2 Sheets--Sheet 1.

J. WILSON.
Plate Printing Press.

No. 161,370. Patented March 30, 1875.

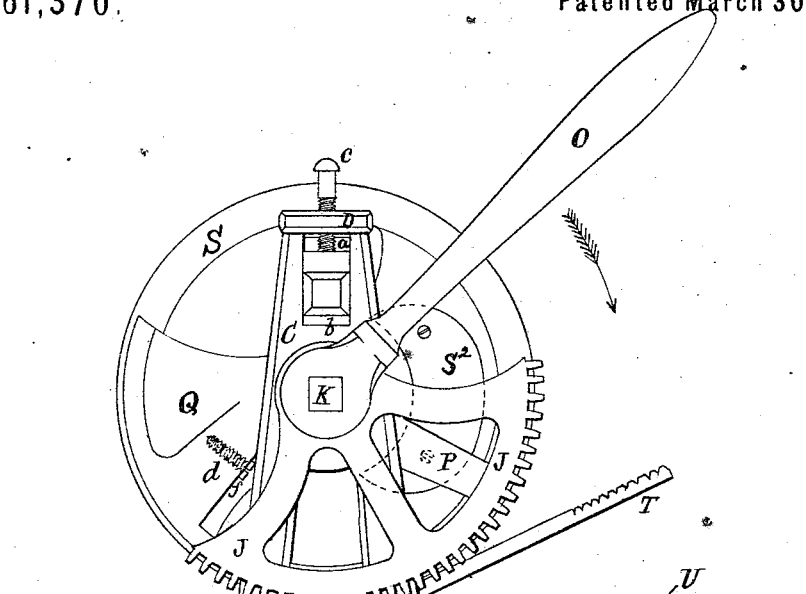

FIG. 2.

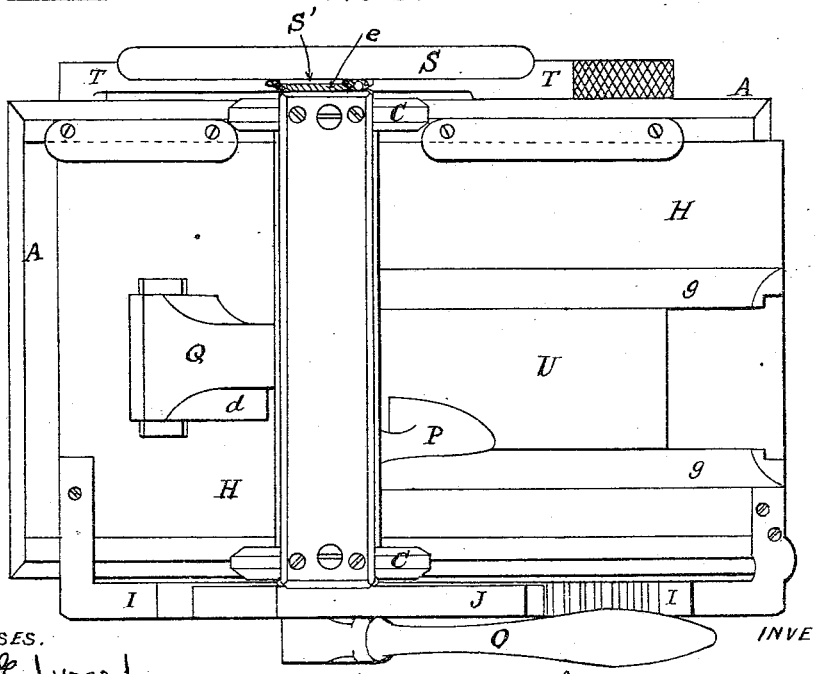

FIG. 1.

WITNESSES.
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E. A. Hemmenway

INVENTOR.
James Wilson

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

J. WILSON.

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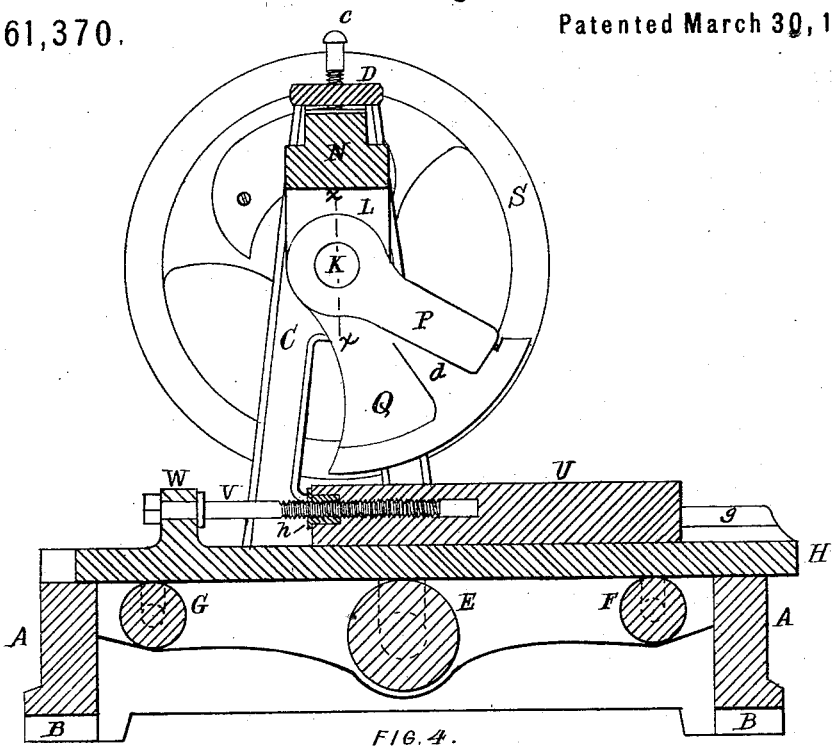

