

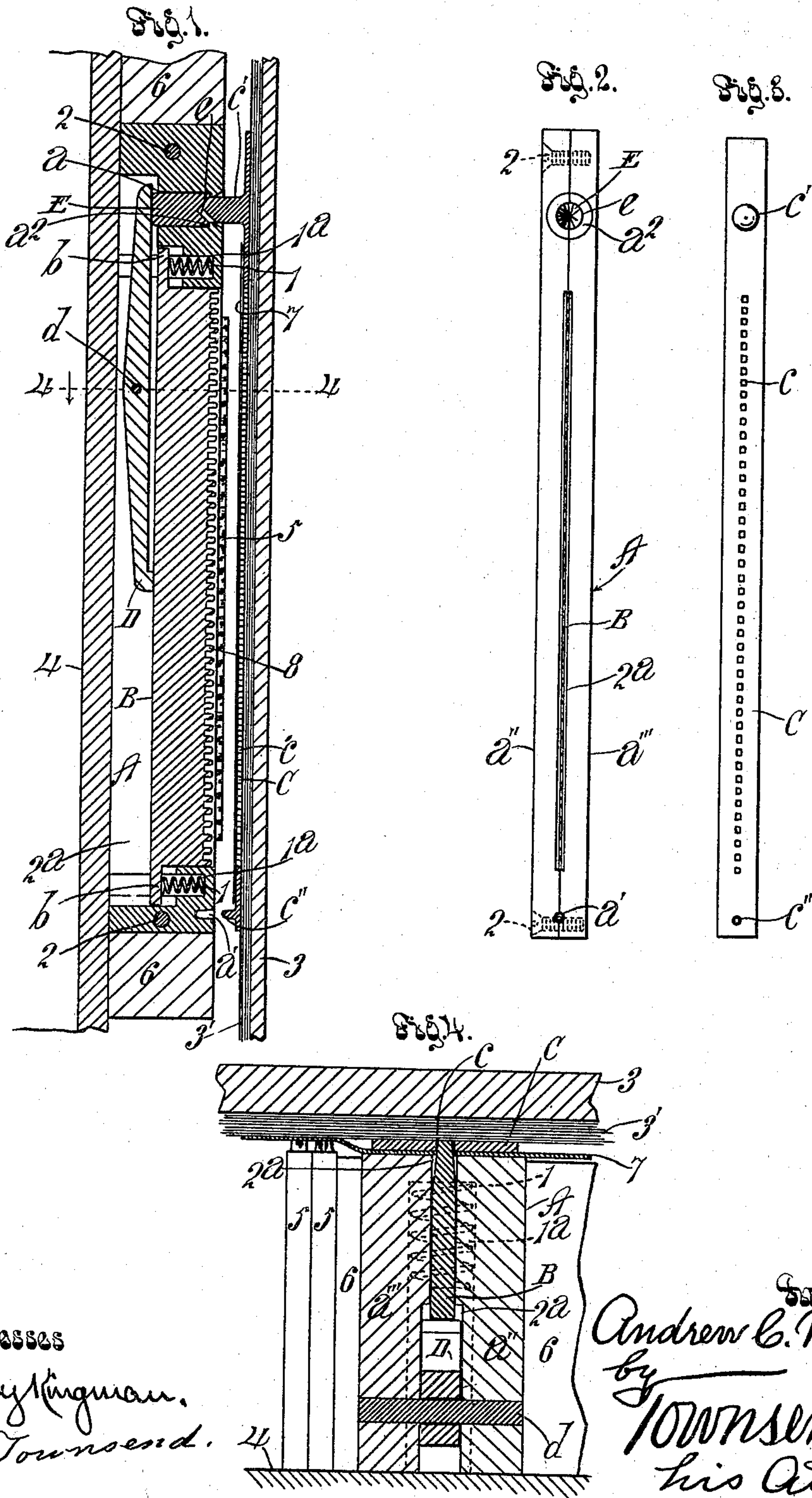
No. 639,206.

