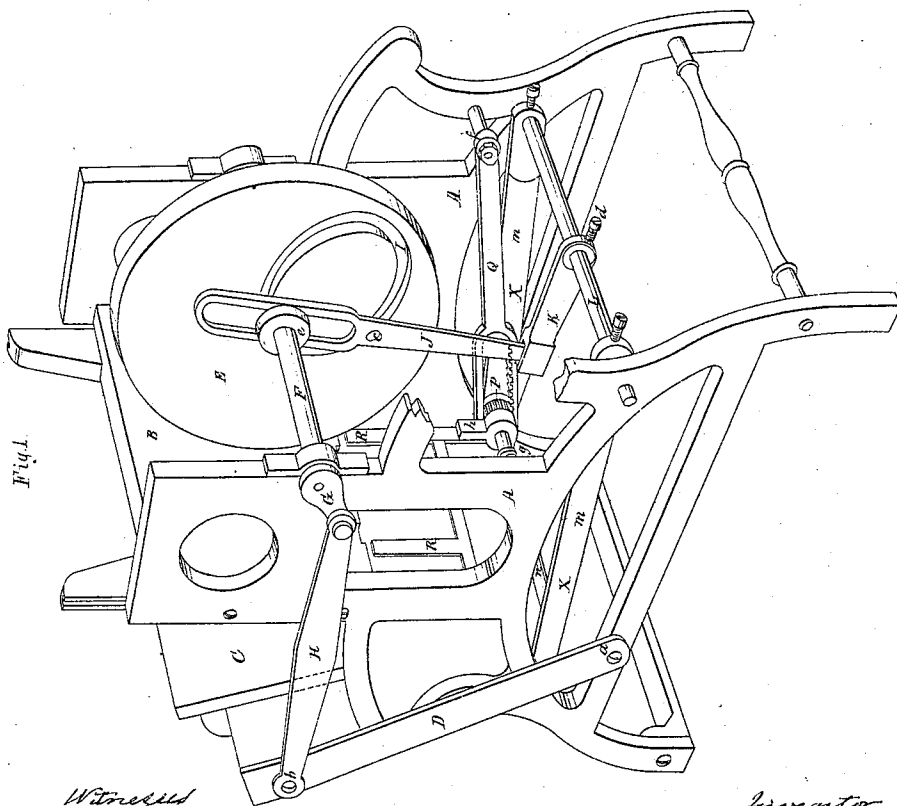
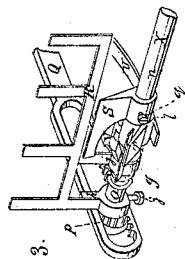
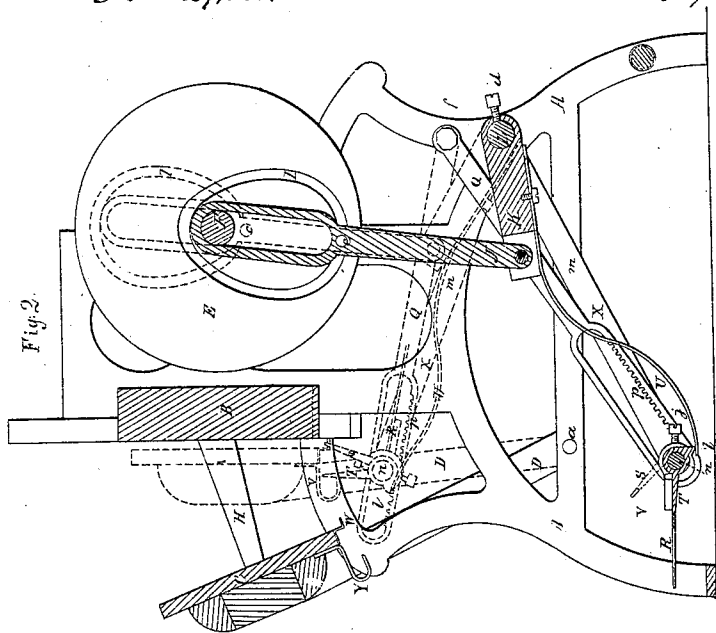


C. Wells & H. Barth.
Printing Press.

No 29,554.

Patented Aug. 7, 1860.



Witnessed
And Hugh
S. Rivard.

Inventor
Thos. Barth.
Chas. Wells.

UNITED STATES PATENT OFFICE.

CHAS. WELLS AND HENRY BARTH, OF CINCINNATI, OHIO, ASSIGNORS TO THE CINCINNATI TYPE FOUNDRY, OF SAME PLACE.

PRINTING-PRESS.

Specification of Letters Patent No. 29,554, dated August 7, 1860.

To all whom it may concern:

Be it known that we, CHARLES WELLS and HENRY BARTH, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Printing-Machines; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and letters of reference making a part of this specification.

