No. 803,466. PATENTED OCT. 31, 1905.

W. A. BILLMAN.

PRINTING AND EMBOSSING PRESS.

APPLICATION FILED MAY 26, 1905.

3 SHEETS—SHEET 1.

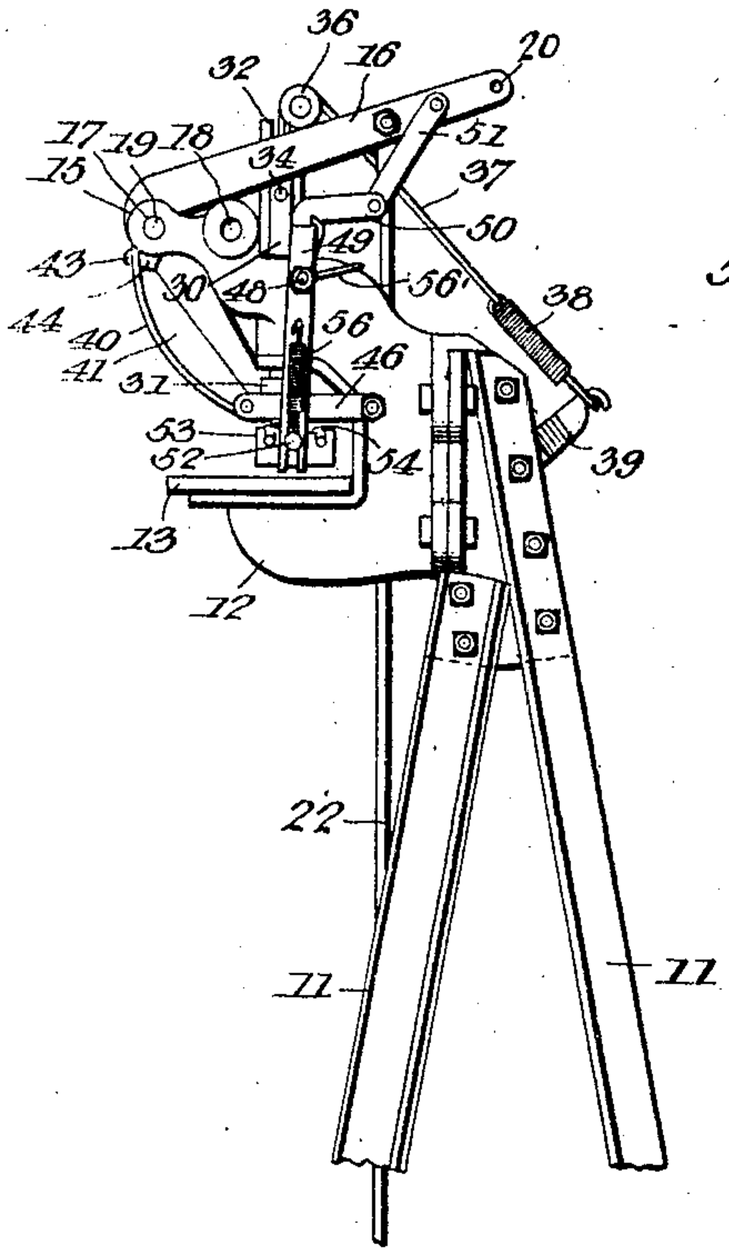


Fig. 2.

