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I. & D. J. SCOTT, EXECUTORS.

DELIVERY MECHANISM.

APPLICATION FILED JULY 18, 1906.

919,387. Patented Apr. 27, 1909.

3 SHEETS—SHEET 1.

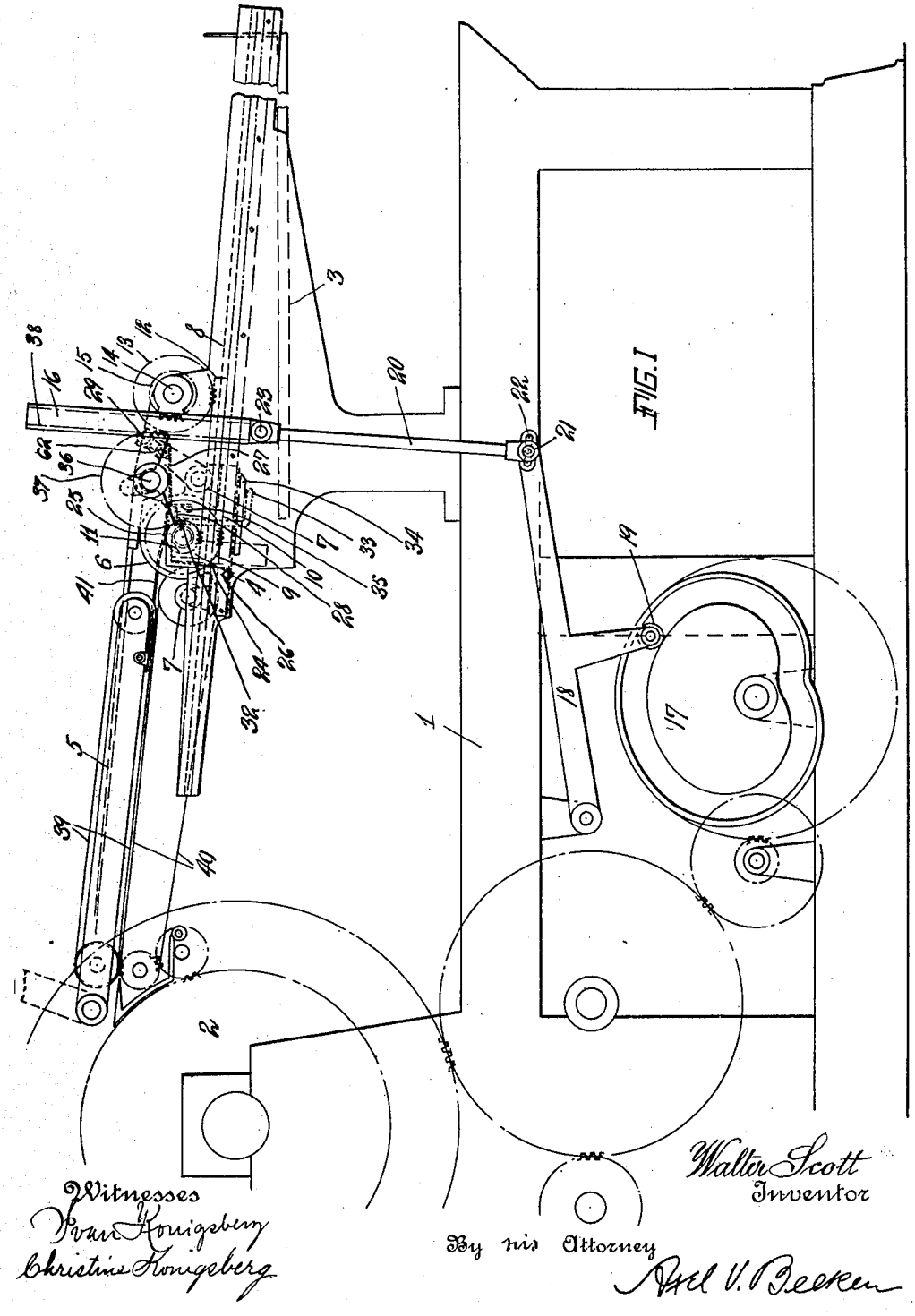


FIG. 1

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Christine Konigsberg

