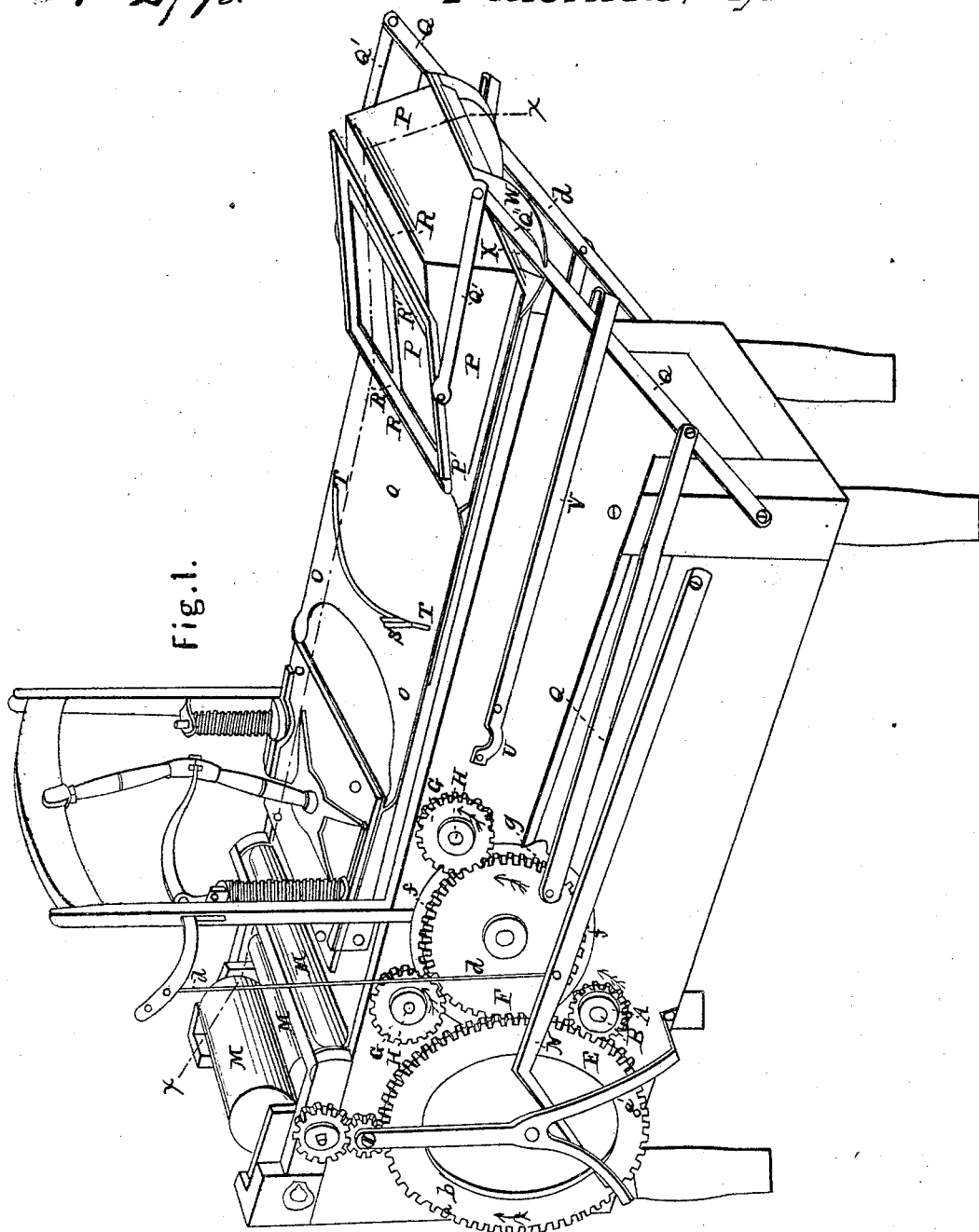


J. G. Northrup.
Printing Press.

N^o 2793.

Patented Sept. 30. 1842.