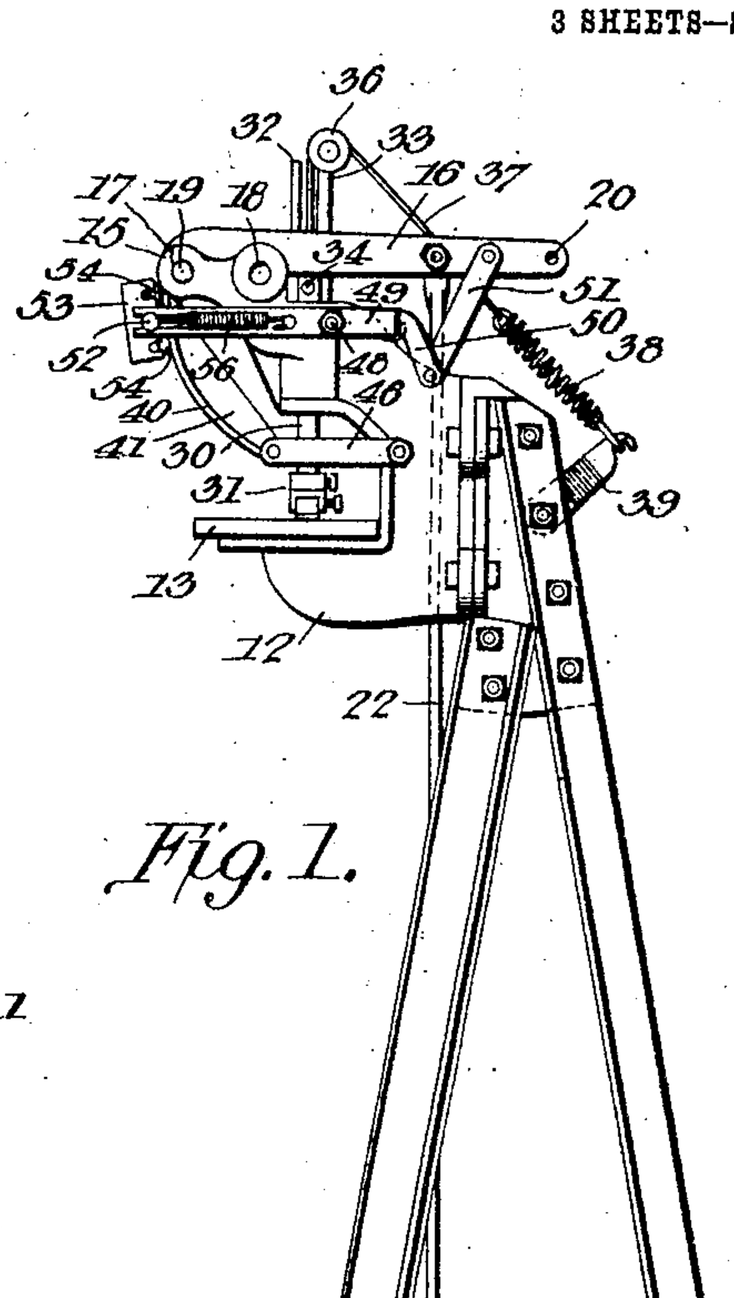