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Inventor

By his Attorney
Axel V. Beeken

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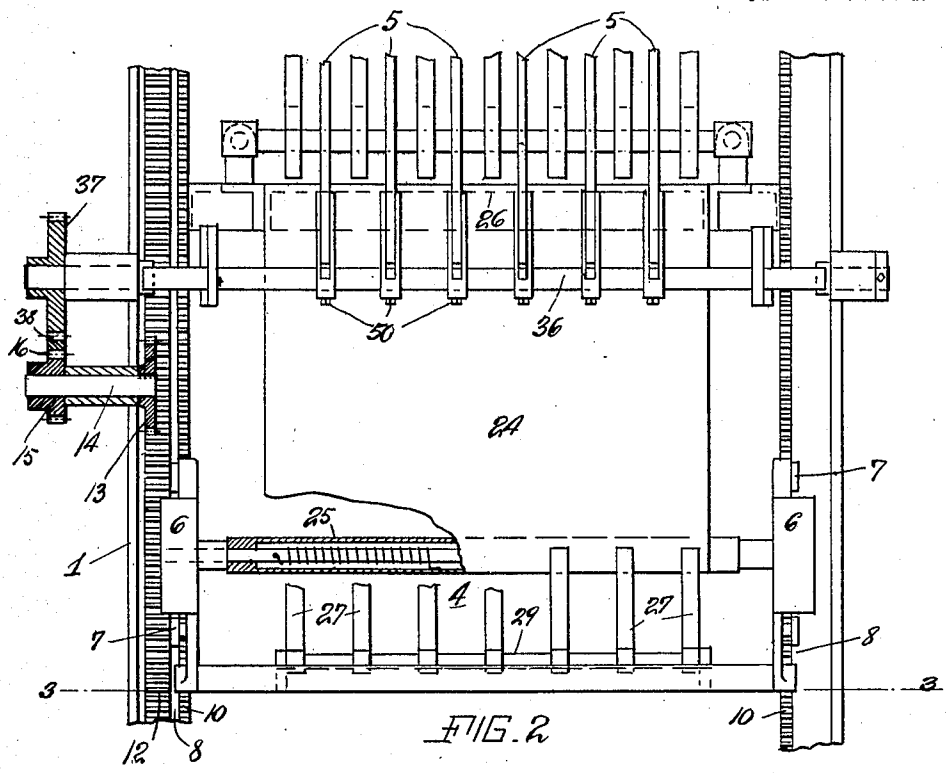


FIG. 2

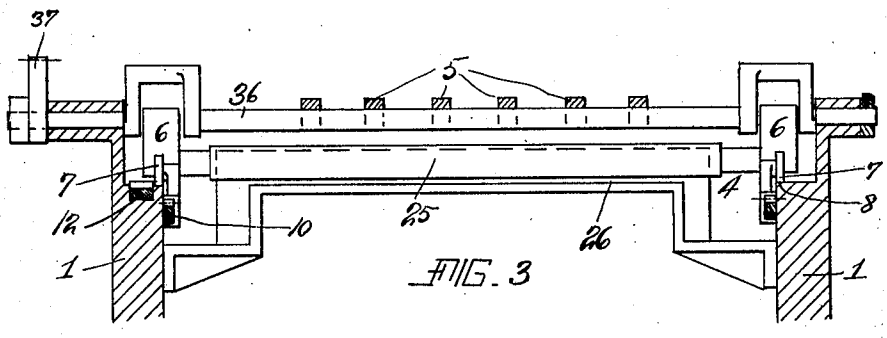


FIG. 3

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3 SHEETS—SHEET 3.

