No. 712,499. Patented Nov. 4, 1902.

# W. T. COLE & F. D. HAMILTON.

## PERFORATING OR SCORING DEVICE FOR PRINTING PRESSES.

(Application filed Mar. 1, 1900.)

(No Model.)

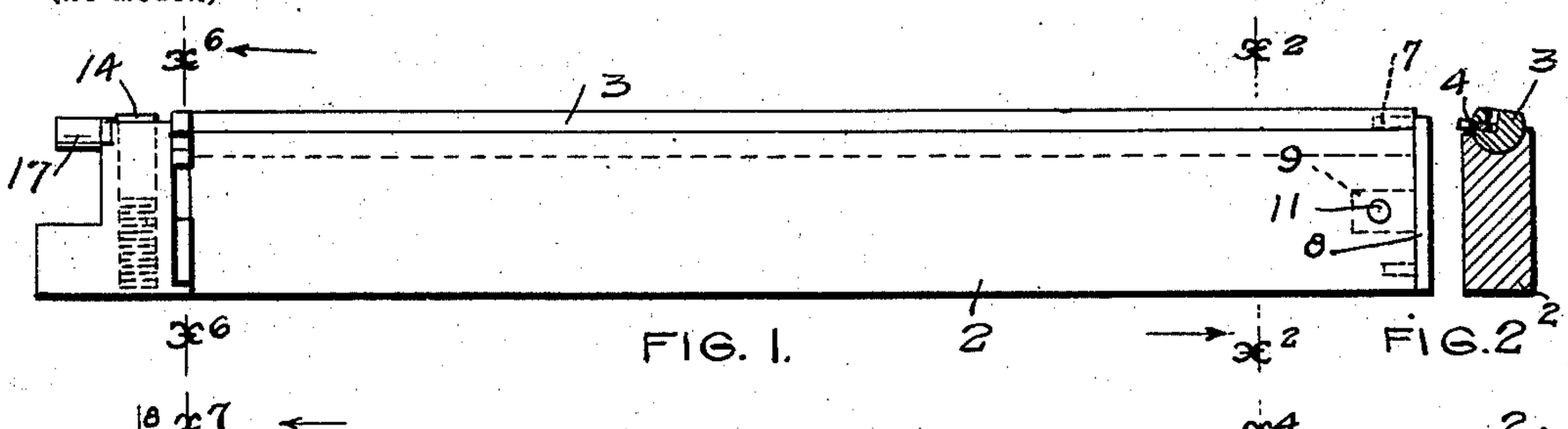



FIG. 1. FIG. 2.

