(No Model.)

G. N. BREED.

PERFORATING DEVICE FOR PRINTING PRESSES.

No. 417,662. Patented Dec. 17, 1889.

Fig. 1.

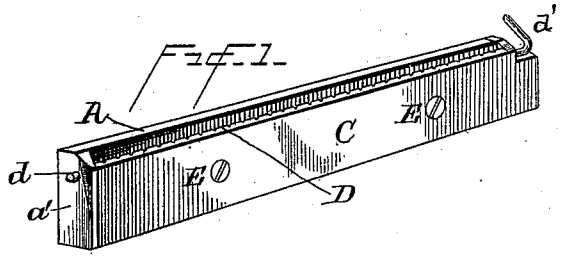


Fig. 2.

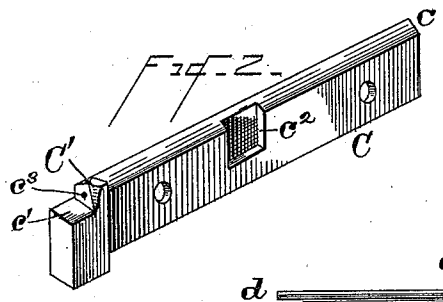


Fig. 3.

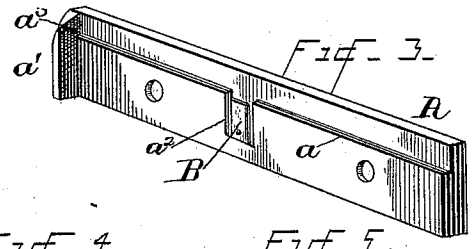


Fig. 4.

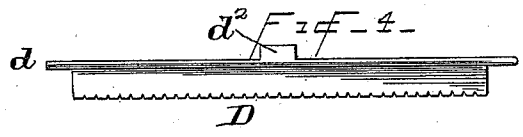


Fig. 5.

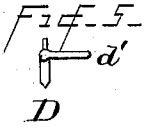


Fig. 6.

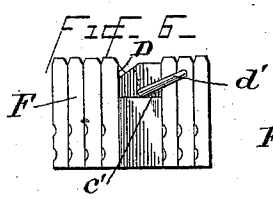


Fig. 7.

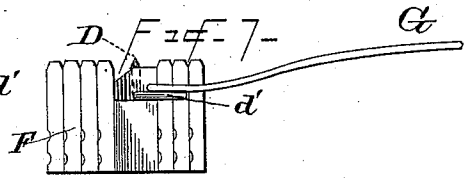


Fig. 8.

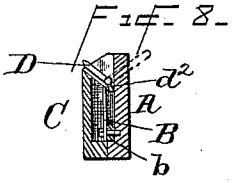
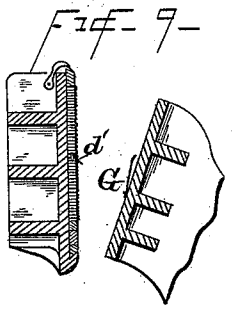


Fig. 9.



WITNESSES.

Norris A. Clark

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INVENTOR.

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BY HIS ATTORNEYS,

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UNITED STATES PATENT OFFICE.

GEORGE NELSON BREED, OF BROOKINGS, (DAKOTA TERRITORY,) SOUTH DAKOTA, ASSIGNOR OF TWO-THIRDS TO P. C. MURPHY AND HENRY C. PARLIAMENT, BOTH OF SAME PLACE.

PERFORATING DEVICE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 417,662, dated December 17, 1889.

Application filed September 22, 1888. Serial No. 286,062. (No model.)

To all whom it may concern:

Be it known that I, GEORGE NELSON BREED, a citizen of the United States, residing at Brookings, in the county of Brookings and Territory of Dakota, have invented certain new and useful Improvements in Perforating Devices for Printing-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to printing; and it consists of a device for making perforations in paper of any kind at the same time that the impression is taken on a press, so that the sheet may be torn apart, when desired, and have a straight margin on each piece at the line of separation. It is customary to accomplish this by setting up with the form of type a notched rule of sufficient height to indent the paper along the line where the separation is to be made; but the disadvantage of this is that the rule is inked at every passage of the inking-rollers and not only indents the paper, but prints thereon a line of dots or short dashes. This gives an ugly appearance to the printed sheet, and calls undue attention to the indentations. Furthermore, the inking-rollers are liable to be damaged by the sharp unyielding points of the perforator.

The object of my invention is to prevent the perforator from coming in contact with the inking-rollers, and yet allow it to project sufficiently above the plane of the type to perforate the paper.

In the drawings, Figure 1 is a perspective view of my perforating device. Fig. 2 is a similar view of the front portion. Fig. 3 is a similar view of the back portion. Fig. 4 is a plan view of the perforating-knife. Fig. 5 is an end view of the same. Figs. 6 and 7 show the device set up with a form of type. Fig. 8 is a cross-section, and Fig. 9 shows the bed and platen of a press with a form of type containing my device.