FIG. 4.

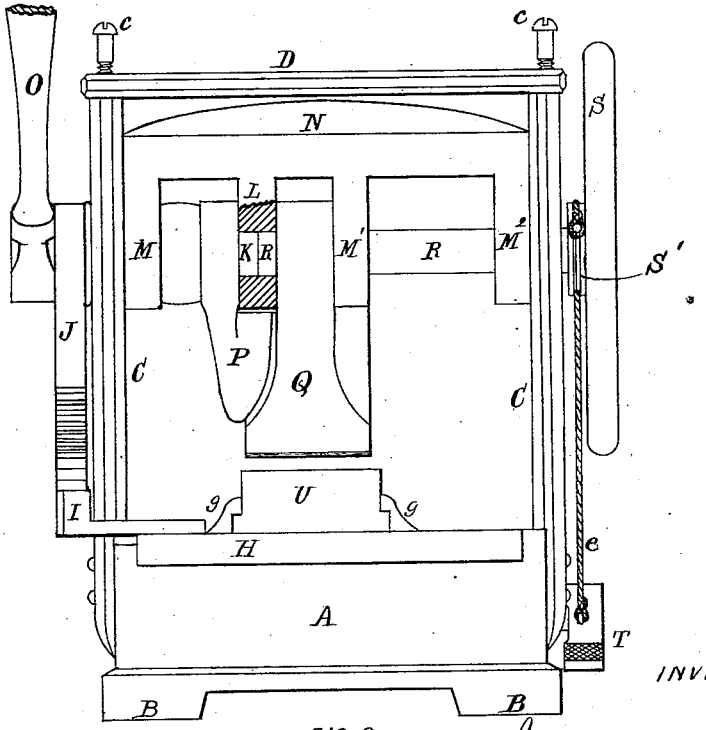

FIG. 3.

WITNESSES.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

JAMES WILSON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PLATE-PRINTING PRESSES.

Specification forming part of Letters Patent No. **161,370**, dated March 30, 1875; application filed December 28, 1874.

To all whom it may concern:

Be it known that I, JAMES WILSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Plate-Printing Presses, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to that class of printing-presses that is used for printing from plates in which the letters or lines to be printed are cut or engraved below the general surface of the plate, as distinguished from printing from relief-plates or type.

The first part of my invention relates especially to the means employed to operate the impression-segment and the plate-bed; and it consists, first, in mounting the impression-segment upon a shaft fitted to suitable bearings, depending from a strong arched cross-head extending across the machine from one side frame to the other, and a weighted counterbalance-wheel secured to the opposite end of said shaft, said counter-balance being so constructed and arranged as to hold the segment stationary at either extreme of its motion. My invention further consists in the use, in combination with said segment and counterbalance-wheel, of a treadle and cord, chain, or other suitable flexible band leading from said treadle to and partially around a pulley upon the shaft upon which said segment and counter-balance are mounted; or the hub of the counterbalance-wheel may be extended, and serve the purpose of a pulley, to which one end of said flexible connection is secured, the purpose of which device will be further described. This part of my invention further consists in providing the impression-segment with a projecting lug upon one side thereof, to be acted upon by a dog or clutch mounted upon the inner end of another and independent shaft, also mounted in suitable bearings depending from the same arched cross-head, and provided with suitable means of imparting thereto a vibratory or partial rotary motion, as will be hereafter described. It further consists in mounting upon the shaft which carries the dog for operating the impression-segment during the taking of the impression, a segment of a toothed wheel, which meshes into and acts upon a toothed rack secured to one edge of the carriage or movable table which carries the impression or plate bed, all so arranged that the carriage, with the plate-bed thereon, may be brought into proper relation to the impression-segment, by the action of said rack and toothed segment, at the same time that the dog is brought in contact with the impression-segment, and then the continuation of the motion of the operating wheel or lever will cause the impression-segment and the plate-bed to move in unison, the power being transmitted to each from the operating wheel or lever independently of the other, but exactly in unison therewith.

