

No. 654,963.

Patented July 31, 1900.

G. A. EVANS.  
PERFORATOR.

(Application filed Mar. 28, 1900.)

(No Model.)

Fig. 1.

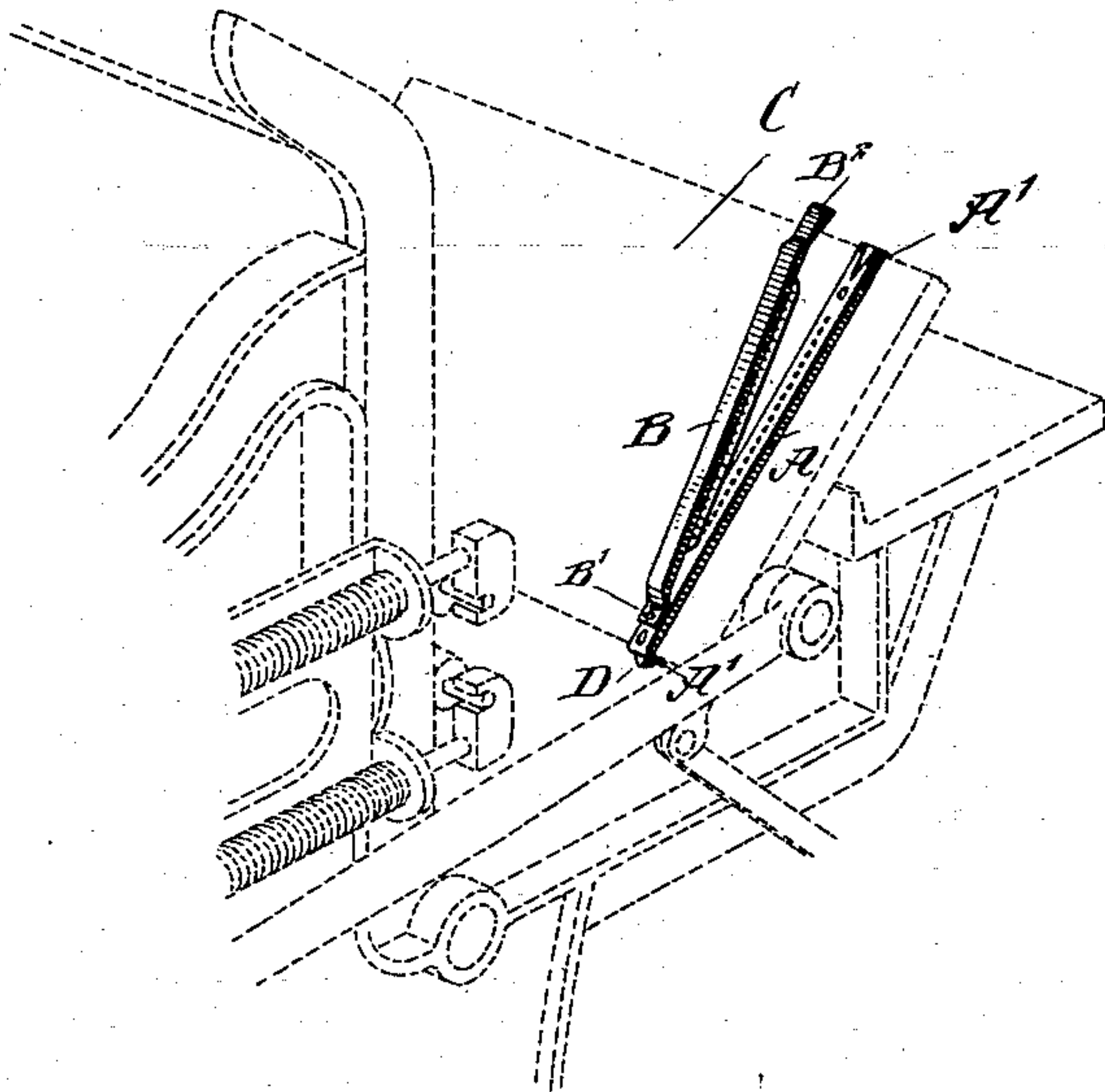


Fig. 2.

