

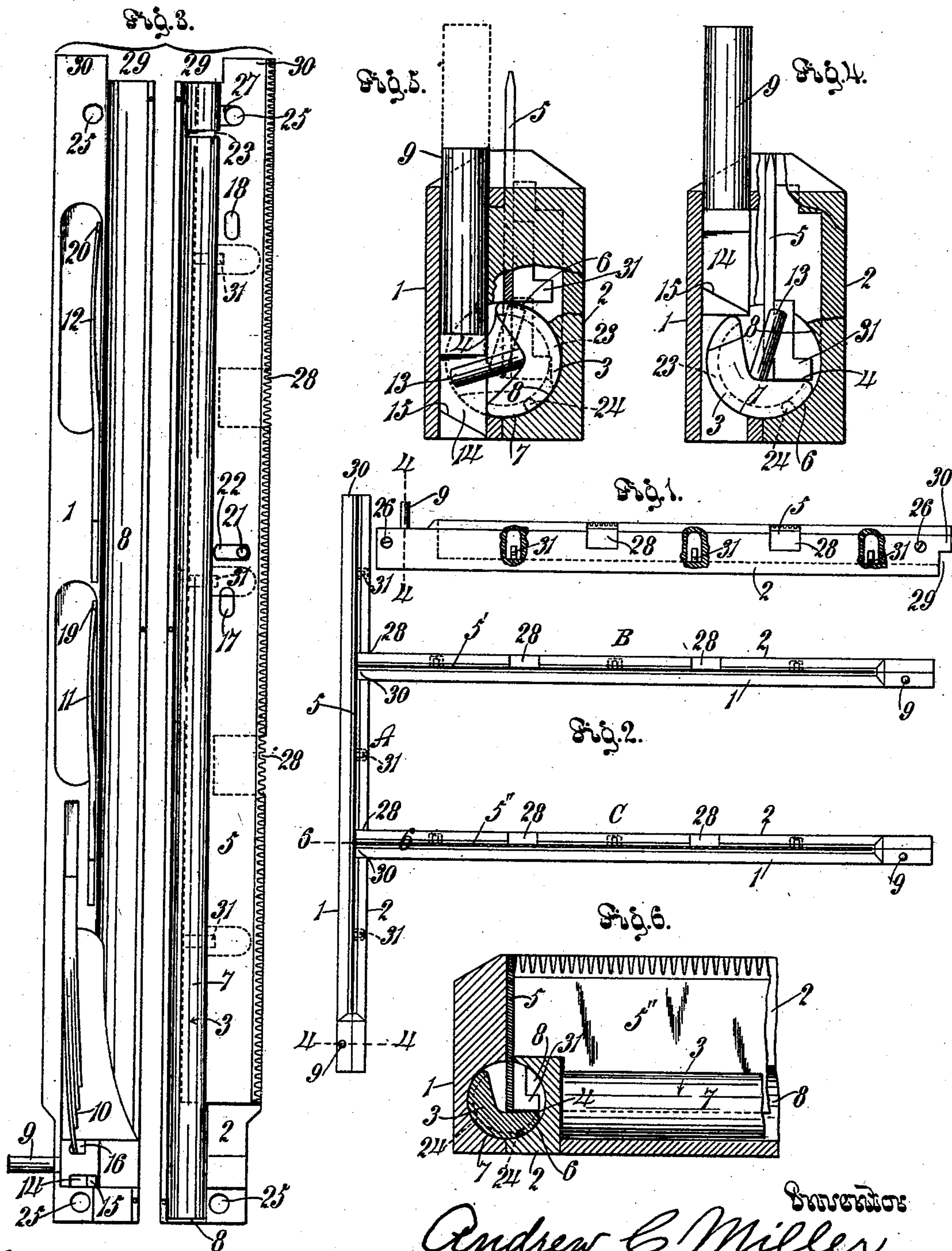
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A. C. MILLER.
PERFORATOR FOR PRINTING PRESSES.

(Application filed Oct. 27, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ANDREW C. MILLER, OF CORONA, CALIFORNIA.

PERFORATOR FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 689,619, dated December 24, 1901.

Application filed October 27, 1899. Serial No. 734,956. (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 Perforator for Printing-Presses, of which the following is a specification.