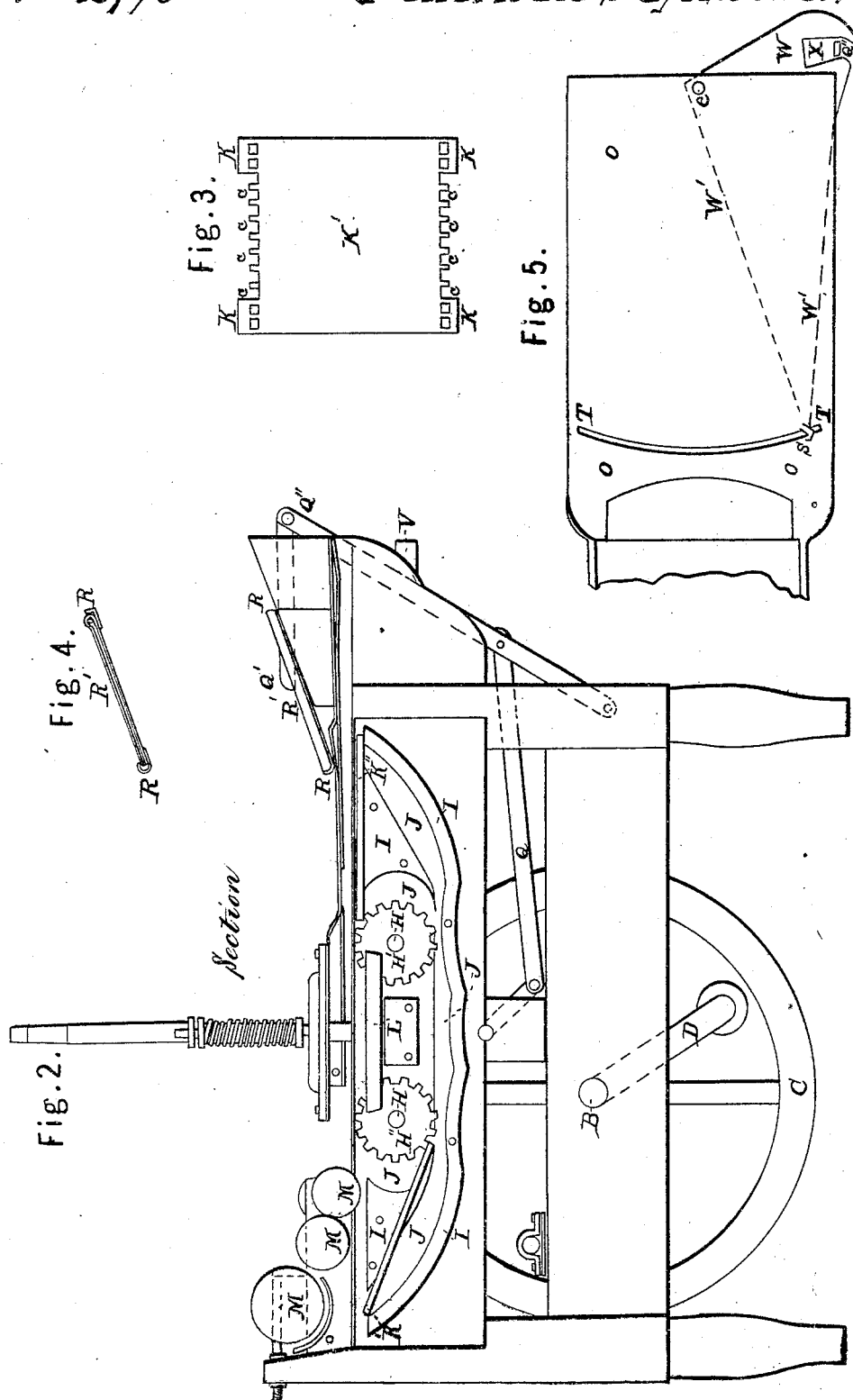


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Printing Press.

Sheet. 2.
2. Sheets.

N^o 2793.

Patented Sept. 30. 1842.



UNITED STATES PATENT OFFICE.

JOEL G. NORTHRUP, OF CORTLANDVILLE, NEW YORK.

