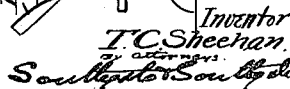


APPLICATION FILED JAN. 27, 1914.

2 SHEETS—SHEET 1.

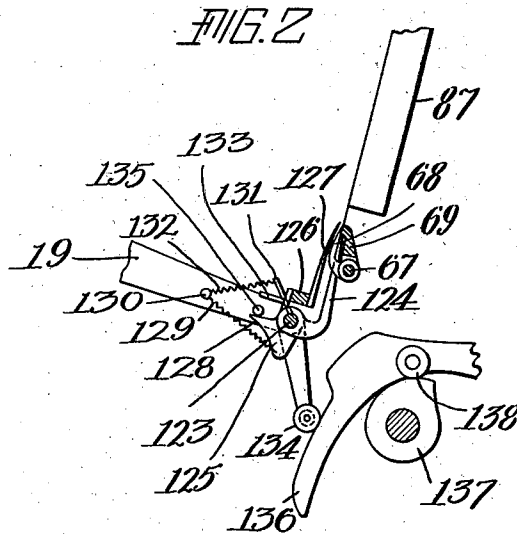
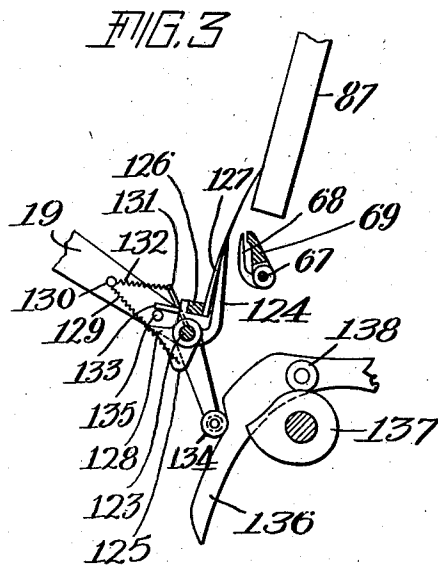


T. C. SHEEHAN.
DELIVERY MECHANISM.
APPLICATION FILED JAN. 27, 1914.

1,123,024.

Patented Dec. 29, 1914.

2 SHEETS-SHEET 2.



Witnesses:

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Inventor:
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by Attorneys

Southgate Boutwell

UNITED STATES PATENT OFFICE.

THOMAS C. SHEEHAN, OF ESSEX FELS, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN HIGH SPEED PRESS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DELIVERY MECHANISM.

1,123,024.

Specification of Letters Patent.

Patented Dec. 29, 1914.

Original application filed August 29, 1906, Serial No. 332,470. Divided and this application filed January 27, 1914. Serial No. 814,673.

To all whom it may concern:

Be it known that I, THOMAS C. SHEEHAN, a citizen of the United States, residing at Essex Fells, in the county of Essex and State of New Jersey, have invented a new and useful Delivery Mechanism, of which the following is a specification.

This is a division of my application Serial No. 332,470 filed August 29, 1906, for a printing machine.

The present invention relates particularly to that class of job printing machines known as self-feeding automatic platen presses.

My invention provides for a novel and improved construction and arrangement of parts in such a manner that the noise and vibration incidental to the operation of the machine are reduced, if not entirely absent.

In order to remove the sheet after it has been printed, I provide a delivery gripping mechanism, which is adapted to act as a fly as well as to grip the sheet and deliver it to the delivery table, said sheet being delivered outside or over the first gripper instead of through as has heretofore been the usual practice.

Other valuable features, as well as a preferred form of carrying out the invention, are disclosed in the following specification and the accompanying drawings, in which—

Figure 1 is a side elevation of a press embodying my invention. Fig. 2 is a view showing the position of the delivery grippers while the sheet is being printed. Fig. 3 is a similar view showing the sheet gripped by the delivery grippers. Fig. 4 is a view looking toward the platen, and showing the gripper mechanism, and Fig. 5 is a detail view showing the mechanism for retracting the grippers.

The reference numeral 1 indicates the side frames of the machine, for suitably supporting the component parts of the same. The said frames are connected in any suitable and conventional manner.

4 indicates the main driving pinion to which power is applied in any suitable manner.

5 indicates the bed carrying the inking mechanism of well known construction and therefore not shown. The bed is pivoted in the frame at 6 and oscillates in the well known manner. Motion is applied to a

shaft 14 by means of a gear 15 meshing with the aforesaid pinion 4. The said gear has a crank to transmit motion to a shaft 16 by means of a rod 17 and crank 18. Upon said shaft the delivery gripping mechanism is mounted by means of swinging arms 19, only one of which is seen.

The gripping mechanism illustrated comprises a gripper rock shaft 67, below the platen 87, on which shaft are mounted grippers 68, which set against a gripper bar 69, provided with cut out portions 70, for the delivery grippers.

When the printing of the sheet is finished the grippers 68 are opened and the sheet is released, ready to be removed from the platen 87 by means of the delivery gripper which will be described below. The grippers move out of the way to allow for this preferably by means shown in my companion case Serial No. 814,672, filed on even date herewith on a gripper feed. The mechanism for thus moving the grippers is shown in Fig. 5. The gripper bar 69 and the rock shaft 67 are supported upon carriers 71 which are pivoted at 72 to collars 73 (Fig. 4) which are rigidly secured to longitudinally sliding rods 74. The carriers 71 are each provided with rolls 88 each positioned to travel upon a cam track 89 pivoted at 90 to the frame of the machine. At its lower end each cam track is provided with a roll 91 contacting with a cam 92 mounted upon a rotating shaft 93. At its lower end the cam track is also provided with a recessed portion 107. As the rods 74 with the grippers attached thereto travel downwardly relatively to the cam tracks 89 the rolls 88 move along the straight intermediate portion of the cam tracks and the gripping mechanism travels in a line parallel with respect to the face of the platen. As the carriers approach the lower end of the track the roll 88 moves backward into the recess 107, and at the same time the cam 92 reaches a position in which the roll 91 is allowed to recede from its forward position. The combination of these two backward movements results in moving the grippers quickly out of the way of the delivery mechanism. The carrier 71 has a rearwardly extending arm 102 which is normally pressed upward by a coiled spring. This spring acts to keep the

roll 88 in contact with the track 89 and forces the roll backward into the recess 107. For a fuller description of this mechanism reference is made to the parent application:
 5 The gripping mechanism is now ready to travel up to seize the next sheet.