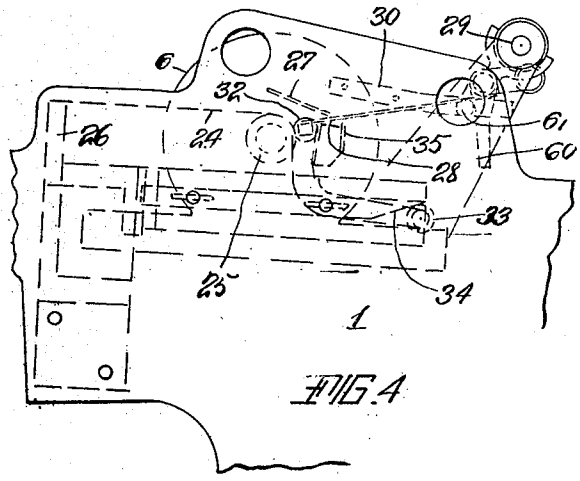


FIG. 4

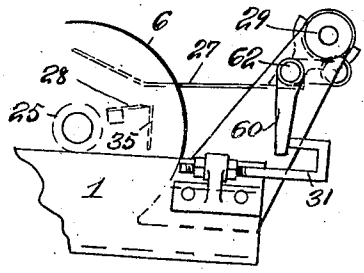


FIG. 5

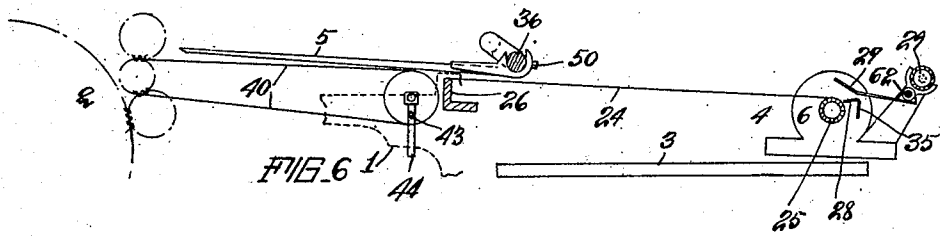


FIG. 6

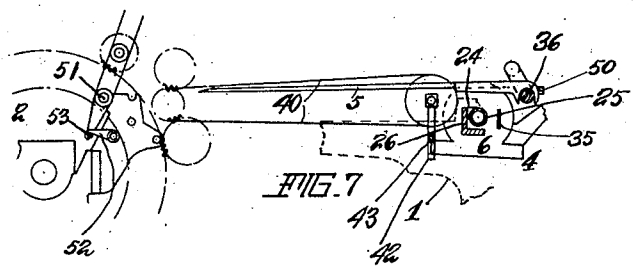


FIG. 7

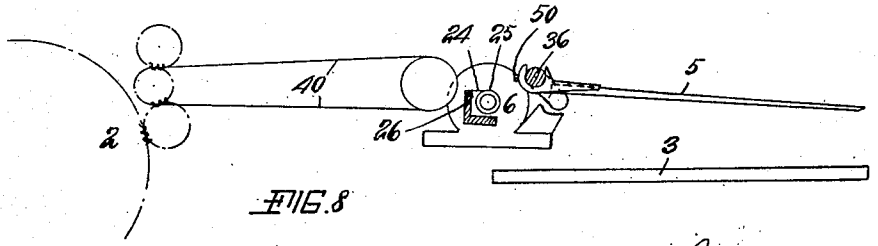


FIG. 8

Witnesses

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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY; ISABELLA SCOTT AND DAVID JOHN SCOTT EXECUTORS OF SAID WALTER SCOTT, DECEASED.

DELIVERY MECHANISM.

No. 919,387. Specification of Letters Patent. Patented April 27, 1909.

Application filed July 18, 1906. Serial No. 326,693.

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States of America, and a resident of Plainfield, Union county, New Jersey, have invented certain new and useful Improvements in Delivery Mechanism, of which the following is a specification.

The present invention relates generally to delivery mechanism, and has more particularly reference to a sheet delivery mechanism adapted to be used in connection with printing machines.

