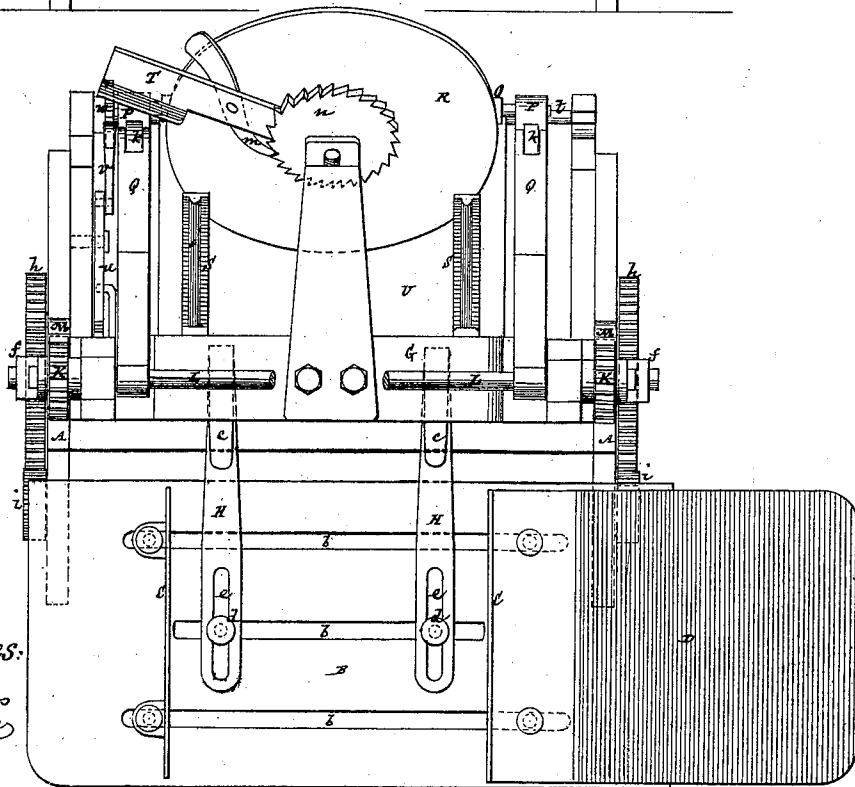
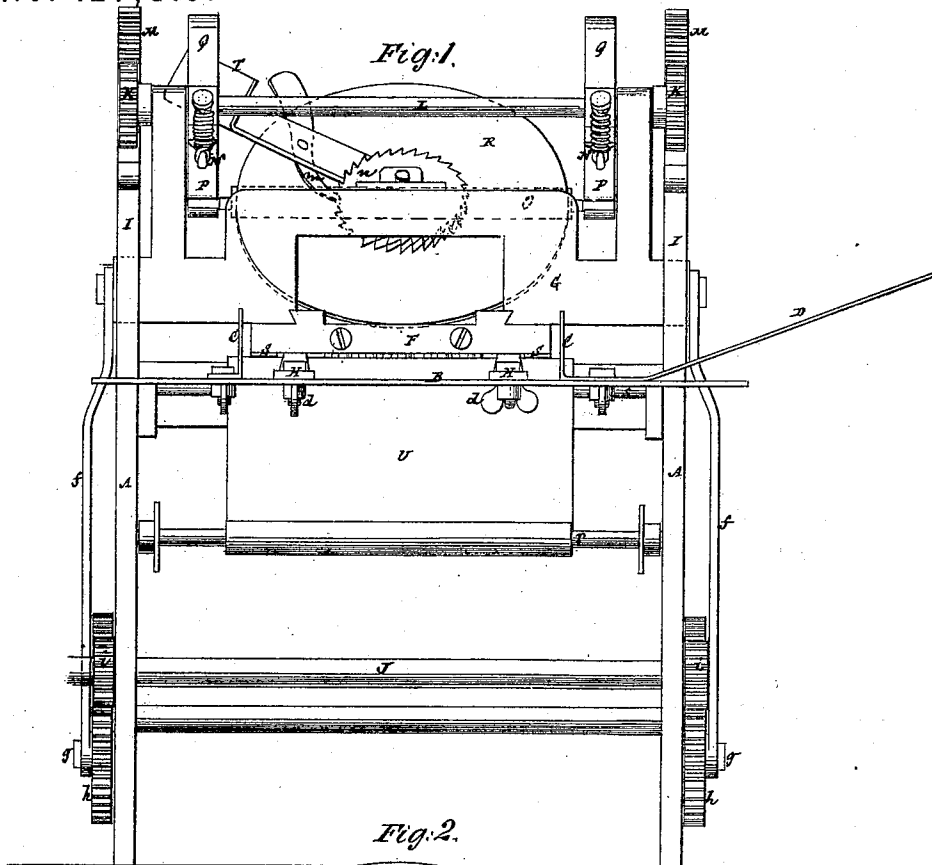




Witnesses:
 Thos. Holmes
 R. R. Kuhn

Edmond Warren

No. 127,815.

Printing-Press.

Patented June 11, 1872.



Thos Hanner
R.R. Raben

Edmond Warren

UNITED STATES PATENT OFFICE.

EDMOND A. WARREN, OF NEW YORK, N. Y.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 127,815, dated June 11, 1872.

Specification describing certain Improvements in Printing-Presses, invented by EDMOND A. WARREN, of the city, county, and State of New York.

