

No. 736,512.

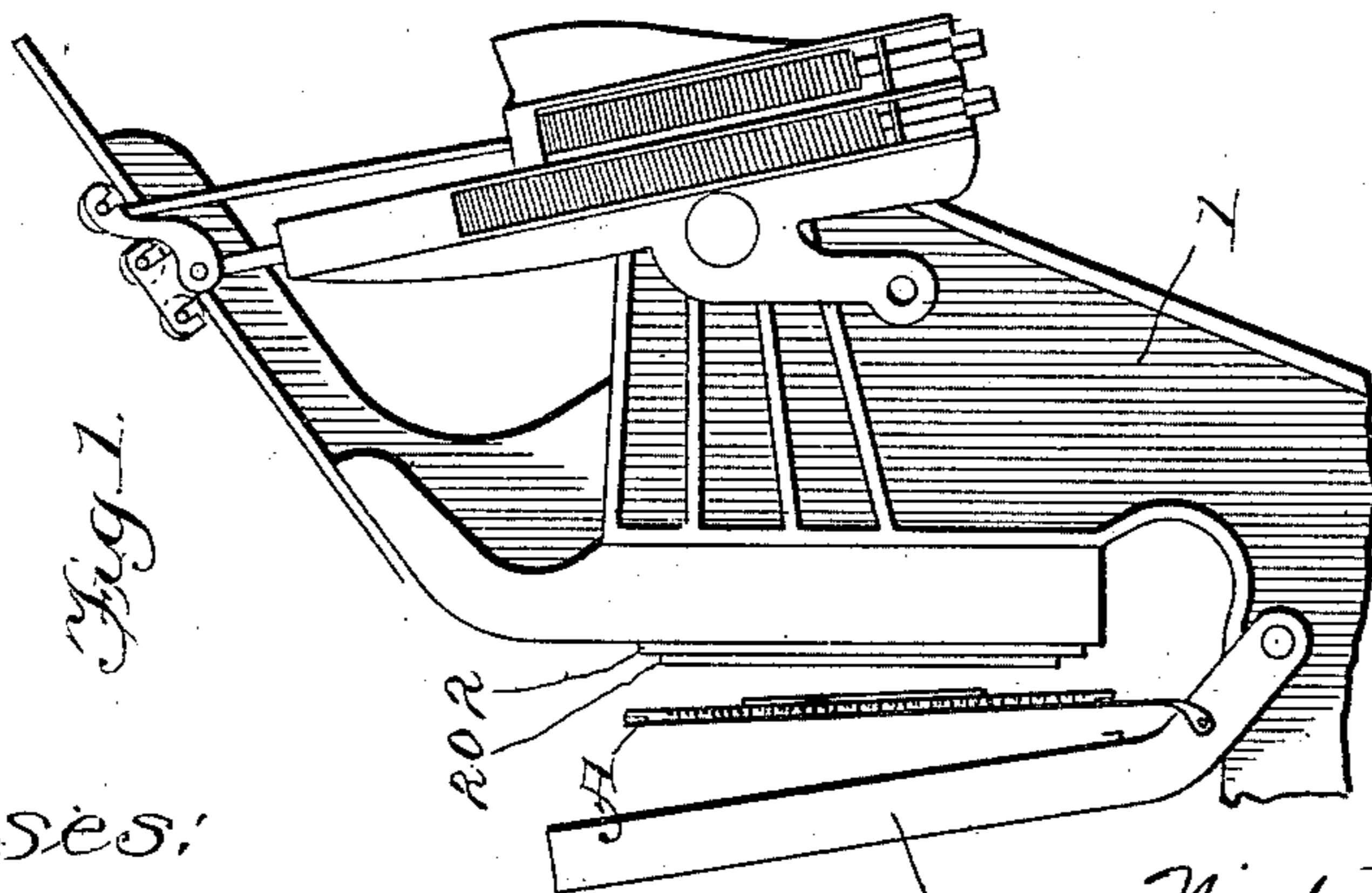