Our invention relates to presses or printing machines in which the impression is produced by a vibrating platen or a vibrating bed, in distinction from that class of presses which produce the impression by what may be called a reciprocating platen or a reciprocating bed; and our invention consists in so arranging the sheet of paper to be printed upon the platen or so constructing the platen of a printing press as that the sheet may be seized by nippers while resting thereon, without being first removed from the platen by tapes or otherwise. It also consists in the construction combination and arrangement of mechanism hereinafter described for seizing the sheet of paper while upon the platen, and after it is printed withdrawing it therefrom and depositing it upon a board or table appropriately placed to receive it.

Figure 1 is a perspective view of a printing press to which our invention is applied. Fig. 2 is a sectional elevation of the same. Fig. 3 is a view of parts which will be particularly referred to.

A is the frame of the press B is a vertical bed firmly secured to the frame.

C is the platen, carried by a pair of vibrating arms D, pivoted, one upon either side of frame A at *a*.

E is a driving wheel or pulley by which motion is communicated to the parts of the apparatus. E is secured upon shaft F, which carries cranks G, one upon either end of the shaft, and these each carry a pitman H, pivoted respectively to the vibrating arms D at *b*, thus imparting motion to the platen causing it to approach the bed and give the impression and then recede to a convenient distance to release the printed sheet and receive another sheet to be similarly printed.

L is a shaft extending across the frame and having bearings in the side pieces A.

K is an arm upon L and secured from rotating thereon by the setscrew *d*, its outer end receives the upright slotted bar J from the face of which a pin (*c*) projects which enters the eccentric groove I formed in the face or side of pulley E. The slot in the upper end of bar J surrounds the shaft F, and J is held relatively vertical by it, while it is held in contact with the face of pulley E by the collar *e* upon shaft F. In the rotation of pulley E the pin *c*, tracing the eccentric groove I, imparts through the bar J and arm K a reciprocating motion to the shaft L. To L there is secured two arms *m*, which are connected at their outer extremities by the round bar *n* and these constitute three sides of a frame X, which has a reciprocating motion due to the motion of the shaft L. The extreme upper and lower positions of this frame are represented in Fig. 2, where the former is indicated in red lines. In presses of this construction this frame X gives motion to the ink rollers which are not herein represented. Fitted to the shaft *n* and rotating thereon is a sleeve O of which the pinion P is a part. This pinion is inclosed in a slot, or elongated opening in the free end of a vibrating bar Q. This bar is pivoted at *f*, to a pin projecting from the frame A. The slot has a rack *p*, with which pinion P, is in gear; now as the frame X, is vibrated, carrying the pinion P, the bar Q, is also caused to vibrate, but the bar Q, is pivoted at a point above and apart from the point around which the frame X vibrates. Hence, when the two are vibrated around their different centers in an upward direction the pinion P, is caused to traverse in the slot or elongated opening in Q, toward the center around which Q, vibrates, and when the two are vibrated downwardly the pinion P, is caused to traverse in the slot away from the center of X. But the pinion P, being in gear with the rack *p*, on an inner face of the slot or opening in the bar Q, the pinion is caused to rotate as it traverses in the slot and as the motion of the frame X, and bar Q, is vibratory or reciprocating, the motion of the pinion is necessarily vibratory and this vibratory motion of pinion P, must also appertain to the entire sleeve O, upon the shaft *n*, of which the pinion *p*, constitutes a part, as above stated.

R is a fly. It is carried by two arms *h i* which are hung upon the sleeve O and a set

screw j passing through h , or the part thereof which surrounds the sleeve O enters a recess in the latter. This recess is elongated slightly in the direction around the sleeve and the point or end of the screw j entering the elongated recess does not confine the fly rigidly upon the sleeve but permits it to move or vibrate through a short arc thereon. The fly is however prevented from working loosely upon the sleeve by a spiral spring g surrounding o and secured by one end thereto, while the other end is secured to the arm i of the fly, confining the fly by a yielding force to one position upon the sleeve, while at the same time it rotates reciprocally with the sleeve O as will be explained. This arrangement, permitting the fly to yield as has been explained, is to permit the fly, when it deposits the paper which has been printed upon the board or table, to yield sufficiently to accommodate the paper as it accumulates thereon and thus avoid any accident to the working parts as will appear more clearly hereafter.

Upon the shaft n is secured a stationary arm s , which is adjustable and held by the set screw g . T is a vibrating arm upon the same shaft, and these (that is s and T) are made to operate as nippers to seize the printed sheet of paper appropriately and in connection with the fly deposit it in its proper place. A tangential enlargement i is formed upon that part of T which surrounds the shaft n and to this is adapted the spring U secured to the under edge of arm K .

The operation of these parts will be described minutely. Upon the under edge of the platen C is secured to a hooked piece Y . W is one of two stops secured to the same edge of c , and having ends turned at right angles to the face of the platen C and somewhat below the lower line of the face thereof, they stop the sheet of paper which may be hurriedly placed upon the platen from slipping therefrom and retain it in the position to receive the impression.