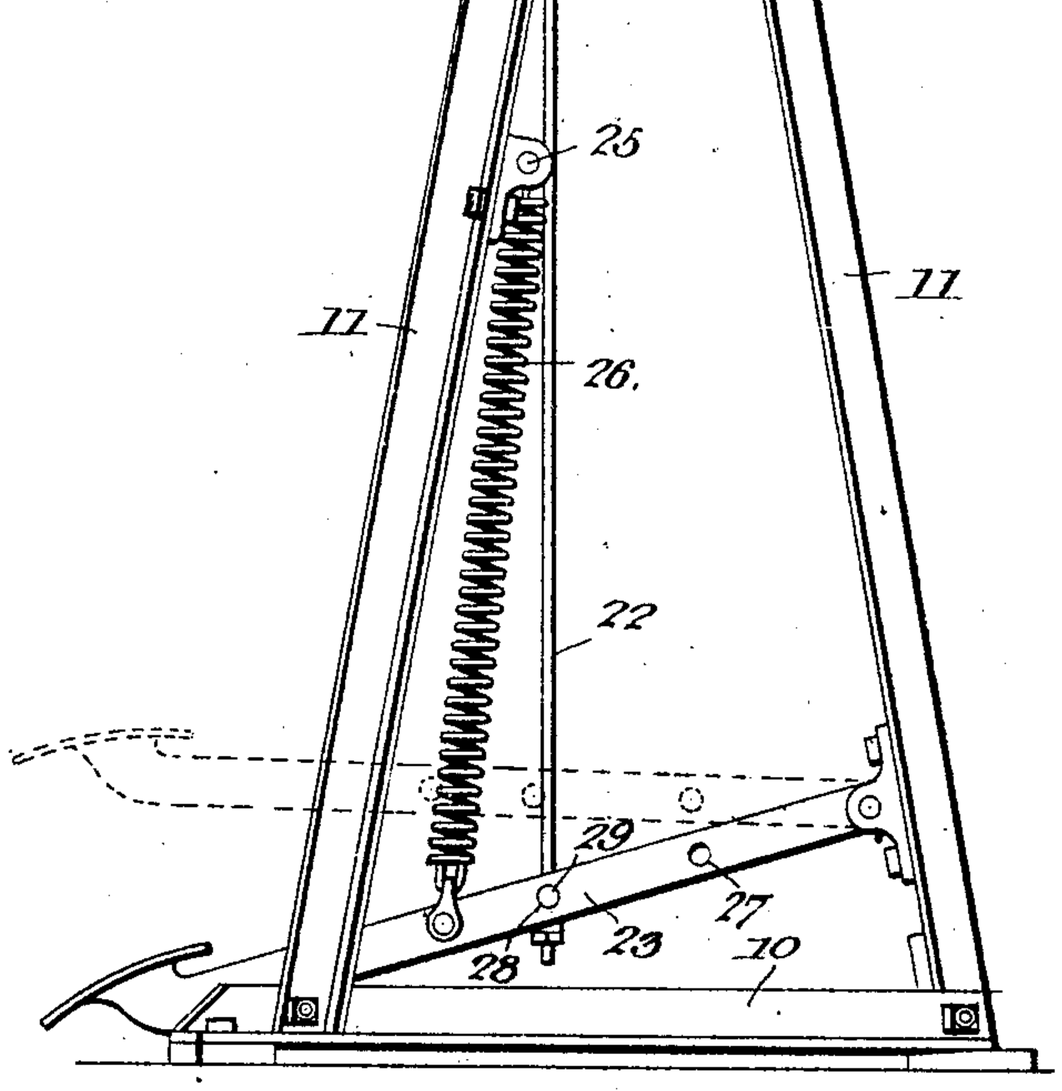