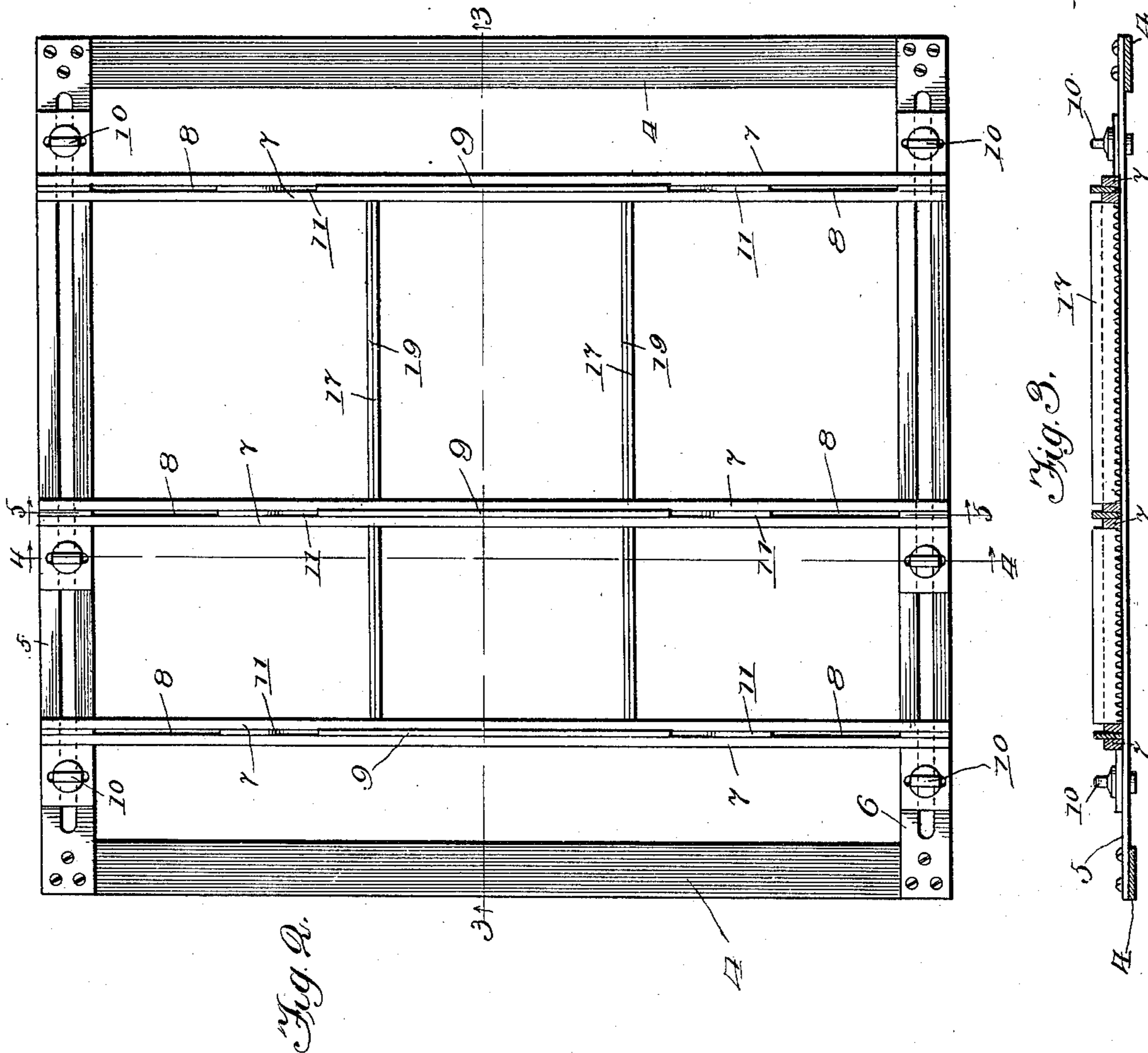
PATENTED AUG. 18, 1903.

