A. H. Bangle,
Printing Press.

No. 111,805. Patented. Feb. 14. 1871.

Fig. 1.

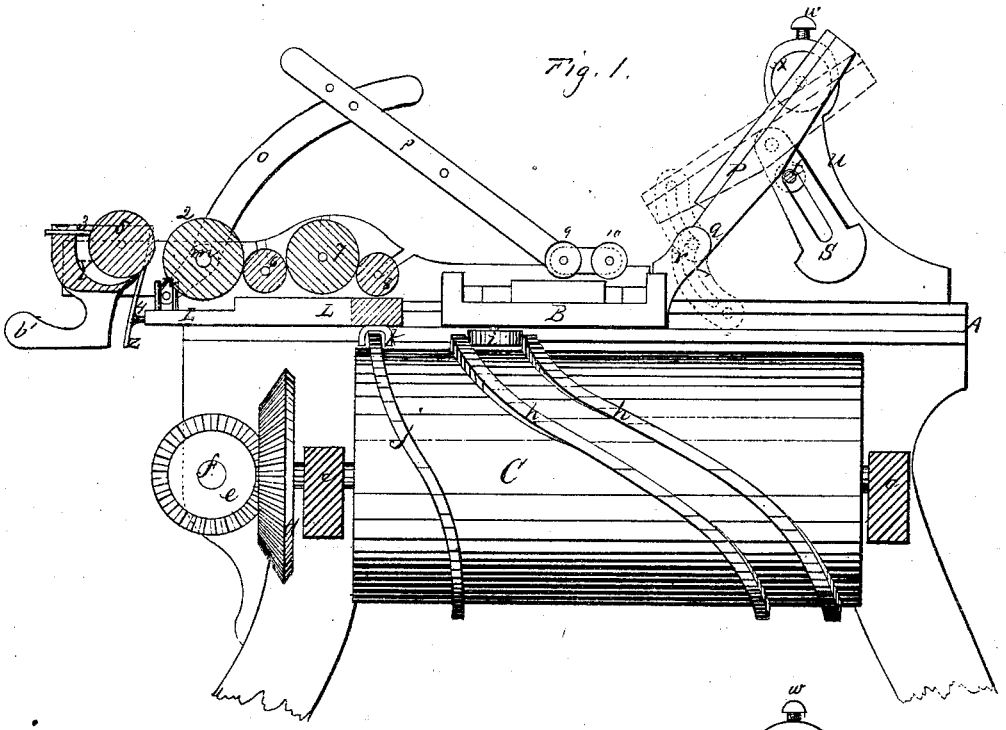
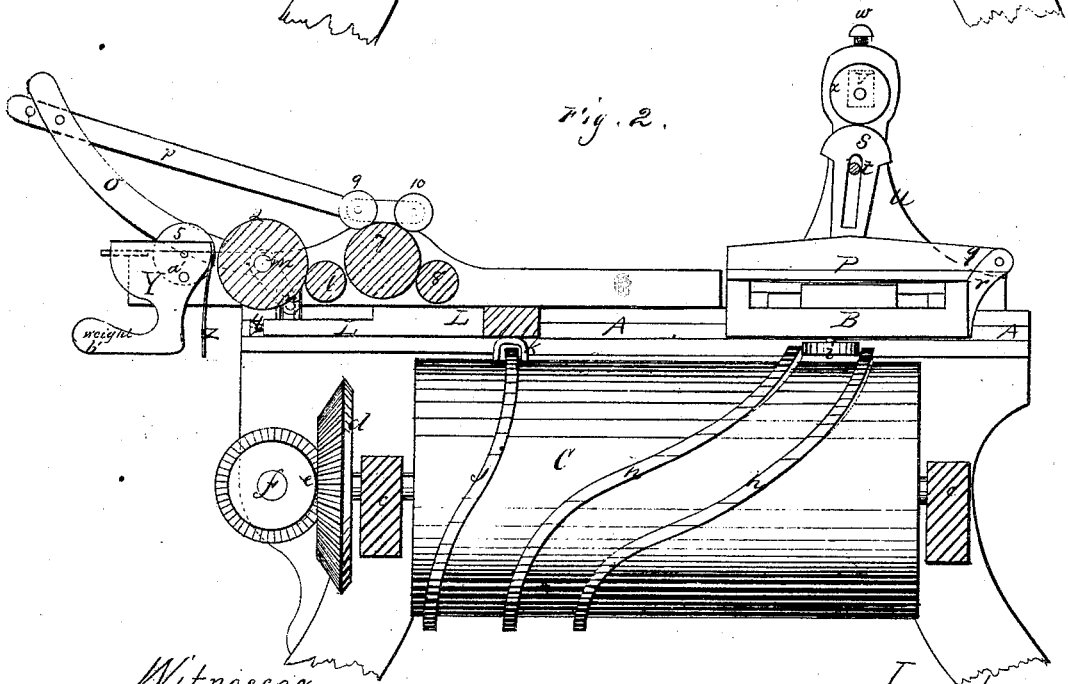


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

AMOS H. BANGLE, OF BROOKLYN, CALIFORNIA.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. **111,805**, dated February 14, 1871.

