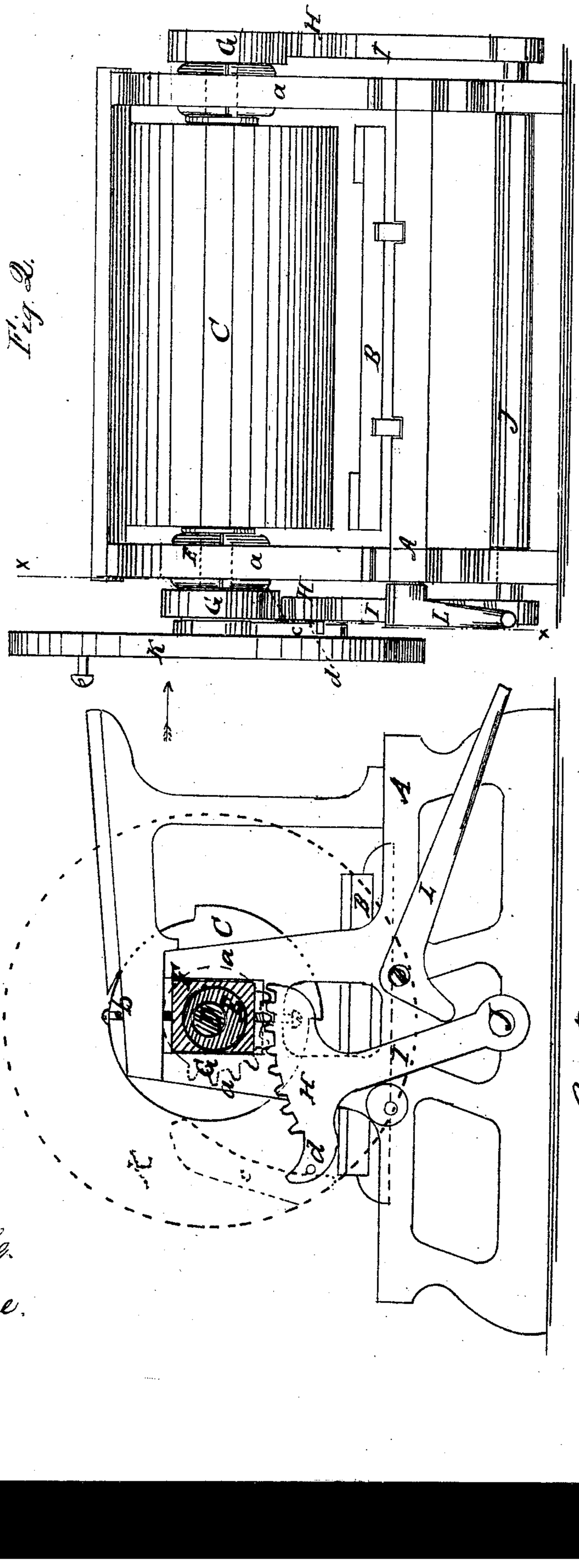
C. Potter, Jr.

Printing-Press.

No. 73195 Patented Jan. 7, 1868.



United States Patent Office.

C. POTTER, JR., OF WESTERLY, RHODE ISLAND.

Letters Patent No. 73,195, *dated January* 7, 1868.

IMPROVEMENT IN PRINTING-PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. POTTER, Jr., of Westerly, in the county of Washington, and State of Rhode Island, have invented a new and useful Improvement in Drum-Cylinder Printing-Presses; and that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention consists in hanging or arranging the cylinder of that kind of printing-presses known as the "drum-cylinder," in such a manner that the cylinder may be raised at any time or at the will of the operator, so as to be inoperative or incapable of giving any impression.

The object of the invention is to give the operator or attendant entire control over the pressure-cylinder, so that in case of a sheet of paper being improperly set or presented to the cylinder, or the failure of a sheet being presented to it at all, the pressure-cylinder, by being raised, will obviate many difficulties attending the above-mentioned contingencies. In the accompanying sheet of drawings—

Figure 1 represents a side sectional view of a press provided with my invention, taken in the line *x x*, fig. 2.

Figure 2, a front view of the same.

Similar letters of reference indicate like parts.