N. A. EMRICH & W. F. KRAUTTER.
PERFORATING ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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by

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2 SHEETS—SHEET 2.

Fig. 6.

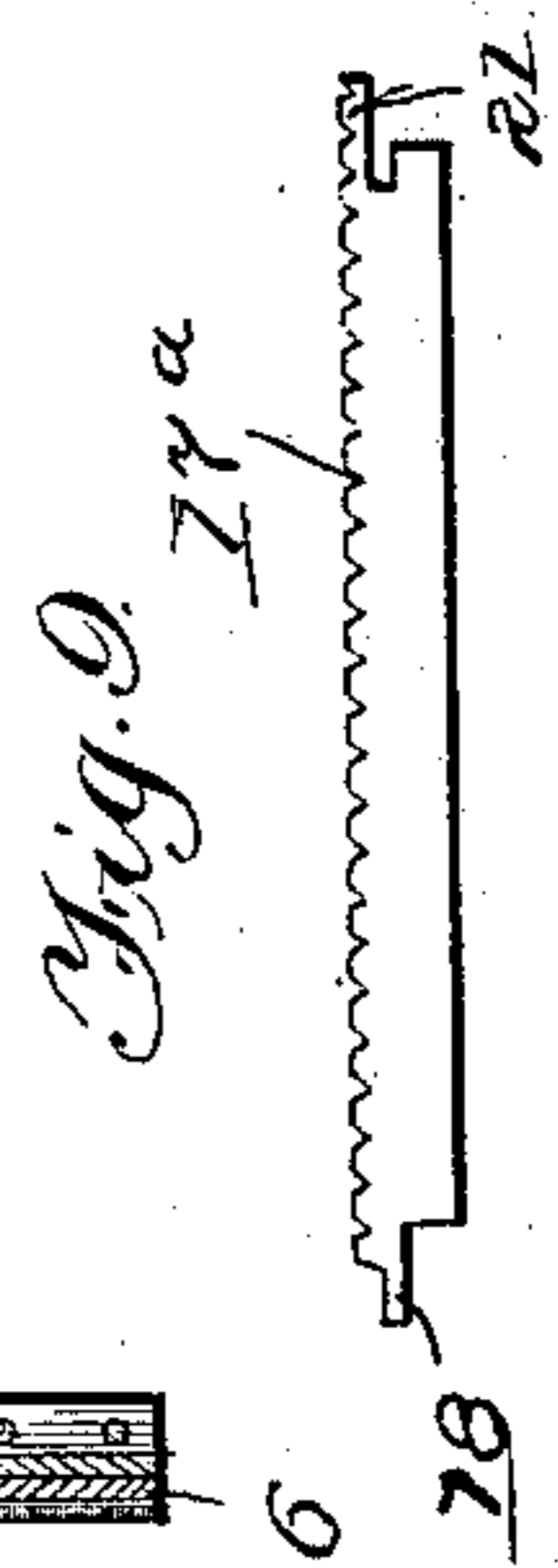
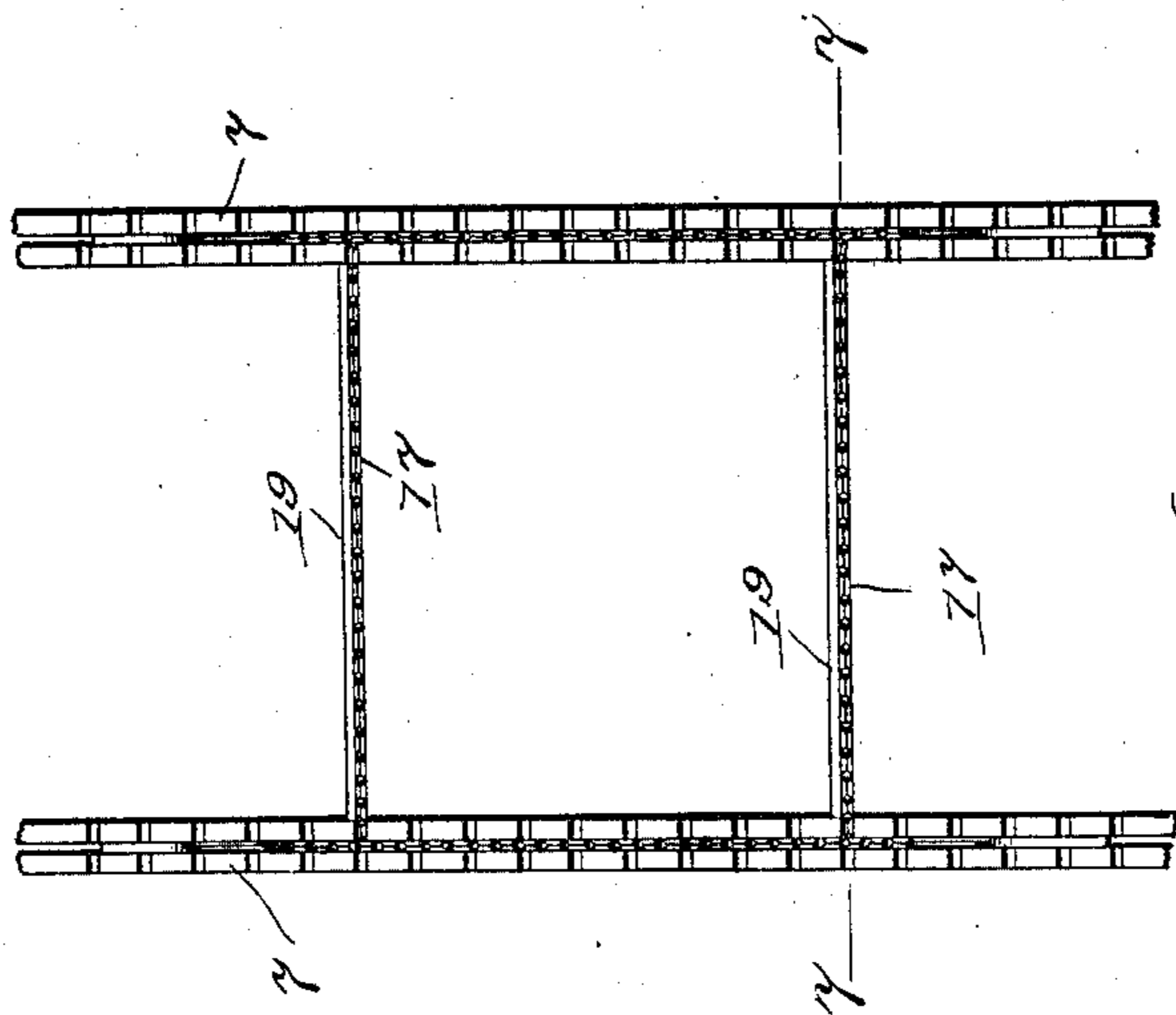