To all whom it may concern:

Be it known that I, AMOS H. BANGLE, of Brooklyn, county of Alameda, State of California, have invented an Improved Printing-Press; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

My improvements in printing-presses relate to that class of presses in which the form-bed is caused to move back and forth horizontally in a slide, while the platen is hinged to it so as to be raised and closed down upon it at the proper time by the same movement; and it consists in an improved device and arrangement of parts for operating the platen and giving the impression.

It also consists in providing an improved fountain, which will at each movement of the sliding form-bed be tilted by an additional sliding frame, so as to transfer a quantity of ink to the distributing-rollers.

In order to explain my invention so that others will be able to understand its construction and operation, reference is had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical elevation, partly in section, showing the planten thrown back. Fig. 2 is the same, showing the platen in position for giving the impression.

A A represent one of the two side rails of the machine. These rails are mounted upon a suitable frame, and are provided with grooves in which the form-bed is arranged to slide.

Beneath the sliding form-bed B is a cylinder, C, which has bearings *c c* at the opposite ends of the frame. At one end of this cylinder is a bevel-wheel, *d*, which engages with a bevel-pinion, *e*, on the shaft *f*, the whole being operated by a crank on shaft *f*, or equivalent device. A grooved cam is formed on the front end of this cylinder by the threads *h h*, in which a friction-roller, *i*, secured to the under side of the form-bed travels. This cam is so disposed upon the cylinder as to give the form-bed a reciprocating motion in the slide, the throw being sufficient in one direction to give the impression, and in the opposite direction to free it from the platen and bring it to a stop while its receives the inking-rollers, and give time to remove the printed sheet and replace it with a blank. On the rear end of the same cylinder is a single cam-thread, *j*, which is traversed by a grooved projection, *k*, which extends downward from the rear sliding frame, L, which operates the type-inking rollers 9 10 through the levers O and links *p*, levers O being fulcrumed on extensions of roller-shaft *m*, and connected at *n* with the sliding frame L, actuated by cam *j*. This cam-thread is so arranged as to carry the sliding frame L forward and back after the form-bed has arrived at the stop position to receive the inking-rollers, the platen being then in position shown in Fig. 1. The ink-rollers, after having inked the form, are drawn back and remain resting upon ink-distributing roller 7 while the impression is being made, roller 7 receiving a continual rotary movement from a belt (not shown) connecting it with a pulley on shaft *f*.

The platen P has extended end plates, *q*, at one side, which are hinged to the arms *r* on the form-bed, and it is suspended from the transverse rod *t* by means of the slotted cam-arms S, which are attached to the middle of each end of the platen, as shown. The rod *s* passes through the slots in the arms S, and is firmly fixed at each side in the standards U, at a height sufficient to allow the platen to press upon the form when the arms are vertical. At the upper end of each of the standards U is an elongated opening, in which a block, *v*, is placed, and which can be adjusted vertically by a screw, *w*, which passes down through the top of the standards. To the inside end of each of these blocks is fixed vertically a roller, *x*, against which the cam or upper end of the arms S will bear at the instant that the arms are brought to a vertical position—thus, by a downward thrust similar to that exerted by a toggle-joint—giving the impression by forcing the platen down upon the form. The amount of force it is desired to exert upon the platen is regulated by the screws *w*. As the form-bed is then withdrawn from under the rod *t* by the grooved cylinder, the arms S will raise the platen until it falls back upon the rod *t* in a position to recive a blank sheet after being relieved of the printed one.

The hinge *q* can, if desired, be extended at

an angle, as shown by dotted lines, and provided with a slot, so as to allow the platen to fall to a nearly horizontal position upon the rod *t*, in order to make it more convenient to remove the printed and place the blank sheet.

The fountain Y is hung upon the journals *a'* at the rear end of the frame, in such a position that the sliding frame L in its backward movement will strike against the pendent springs *z*, and by pressing them backward tilt the upper end of the fountain forward until the fountain-roller comes in contact with the roller 2 and transfers to it a quantity of ink, the quantity being regulated by the knife or gage-piece 3. The fountain is returned to its normal position when the screws 4 are withdrawn from the springs *z* by the counter-weights *b'*. Screws 4 are inserted in the rear end of the frame L for the purpose of tilting the fountain, and may be adjusted so as to cause it to remain in contact with the roller 2 a greater length of time, and consequently transfer a larger quantity of ink.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The slotted cam-arms S, transverse rod *t*, and adjustable pressure-rollers *x*, when employed as and for the purpose specified.

2. The fountain Y, hung upon journals at each end, and tilted into contact with the distributing-rollers by the sliding frame L, substantially as and for the purpose described.

3. A printing-press combining the features herein specified—that is, having the sliding form-bed B, hinged platen P, and sliding frame L, operated by the cam-cylinder C, in the manner described, and having a tilting fountain, Y, the whole constructed and arranged to operate in the manner and for the purpose specified.

In witness whereof I have hereunto set my hand and seal.

AMOS H. BANGLE. [L. S.]

Witnesses:
GEO. H. STRONG,
J. L. BOONE.