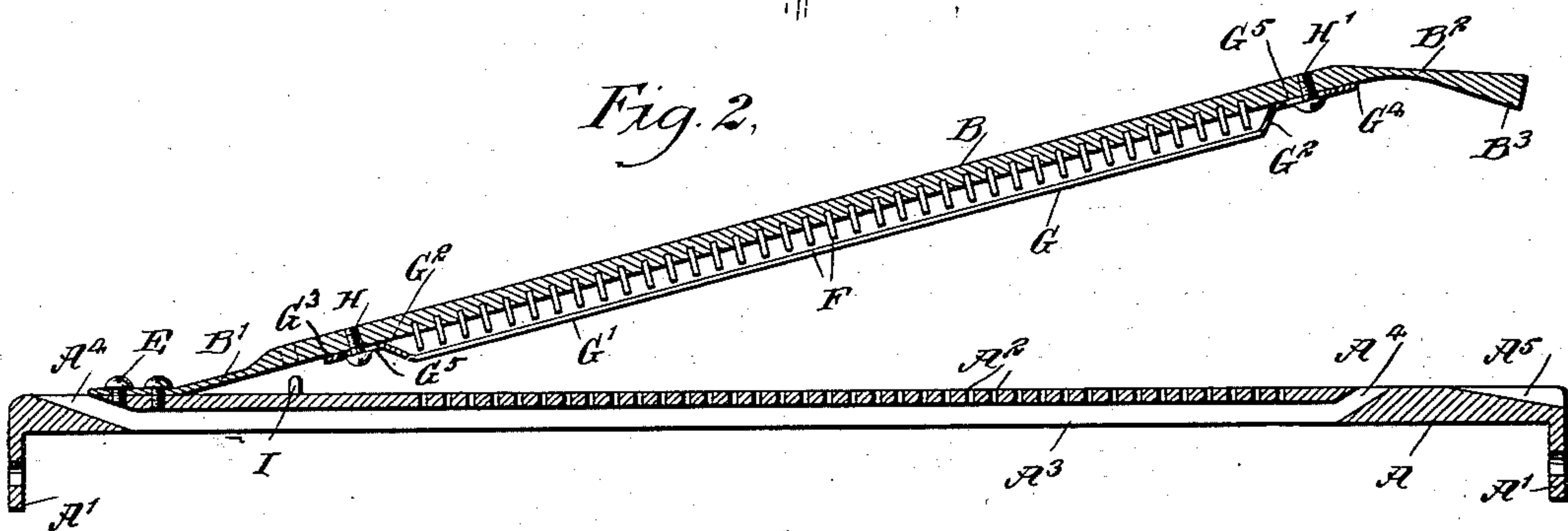


Fig. 3.

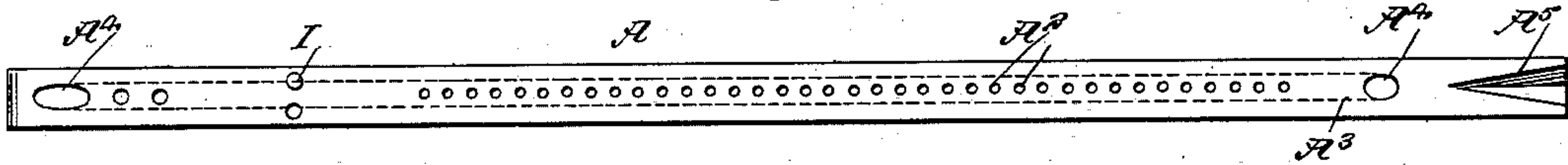
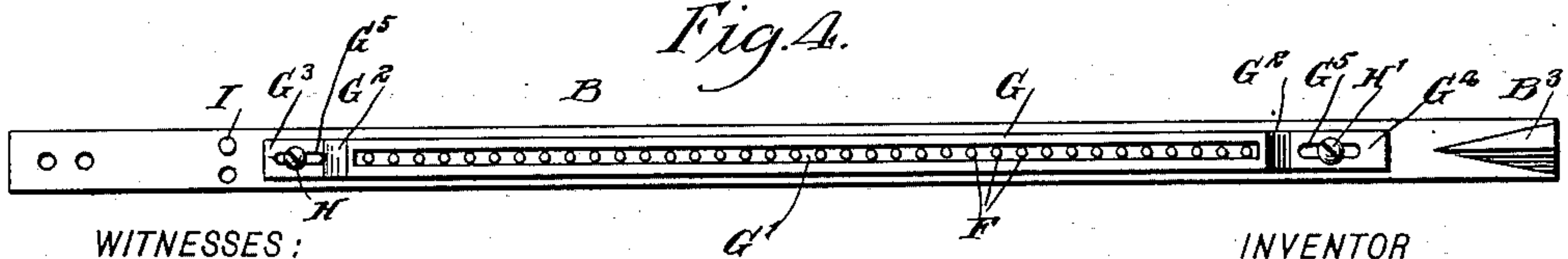


