(No Model.) 2 Sheets—Sheet 1.

C. B. MAXSON & G. P. FENNER.

PRINTING PRESS.

No. 457,286. Patented Aug. 4, 1891.

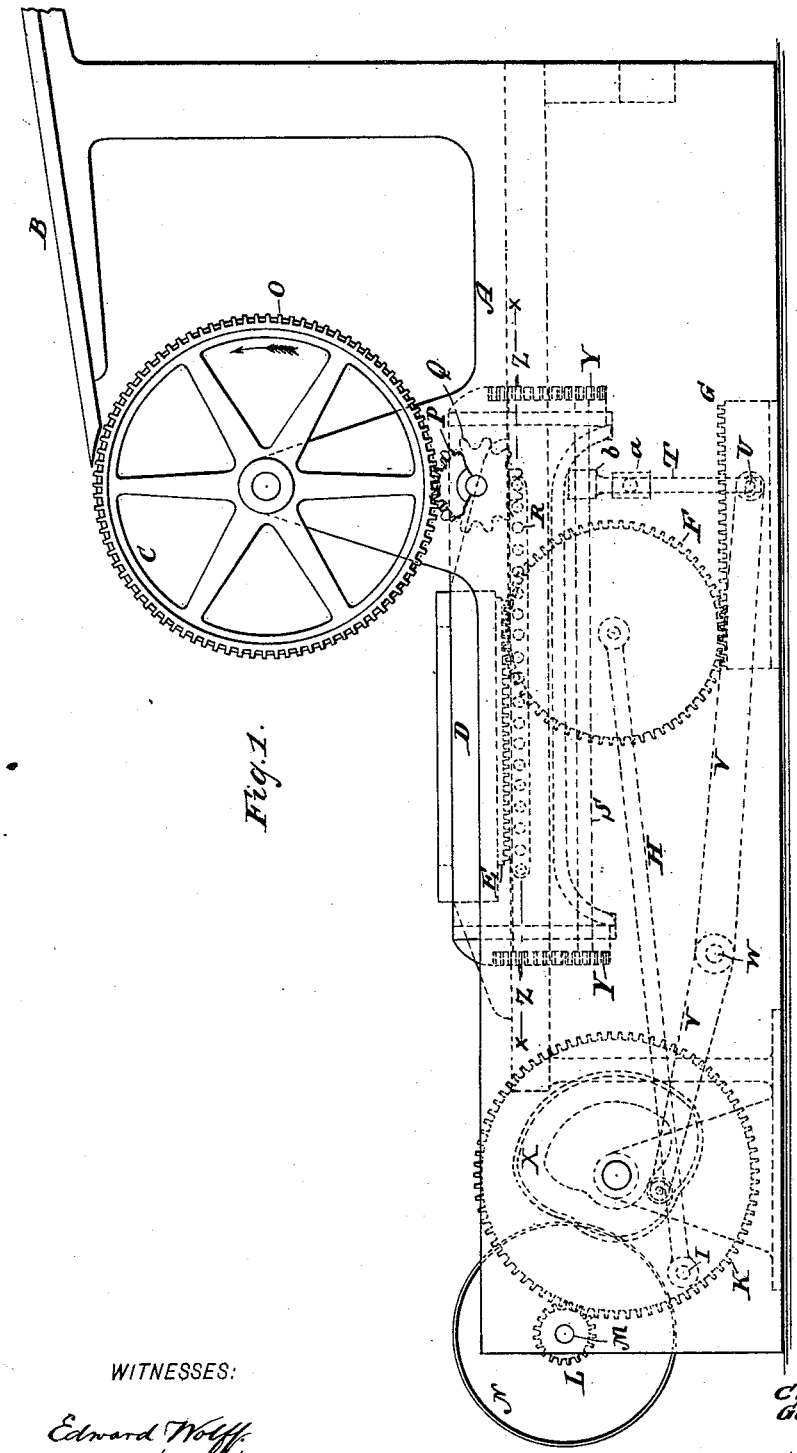

Fig. 1.