Fig. 5.

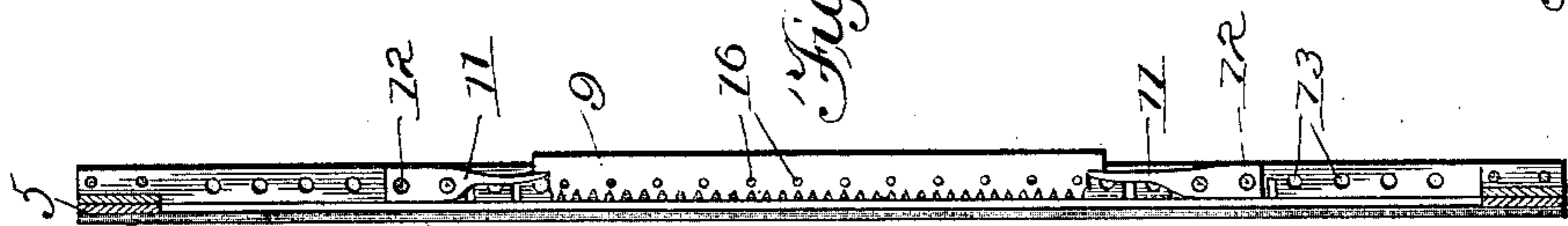
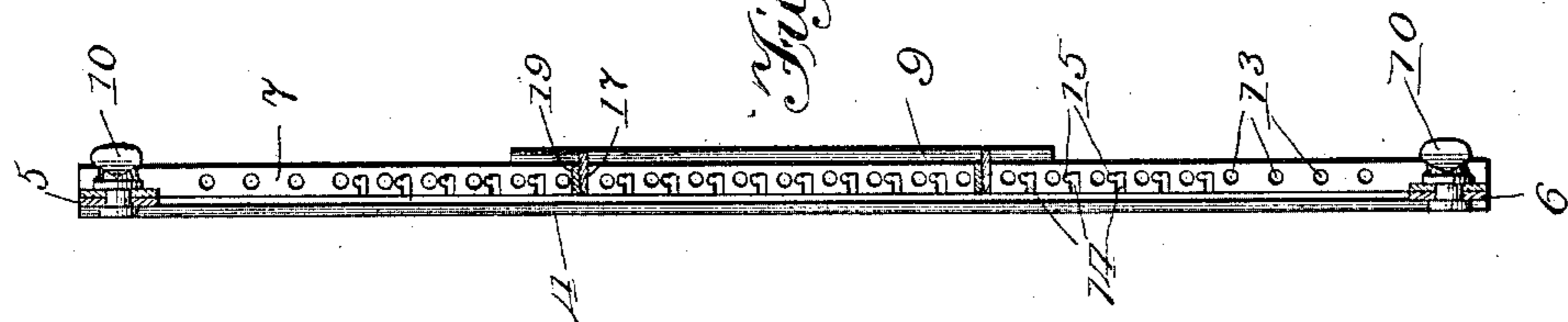


Fig. 4.



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UNITED STATES PATENT OFFICE.

NICHOLAS A. EMRICH AND WILLIAM F. KRAUTTER, OF CHICAGO, ILLINOIS,
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ILLINOIS.

PERFORATING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 736,512, dated August 18, 1903.

Application filed September 22, 1902. Serial No. 124,389. (No model.)

To all whom it may concern:

Be it known that we, NICHOLAS A. EMRICH and WILLIAM F. KRAUTTER, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Perforating Attachments for Printing-Presses, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to perforating attachments for printing-presses, by which a sheet of paper or other material can be perforated at the same time that it is printed.

Prominent objects of the invention are to provide a simple, practical, and durable attachment of this sort to make it unnecessary for the inking-rollers to pass over the perforating attachment when such rollers ink the form, thereby preventing the cutting of such rollers by the perforating attachment and also preventing the inking of the perforators, and to provide a simple and practical construction of attachment and method of actuating the same.

In the accompanying drawings, Figure 1 is a side elevation of a printing-press having a perforating attachment embodying our invention. Fig. 2 is a plan view of the attachment. Fig. 3 is a cross-section taken on line 3 3 of Fig. 2. Figs. 4 and 5 are sections taken on lines 4 4 and 5 5 of Fig. 2. Fig. 6 is a view of a portion of the attachment, showing a detail of construction. Fig. 7 is a section taken on line 7 7 of Fig. 6. Fig. 8 is a view of a locking-bar, and Fig. 9 is a view of a modified form of perforator.