Fig. 1.



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3 SHEETS—SHEET 2.

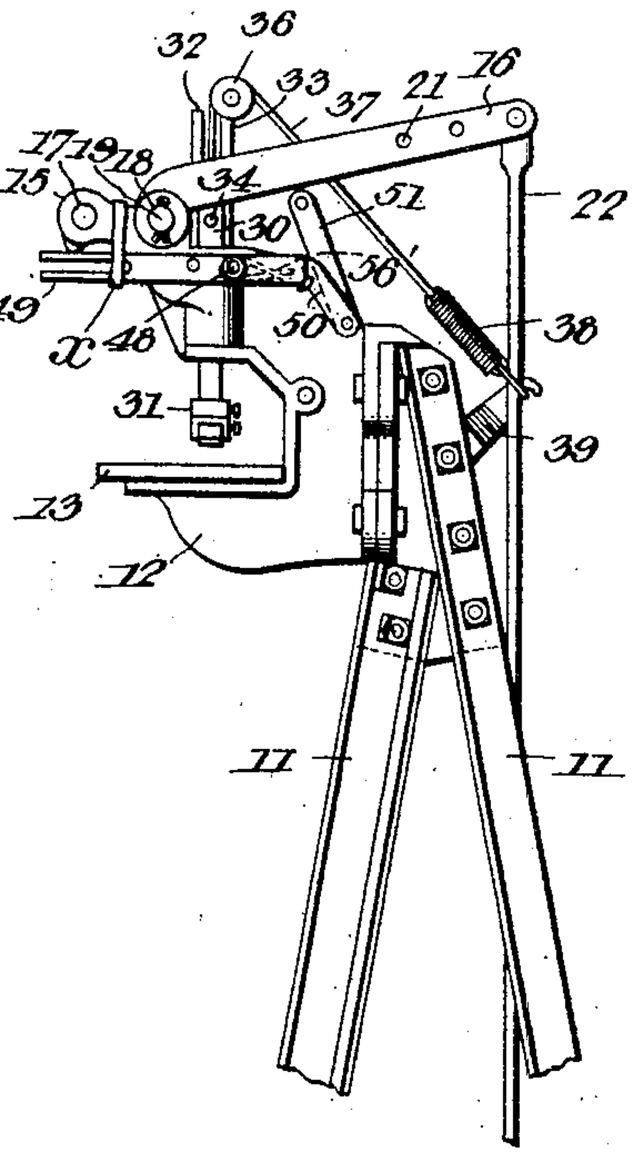

Fig. 3.

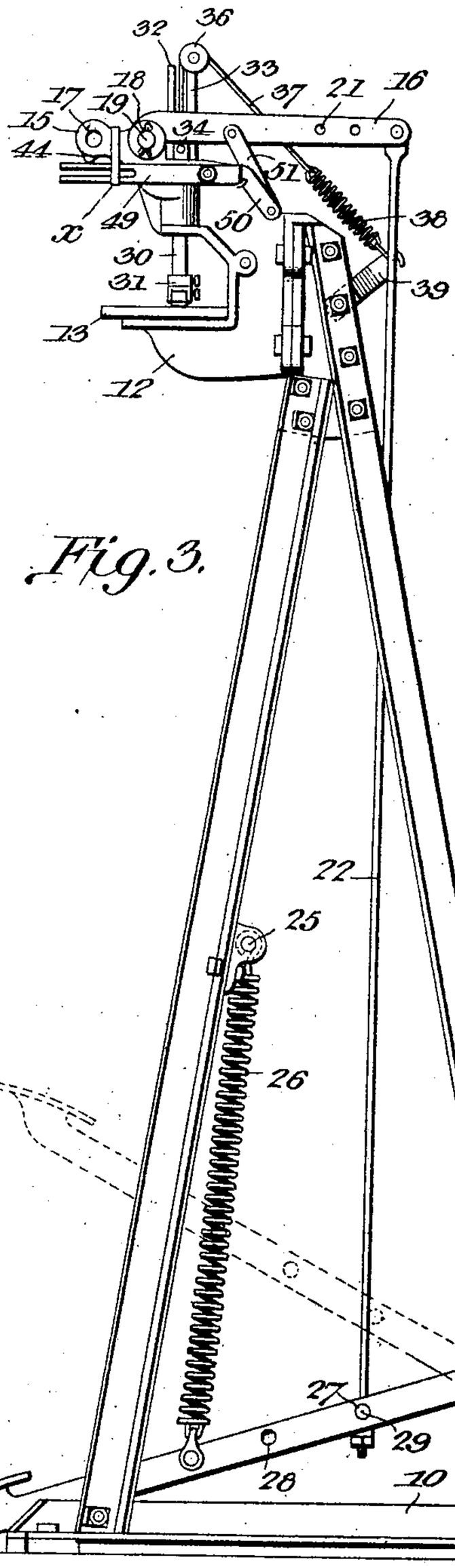

Fig. 4.

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3 SHEETS—SHEET 3.