This invention relates to perforators adapted for use in simultaneously printing and perforating sheets of tickets, bank-checks, receipts, &c., and arranged to hold the perforating-blade retracted at the time of inking, so that the perforations will not be marked with ink.

The object of this invention is to provide a more perfect appliance of this kind than has heretofore been provided.

In carrying out this invention I purpose to provide more perfect means for throwing the perforator-blade out into and holding it in its perforating position.

Another object of my invention is to provide perforators which can be set in the form with the type to make parallel perforated lines connected with a perforated line at right angles to said parallel lines, so as to simultaneously print and perforate a sheet with a plurality of bank-checks on a single sheet.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of my newly-invented perforator designed for perforating one line and for assembling with like perforators for perforating a sheet with lines at right angles to each other. The case is broken away to show the lugs on the blade. Fig. 2 is a view of a set of three of my newly-invented perforators assembled in a position which they occupy in the printer's form when arranged for perforating a sheet for three bank-checks and their stub. Fig. 3 is a view of the appliance with the two halves of its case laid open to expose the interior construction. Fig. 4 is a section on line indicated by 4 4, Figs. 1 and 2. The plunger and the bar and pin which are operated thereby are shown intact. The parts are shown in their normal or initial position. A portion of the case is broken away to expose the end of the perforator-blade. Fig. 5 is a like section showing the parts in their perforating position with

the plunger fully pressed in and the perforator-blade fully extended. Dotted lines indicate the initial position of the parts. Fig. 6 is a section on the line indicated by 6 6, Fig. 2.

This perforator when ready for use, as shown in Fig. 1, resembles a straight bar to be locked into the form with the type and furniture (not shown) and can be made of any desired length for any required work.

The device comprises a case which is formed of two side pieces 1 2, which are chambered to receive the operative parts and are made of the thickness required for the necessary strength.

3 indicates a rotary bar provided with a cam-like face 4 for operating the perforator-blade 5 and with a bearing-face 6 at the edge of the cam-like face for holding the blade extended. The face 7 of the bar 3 is formed in a segment of a cylinder, and a cylindrically-shaped bearing 8 is provided in the case for said segmental face, so that the bar can partially rotate in the case to cause the cam-face 4 to force the blade 5 out into its extended position. (Shown in Fig. 5.) The bar is grooved opposite the segmental face to chamber the inner edge of the perforator-blade. The cam-face 4 forms one wall of the groove.

9 indicates a plunger mounted in the case to be operated by the platen of a press (not shown) and arranged to engage with one side of the rotary bar 3 to rotate the same to extend the blade. Suitable means are provided for returning the parts to their initial positions.

10 indicates a spring chambered in one of the side pieces for returning the plunger to its initial position.

11 12 indicate springs for returning the blade to its initial position, (shown in Fig. 4,) and 13 indicates a pin fastened to and projecting from the bar 3 into a recess 14 in the plunger above a shoulder 15 of the plunger, which shoulder is arranged to engage the pin 13 on the outward movement of the plunger, thus to positively rotate the bar 3 to withdraw the blade-supporting face 6 from beneath the lower edge of the blade 5.

16 indicates a recess in the plunger for the end of the spring 10. This spring is made of considerable strength, so as to positively

return the plunger to its extended position and to also turn the bar 3 to bring it out from under the blade 5, so that the springs 11 and 12 can force the blade down along the cam-face.

17 and 18 indicate slots in the blade 5, into which slots projections 19 and 20 of the springs 11 and 12, respectively, extend for the purpose of retracting the blade.

21 indicates a stud projecting inwardly from one of the sides of the case and extending through a slot 22 in the blade to engage the opposite side of the case to prevent the case from being sprung against the blade.

23 indicates a groove cut in the periphery of the rotary bar 3 to receive a pin 24, which projects from one side of the case to hold the bar from sliding endwise.

25 indicates the screw-holes into which the screws 26 are screwed to hold the two sides of the case together.

27 indicates a slot in the blade to allow the blade to extend to the end of the case and to work freely with relation to the screws.

28 indicates notches in one side of the case, and 29 indicates a gain at one end of the case, above which the case extends, as at 30, to enter the notch 28 when one of the perforators is set at right angles to another perforator for the purpose of simultaneously making one line of perforations at right angles to another line of perforations.