Patented Dec. 12, 1899.

A. C. MILLER.  
PERFORATOR FOR PRINTING PRESSES.

(Application filed Mar. 20, 1899.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## PERFORATOR FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 639,206, dated December 12, 1899.

Application filed March 20, 1899. Serial No. 709,837. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW C. MILLER, a citizen of the United States, residing at Corona, in the county of Riverside and State of California, have invented a new and useful Paper-Perforator for Printing-Presses, of which the following is a specification.

In the printing of receipt-forms, checks, or orders that are to be detached from stubs it is necessary to perforate or partially break the paper, so that the receipt or check can be easily torn off. Such perforating has hitherto been accomplished by arranging a serrated perforating-blade in the type-form and running the printed sheets through the press after the printing has been done, and it has also been accomplished by arranging a serrated blade in a case adapted to be set in the type-form with the type, and the said serrated blade has been arranged to be projected toward the platen when the platen comes in contact with the type-form to make the impression.

The object of my invention is to produce a superior perforating device which may be set up with the type in the type-form and which will be below and out of the way of the travel of the ink-rollers when the type is being inked and which will be operated at the time the impression of the type upon the paper is being made and to provide means for operating the same which can be readily set to register with the perforating-blade and to operate the device in any part of the form.

The accompanying drawings illustrate my invention.

Figure 1 is a longitudinal mid-section of my device in position for operation. Portions of the printing-press platen and the type-form are also shown. Fig. 2 is a plan of the perforator-case. Fig. 3 is a plan of the perforator-plate. Fig. 4 is an exaggerated cross-sectional detail on line 4 4, Fig. 1, showing the parts in position for printing and perforating.

A indicates the perforator-case, in which is mounted the perforator-blade B, having spring-engaged shoulders or lugs *b b*.

1 1 indicate springs seated in sockets *1<sup>a</sup>* in case A to press upon the lugs or shoulders *b* to press the plate against one end of a plate-operating lever D, which is a lever of the third class, pivoted at its middle to the case by a

pivot *d* and arranged to hold the perforating-plate normally below the level of the type.

E is a lever engaging and operating follower working in a hole *a*, which extends through the face of the case.

C indicates the perforator-plate flat on one side to be fastened on the pad *3'*, carried by the platen 3 of the press. The plate C is perforated, as at *c*, to receive the edge of the perforator-blade and is provided with a pin *c'* to engage the follower E to cause it to operate the lever.

*c''* indicates a locating-pin on the plate C to register with a hole *a'* in the case. The pins and holes are so arranged that when the pins are in the holes the perforations *c* will be in position to receive the edge of the perforator-blade when the same is thrown out by the lever.

It is immaterial for the purposes of my invention whether the plate be perforated by a slot or by a number of teeth-receiving openings, which are preferred and are shown at *c*.

The blade B and lever D are seated in and work in a slot *2<sup>a</sup>* in the case A.

The case may be of a single piece, and the recesses *1<sup>a</sup>* for the springs and the guide-slot *2<sup>a</sup>* for the blade and lever may be cut out from the under side thereof; but for convenience of construction I have shown the perforator-case as made of two separable halves *a'' a'''*, which are fastened together by screws 2 2.

4 indicates the body of the press.

5 5 indicate type, and 6 6 indicate slugs.

*a<sup>2</sup>* is a countersunk annular shoulder at the outer end of the follower-hole *a*. This shoulder retains the follower E in the case.

The outer end of the follower E is countersunk, as at *e*, and the end of the follower-operating pin *c'* is tapered to fit the countersink *e* and is of the same diameter as the hole through the countersunk annular shoulder *a<sup>2</sup>*, so that when it is desired to locate the plate on the case to cause the perforations *c* of the plate to register with the teeth 8 of the blade B this can be done by inserting the pins *c'* and *c''* into the holes *a<sup>2</sup>* and *a'*, respectively. The axes of the pins *c'* and *c''* are preferably in line with the perforations *c*, and the centers of the centering-holes *a' a<sup>2</sup>* are preferably in line with the mouth of the slot *2<sup>a</sup>*.