A represents the frame of a drum-cylinder printing-press, and B the reciprocating form-bed thereof. These parts may be of usual construction, and therefore do not require a special description. C represents the drum-cylinder, which is constructed as usual, but hung in a novel way, as follows: The shaft D of this cylinder passes eccentrically through its bearings E E, as shown clearly in fig. 1, and these bearings are fitted in boxes F, which are placed between guides *a a*, at each side of the frame A, and are adjusted at a greater or less height by means of set-screws *b*. The bearings E E are allowed to turn freely in the boxes F, and each bearing has a toothed segment or partially-toothed pinion, G, keyed upon it, (see fig. 2,) and these segments or pinions gear into segment-racks H H, which are at the upper ends of radius arms I I, connected at their lower ends to a shaft, J, in the lower part of the frame A. On one end of the shaft D of the drum-cylinder, there is keyed a wheel or pulley, K, having a bar, *c*, attached to its inner side, and to one side of the frame A there is attached a bent lever, L, which, when its outer end is pressed down, bears against the radius arm I in the rear of it, and throws the rack H at the upper end of said arm backward, thereby turning both pinions G, as both radius arms I are operated in consequence of being connected by the shaft J, and both bearings E will be turned, and the drum-cylinder C raised so as to be free from the form on bed B, owing to its shaft D passing eccentrically through said bearings. The drum-cylinders only remain elevated during one revolution of the drum-cylinder C, as the bar *c* on the inner side of the wheel or pulleys K, comes in contact with a pin, *d*, projecting from the segment H, which is by the side of the wheel or pulley K, and throws said segment back to its original position, so that the drum-cylinder is automatically lowered to a working position in time to receive a sheet and press it upon the form on bed B.

In printing, the advantages derived by having the press so constructed that the impression may be thrown off at the will of the operator without stopping the press are many and important, and among them may be enumerated the following:

If the feeder or operator fails to get the sheet properly to the guides, the sheet, if taken at all by the nippers, is printed "out of register" and is spoiled, and both the paper and press-work are lost. This occurs often, and is the source of great loss in printing.

Again, if the nippers fail to take the sheet at all, then the impression is taken upon the blanket, the tympan-sheet, or the overlays, in which case, the next two or three sheets are spoiled by the offsetting of the ink from the blanket, or tympan-sheet, or overlays; but what is of much more serious consequence many times, is, that the overlays, which sometimes take days in getting ready for a single form, are, after a few false impressions, so injured as to require to be made over again.

Again, in very fine work, much rolling of the form is required, and for such work the presses have to be made with additional rollers, as the forms pass under the inking-rollers and back but once to each impression,

thereby rendering necessary very great additional cost in their construction, while they are still liable to the same objections enumerated in the two preceding paragraphs; while, if the impression could be prevented being taken, at the will of the operator, he could roll or ink his form as many times as he liked before taking the impression.

So important, in fact, are these points in presses, that most of the book-work, and by far the largest share of the fine cut-work, are done on the "bed and platen" press known as the "Adams patent press," having the facilities for throwing off the impressions, and the advantages thereby derived as enumerated above, while in the presses known as cylinder printing-presses, viz, those having a reciprocating form or type-bed, and a continuous rotary movement of the cylinder, giving an impression to each revolution of the cylinder, it, though exceedingly desirable, has never been accomplished, though the latter class of presses are, at the present day, probably more numerous than any other in use.

I have, in my improvements now made, accomplished successfully the desired result, and the important parts of it are shown in the drawings accompanying this application. And in order to enable others to make and use said invention, the following description is given of the said improvement:

In the model, the sheet-nippers were not made, but their position indicated only, and the time of taking the sheet is immediately after the nipper-edge of impression-surface, as indicated, passes out from under the feed-table, when the cylinder is revolved in the direction of the arrow, and the time for impression to commence is when the nipper-edge, thus indicated, comes into a position next the bed H, vertically, under the shaft of the cylinder.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, in printing-presses known as cylinder printing-presses, having a reciprocating form-bed for holding and carrying the type, and a cylinder having a continuous rotary movement, and making one revolution to each impression, working in combination with the bed impression—

1. The combination of the eccentric bearing E, adjustable box F, segmental pinions G, segments H, lever L, and cylinder C, substantially as described for the purpose specified.

2. The wheel K and cam *c*, in combination with the eccentric bearing E, for the purpose of returning the cylinder after having been lifted to its original position before taking a sheet, substantially as herein shown and described.

C. POTTER, JR.

Witnesses:

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ALEX. F. ROBERTS.