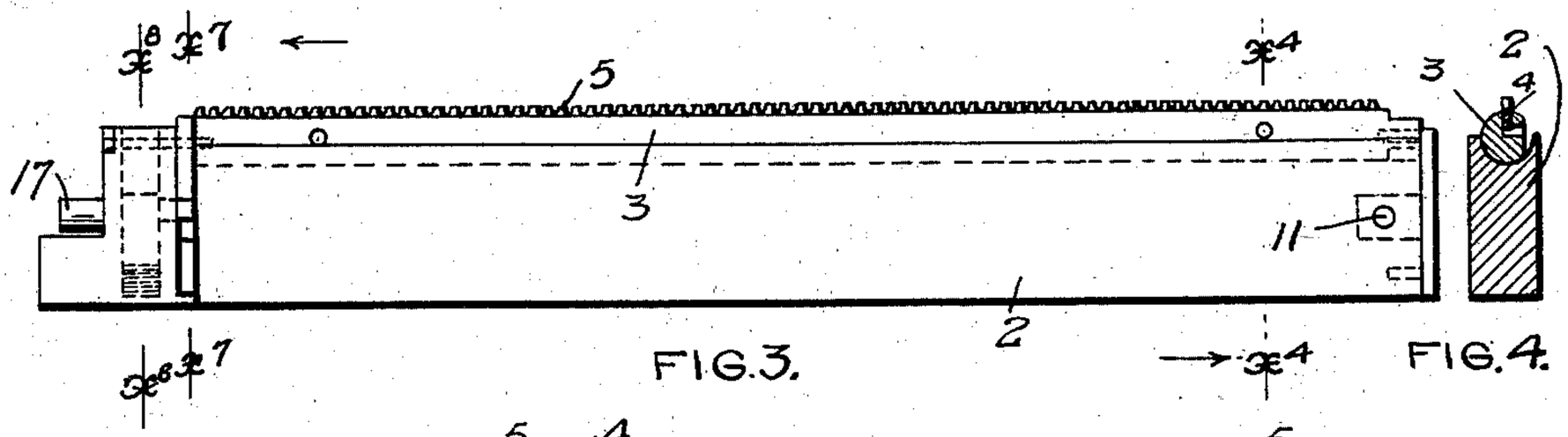



FIG. 3. FIG. 4.

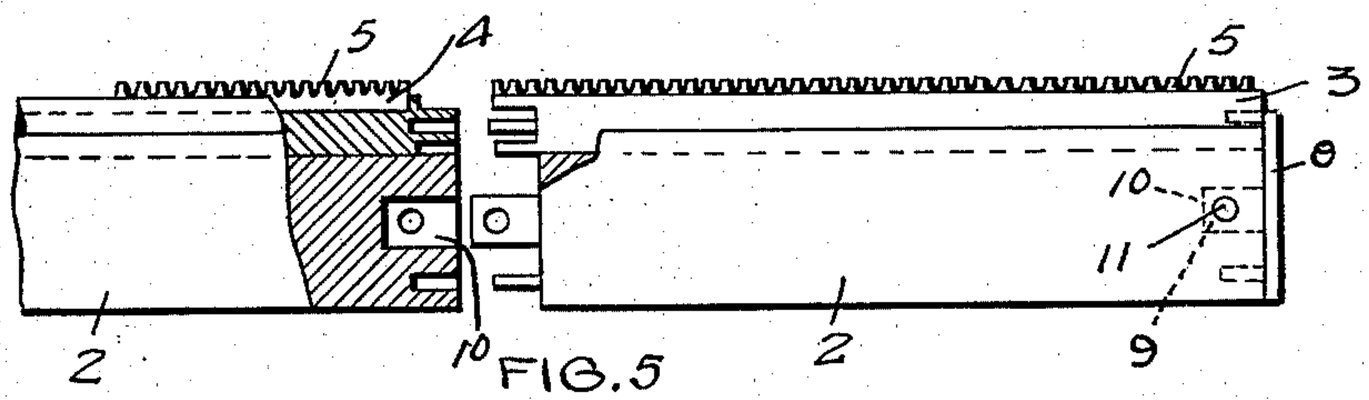



FIG. 5.

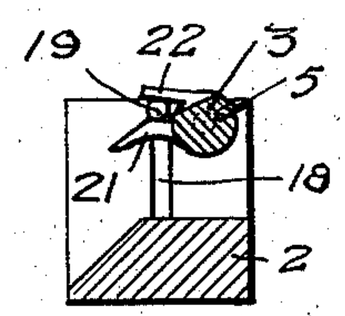



FIG. 6.

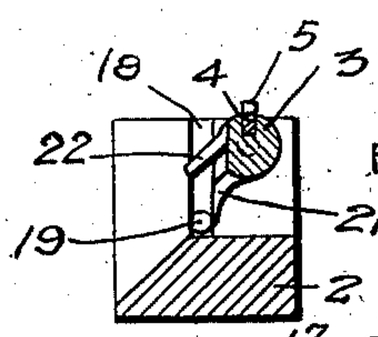



FIG. 7.