In Fig. 2 the three separate perforators are respectively indicated by the characters A, B, and C. The perforator A is set for perforating between the stub and the checks, and the perforators B and C are set for perforating between the checks. By means of the notches 28 in the side of the perforator A and the gains 29 in the ends of the perforators B and C the perforator-blades 5' and 5'' of the perforators B and C, respectively, are adapted to be brought close against the perforator-blade 5 of the perforator A, so that the parallel and rectangularly-arranged rows of perforations can be properly made.

In practical operation for perforating a sheet for three bank-checks the three perforators A B C will be placed as indicated in Fig. 2 and will be locked in the form with the type or plates for printing the checks. Then the form will be set in the press ready for printing. When the press is operated, the platen of the press (not shown) will engage the end of the plunger 9, the inner edge of which normally rests upon one edge of the bar 3, and will thereby force such edge of the bar down, thus rotating the bar until the edge of the bar escapes from beneath the plunger 9. Then the plunger is free to slide on past the bar. The rotation of the bar under the pressure of the plunger causes the cam-face 4 to throw the blade 5 outward into the position shown in Fig. 5, and the face 6 of the bar is thus brought to extend underneath the inner edge of the blade 5 from end to end of said blade, with the exception of the small por-

tion of the blade which extends over the gain 29. The blade is thus perfectly supported and prevented from being pressed into the case until the impression has been made and the platen is withdrawn from the form. Then the spring 10 will operate to force the plunger 9 outward. The shoulder 15 of the plunger then engages the end of the pin 13, and the force of the spring 10 is then positively exerted to rotate the bar 3 and bring the face 6 of the bar out from underneath the edge of the blade 5. Then the blade sliding down the cam-face under the force of the springs 11 and 12 assists in returning the bar and finally returns it to the normal position with the blade 5 fully retracted in the case.

31 indicates lugs at the side of the blade to be engaged by the rotary bar at the first part of its rotation for starting the blade outward.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a perforator, the combination with a perforator-blade, of a rotary bar provided with a cam-like face for operating the blade and with a bearing-face at the edge of the cam-like face for holding the blade extended; means to be operated by the platen of a press to rotate the bar to extend the blade; and means for returning the parts to their initial position.

2. In a perforator, the combination with a perforator-blade; of a rotary bar provided with a cam-like face for operating the blade and with a bearing-face at the edge of the cam-like face for holding the blade extended; a plunger to be operated by the platen of a press and arranged to engage the bar to rotate said bar; and means for returning the parts to their initial position.

3. In a perforator, the combination with a perforator-blade; of a rotary bar grooved longitudinally to chamber the inner edge of the blade and formed with a cam-face for operating said blade; the face of said bar opposite the groove being in the segment of a cylinder; a cylindrically-shaped bearing for said segmental face; a plunger to be operated by the platen of a press and arranged to engage with one side of the bar to rotate the same to extend the blade; and means for returning the parts to their initial position.

4. In a perforator, the combination with a perforator-blade, of a rotary bar grooved longitudinally to chamber the inner edge of the blade and formed with a cam-face for operating said blade; the face of said bar opposite the groove being in the segment of a cylinder; a cylindrical bearing for said segmental face; a plunger to be operated by the platen of a press and arranged to engage with one edge of the bar to rotate the same to extend the blade during a portion of the movement of the plunger and said bar being arranged to be moved out of the path of the plunger at the close of the inward movement of the plunger, said plunger being arranged to engage the inner edge of the bar to hold the

bar in position with its outer edge under the inner edge of the blade at the innermost position of the plunger; and means for returning the parts to their initial position.

- 5 5. In a perforator, the combination with a rotary perforator-blade-operating bar, of a plunger arranged to engage with one edge of the bar to rotate the same during a portion of the movement of the plunger, and said bar
10 being arranged to move out of the path of the plunger at the close of the inward movement of the plunger; means for returning the plunger to its initial position; and a pin projecting from the bar to be engaged by the plun-
15 ger at the return movement of the plunger to start the bar in its return movement.

6. In a perforator, the combination of a case chambered to receive the operative parts; a blade mounted in said chamber to slide therein and to be projected therefrom; springs 20 in the case to normally retract the blade; a rotary bar provided with a cam for throwing the blade outward; a plunger for rotating said bar; and a spring for operating the plunger.

In testimony whereof I have signed my 25 name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 20th day of October, 1899.

A. C. MILLER.

Witnesses:

JAMES R. TOWNSEND,
FRANCIS M. TOWNSEND.