The same letters refer to the same parts in all the views.

The back portion A of the perforator is substantially of the shape shown in Fig. 3, having a narrow shoulder a near its upper inside edge. At one end it has a flange or lip a', projecting at right angles and on the same side as the shoulder a. About in the middle of the inner face is a recess a^2, running down nearly to the bottom of the portion A. In this recess is seated a flat spring B, which is flush, or thereabout, with the inner face of the portion A. The upper end of the spring terminates about on a level with the shoulder a, and its lower end is fixed. A block b, inserted behind it or formed integral with the spring, holds it away from the back of the recess a^2.

The front portion C of the perforator is shown in Fig. 2. It is not so high as the back portion A, and its upper edge c is beveled off upwardly from the inner to the outer face. At one end is a flange C', projecting at right angles to the inner face, and attached to or formed integral with this flange is a block, forming a shoulder c' on the outside of the flange C'. The shoulders c' and a and the lower line of the beveled edge c are all in the same plane when the parts are assembled. A recess c^2 is cut in the inner face of the front portion C in such a position as to register with the recess a^2. In the flange a' is a hole a^3, just above and parallel with the shoulder a. In the flange C' is a hole c^3, just above the shoulder c'. These holes form bearings for the journals d of the perforating-knife D. This consists of a narrow flat blade provided with teeth, which may be of any desired shape—blunt, as shown in the drawings, needle-pointed, saw-toothed, or even small punches, solid or hollow. The journals d are at each end of the blade, and one of them has an arm d' extending therefrom at about a right angle to the plane of the blade. From the back of the blade, near its middle, projects a short tongue d^2.

When the parts are assembled, the knife lies in a groove formed by the back portion A above the shoulder a and the beveled edge

c of the front. The tongue d^2 enters the recess a^2 and rests behind the spring B, the blade D lying upon the beveled edge c of the front portion, as shown in Figs. 1, 6, and 8. The arm d' extends upwardly above the shoulder c', as shown in Figs. 1 and 6. The inner faces of the front and back portions come in contact and the parts are held together by suitable screws or rivets E.

The perforator is inserted between the lines of type F at the required place and locked up with the form, being of substantially the same height as a space or a lead. In this position the edge of the perforating-knife D lies below the face of the type, as shown in Fig. 6, so that it cannot be touched by the inking-rollers.

On the platen of the press is fastened a finger G, consisting of a light flat spring so arranged that when the platen is closed upon the type the spring G will come in contact with the arm d' and turn it down upon the shoulder c', as shown in Fig. 7, tilting the knife D up into a vertical position, so that its edge will be slightly above the face of the type. The back of the knife lies just above the shoulder a, which sustains the knife from springing when the pressure of the platen is brought upon it. The tongue d^2 bears against the spring B, bending it toward the front C of the perforator, so that when the impression has been taken and the finger G has been withdrawn from the arm d' the spring B throws the knife D down again and holds it out of the way of the inking-rollers, as before; or the spring may be omitted and the knife allowed to fall by its own weight.

It is evident that the body of the device may be made all in one piece instead of two, if desired, being suitably grooved and slotted to receive the spring B and knife D.

I am aware of the patent to one Kennedy, dated April 3, 1888, and do not lay claim to any of the specific devices therein shown, described, and claimed. My invention is limited to a specifically distinct and different mode of accomplishing the same general result attained by his mechanism.

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

1. A perforating device for printing-presses, consisting of a block having a longitudinal recess, a perforating-blade lying in said recess and suitably journaled at each end, an arm projecting from said blade at right angles thereto, and a finger on the platen of the press adapted to come in contact with the arm when the impression is taken and turn it down, thereby tilting the blade up into position to operate, substantially as described.

2. A perforating device for printing-presses, consisting of a block having a longitudinal recess, and a shoulder c' at one end, a perforating-blade lying in said recess and suitably journaled at each end, an arm projecting from said blade at right angles thereto and adapted to be stopped by the shoulder c', and a finger on the platen of the press, adapted to come in contact with the arm when the impression is taken and turn it down till it strikes the shoulder c', thereby tilting the blade up into position to operate, substantially as described.

3. A perforating device consisting of the back portion A, having the shoulder a and flange a', the front portion C, having the flange C', beveled edge c, and shoulder c', the tilting knife D, journaled in the flanges a' C' just above the shoulder a, and having an arm d^2, projecting at right angles to the knife above the shoulder c', by which it is adapted to be stopped, substantially as described.

4. A perforating device consisting of the back portion A, having the shoulder a, flange a', and recess a^2, the spring B, seated in said recess, the front portion C, having the beveled edge c, the flange C', shoulder c', and recess c^2, the perforating-blade D, having the arm d', and the tongue d^2, engaging with the spring B, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE NELSON BREED.

Witnesses:
P. C. MURPHY,
JAS. F. BROOKE.