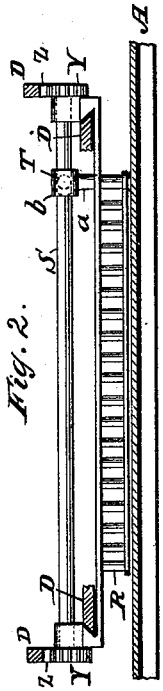

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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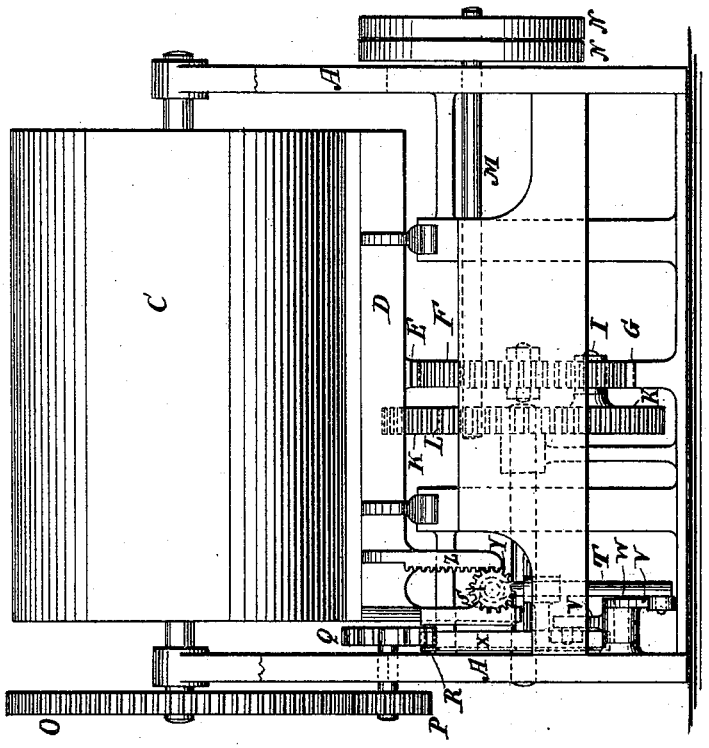

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES B. MAXSON, OF WESTERLY, RHODE ISLAND, AND GEORGE P. FENNER, OF NEW LONDON, CONNECTICUT.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 457,286, dated August 4, 1891.

Application filed April 20, 1891. Serial No. 389,631. (No model.)

To all whom it may concern:

Be it known that we, CHARLES B. MAXSON, a citizen of the United States, residing at Westerly, in the county of Washington and State of Rhode Island, and 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 Printing-Presses, of which the following is a specification.

This invention relates to an improvement in printing-presses; and the invention consists in the details of construction set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a printing-press. Fig. 2 is a detail view sectioned along *x x*, Fig. 1. Fig. 3 is a rear elevation of Fig. 1.

In the drawings, the letter A indicates the frame or support of the press, having a feed-board B, from which sheets are supplied to the impression-cylinder C. The type-bed D has a rack E, engaged by a gear-wheel F, reciprocating along the rack G. Said gear-wheel F is reciprocated by the link H and crank-pin I on gear-wheel K. The wheel K receives motion from pinion L on shaft M, having the usual fast and loose pulleys N. The construction of these parts is familiar.

The impression-cylinder C is rotated by the gear-wheels O and P. To the gear-wheel P is connected the gear-wheel Q, actuated by the rack R. Said rack R is made shifting or vertically movable, so that as the rack reciprocates it engages the gear-wheel Q at one stroke underneath and at another stroke above, so as to keep the gear-wheels Q P O and cylinder C rotating in the same direction. Said rack is made shifting or vertically movable by being dovetailed to or guided on the type-bed D, as seen in Fig. 2. Said rack has a shaft S, engaged by an arm T, which gives the vertical or shifting movement to the rack at the proper moments. Said arm T is jointed or pivoted at U to a lever V, fulcrumed at W, and actuated by a cam or groove X, connected to gear-wheel K or to the shaft of said wheel K.

The shaft S is rotatably connected to the rack R, and said shaft has equalizing-gears Y, meshing into equalizing-racks Z on the bed D. The effect of the gears Y and racks Z is to keep the ends of rack R even or on a level with one another.

The arm T is guided in its reciprocations by a guide *a*, extending from frame A and embracing or guiding the arm T. Said arm T has an eye *b*, in which the shaft S can readily reciprocate and rotate, but which raises and lowers the shaft S and rack R as the arm T moves up and down.

The vertically-movable rack R conveys the motion from bed D to cylinder C, and said cylinder is kept rotating in one and the same direction.

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

1. The combination, with an impression-cylinder and a type-bed, of a vertically-movable rack, guides for the rack, a gear engaging the rack and connected with the impression-cylinder to rotate the latter, and means for raising and lowering the rack to engage the gear at opposite points and thereby rotate it in the same direction, substantially as described.

2. The combination, with an impression-cylinder, of a type-bed provided with vertical guides, a vertically-movable rack engaging the guides on the type-bed, a gear engaging the rack and geared to the impression-cylinder, and means for raising and lowering the rack, substantially as described.

3. The combination, with an impression-cylinder and a type-bed, of a vertically-movable rack, guides for the rack, a gear engaging the rack and connected with the impression-cylinder, equalizing-racks, a pair of connected equalizing-gears engaging the equalizing-racks, and means for raising and lowering the equalizing-gears, substantially as described.

4. The combination, with an impression-cylinder and a type-bed, of a vertically-movable rack, guides for the rack, a gear engaging the rack and connected with the impression-cylinder, equalizing-racks, a pair of equalizing-gears engaging the equalizing-racks, a shaft connecting the equalizing-gears, a vibrating lever connected with the shaft of

the equalizing-gears, and a cam for actuating the lever to raise and lower the equalizing-gears, substantially as described.

5. The combination, with an impression-cylinder and a type-bed, of a vertically-movable rack, guides for the rack, a gear engaging the rack and connected with the impression-cylinder, a vibrating lever for moving the rack vertically, a cam for operating the vibrating lever, a gear-wheel K for operating the cam, a crank-pin I on the gear-wheel, a link H, and a reciprocating gear-wheel F, connected with the link for actuating the type-bed, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

CHARLES B. MAXSON.
GEORGE P. FENNER.

Witnesses:
CHAS. A. FAIRBANKS,
WILFRED D. WELLS.