the grippers move toward the platen, they

are open. The parts are so timed, that the forward motion of the platen and the rearward motion of the grippers cease at the same time, and the lower gripper jaw will have passed between the platen and the printed sheet. At this moment, however, the member 36 will abut the edge of the platen and is forced back carrying the slide 32 with it, thus releasing the upper gripper jaw, which by reason of the spring 31 will close on the sheet, and is also held closed by the slide 32, which abuts the tail 30 by the force of the spring 31 as seen in Fig. 4. The platen now commences its rearward stroke, and the grippers remove the sheet therefrom. It should be noted, that the grippers do not pull the sheet from the platen by a movement parallel to the surface thereof, but as the grippers withdraw, they are also raised by the arms 23 and the removal of the sheet takes place quicker, giving the operator ample time to place a fresh sheet on the platen, before the latter moves down. Almost at the end of the forward stroke of the gripper, the upper jaw will encounter the rod 38, as shown in Fig. 4, and as the grippers continue to move forward the tail 30 will be depressed by the rod 38, gently opening the grippers until the tail snaps under the end of the slide 32 and the grippers are fully opened and the sheet has been dropped in the receptacle 50. The operation is now repeated and the grippers moved rearward in order to remove the next sheet from the platen, and it will be seen from Fig. 4 that the open gripper will pass under the rod 38 without contacting therewith.

The following facts should be kept in mind for fully understanding the above described operation. The motion of the grippers is rectilinear on the oscillating arms 23 by reason of the pin and slot connections between the said arms and the swinging arms 15, so that the grippers partly raise the sheet in removing the same from the platen, this gives the operator ample time to feed a fresh sheet to the press. It has also been stated that the grippers are adjustable transversely on and at right angles to the bar 12, and the grippers may be fixed to reach way in on the platen to grip a small card, or they may be adjusted to just overlap the edge of the platen to seize a large sheet. Corresponding with the position of the grippers will be the position of the closing member 36. If a small card or envelop is printed, the grippers must reach far in over the platen in order to seize it, consequently the member 36 will be pushed closer to the bar 12 to close the grippers later than when a large sheet is handled, in which instance the member 36 will be adjusted to close the grippers early. If, however, the member 36 should be adjusted too far away from the bar 12 and hits the platen

before the finish of the stroke of the gripper carriage, it will simply be pushed back in its sleeve 37 and will not break, hence the reason for not fixing the member 36 by set screw or similar means. On the other hand, the sleeve holds the member 36 fast enough, so that it will perform its function when properly adjusted. Inasmuch as the grippers may assume different positions with relation to the bar 12, it will be clear that the opening rod 38 must be adjustably carried in the lugs 39, so that the grippers will be opened at the proper time to deposit the sheet.

This invention is thought to be clear from the foregoing and it will be seen that it is readily put on the press and that the construction of the latter is not changed, also that the delivery takes place under the feed table and the printed sheets may easily be removed.

I do not limit myself to the exact form shown, as changes may be made within the scope of the claims.

I claim:

1. The combination of a platen press having a movable platen, delivery grippers, means carried by the said delivery grippers for closing the same by contact with the said platen, guiding means for said grippers and means mounted on the said guiding means for opening the delivery grippers at a predetermined point.

2. A delivery gripping mechanism for platen presses comprising a pair of oscillating levers, grippers mounted to reciprocate on said levers, means for closing said grippers, means for opening said grippers the said opening means being adjustably mounted on the aforesaid oscillating levers.

3. A delivery gripper for printing machines comprising a lower gripper jaw, an upper pivoted gripper jaw, means interposed between the said jaws for normally closing the same, a spring actuated sliding member for keeping the upper jaw in open position during given periods and means carried by said sliding member for closing the said gripper.

4. A gripping mechanism of the class described comprising oscillating guiding means, a gripper carriage movable on said guiding means, grippers carried by the said carriage, means for adjusting the said grippers transversely on the said carriage and at right angles thereto, means for closing the said grippers and means for opening the same.

5. A gripping mechanism of the class described comprising oscillating guiding means, a gripper carriage movable on said guiding means, grippers carried by the said carriage, means for adjusting the said grippers transversely on the said carriage and at right angles thereto, means for closing

the said grippers and means for opening the same, the said opening means being carried by the said guiding means.

6. The combination with a platen press having a movable platen, pivoted levers adapted to coact with said platen, a gripper carriage slidably mounted on said levers, grippers on said carriage, means for closing said grippers by contact with the said platen and means for opening said grippers adjustably carried by the said levers.

7. The combination with a platen press having a movable platen, pivoted levers adapted to be oscillated by said platen, delivery grippers movably supported by the said levers, means carried by the said grippers for closing the same by contact with the said platen, means for reciprocating the said grippers and means carried by the said levers for opening the said grippers.

8. The combination of a platen press having a movable platen, a movable form member, delivery grippers, means interposed between the said form member and the said grippers for reciprocating the latter and means interposed between the said platen and the said grippers for oscillating the latter.

9. The combination of a platen press having a movable platen, a pair of pivoted levers, means for oscillating the latter by the said platen, a gripper carriage supported by the said levers, means for adjusting the said grippers transversely upon said carriage and at right angles thereto, a movable form member, means for reciprocating the said gripper carriage on the said pivoted levers by the said form member and means carried by the said pivoted levers for opening the said grippers.

10. A gripping mechanism of the class described comprising oscillating guiding means, a gripper carriage slidably supported on the said means, grippers carried by said carriage, means for adjusting the said grippers toward and away from the said guiding means, and means for adjusting the grippers parallel to the said guiding means.

11. A gripping mechanism of the class described comprising oscillating guiding means, a gripper carriage slidably supported on the said means, grippers carried by said carriage, means for adjusting the said grippers toward and away from the said guiding means, means for adjusting the grippers parallel to the said guiding means, and gripper opening mechanism carried by the said guiding means and adjustable thereon.

12. The combination of a platen press having a movable platen, delivery grippers comprising an upper and a lower gripper jaw, a slide for locking the upper gripper jaw in open position, a spring for causing said slide to act and a member carried by

said slide for closing said gripper by contacting with the said platen to force the said slide back against the pull of the said spring.

5 13. The combination of a platen press having a movable platen, delivery grippers comprising an upper movable and a lower fixed gripper jaw, a slide carried by the said lower jaw for locking the upper jaw in
10 open position, a spring for causing the said slide to act and a member frictionally carried by the said slide for closing the said upper gripper jaw by contacting with the platen to force the slide back against the
15 pull of the said spring.

14. A gripping mechanism for printing machines comprising a reciprocating carriage, grippers thereon and consisting of a
20 a sliding member carried by the said lower

jaw, a spring interposed between the latter and the said slide, a member held in frictional contact with the said slide and adapted to force the latter away from the said upper gripper jaw to close the same.

15. The combination of a movable platen, movable members coacting with the same, a gripping mechanism carried by the said movable members, other members held in frictional engagement with the said gripping mechanism and adapted to coact with the platen to close the grippers and means for reciprocating the said gripping mechanism.

Signed at Newark, N. J. this 29th day of February 1908.

LEWIS E. MORRISON.

Witnesses:

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FREDERIC J. ARNOLD.