This invention, or certain features of it, is more particularly designed to be applied to printing-presses for printing book-heads and other like work, although not exclusively restricted thereto. The improvements consist in the employment of certain top guides disconnected from the bed, but adjustable in or out relatively to the latter, and toward or from each other, for directing and arresting the feed of the strip or sheet to be printed, as in printing book or bill heads, said guides being dispensed with when printing a continuous sheet. The improvements also consist in novel means for alternately steadying and setting in motion a revolving inking-plate, the same being steadied by the travel of the inking-roller across its entire face, and being set in motion by the action of a weight as the inking-roller leaves it. There are also novel means for hanging and operating the inking-roller, said means including a combination of springs, racks, and pinions, whereby the inking-roller is made to have a uniform action over the inking-plate.

In the accompanying drawing, Figure 1 represents a front elevation of a printing-press having my improvements applied to it; Fig. 2, a plan of the same, and Fig. 3 a mainly central vertical section thereof. Fig. 4 is a face view of the chase detached, and Fig. 5 a longitudinal section of it.

Similar letters of reference indicate corresponding parts throughout the several figures of the drawing.

In said drawing, A is the main frame, of any suitable construction, for carrying the working parts of the press. B is the feed-table, which may be provided with side guides C C, adjustable along slots b in the table to suit different widths of strips or sheets. D is a pile-holder. E is the platen, which is stationary; and F the chase, carried by a holder or beam, G, and having a straight up-and-down motion toward and from the platen. H H are top guides for the strip or sheet to be printed. These guides are of a bent or hook shape at their forward ends c c to receive within them the advance portion of the sheet for the purpose of adjusting the latter to its position un-

der the type, and of keeping the sheet from being lifted by the "form" when receding from it. Said guides are disconnected from the bed, so that they form no obstruction, and are attached to the feed-table B in an adjustable manner by means of screw-clamps d, arranged to pass through longitudinal slots e in the guides and through the slots b of the table, whereby said guides may not only be set in or out relatively to the bed, but also toward or from each other to suit different feeds and widths of strips or sheets being fed. When printing a continuous strip these guides are removed. The chase F or its holder G is reciprocated to and from the bed in a direct or straight up-and-down course within slotted side guides or uprights I I by pitmen f, deriving their motion from cranks or eccentric pins g on spur-wheels h, driven by pinions i on a main driving-shaft, J. Said chase or its holder is also steadied and guided in its travel by pinions K K fast to a cross upper shaft, L, and working in stationary vertical racks M M, the shaft L turning in bearings or uprights carried by the chase-holder. This mode of operating the chase insures a uniformity of impression in all positions of the type, whether arranged to occupy a central, forward, backward, or end position in the chase. The reciprocating rotary motion also, communicated to the shaft L by the travel of the pinions K K up and down the rack M M, serves, in conjunction with springs N N, to operate the inking-roller O. This inking-roller is arranged to extend across the machine, and turns at its ends in bearings formed in curved levers or carriers P P, jointed at k to other curved levers or arms Q Q, which are adjustably attached to the reciprocating shaft L. The springs N N, that aid in the operation of the inking-roller, are attached to the jointed or pivoted carriers P P, and serve to keep said roller in contact with the inking-plate R when traveling across it in an up-and-down direction; also serve to keep the roller in contact with guides S S during its passage to and from the inking-plate R and "form" in the chase F; likewise serve to produce an elastic pressure of the roller on the type when inking the latter. Said inking-roller O is reciprocated over the inking-plate, and to and from or over the "form," by the swinging motion of the levers Q Q as derived from the re-

reciprocating action of the shaft L, which, being operated by the pinions K K in a regular or uniform manner as said, pinions work up and down the fixed racks M M, insure, in conjunction with the springs N N, a uniform action of the inking-roller O over the inking-plate R, and thus produce a uniform inking of the roller. The inking-roller O extends across the whole face of the inking-plate, or to both sides of the axis of the latter, said inking-plate being an intermittently-revolving one, pivoted at l to an arm from the chase-holder. By this arrangement of the inking-roller on both or opposite sides of the axis of the inking-plate the latter is kept stationary by the roller when traveling over or across it, and is only moved, and this in one and the same direction, when the inking-roller is clear of the plate. This gives a better distribution of the ink, or exposure of the roller to repeatedly-changing inking-surfaces, over or as compared with operating the inking-roller from or on one side of the axis of the plate, and the roller itself is made to steady or hold the plate when taking ink from it. Said inking-plate R is intermittently revolved, when the inking-roller is clear of it, by the falling of a weight or weighted lever, T, through a pawl, m, acting on a ratchet, n, fast to the inking-plate. This weighted lever is raised to give a fresh bite of the pawl each time the inking-roller is projected up over the plate by the upward swing of one of the levers or arms Q. U is a movable smut-apron, arranged to pass over the bed E, and operating in the

usual manner. The chase F has the "form" secured in it by means of set-screws x, which facilitates the placing and removal of the "form." To provide for the use of these screws without springing the chase the latter is constructed with a back, y, and to provide for the convenient attachment and removal of the chase to its holder G it is formed with dovetail slides or strips z on its back, arranged to fit correspondingly-shaped grooves in the bottom of the chase-holder.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination, with the platen E, of the detached top guides H H, adjustable toward or from each other, and in relation to the bed, substantially as specified.

2. The combination, with the inking-roller O, for the purpose of operating the same, of the traveling pinions K K, the shaft L, the fixed racks M M, the springs N N, and the levers P and Q, essentially as herein set forth.

3. In combination with the revolving inking-plate R, the inking-roller O, arranged to travel over said plate on both or opposite sides of the axis of the latter, and the weight or weighted lever T, with attached devices for revolving the plate when the inking-roller is clear of it, substantially as described.

EDMOND A. WARREN.

Witnesses:

FRED. HAYNES,
R. E. RABEAU.