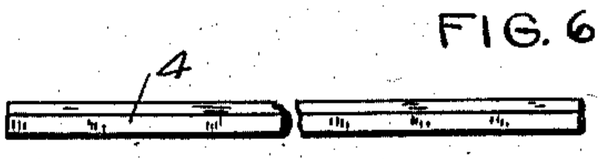
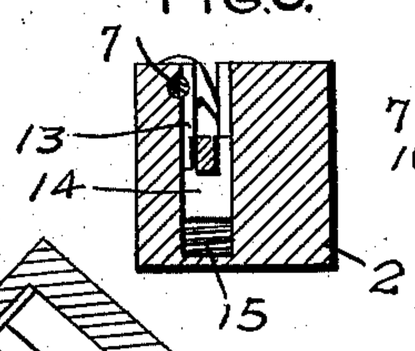



FIG. 12.

FIG. 8.



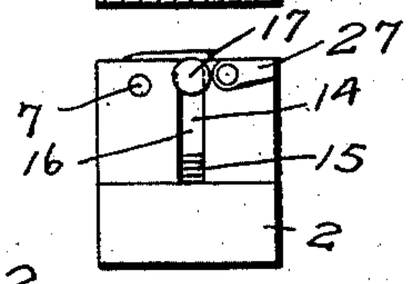




FIG. 9.

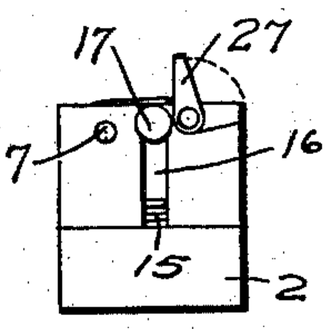



FIG. 10.

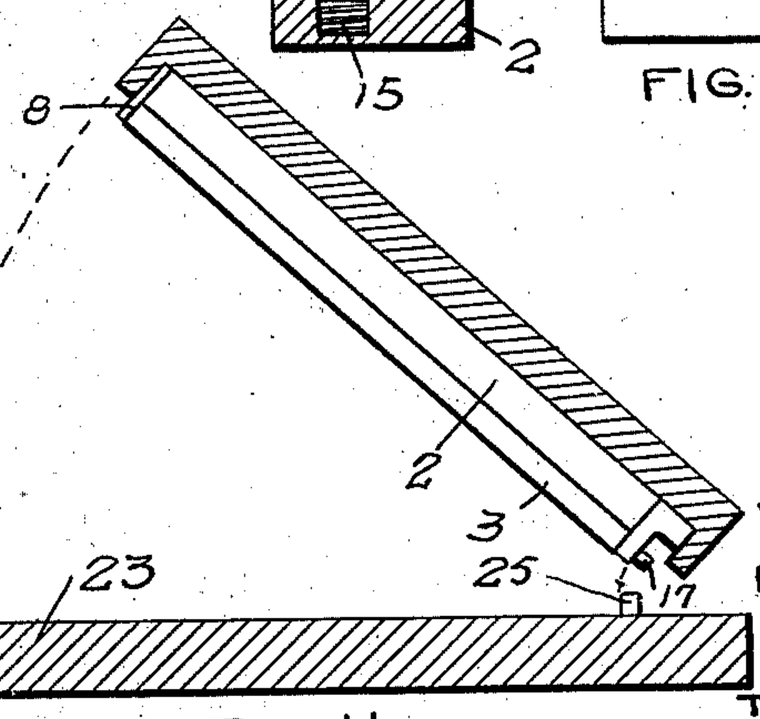



FIG. 11.

WITNESSES
E. S. Stanton
Richard Paul

INVENTORS
WILSON T. COLE
FRANK D. HAMILTON
BY Paul & Hawley
THEIR ATTORNEYS

# UNITED STATES PATENT OFFICE.

WILSON T. COLE AND FRANK D. HAMILTON, OF MINNEAPOLIS, MINNESOTA;
SAID HAMILTON ASSIGNOR TO G. A. WILL, OF MINNEAPOLIS, MINNESOTA.

## PERFORATING OR SCORING DEVICE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 712,499, dated November 4, 1902.

Application filed March 1, 1900. Serial No. 6,913. (No model.)