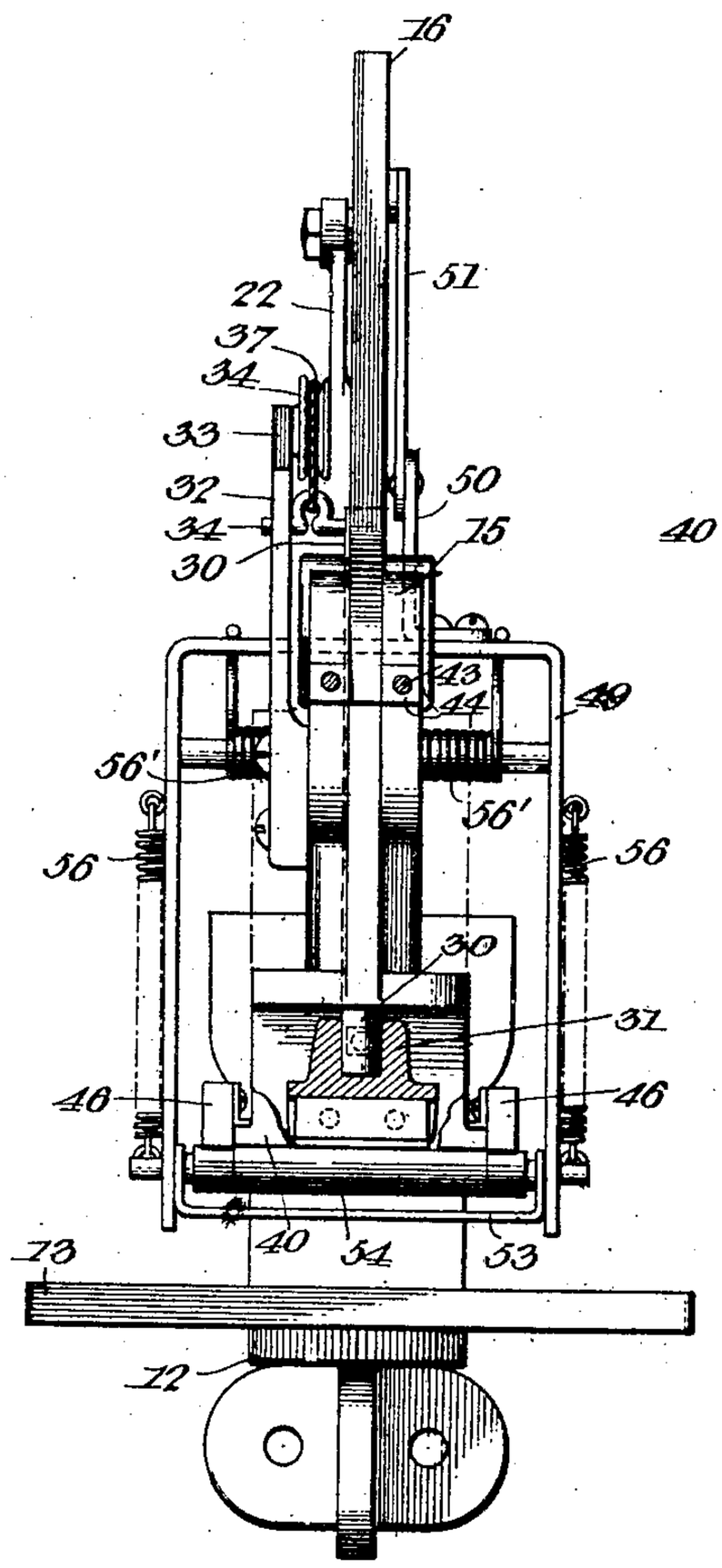

Fig. 5.