The second part of my invention relates to the means employed to regulate and control the movement of the impression-segment for the purpose of adapting it to the length of the plate or "pull;" and it consists in so constructing the dog or impression-segment, or both, that the points of contact between said parts may be adjusted to vary the time of contact with relation to the position of the plate-bed.

In the drawings, Figure 1 is a plan of a press embodying my improvements. Fig. 2 is a side elevation. Fig. 3 is an end view with one of the shaft-bearings shown in section, and Fig. 4 is a vertical longitudinal section on line *x x* on Fig. 3.

A is the main frame of the machine, provided with legs B B, which may be of suitable height to bring the top of the plate-bed in a convenient position for the operator. C C are two uprights secured to the frame A, one upon either side, and rising above the same, as shown, and having their top ends connected together by the tie D. E, F, and G are rolls, upon which the carriage H rests, E being placed directly under the axis of the impression-segment. I is a rack secured to one edge of the carriage H, and into which the toothed segment J meshes, by the rotation of which the carriage H is moved in either direction, according to the direction given to said segment. The segment J is firmly secured to the outer end of the shaft K, which is mounted in bearings L and M, depending from the strong arched cross-head N, the ends of which pass

through slots *a a* in the upper ends of the standards C C, and rest upon the blocks of elastic material *b b*, and are adjusted in position by the screws *c c*. The shaft K also has secured to its outer end, the operating-lever O; or, instead of the lever, a wheel provided with a series of handles, may be used in the ordinary way. P is a dog or clutch-lever firmly secured to the inner end of the shaft K, and so formed and arranged as to engage with the lug *d* upon the impression-segment Q, firmly secured to the inner end of the shaft R, which is mounted in the bearings L, M^1, and M^2, depending from the arched cross-head N, and has mounted upon its outer end the counterbalance-wheel S and grooved pulley S^1. The wheel S is made heavier, or has secured to it upon the side opposite the impression-segment a counterweight, S^2, sufficiently heavy to hold the segment in position at either extreme of its movement. T is a treadle arranged near the floor, and connected by the cord *e* with the pulley S^1, in such a manner that a depression of the treadle T will cause the shaft R to be partially rotated, so as to bring the impression-segment from its rear position toward the front. The lug *d* upon the impression-segment Q is provided with an adjustable screw, *f*, against which the dog P bears when it engages with the segment. The carriage H is provided upon its upper side with the slides *g g*, into which the plate-bed U is fitted, so that it may be moved endwise therein, as it is acted upon by the screw V, mounted in the bearing W, and working in the nut *h* set in the bed U.

The operation of my machine is as follows: The parts of the machine being in the position shown in Figs. 1 and 2, and the plate-bed U being adjusted to position adapted to the particular job to be printed, and the plate secured thereon, the plate is inked in the usual manner, and the card or piece of paper to be printed is placed in position thereon, when the operator places his foot upon the treadle T, and depresses it until the impression-segment is brought in contact with the dog P, in which position it is retained by the counterpoise-weight S^2 of the wheel S until moved by the operator. The operator now seizes the lever O, or the handles of the operating-wheel, and moving it in the direction of the arrow, the dog P, bearing against the lug *d*, and the toothed segment J, acting upon the teeth of the rack I, will cause the periphery of the impression-segment, and the surface of the plate with which it is in contact, to move in perfect unison until the plate has entirely passed under the segment, when the counterweight on the wheel S will cause the segment to continue its motion in the same direction, moving away from the dog P into the position shown in Fig. 2, in which position it remains until moved forward again by depressing the treadle T, as before described, before doing which, however, the operator moves the lever O in the reverse direction, and through the action of the segment J upon the rack I causes the carriage H, with the plate-bed thereon, to be moved toward the front of the machine in position to be ready for a repetition of the operation.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a plate-printing press, of the impression-segment Q, counterpoise-weight S^2, and pulley S^1, all mounted upon the shaft R, with the weight and segment upon opposite sides thereof, and connected, by the cord or chain *e*, to the treadle T, and arranged to operate substantially as described, for the purpose specified.

2. In a plate-printing press, the impression-segment Q, mounted upon the shaft R, in combination with the dog or clutch P, mounted upon the shaft K, and arranged to engage with said segment when moving in one direction, and to move independently thereof when moving in the opposite direction, substantially as described.

3. In combination with the impression-segment Q and dog P, mounted upon separate and independent shafts, an adjustable point of contact, *f*, whether attached to the segment or dog, substantially as described.

4. In combination with the segment Q and dog P, mounted upon separate shafts, and arranged to engage with each other, as set forth, the toothed rack I, secured to the carriage or table H, and the toothed segment J, arranged to engage therewith, and mounted upon the same shaft with the dog P, substantially as described.

Executed at Boston this 23d day of December, 1874.

JAMES WILSON.

Witnesses:

WM. P. EDWARDS,

E. A. HEMMENWAY.