The operation of our invention is as follows: When the apparatus is in the position represented by black lines in Fig. 2, a form of type having been previously placed upon and secured to the bed B , a sheet of paper is placed upon the face of the platen C its lower edge touching the stops W which permit the sheet to project a short distance or a portion of a margin below the lower line of the platen. The pulley E then acting through the shaft F , cranks G , and pitmen H , causes the platen to be brought around upon the pivot a to a contact with the form upon the bed B , where the impression is made. In the mean time the pin e , tracing the eccentric groove I , has, through its slotted bar J and arm K , elevated frame X , to the positions represented in red lines,

and as the frame X is elevated the slotted bar g pivoted to the eccentric pin f is also carried up; but as it ascends the pinion P in gear with the rack p on one of the inner faces of the slot in the end of Q is caused to rotate in such a manner as to revolve the fly R inwardly or backwardly to the position shown in red lines, Fig. 2. At the same time the hook Y upon the platen C as the latter approaches the form to give the impression encounters the nipper T , closing it toward s until it reaches a point where the spring U will so act upon the tangential enlargement i , as to cause the nipper T to spring into contact with S and thus inclose the sheet of paper or the margin which projects below the platen between their surfaces. The platen C now leaves the form of type, disengaging the sheet which has now been printed, therefrom and the frame X carrying the slotted bar Q commences to descend to the position represented in black lines from which it was just elevated. In its descent the nippers carry the printed sheet of paper downwardly and the pinion P is rotated in an opposite direction from that which was first described, causing the fly R to be rotated outwardly into contact with the sheet of paper. But as soon as it reaches a position in a radial range with the nippers S T , which have clasped the sheet and are carrying it down as has been described, a small arm V , projecting from a fixed collar upon the sleeve O , encounters the arm of nipper T and opens it, so as to release the sheet of paper from the nippers and allow the fly to carry it forward and downward to a horizontal position and deposit it upon the board or table appropriately placed to receive it. At the same time the nipper T is rotated by V outwardly from the nipper S until the enlargement upon the hub of T reaches a "dead point," or a point of central bearing with reference to the spring U , as shown in Figs. 2 and 3, in which relative position it is retained by the pressure of U until the return of the parts to that position which has been described wherein the hook Y acting upon it as shown in red lines Fig. 2 forces it to close toward S , and U again springs it into contact therewith or with an interposing printed sheet to be removed as before.

The printed sheets as they are removed by the fly R and deposited one above another will gradually accumulate into a pile of considerable magnitude, but the fly R being arranged to yield somewhat on the sleeve O , by which it is carried, readily accommodates the increasing bulk. If it is desired to give the fly R a cumulative or a gradually-increasing motion in its traverse outward with the sheet of paper, the pinion P may be set eccentrically upon the shaft or sleeve, so that the rack p , with which it is geared,

may at the appropriate point act upon a shorter radius of the pinion and thus accelerate the motion of the fly.

We have described the operation of our invention in connection with a vibrating platen. When, however, as in some presses, the platen is stationary and the bed vibrates the operation of the parts which have been described will be similar and the functions of each will be the same. We have also provided to allow the paper to project beyond the edge of the platen to afford a hold for the nippers.

It is obvious that a portion of the edge of the platen could be cut away, affording a space for the nippers and allowing them to seize the paper when it does not project beyond the line or edge of the platen. It is also practicable to raise and support one edge or margin of the sheet off from the platen far enough to allow one jaw of the nippers to enter between it and the face of the platen while the other jaw closes upon the outer surface of the sheet claspings it as has been described.

We are aware that nippers and a fly are common devices in printing presses, but we are not aware that the latter has ever before been applied to presses operating by a vibrating platen or bed, or that nippers were ever before used for seizing the sheet of paper when upon the platen of a vibrating bed or vibrating platen presses.

Our arrangement of mechanism for seizing the sheet of paper and disposing of it when printed, applied to that class of presses termed "job presses," in which either the bed or platen vibrate, renders these presses

very much more safe, complete and effective. It is believed that their speed of performance in printing is nearly doubled, while the danger attending the operation of removing the printed sheets by hand is entirely obviated.

Having fully described our improvements, what we claim, and desire to secure by Letters Patent, is—

1. In printing presses having a vibrating platen or a vibrating bed, seizing the sheet of paper while upon the platen by nippers T, S.

2. The fly R for properly disposing of the sheet of paper after it is printed—in combination with a vibrating platen or a vibrating bed, and nippers T, S, arranged and operating substantially as described.

3. Carrying the fly R and nippers T S by the same frame X that operates the ink rolls in printing presses which employ a vibrating platen or vibrating bed.

4. The stationary nipper S the nipper T and the spring U constructed arranged and operating as described in combination with the hook Y or its equivalent upon the vibrating platen or bed C for the purpose described.

5. The bar Q vibrated by frame X but pivoted eccentrically thereto having rack *p* giving motion to pinion P, substantially as and for the purpose described.

CHAS. WELLS.
HENRY BARTH.

Witnesses:

WM. CLOUGH,
S. K. GRAVES.