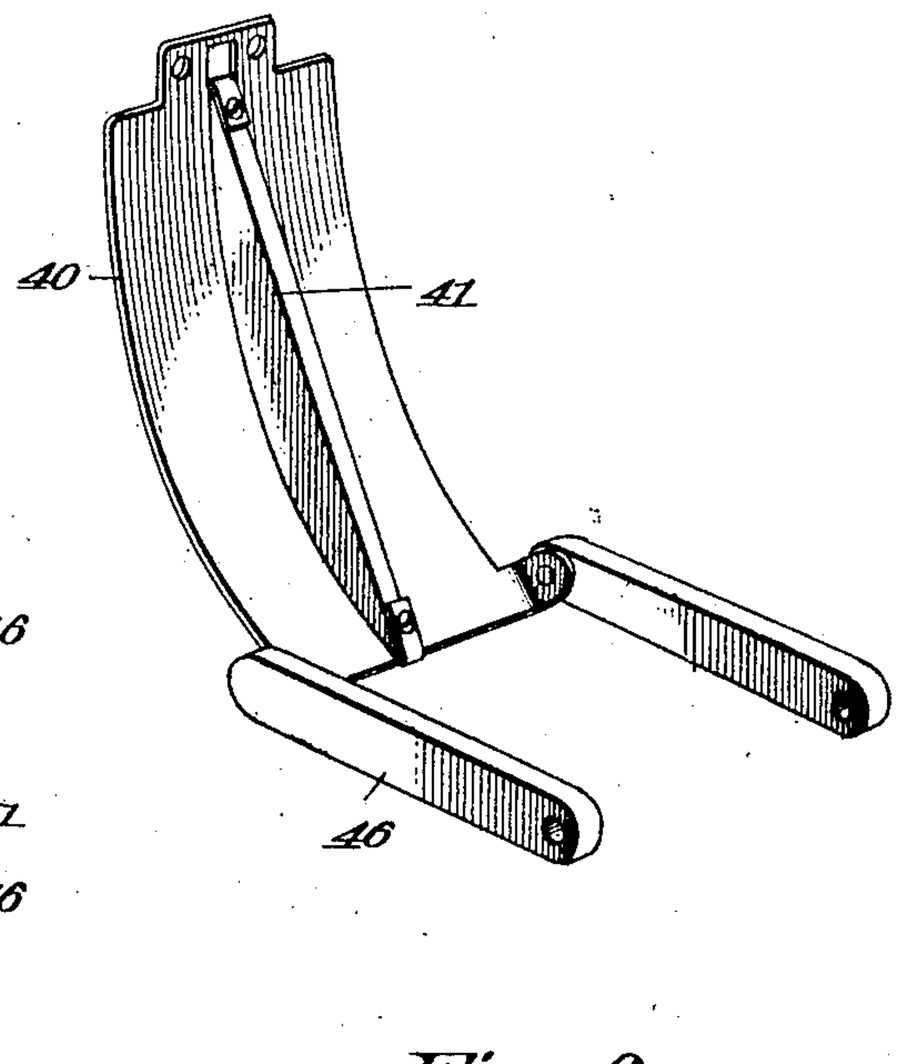

Fig. 6.

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UNITED STATES PATENT OFFICE.

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PRINTING AND EMBOSSING PRESS.

No. 803,466. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed May 26, 1905. Serial No. 262,470.

To all whom it may concern:

Be it known that I, WILLIAM ALBERT BILLMAN, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented a new and useful Printing and Embossing Press, of which the following is a specification.

This invention relates to printing and embossing presses, and has for its principal object to provide a machine of simple and compact construction adapted especially for the printing and embossing of cards, photographic mounts, and other small articles.

A further object of the invention is to provide a machine of such character that by a simple adjustment of some of the parts the degree of pressure exerted will be altered to permit the use of the press for ordinary printing or for embossing or stamping purposes.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of a machine constructed in accordance with the invention, showing the same as adjusted for ordinary printing purposes. Fig. 2 is a similar view of the upper portion of the same with the parts in a slightly different position. Fig. 3 is a view similar to Fig. 1, showing the parts adjusted for use for embossing purposes. Fig. 4 is a similar view of the upper portion of the machine with the parts in different position. Fig. 5 is a front elevation of the machine, parts being shown in section. Fig. 6 is a detail perspective view of the ink-plate and roller-guide detached.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the machine are supported on a suitable framework including a base 10 and a plurality of standards 11, which are connected at their upper end to form a tripod, and to the upper end of this frame is secured a small frame member 12, carrying a fixed platen 13 and arranged to support a chase or type-carrier, its operating means, and the inking mechanism. Projecting forwardly from the upper portion of the frame is an arm 15, that is bifurcated for the reception of the front end of a lever 16, and said arms are provided with two openings 17 and 18, either of which may serve for the reception of a pivot-pin 19, by which the forward end of the lever is pivotally connected to the arm, the connection being at the front opening 17 when the apparatus is employed for printing and at the rear opening 18 when the press is to be employed for embossing or stamping purposes, where heavier pressure is required. In the rear end of the lever are arranged two openings 20 and 21, to which may be connected the upper end of a rod 22, having its lower end connected to a pedal 23, and the upper end of the rod is connected at the opening 21 when the press is employed for printing and at the opening 20 when employed for embossing. The pedal 23 is pivotally connected to the rearmost bar of the tripod and extends between the two forward bars, being normally elevated by means of a helical tension-spring 26. The bottom is formed of a pair of bars slightly spaced from each other for the passage of the lower end of the rod 22 and has two openings 27 and 28 for the reception of a pivot-pin 29, to which the lower end of the rod is connected, said rod being threaded and extending through a correspondingly-threaded opening in the pivot-pin in order to permit close adjustment. When the press is used for printing, a rod is connected at the opening 28, and when the press is employed for embossing the pivot-pin is shifted to the opening 27, its point being near the fulcrum and permitting heavier pressure.