PRINTING-PRESS.

Specification of Letters Patent No. 2,793, dated September 30, 1842.

To all whom it may concern:

Be it known that I, JOEL G. NORTHRUP, of Cortlandville, in the county of Cortland and State of New York, have invented a new and Improved Manner of Constructing Printing-Presses; and I do hereby declare that the following is a full and exact description thereof.

The principal improvement in my press consists in the manner in which I bring two, or more, forms of type alternately under the platen, or under the cylinder of a printing-press, and also under the inking apparatus, for the purpose of inking the forms. The apparatus by which I effect this may be applied either to a platen, or to a cylinder press. In the accompanying drawings, I have represented it as applied to the former, together with some improvements in the manner of arranging the parts of such a press, by which it is particularly adapted to be used in combination with my improvement in the manner of transporting the forms of type.

In the accompanying drawings Figure 1, is a perspective view of a platen press, with the principal gearing by which the respective parts are actuated. Fig. 2, is a vertical section along the press, in the line *x x* of Fig. 1.

The platen is represented as worked by a toggle joint in the ordinary way.

A, is a small cog-wheel on the end of the main driving shaft B, which shaft is shown in Fig. 2, as carrying a fly-wheel C, and furnished with a winch D, to turn it by hand; but it may, of course, be driven by any adequate power. The wheel A, gears into the large wheel E, and this into the wheel F. The wheel E, is made of double the thickness of the wheel A, and the wheel F; and on its inner side the teeth are cut away for about three fifths of its circumference, as from *a* to *a'*. The wheel A, gears into the wheel E, at its front part, where its teeth are continuous; and the wheel F, at its back part, where a portion of its teeth are removed, and is acted upon by it, therefore, only during about two fifths of its revolution; the object of this is to keep the forms stationary

during the time the platen is taking the impression. The wheel F, gears into the small wheels G, G'; these wheels are fixed upon, and carry, shafts H, H, which cross the press from side to side, and to each of these shafts, within the cheeks of the frame, the other small wheels are attached, one at each end. Two of these are shown at H', H'', Fig. 2, close against the inner face of the frame of the press; there being two others against the inner face of the opposite side, I, I, I, are ledges, or plates, which are raised from the inner sides of the press, leaving depressions at the shaded part J, J, J; which ledges serve to sustain and guide the beds, and forms of type.

Fig. 3, represents the face of one of the beds, upon which the forms are to be placed. K, K, are projections from the sides of these, at each of their corners, which enter the recesses J, J, Fig. 2, and rest on the ledges formed by I, I. The openings *c, c, c*, form each side of the bed into a ratchet, which is acted upon by the teeth of the wheels H', H'', and by their corresponding wheels on the opposite side. The beds are seen in section at K', K'', Fig. 2. L, is an iron support, made fast to the sides of the frame, and upon which the bed rests during the time of taking the impression. M, M, M, are inking rollers, which receive their motion from the wheel E, and which may be combined and arranged in the same manner with those now in use, and which, therefore, do not require to be described. When the respective wheels are made to revolve in the direction indicated by the arrows, the forms will be carried alternately from under the platen toward, and beneath, the inking apparatus, where they will be inked in the usual manner; they will then descend and be carried toward the opposite end of the press, where they will be elevated and brought on to the support L; at that moment, the wheel E, will cease to act on the wheel F, and the shafts H, H, with the wheels upon them, will cease to revolve. A pin, or stud, *b*, on the wheel E, being then brought into contact with the lever N, will force it down, and by means of the rod *d, d*, will bring down

the platen, and take an impression. When this is completed, the wheel E, will again engage with the wheel F, and the form be carried to the inking apparatus. To cause the wheel E, to enter accurately into gear with the wheel F, when the latter is to be set into motion, I employ the following device, *f, f*, is an iron plate on the back of the wheel F, made fast to it; on this there is a projecting tooth *g* and from the back of the wheel E, a pin projects, as at *a'*; this pin, when brought into contact with the tooth *g*, causes its first tooth, after the blank space, to be brought into exact gear with the teeth on F.