When it is desired to use the perforator,



the case is set with the type in the form and is held in the position desired by blocking with slugs or furniture, as at 6 6. When the form is set in the press, the perforator-plate is placed thereon by inserting the pin  $c''$  in the pin-hole  $a'$  and the plunger-operating pin  $c'$  in the hole  $a^2$  in engagement with the lever-operating follower E. Paste is then applied to the back of the perforator-plate and the press is operated in the manner usual when an impression is taken, and the pressure of the platen causes the paste to adhere to the padding 3' on the platen and fastens the plate firmly thereto.

The pin-hole  $a^2$  in the perforator-case is preferably countersunk, the center being just large enough to allow the pin  $c'$  to pass there-through, thus to provide for guiding the tapering end of the follower-operating pin into the hole in case the padding on the platen should move.

The follower E is provided with a countersink to allow the tapering end of the follower-operating pin to enter some distance to retain it therein when the perforating-plate is being set on the platen. This also serves to center the pin.

The perforating-plate is made of thin sheet metal and is provided either with a slot extending lengthwise intermediate its ends or with perforations corresponding in size with the serrations or points on the perforating-blade.

In operation the paper 7 to be printed and perforated is placed on the platen in the usual manner, with the part to be perforated lying over the perforated plate. The press is then operated and simultaneously makes the impression of the type and perforates the paper—that is to say, when the platen comes within a short distance of the type the pins  $c'$   $c''$  on the perforating-plate enter their respective pin-receiving holes  $a^2$  and  $a'$  and the pin  $c'$ , through the medium of the follower E, engages with the lever D to throw the perforating-plate outward. The teeth or points on the blade cut through the paper and enter the perforating-plate. When the platen leaves the type after the impression and perforation, the springs 1 1 force the blade inward and operate the lever to force the follower outward ready to be again engaged by pin  $c'$  at the next impression.

The top of the perforator-case is below the level of the type and out of the path of the inking-rolls, and the thickness of the perforating-plate is not quite equal to the difference between the height of the case and the height of the type.

By providing a perforating-plate which can be readily located on the perforator-case and then fastened to the platen by operating the

press I avoid the necessity of accurately locating the perforator-case in the type-form, and the perforator can readily be placed in any position or angle in the form.

By providing the two pins on the perforating-plate to register with the holes in the case the openings or slots therein always register with the perforating-blade to receive it when it is thrown upward to perforate the paper.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A perforator for printing-presses comprising a case; a perforating-blade in the case; springs arranged to retract the blade; a lever of the first class pivoted in the case with one end in engagement with the perforating-blade at the middle thereof; a follower to engage the other end of the lever; and means carried by the platen of the press to actuate the follower.

2. A perforator for printing-presses comprising a case having a slot therein for the perforating-blade and also having a pin-receiving hole at each end of the case; a perforating-blade in the case to play through the slot; springs arranged to retract the blade; a lever of the first class pivoted in the case with one end in engagement with the perforating-blade at the middle thereof; a follower to engage the other end of the lever; and a perforator-plate carried by the platen of the press and provided with pins to register with the holes, one of said pins being arranged to operate the follower.

3. The combination of the perforator-case provided with a slot and provided at one end with a pin-centering hole and at the other end with a follower-holding hole having an annular shoulder at its outer end; a perforating-blade mounted in the slot and provided at its ends with projections; springs in the case to engage the projections to retract the blade; a lever pivoted in the case with one end in engagement with the blade; a follower in the follower-hole and engaging the other end of the lever; a perforated plate provided with a follower-operating pin to engage the follower; and a locating-pin to enter the centering-hole of the case.

4. The combination of the slotted case provided with a hole having an inwardly-projecting shoulder at its outer end; a follower in such hole; a perforating-blade mounted in the slot; and a lever pivoted in the case with one end in engagement with the blade and the other end in the path of the follower.

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Witnesses:

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