Coming now to the delivery gripping mechanism proper, the depending arms 19 are shown carrying between them a rocking shaft 10 123, upon which is mounted fast a lower gripper jaw 124. On the said shaft are oscillatably mounted two castings 125, only one of which is seen, and these castings support a bar 126, upon which is mounted the other gripper 15 jaw 127. The gripper jaws are of course so positioned as to conveniently enter the cut-out portions 70 in the upper gripper mechanism. The said castings carry a stop 128, and a spring 129 connects the rear portion of the casting with a pin 130. Another pin 131 is driven into the shaft and 20 between it and the pin 130 a spring 132 is located. This spring is stronger than the spring 129. A second stop 133 is also mounted in the casting. A cam roll 134 25 is provided which operates to open and close the grippers in a manner to be explained later. As the delivery gripping mechanism swings toward the platen to take the sheet from the same, the spring 132 30 overcomes the resistance of the spring 129 and forces the stop 133 into engagement with a pin 135 on the arm 19. When the gripper mechanism reaches the platen, the roll 134 comes into contact with a cam 136, 35 thereby turning the shaft 123 until the stop 128 under the influence of the spring 129 comes into contact with the pin 135. The cam 136 thereafter continues to turn the shaft 123 overcoming the resistance of 40 the spring 132 until the grippers are opened. The cam roll 134 now rides on the concentric raised portion of the cam 136, which in this position acts as a fixed cam. It will 45 be seen from Fig. 2 that one gripper jaw is on one side of the sheet, while the other gripper jaw is on the other side of the sheet. Upon the continued motion of the machine, the cam 136 recedes suddenly, thus allow- 50 ing the shaft 123 to be turned suddenly away from the platen. This has the effect of closing the grippers, inasmuch as no resistance is offered to the spring 132, and the sheet will be removed from the platen 55 by a fly action (not shown). The upper gripping mechanism, as before stated, has moved out of the way and thus presents no obstacle to the sheet in removing the same from the platen. This action of the delivery 60 gripper mechanism is shown very clearly in Figs. 2 and 3, where also the means for operating the cam 136 is illustrated, which, in the present form, takes the shape of a rotary cam 137 in engagement with a cam 65 roll 138, carried by the cam 136, which is

conveniently pivoted in the frame-work at 139 (see Fig. 4).

The delivery grippers now swing back, taking the sheet with them, until they reach a cam 140, which serves to open the grippers, which now let go of the sheet and deposit the same on the delivery table 141. 70

While I have illustrated and described a preferred form in which my invention may be embodied, and while I have shown it as 75 it may be constructed when used in connection with a particular type of printing machine, I am aware that many modifications may be made therein, and that the invention can be adapted for use with other types of 80 printing machines by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to the particular construction shown and de- 85 scribed, but

What I do claim is:

1. In a printing machine, in combination, a delivery mechanism comprising a pair of swinging arms, a set of gripping jaws yield- 90 ingly movable relative to said arms, a second set of jaws also yieldingly movable relative to said arms, and mechanism for opening said jaws and for moving said jaws relative to said arms. 95
2. In a platen printing machine, in combination, a set of grippers spaced apart and adapted to hold a sheet in printing position on the platen and to remove the sheet from the platen, with a movable delivery mechanism comprising jaws adapted to project 100 into the spaces between the first mentioned grippers to seize a sheet, and means for removing the first mentioned grippers from the path of the delivery mechanism. 105
3. A printing machine having a delivery mechanism comprising a swinging arm, a shaft thereon, a pair of jaws mounted on said shaft, resilient means tending to move said jaws in one direction, and a stronger 110 resilient means for normally moving said jaws in the opposite direction.
4. A printing machine having a delivery mechanism comprising a movable arm, a shaft thereon, a jaw on the shaft, a spring 115 for forcing said jaw in a certain direction, a stronger spring for forcing the jaw in the opposite direction, a stop for limiting the motion of the jaw in both directions, and a cam for moving the jaw in the direction 120 in which it is urged by the weaker spring.
5. A printing machine having a delivery mechanism comprising a movable arm, a shaft thereon, a jaw on the shaft, means 125 for forcing said jaw in a certain direction, a stronger means for forcing the jaw in the opposite direction, a stop for limiting the motion of the jaw in both directions, a cam for moving the jaw in the direction in which it is urged by the weaker means, and means 130

for moving said cam into a position to operate the jaw, said means comprising a second cam.

6. A printing machine having a delivery
5 mechanism comprising an arm adapted to move toward the platen of the machine, a stationary pin on said arm, an oscillating frame mounted on the arm, a jaw carried by said frame, a spring for forcing said
10 frame against the pin, and a movable cam for forcing the frame to swing in the oppo-

site direction, said cam having a concentric portion for holding the frame in position to keep the jaws open.

In testimony whereof I have hereunto set 15 my hand, in the presence of two subscribing witnesses.

THOMAS C. SHEEHAN.

Witnesses:

JAMES S. WRIGHT,
PAUL NATHAN.