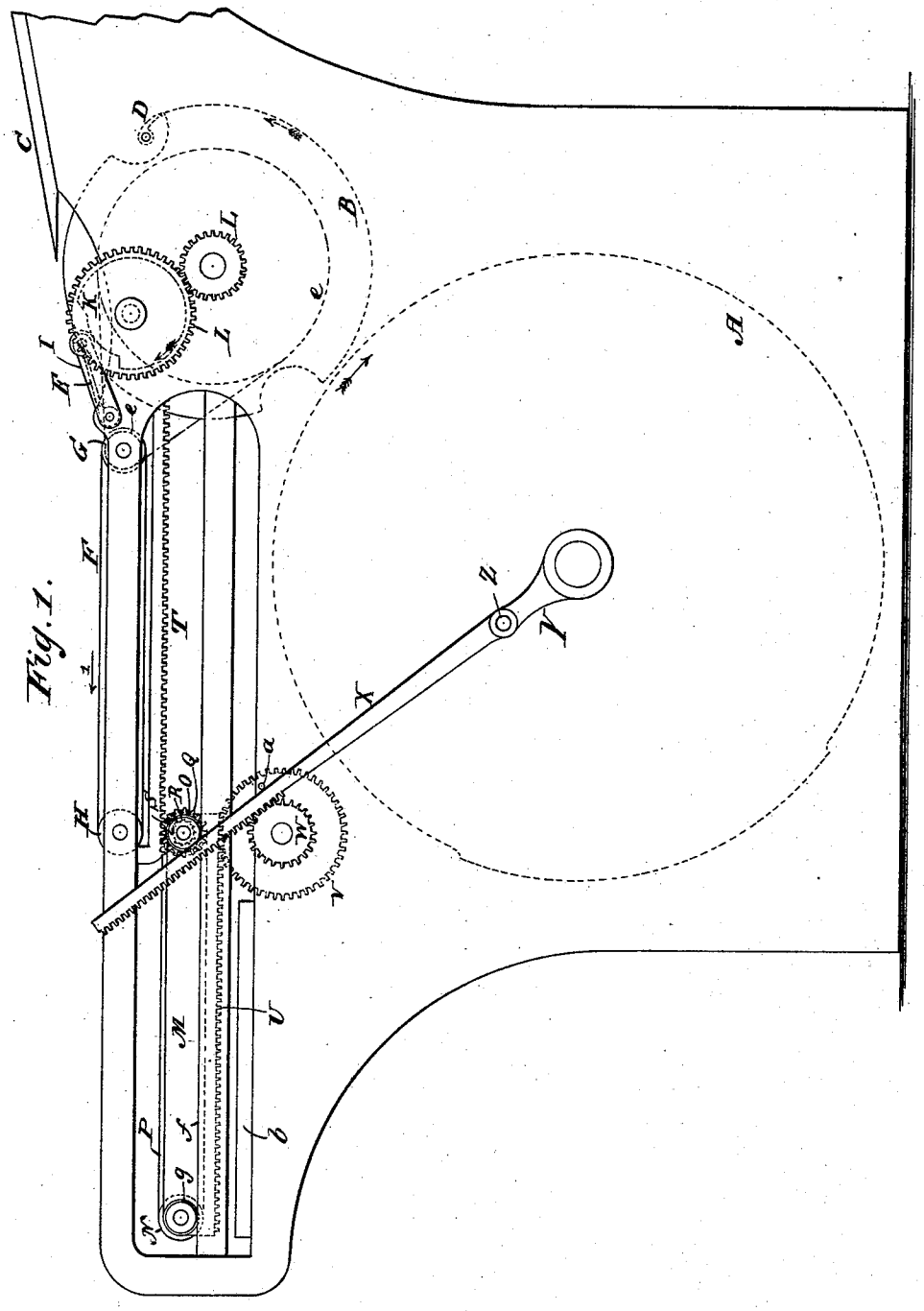
(No Model.) 2 Sheets—Sheet 1.