*To all whom it may concern:*

Be it known that we, WILSON T. COLE and FRANK D. HAMILTON, of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Perforating or Scoring Devices for Printing-Presses, of which the following is a specification.

Our invention relates to improvements in perforating or scoring attachments for printing-presses by means of which the paper may be perforated or scored simultaneously with the printing; and the objects we have in view are to provide a device of this kind with a movable perforating or scoring bar that may be brought into position for perforating or scoring the paper just before it comes into contact with the type, and in which the edge of the blade carrying the points or teeth for perforating or the edge for scoring is brought below the surface of the type before the inking-rollers are passed over the face of the type, and in which these movements of the perforating or scoring bar are accomplished by a rocking movement of the bar as distinguished from a sliding or projecting movement.

Another object of the invention is to provide a device of this character with a solid base which may be locked into the form with the type by any desired amount of pressure without binding the movable bar or in any way interfering with its operation.

Other objects of the invention will appear from the following detail description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of our improved perforator or scorer with the bar rocked into position to bring the edge of the blade below the surface of the type-face. Fig. 2 is a section on line $x^2$ $x^2$ of Fig. 1. Fig. 3 is a side elevation with the bar rocked into position to elevate the edge of the blade. Fig. 4 is a section on line $x^4$ $x^4$ of Fig. 3. Fig. 5 is a detail showing means for applying an extension to the device. Fig. 6 is a detail section on line $x^6$ $x^6$ of Fig. 1. Fig. 7 is a section on line $x^7$ $x^7$ of Fig. 3. Fig. 8 is section on line $x^8$ $x^8$ of Fig. 3. Fig. 9 is an elevation looking at the end of the device and showing the finder in its depressed position. Fig. 10 is a view similar to Fig. 9, but showing the finder elevated. Fig. 11 is a sectional view showing the perforator or scorer arranged in the type-form and representing the relative positions of the type-form and platen when the printing-press is ready for the beginning of the printing operation. Fig. 12 is a detail of the scoring-blade.

In all of the drawings, 2 represents the base of the perforator or scorer, which consists of a solid bar having a curved recess in its upper surface extending the length of the base. This recess forms a continuous bearing for the rocking bar 3, which carries the perforating or scoring blade 4. When used for perforating, this blade is provided with the perforating teeth or points 5. When used for scoring, the blade has a plain edge, as shown in Fig. 12. The blade 4 is preferably secured in any suitable manner in a recess in the bar 3. The bar 3 is nearly cylindrical in form, being cut away or flattened upon one side, as shown in Figs. 2 and 4 of the drawings. This bar, as already stated, is arranged in the recess in the top of the base, and the wall of the recess forms a continuous bearing for the bar. At each end of the base a pin 7 is provided, which engages a central socket or recess in the end of the bar 3. These pins hold the bar in position and form an axis or pivot upon which the bar rocks. The pivot-pin at one end of the base is secured in a plate 8, and this plate is provided with a lug 9, adapted to engage a socket or recess 10 in the end of the base and to be secured in position by a pin 11, which passes through the base and through a hole in the lug 9. At the other end of the base the pivot-pin is secured in an upwardly-extending portion of the base. At this end of the base we provide means for rocking the bar just prior to the time when the paper to be printed upon is brought in contact with the face of the type. For this purpose we provide in the base, at this end thereof, a socket 13, within which is arranged the vertically-sliding plunger 14, adapted to be held near the top of the socket by means of the spring 15, arranged beneath the plunger in the socket. A slot is provided at each side of the socket. Through the outer slot 16 the lug 17, which is secured to the plunger 14,