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GUSTAVUS ALFRED EVANS, OF NELSON, CANADA.

## PERFORATOR.

SPECIFICATION forming part of Letters Patent No. 654,963, dated July 31, 1900.

Application filed March 28, 1900. Serial No. 10,544. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAVUS ALFRED EVANS, a citizen of the United States, residing in Nelson, in the Province of British Columbia and Dominion of Canada, have invented a new and Improved Perforator, of which the following is a full, clear, and exact description.

The invention relates to printing-presses; and its object is to provide a new and improved perforator which is simple and durable in construction, very effective in operation, and arranged to perforate the paper while the impression is being made to insure a proper registration of the punches and perforations in the bed-piece and to cause a proper release of the perforated paper from the punches when the perforator opens.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a reduced view of the improvement as applied. Fig. 2 is a sectional side elevation of the improvement. Fig. 3 is a plan view of the bed-piece, and Fig. 4 is an inverted plan view of the punch-bar.

The improved perforator consists, essentially, of the bed-piece A and the punch-bar B, of which the bed-piece is formed at its ends with angular lugs A', adapted to engage the top and bottom edges of the platen C of the printing-press, as indicated in Fig. 1, so that the bed-piece A extends over the face of the platen near one edge thereof. Set-screws D engage the lugs A' and screw in the platen, so as to securely hold the perforator in place on the platen.

The bed-piece A is provided at its top with a row of perforations A<sup>2</sup>, opening at their inner ends into a recess or opening A<sup>3</sup>, formed on the under side of the bed-piece, openings A<sup>4</sup> leading from the ends of the channel to the face of the bed-plate, as indicated in the drawings. This channel A<sup>3</sup> serves to receive the disks cut out from the paper during the process of perforating, and the cut-out disks

are free to slide through the opening A<sup>4</sup> to the outside of the perforator to drop on the floor at the time the platen C assumes a vertical position. In case the cut-out disks accumulate or stick in the channel it is only necessary to introduce a wire through the upper opening A<sup>4</sup> to push the said disks out through the lower opening A<sup>4</sup> to clear the channel of the disks.

The punch-bar B is formed at its ends with springs B' and B<sup>2</sup>, of which the lower spring B' is secured by screws E to the face of the bed-piece A at the lower end thereof, and the upper spring B<sup>2</sup> is formed on its under side with a V-shaped longitudinally-extending guide B<sup>3</sup>, adapted to engage a correspondingly-shaped guideway A<sup>5</sup>, formed on the upper end of the bed-piece A. Normally the spring B' holds the punch-bar B in an open position, as shown in Figs. 1 and 2, and when the platen C moves into a closing position after making the impression on the paper then the punch-bar is swung toward the bed-piece A—that is, into a closed position.