Referring to Fig. 1, the printing-press shown involves a body-frame 1, in which the form 2 is arranged, and also a swinging bed 3 pivotally connected at its lower end with the body-frame. Our perforating attachment A is made in the form of a swinging frame pivotally connected at its lower end to the swinging bed 3. This swinging frame consists of a pair of side pieces 4 4 and graduated slotted top and bottom pieces 5 and 6. The latter carry vertically or longitudinally extending carriers or holders 7 7 7, in the slots 8 8 of

which are arranged the perforators 9 9 for the vertical lines. The holders 7 7 are held to the top and bottom pieces 5 and 6 by thumb-nuts 10 10, which work in the slots of said top and bottom pieces, whereby lateral adjustment of the holders can be secured. The perforators 9 9 are arranged with their pointed or perforating edges backwardly—that is, with such edges away from and not next to the frame when the perforating attachment is in position pivotally attached to the bed 3. The perforators are held in position in the holders 7 7 by springs 11 11, attached by screws 12 12, Fig. 5. These springs 11 11 tend to hold the perforators in the position shown in said figure, with their perforating or cutting edges substantially flush with the rear edges of the holders 7 7. The holders 7 7 are provided with apertures 13 13 for the screws 12 12, by which said screws can be put in position to hold the perforators 9 9 in any desired adjustment up or down in the holders and also by which perforators of different lengths can be held in position. The holders 7 7 are also provided with slots 14 14 and apertures 15 15 at the inner ends thereof, and the perforators 9 9 are also provided with apertures 16 16, Fig. 5, adapted to register with the slots 14 14 when the perforators 9 9 are held properly in position. Cross perforators 17 17, Figs. 6 and 7, having pin-like projections 18 18 at their ends, are fitted into the apertures 16 16 in the perforators 9 9 and adapted to work in the slots 14 14 in the holders 7 7. These perforators 17 17 are held in this position by locking-strips 19 19, adapted to fit into the apertures 15 15 at the inner ends of the slots 14 14. These parts are thus arranged by fitting the pin-like ends or projections 18 18 of the perforator 17 into the apertures 16 16 in the perforators 9 9 in adjacent holders 7 7, as shown in Fig. 6, and then inserting the ends of the locking-strips into the apertures 15 15. It will thus be seen that the cross perforators 17 17 are firmly attached to the lengthwise perforators 9 9, whereby they are free to move with the latter, and that the locking-strips 19 19 are rigidly connected with the holders 7 7, whereby they have no positive connection with the cross perforators 17 17. Thus the

lengthwise and cross perforators are securely held together and are free to move in and out or backwardly and forwardly relatively to the form comprising the perforating attachment.

The number of perforators and their size and arrangement can be as desired, it being seen that the vertical perforators are provided by the holders 7 7, which can be in any desired number and can be adjusted from side to side, and the cross-perforators can be in any desired number between the lengthwise perforators and can be located either up or down, as desired, by arranging them in different ones of the series of apertures and slots in the holders 7 7. All of the perforating edges are arranged to face backwardly when the perforating attachment is connected with the bed 3.

The form 2 is provided with blocks or bars 20 20, which are held in the form so as to project therefrom, as shown in Fig. 1. These blocks or bars are located opposite the perforators 9 9 and 17 17, or some of the same, as desired. It will thus be seen that when the printing-press is operated the stock is fed to the machine and is placed between the bed 3 and the perforating attachment A. The bed then advances toward the form and causes the printing to be done. At the same time the forward edges of the perforators 9 9 and 17 17—that is, the edges nearest the form—strike against the blocks 20 20, thereby moving the perforators backwardly against the paper and causing them to perforate the same. The bed then recedes and the springs 11 11 push the perforators forwardly, thereby withdrawing their teeth from the paper, which can then be removed as usual. The frame of the attachment extends over the top and bottom of the bed, so that it does not interfere with the form.

In Fig. 9 we have shown a perforator with overhanging or projecting ends 21 21, by which the perforated line is extended on the outside of the vertical perforators 9 9.