The tympan is to be formed and combined with the press so as to receive the sheet that is to be printed upon, between two frames which are hinged together, and open like the covers of a portfolio. This frame, containing the sheet, which is placed there by an attendant, is received within a sliding frame which carries it under and withdraws it from the platen; reverses it, and carries it under a second time, so as to take an impression from the second form, and then delivers it on to a side table, to be removed and replaced by a blank sheet.

O, O, is a platform of sheet-iron, or other suitable material, consisting of two laminæ, or plates, put together so as to leave a space between them for a third thickness of sheet metal to play in.

P, P, is a bed of wood, or other material, upon which the tympan rests when at its greatest distance from the platen; the top of this forms an inclined plane, as shown in the drawing.

The tympan is moved back and forth by a system of levers Q, Q, Q, operated upon by a crank pin on the wheel F, and by a corresponding crank on the opposite side of the machine.

R, R, is the tympan frame, which receives the folding tympan R', and which is jointed to the levers Q, in the manner shown in the drawing. The tympan frame is turned over in the following manner. As it passes back from the platen, its edge is brought into contact with the vertical edge P', of the bed P, P, and it will be seen that the further moving back of the levers Q', Q', upon it, will necessarily turn it over on to the bed P, P; when it has been turned over once, and the sheet has received a second impression, the frame R, R, which holds the tympan, will, on its return to the bed P, be turned over on to the bed, leaving the tympan and sheet on the platform O, O; and this, by means of a stud S, which moves back and forth in the curved slot T, T, will push the tympan on to a table which is placed alongside of the platform O, O, and nearly on a level with it. This table is not shown in the

drawing, but the hollow U, in the guide piece V, is intended to receive a hook, or cleat, on the table, to keep it in place; the printed sheet is to be removed by an attendant, a blank sheet inserted, and the tympan replaced in the frame R.

Fig. 4, is a section through the frame and tympan, in their position at the time when the latter is placed on the former; the ledges at the two sides of the frame will retain the tympan when it is first turned over, but by a second turn over, it will be released and left on the platform, and the stud S, will then push it off laterally on to the table.

Fig. 5, is a top view of the platform O, O, without the bed P, P, intended to show the manner in which the tympan is slid off from it on to the side table. W, W', is a piece of sheet-iron that carries the stud S, and works on a joint pin at *e*, between the two plates of which the platform consists. The arm Q'', of the system of levers that move the tympan frame, passes into the notch X, of the plate W, as said frame is turned over, and when the tympan is left on the platform, carries it on to the side table, by giving motion to the stud S; and the arm Q'', when its motion is reversed, carries the stud S, back to the opposite side of the platform. There is not any blanketing on the tympan, this being rendered unnecessary by affixing such blanketing on to the under side of the platen.

When the revolving beds and forms are applied to the cylinder press, they are to be carried around and brought under the cylinder in precisely the same manner in which they are brought under the platen in the press herein described; but the intermitting motion, and the devices connected with the management of the platen, and of the tympan, are not used. The cylinder is placed in the center of the machine, occupying the situation of the platen in Fig. 1, and the forms are made to pass under, and receive the pressure for taking the impression from it, as in other cylinder presses; the sheets are to be carried forward by cards, their feeding and delivery being managed as in other cylinder presses.

Having thus fully described the nature of my improvements in the printing-press, and shown the manner in which the same is carried into operation, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The combining with a printing press two, or more, forms of type, placed on suitable beds; and the carrying them around so as to bring them alternately under the platen of a platen press, or under the cylinder of a cylinder press; the requisite motion being given to them substantially as set forth; and under such modifications as will

be rendered necessary by the kind of press to which the improvement is applied.

2. I claim, in the platen press the manner in which I have combined and arranged the
5 system of levers Q, Q, the tympan frame, and tympan, the bed P, P, and the stud S, for moving, reversing, and sliding off the

tympan, the respective parts being arranged, and operating, substantially as herein made known.

JOEL G. NORTHRUP.

Witnesses:

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HENRY R. WORTHINGTON.