On the under side of the punch-bar B are secured the punches F, adapted to register with the apertures or perforations A<sup>2</sup> at the time the impression takes place, and the punch-bar B is swung into a closed position, as above mentioned. On the under side of the punch-bar B is also arranged a paper-releasing device G, in the shape of a longitudinally-extending bar formed with an elongated slot G' for the passage of the punches F at the time the punch-bar moves into a closed position. The ends of the bar for the paper-releasing device are formed with offsets G<sup>2</sup>, terminating in flanges G<sup>3</sup> G<sup>4</sup>, having elongated slots G<sup>5</sup>, through which extend the screws H H', screwing in the punch-bar B. The upper side of the bed-piece is preferably convex.

Now it is evident that when the punch-bar B moves into a closed position, as above described, then the bar of the paper-releasing device first moves in contact with the face of the bed-piece A and is then flattened out in an upward and downward direction, the flanges G<sup>4</sup> G<sup>5</sup>, with their elongated slots, permitting such movement. As the paper extends over the face of the bed-piece A it is evident that the bar of the releasing de-



vice engages the paper at the closing of the plates and securely holds the paper in place during the time the punches F perforate the paper at the final closing of the platen.

- 5 When the platen C swings into an open position after the impression is made, then the punch-bar B swings into an open position, owing to the resiliency of the spring B', thus withdrawing the punches F from the aperture  
10 A<sup>2</sup> and the paper. When this takes place, the bar of the paper-releasing device G returns to its normal position, owing to the resiliency of its spring ends, and finally disengages the paper, but not until the punches F  
15 have completely left the paper.

By the arrangement described the perforator can be readily attached to the end of the platen C, so that the tympan can be located in such a manner as to bring the face of the  
20 tympan almost level with the top face of the bed-piece A to allow of printing close to the perforations, if necessary, without danger of tearing the paper.

- When the punch-bar B moves into a closed  
25 position, the guide B<sup>3</sup> passes into the guideway A<sup>5</sup>, so as to insure a proper registration of the punches F with the perforations A<sup>2</sup>, and in order to prevent accidental longitudinal displacement of the punch-bar during  
30 the perforating process I prefer to provide guide-pins I, projecting from the lower ends of the bed-piece A and the punch-bar B and engaging corresponding registering apertures in the punch-bar as the bed-piece.

35 The device is very simple and durable in construction, is not liable to get out of order, and insures proper perforation of the paper without danger of tearing the same.

Having thus fully described my invention,  
40 I claim as new and desire to secure by Letters Patent—

1. A perforator for printing-presses, comprising a bed-piece, and a punch-bar carrying punches for engagement with perforations  
45 in the said bed-piece, the punch-bar having its ends formed with springs, of which one is secured to the bed-piece to form a fulcrum for the punch-bar, the other spring having a longitudinally-extending guide for engage-

ment with a corresponding guideway on the 50 bed-piece, as set forth.

2. A perforator, comprising a bed-piece having perforations, a punch-bar having a spring connection with the said bed-piece, punches carried by said punch-bar and adapted to engage the said perforations in the bed-piece, and a slotted paper-releasing bar extending on the under side of the said punch-bar and having its ends loosely secured thereto, substantially as shown and described. 55 60

3. A perforator, comprising a bed-piece having perforations, a punch-bar having a spring connection with the said bed-piece, punches carried by the said punch-bar and adapted to engage the said perforations in 65 the bed-piece, and a slotted paper-releasing bar secured to and having guided movement on the under side of the said punch-bar, the said paper-releasing bar extending normally beyond the ends of the said punches, as set forth. 70

4. A perforator, comprising a punch-bar, and a bed-piece having perforations for engagement by the punches of the said punch-bar, the said bed-piece being formed at its 75 under side with a discharge-channel for the cut-out portions of the paper, the said channel terminating at each end in an opening leading to the front face of the bed-piece, as set forth. 80

5. A perforator, comprising a bed provided with perforations, a longitudinal channel on its under side, openings at its ends leading into said channel, and a recess at one end, a punch-bar having a spring connection with 85 the bed and provided with punches and with a guide at its free end to enter the recess of the end, and a slotted paper-releasing bar extending on the under side of the punch-bar, and having guided movement thereon, 90 substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAVUS ALFRED EVANS.

Witnesses:

A. M. JOHNSON,  
JOHN PATTERSON.