G. P. FENNER.

SHEET DELIVERY APPARATUS FOR PRINTING MACHINES.

No. 406,716. Patented July 9, 1889.



WITNESSES:

Eduard Wolff.
William Miller

INVENTOR
George P. Fenner.
BY Van Santvoord & Hauff
his ATTORNEYS

N. PETERS. Photo-Lithographer, Washington, D. C.

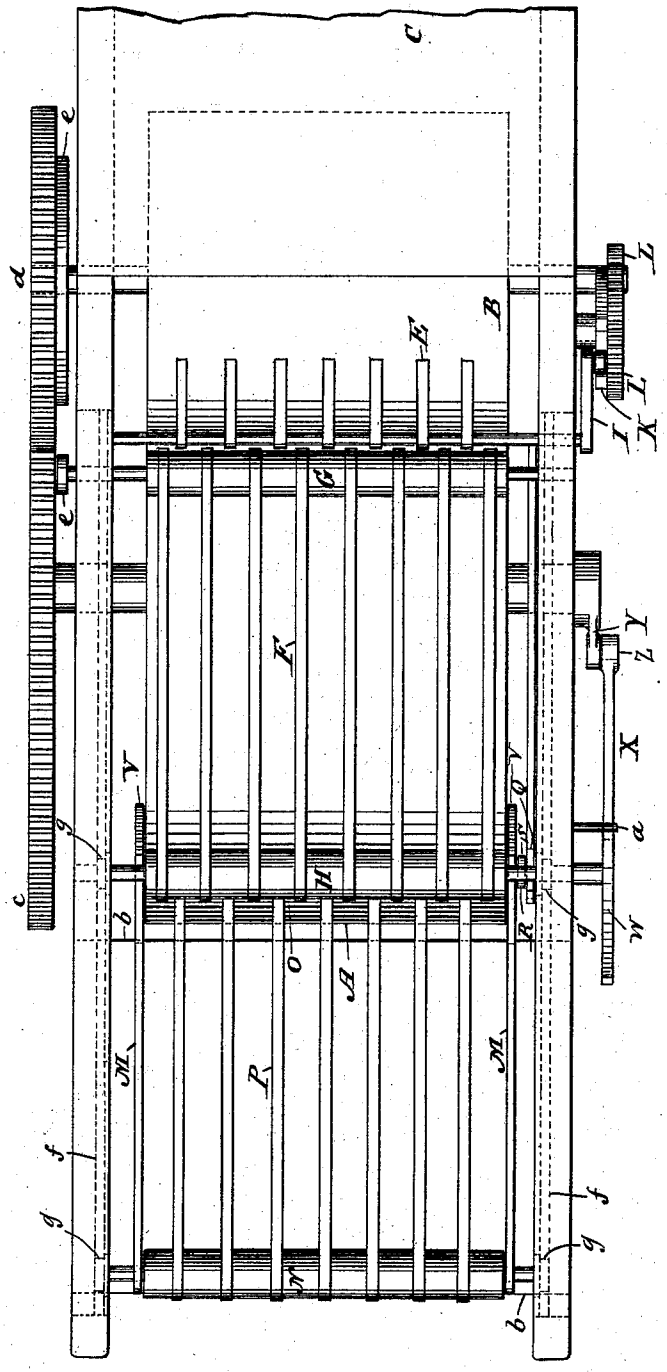
(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE P. FENNER, OF NEW LONDON, CONNECTICUT.

SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 406,716, dated July 9, 1889.

Application filed September 20, 1888. Serial No. 285,879. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. FENNER, a citizen of the United States, residing at New London, in the county of New London and State of Connecticut, have invented new and useful Improvements in Sheet-Delivery Apparatus for Printing-Machines, of which the following is a specification.

This invention relates to an improvement in sheet-delivery apparatus serviceable in printing-presses, as set forth in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a sheet-delivery apparatus. Fig. 2 is a plan view of parts shown in Fig. 1.

Similar letters indicate corresponding parts.