The object of the invention is to obtain a structure in which the sheet can be delivered printed side up, or printed side down at will.

The invention consists in the hereinafter described features of construction, combination of parts and arrangement of elements.

In the drawings, the invention is embodied in a concrete and preferred form, although changes of construction may be made without departing from the intended scope of the invention.

In the said drawings: Figure 1. is a side elevation of so much of a printing machine as is necessary to an understanding of the mechanism embodying the invention. Fig. 2 is a plan detail view of the gearing for operating the several parts of the delivery mechanism. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2. Figs. 4. and 5 are detail views of the grippers of the reciprocating carriage showing the said carriage respectively in its rearward and forward positions. Fig. 6 shows the arrangement of the parts when the reciprocating carriage is used to deliver the sheets. Fig. 7 shows the arrangement of the parts when the fly is used to deliver the sheets, the fly being shown in the act of receiving the sheet. Fig. 8. is a view similar to Fig. 7 but showing the fly in the act of delivering the sheet.

Similar characters of reference indicate corresponding parts in the different views.

1 indicates a framework suitably supporting the various parts comprising the machine. 2 indicates the impression cylinder. 3 the delivery board. 4 the reciprocating delivery mechanism and 5 is the fly.

The reciprocating delivery mechanism is of the usual or of any other suitable construction and consists, in the present instance, of the carriage 6, having the hangers 7, traveling on the rails 8 and provided with gears 9, engaging the stationary rack 10 of both sides of the framework.

Motion is imparted to the gears 9, by means of the pinion 11 mounted on the same shaft with the gears 9 and engaging with the reciprocating rack 12 in mesh with the gear 13 mounted on the shaft 14. This shaft 14, also carries the pinion 15, engaging with one face of the double-faced rack 16, operated from the cam 17, by means of the pivoted lever 18 and friction roll 19, connected with the rod 20 by means of the adjustable pin on screw 21 in the slot 22. This rod 20 is pivoted to the rack 16 at 23. The cam 17 makes one revolution to each two revolutions of the impression cylinder and is suitably geared to the same in a well known manner.

The reciprocating delivery mechanism carries a sheet support which rewinds on the return stroke of the carriage so as to peel from under the sheet. This sheet support preferably takes the form of a collapsible apron 24 wound on the roller 25 and fastened with its other end to the fixed bar 26. On the outward excursion of the carriage this sheet support is unwound, while on the return stroke the said support rewinds thereby peeling from under the sheet.

The reciprocating delivery mechanism further carries the usual grippers 27 and 28 adapted to be rendered inoperative. The grippers 27 are mounted on the shaft 29 and turn around the center 62. An arm 60 is adapted to engage with the stop 31 at the end of the forward stroke to open the grippers and is adapted to engage with the projection 61 on the stop 30 at the end of the return stroke to close the grippers. The grippers 28 are pivoted at 32 and are provided with the roller 33 adapted to engage the stationary cam 34 to lower the said grippers when the sheet is fed into the bite of the said grippers. A gage 35 is likewise provided adjacent to which the sheet is fed.

The fly is mounted on the shaft 36 which is

cranked at one point on each side of the machine, as shown in Fig. 3 to clear the members of the reciprocating carriage. Mounted on the shaft 36 is a segment 37 which engages with the other face 30 of the rack 16 whereby both the reciprocating carriage and fly are operated from the same cam and rack.

Interposed between the fly and reciprocating delivery mechanism on the one hand and the impression or the other cylinder on the other hand, is a suitable primary sheet receiving device, consisting in the present instance of the upper and lower tapes 39 and 40 receiving motion from a gear on the impression cylinder in the usual way. A guide 41 may also be used if desired.