In place of the perforators shown we can employ scoring-blades, the difference being that the latter will be blades like knife-edges instead of the notched or tooth-like blades shown.

It will be understood that we do not wish to limit ourselves to the exact construction herein set forth, as it is obvious that the devices can be changed and modified without departing from the spirit of our invention.

What we claim as our invention is—

1. The combination with a printing-press having a swinging bed, of a perforating attachment carried by said bed, comprising holders, perforating devices carried by said holders, springs controlling said perforating devices, and means for resisting the forward movement of the perforating devices while the bed is still advancing, substantially as described.

2. The combination with a printing-press

having a swinging bed, of a perforating attachment carried by the bed, said attachment comprising a set of holders, perforating devices movable relatively to said holders, springs connecting the perforating devices with the holders, cross-perforators connected with the perforators in said holders, means for holding said cross-perforators rigid with the perforators in the holders, and means in the form for resisting the forward movement of the perforators while the bed is still advancing, substantially as described.

3. The combination with a printing-press having a swinging bed, of a perforating attachment carried by the bed, said attachment comprising a frame, a set of holders thereon, each holder consisting of a slotted strip adjustable on the frame, perforators in said slots, springs also arranged therein for connecting the perforators with the holders, cross-perforators connected with the perforators in said holders, means for locking the same rigid therewith, and means in the form for stopping the perforators while the bed is still advancing, substantially as described.

4. The combination with a printing-press having a swinging bed, of a perforating attachment pivotally connected with the said bed, comprising a frame, a set of longitudinally-slotted strips 7, 7, adjustably secured to said frame, said strips being provided with slots 14, 14 and apertures 13, 13 and 15, 15, perforators 9, 9, arranged in the longitudinal slots of said strips, said perforators being provided with apertures 16, 16 adapted to register with the slots 14, 14, springs 11, 11 connected by screws 12, 12, passing through the apertures 13, 13, said springs being adapted to hold the perforators 9, 9, in position, cross-perforators 17, 17 having end projections adapted to fit in the apertures 16, 16 of the perforators 9, 9, locking-strips 19, 19 adapted to fit in the apertures 15, 15 of the strips 7, 7, and blocks or bars in the form adapted to strike against the forward edges of the perforators when the bed is still advancing, substantially as described.

5. A perforating device, comprising a set of holders, perforating devices movable relatively to said holders, springs connecting the perforating devices with the holders, cross-perforators connected with the perforators in said holders, and means for holding said cross-perforators rigid with the perforators in the holders, substantially as described.

6. A perforating device, comprising a frame, a set of holders thereon, each holder consisting of a slotted strip adjustable on the frame, perforators in said slots, springs also arranged therein for connecting the perforators with the holders, cross-perforators connected with the perforators in said holders, and means for locking the same rigid therewith, substantially as described.

7. A perforating device, comprising a frame, a set of longitudinally-slotted strips 7, 7, adjustably secured to said frame, said

strips being provided with slots 14, 14 and
apertures 13, 13 and 15, 15, perforators 9, 9
arranged in the longitudinal slots of said
strips, said perforators being provided with
5 apertures 16, 16 adapted to register with the
slots 14, 14, springs 11, 11 connected by screws
12, 12, passing through the apertures 13, 13,
said springs being adapted to hold the perfo-
rators 9, 9 in position, cross-perforators 17,
10 17 having end projections adapted to fit in
the apertures 16, 16 of the perforators 9, 9,
and locking-strips 19, 19 adapted to fit in the
apertures 15, 15 of the strips 7, 7, substan-
tially as described.

15 8. The combination of two sets of perfora-

tors, those in one set extending transversely
to those in the other set, said transverse per-
forators being provided with pins or projec-
tions adapted to fit into the other perforators,
and also provided with extended portions ex- 20
tending beyond such perforators, substan-
tially as described.

In witness whereof we hereunto subscribe
our names this 15th day of September, A. D.
1902.

NICHOLAS A. EMRICH.

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Witnesses:

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