passes, and through the inner slot 18 a pin 19 passes, and this pin projects between the lugs 21 and 22 on the rocking bar 3. The spring 15 normally holds the plunger 14 in an elevated position, with the pin 19 near the top of the slot 18, as shown in Fig. 6, and with the bar 3 in the position shown in Figs. 1 and 6 of the drawings. The lug 17 is also substantially at the top of the slot 16, as shown in Figs. 1, 9, and 10. This is the normal position of the parts, with the perforating points or teeth turned to one side, as shown in Fig. 6, where they are below the surface of the type. With the bar in this position the inking-rollers may be passed over the face of the type without coming in contact with the edge of the block 4. The press-platen 23 (see Fig. 11) is provided with a suitable block 25, which may be adjusted to any desired position thereon. This block is fixed in such position on the platen that as the platen is moved against the type the block 25 comes in contact with the lug 17 on the perforator, moving said lug and forcing the plunger 14 toward the bottom of the socket 13 against the tension of the spring 15, and thereby rocking the bar 3 from the position shown in Fig. 6 to the position shown in Fig. 7. The bar 3 is rocked into the position shown in Fig. 7 just before the platen brings the paper in contact with the face of the type, and the lug 21 is provided with a straight surface near its outer end, as shown in Figs. 6 and 7, so that the latter part of the movement of the plunger 14 and the pin 19 does not change the position of the bar 3. We also prefer to provide an extension (one or more) which can be coupled to the end of said perforator or scorer for the purpose of increasing its length. In Fig. 5 of the drawings are shown an extension base-bar 2 and an extension rocking bar 3, provided with lugs or pins adapted to engage the sockets in the end of the main base-bar and rocking bar, which are engaged by lugs or pins on the plate 8 when the extension is not used. The extension base and rocking bar are provided with similar sockets or recesses to receive the lugs or pins on the plate 8, so that when the extension is to be used the plate 8 may be removed from the end of the main base and rocking bar and applied to the end of the extension base and rocking bar, as shown in Fig. 5.

In order to know where to set the block 25 on the platen, we provide a marker or finder on the upper part of the base 2 and at one end thereof, as shown in Figs. 9 and 10. This marker or finder consists of a pivoted lug 27, that may be turned down into the position shown in Fig. 9, so as to normally stand flush with the top of the base. When the perforator or scorer has been properly placed in the type-form and the form put onto the press, this finder is turned into the position shown in Fig. 10. The platen, with the tympan-sheet thereon, is brought against the form and the finder makes an impression in the sheet, which shows where the block 25 should be located on the platen. This block may be secured on the tympan-sheet by paste or by any other suitable means.

It will be seen that our improved perforator or scorer is simple in construction and positive in its operation. The solid base is especially advantageous, as when the device is placed in the form any amount of pressure may be applied thereto in locking the type in the form without affecting the operation of the device. The rocking bar always operates freely and positively, and the form of the bar and its arrangement in the curved recess in the base provide a positive bearing for the bar throughout its entire length, which insures its always retaining its correct form and prevents the blade from getting out of alinement or becoming uneven or untrue. The rocking bar may be provided either with a blade having the series of points and teeth for perforating the paper or with the plain blade for scoring.

We do not limit ourselves to the details of construction, as it is obvious that many of the details may be changed or modified without departing from our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, in a scoring or perforating device for printing-presses, with the base 2 provided with a recess in its upper surface and with the socket 13 having the slots 16 and 18, of the plunger 14 arranged in said socket, the spring 15 engaging said plunger, the rocking bar 3 mounted in the recess in said base, a connection between said plunger and said bar whereby said bar is rocked as said plunger is moved, and a lug 17 connected with said plunger and passing through said slot 16.

2. The combination, in a perforating or scoring device for printing-presses, with the base and the movable blade, of an adjustable marker or finder arranged upon said base, for the purpose set forth.

3. The combination, in a perforating or scoring device for printing-presses, with the base and the rocking bar, of an extension-base, an extension rocking bar, and means for coupling said extension-base and extension rocking bar to the main base and main rocking bar, respectively, substantially as described.

In testimony whereof we have hereunto set our hands this 24th day of February, 1900.

WILSON T. COLE.
FRANK D. HAMILTON.

In presence of—
A. C. PAUL,
M. E. GOOLEY.