In the drawings, the letter A indicates a type-bed or type-cylinder, and B an impression-cylinder. A sheet being fed from the feed-board C is taken by the gripper D and carried between the cylinders A B. After being thus printed the sheet passes to the delivery traveler or tapes F. A stripping finger or fingers E, actuated by an arm I and cam K, strips the printed sheet from the impression-cylinder and causes said sheet to pass to the traveler F. Gears L are shown adapted to actuate the cam K. The delivery traveler or tapes F move in the direction of arrow 1, Fig. 2. Rollers G H carry the traveler or tapes F.

M is a carriage, having rollers N O supporting a traveler or tapes P. On the shaft of the roller O is loosely mounted a gear-wheel Q. A toothed wheel R is firmly secured to the shaft of the roller O, and a pawl S is secured to the gear-wheel Q, so that a clutch-connection is formed between the gear-wheel Q and roller O. When the gear-wheel rotates in one direction, the pawl S glides over the teeth of the wheel R without turning said wheel R or the roller O; but when the gear-wheel rotates in the opposite direction the pawl S engages the teeth of the wheel R and rotates said wheel and the roller O and imparts motion to the traveler or tapes P.

A rack T is applied or fixed to the apparatus, so as to engage the gear-wheel Q. The carriage M has a rack U engaging the gear-wheel V. Two gear-wheels V, Fig. 2, are shown, adapted to engage two racks, one at each side of the carriage M; but one gear-wheel V and one rack U might be made to answer. The gear-wheels V are oscillated by a gear-wheel W and a rack-bar X, jointed at Z to the crank Y. The crank Y imparts an oscillating or reciprocating motion to the rack-bar, and a pin or arm *a*, fixed to the press or machine, holds the rack-bar in gear with the wheel W.

The operation is as follows: A sheet having been printed, said sheet is passed from the cylinder B to the traveler or tapes F, which carry said sheet toward the carriage M and deposit said sheet on said carriage. The motion of the carriage is such that it is under the traveler or tapes and about to begin its forward movement at the time the head of the sheet passes off the traveler or tapes. Said carriage M, moving in the same direction as the sheet, receives the sheet from the traveler or tapes and conveys it over the receiving-table. The carriage M then moves backward or toward the cylinder B, and during this motion of the carriage the clutch-connection rotates the roller O, so as to impart a progressive movement to the traveler or tapes P—that is, to move that portion of the carriage-tapes which carries the sheet toward the receiving-table *b*. The sheet resting on the tapes P is by this progressive movement of the tapes caused to move off the carriage M to the receiving-table *b*. During the forward motion of the carriage M away from the cylinder B the clutch-connection allows the roller O and traveler P to be at rest. Suitable gears *c d*, Fig. 2, convey motion between the cylinders A B. Pulleys *e e* are adapted for the reception of a belt (not shown) to convey motion between the cylinder A and roller G, to actuate the traveler F and keep the traveler F continuously moving. The carriage M is supported by ways *f* and rollers *g*, Fig. 2, so that said carriage can be readily reciprocated by the rack-bar X. As the crank Y oscillates the carriage M positively in both directions, the use of a spring or weight to restore the carriage to its original position can be dispensed with. The traveler or tapes F constitute a simple and effective delivery apparatus for deliver-

ing the printed sheet from the impression-cylinder B to the carriage M, and as said traveler F can dispense with grippers or equivalent mechanism said traveler can be cheaply made and contains no mechanism liable to get out of order.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with an impression-cylinder, a delivery apparatus, and a receiving-table, of a reciprocating carriage arranged below the delivery apparatus and on which the printed sheet is deposited by said delivery apparatus, and a crank for positively moving said carriage in both directions, substantially as described.

2. The combination, with an impression-cylinder and a receiving-table, of a delivery traveler or tapes receiving the sheet direct from the cylinder without the aid of grippers or equivalent mechanism, and a reciprocating carriage located below the tapes and on which the printed sheet is deposited by the said delivery-tapes, substantially as described.

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

GEORGE P. FENNER. [L. S.]

Witnesses:
NATHAN BABCOCK,
WILFRED D. WELLS.