The lower tapes are made adjustable by means of the pin 42 adjustable in the framework by means of the screw 43 adjacent to the said fly and reciprocating delivery mechanism. It is not always necessary to use the upper tapes especially when delivering the sheets with the printed side up. In the latter event, the fly may take the place of the upper tapes, as shown in Fig. 6, by unloosening the screws 50 which hold the fly fingers in position, and by reversing the fly fingers and attaching them again by the said screws to the fly shaft. If upper tapes are used, however, it is necessary to move them out of the way when the fly is used to deliver the sheets. In that event, the upper tapes may be pivoted at the end adjacent to the pivot 51 and swung up out of the way and held in position by means of the hook 52 passing over the pin 53 as shown in Fig. 7.

When it is desired to deliver the sheet with the printed side up, the lower tapes are brought into alinement with the reciprocating delivery mechanism, and the fly is disconnected by moving the segment 37 out of mesh with the rack 16 or is otherwise rendered inoperative. On the stroke of the reciprocating delivery mechanism toward the impression cylinder, the stop 30 moves the grippers 27 downward while the cam 34 lowers the grippers 28, exposing the gage 35. The sheet moves into the bite of the grippers on the forward stroke, traveling faster than the reciprocating delivery mechanism by reason of the tapes, and when the said reciprocating delivery mechanism has traveled a certain distance forward, the cam 34 ceases to influence the grippers 28 and the said grippers move upward nipping the sheet. At the end of the movement in the forward direction, the stop 31 opens the grippers 27 and on the return stroke of the reciprocating delivery mechanism the sheet is rolled off onto the delivery board with the printed side up.

If it is desired to deliver the sheet with the printed side down, the fly is made operative and the reciprocating carriage can be rendered inoperative by moving the gear 15 out of mesh with the rack 16. The upper tapes, if previously used, are swung up out of the way and the lower tapes are raised above the level of the fly fingers. The sheet moves out over the fly which is momentarily held by reason of the dwell on the cam 17 and the fly then takes the sheet and turns it over onto the delivery board with the printed side down, or, if desired, the reciprocating carriage may be maintained operative and the fly also rendered operative, whereby the fly would deliver the sheet onto the reciprocating carriage, printed side down, and the said carriage would then deliver the sheet with the printed side down to the board.

It will thus be seen that the primary sheet receiving device is adapted to transmit the sheet to either the fly or the reciprocating delivery mechanism at will, and that when one of the said delivery elements is used, the other may be rendered inoperative. Further, that in the present instance, when either of the said delivery elements is used, the other is preferably rendered inoperative.

What is claimed is:

1. In a delivery mechanism, the combination of a delivery board, a reciprocating carriage, adapted to be rendered inoperative, for delivering sheets to the board, a fly, adapted to be rendered inoperative, for delivering sheets with the printed side down either to the reciprocating carriage or to the delivery board direct, and means for delivering sheets with the printed side up to either the reciprocating carriage or fly at will.

2. In a delivery mechanism, the combination of a delivery board, a reciprocating carriage, adapted to be rendered inoperative, for delivering sheets to the board, a fly, adapted to be rendered inoperative, for delivering sheets with the printed side down either to the reciprocating carriage or to the delivery board direct, and running tapes in front of the impression cylinder for delivering sheets with the printed side up either to the reciprocating carriage or fly at will.

3. In a delivery mechanism, the combination of a reciprocating carriage, a fly, a double faced rack, a gear, for operating said carriage, adapted to be brought in and out of mesh with the rack on one side thereof, and a gear, for operating the said fly, adapted to be brought into and out of mesh with the rack on the other side thereof.

4. In a delivery mechanism, the combination with a reciprocating carriage, adapted to deliver sheets with the printed side up, and a fly, adapted to deliver the

sheets with the printed side down, of a double faced rack, a gear for operating the said carriage, adapted to be brought into and out of mesh with the said rack on one side thereof, and a gear for operating the fly adapted to be brought into and out of mesh with the rack on the other side thereof.

Signed at New York city this 13th day of July 1906.

WALTER SCOTT.

Witnesses:
GEO. A. MARSHALL,
AXEL V. BEEKEN.