The frame 12 is provided with a vertical opening for the reception of a vertically-movable bar 30, that carries at its lower end a chase 31, in which may be clamped the type for printing or embossing purposes, and in order to prevent rotative movement of the bar a pair of spaced guides 32 and 33 are secured to one side of the frame and are arranged for the reception of a pin 34, that projects from said bar. The longer of these bars 33 is provided with a stud that forms a bearing for a sheave 36, over which passes a cord or chain 37, that is connected to one end of a helical tension-spring 38, the opposite end of the spring being connected to a bracket 39 on one of the frame members. The function

of this spring is to elevate the bar 30 and the chase.

At the front of the machine is a detachable ink-table 40, which may be formed of a sheet of metal having a central strengthening-rib 41. The upper end of this table is secured by a screw or similar fastening device 43 to a lug 44 at the front end of the arm 15, and the lower end of the table is secured to a pair of spaced arms 46, which are arranged to permit the passage of the chase between them, the rear ends of the arms being secured by screws or similar detachable fastening devices to the frame member 12, the construction being such that the inking-table may be readily removed when the press is to be used for embossing purposes. The bars 46 further serve as guides for the passage of the inking-rollers during the passage of the same over the type held in the chase.

The frame is provided with bearings for a transversely-disposed spindle 48, to which are pivoted the opposite arms of a yoke 49. Projecting from the cross-bar of the yoke is an arm 50, that is connected by a link 51 to the upper lever 16, so that as the latter is moved the yoke will be rocked with the spindle 48 as an axis. The lower ends of both arms of the yoke are provided with slots for the reception of pins 52, projecting from a roller-carrying frame 53, that is provided with bearings for the reception of two or more inking-rollers 54, and said pins are connected to the projecting end portions 48 of the spindle or to screws or pins projecting therefrom by means of helical tension-springs 56, the springs tending to maintain the rollers in engagement with the arcuate inking-table 40 and in engagement with the guiding-strip 46, the rollers at this point being preferably formed of metal in the usual manner, so that there will be no waste of ink by applying the same to the strips. In order to permit smoother action of the inking-rollers, the end portions of the spindle 48 serve to support a torsion-spring 56′, the central portion of which is bent over and bears upon the frame, while the opposite end portions of the spring are engaged with the cross-bar of the yoke and tend at all times to move the roller-carrying frame down over the table and in contact with the type carried by the chase. These springs, however, are not in all cases essential.

Where the press is used for ordinary printing, the parts are arranged as shown in Fig. 1, with the forward end of the lever 16 pivoted at the opening 17, the upper end of the rod 22 connected at the inner opening 21 of the lever and the lower end of the rod connected at the outer opening 28 of the pedal. On depressing the pedal the inking-rollers, which normally lie slightly to the rear of the chase, will move across the type carried thereby before the lever engages the upper end of the bar 30, so that the rollers will be clear of the chase before the bar begins to descend. The bar is then forced through and the type moved into engagement with the card or other article previously placed on the platen. On releasing the pedal the spring 26 will elevate the same and spring 38 will elevate the bar, so that the parts will be automatically restored to initial position. Where the press is to be used for embossing, it is essential that greater pressure be employed, and for this purpose the inking-table is removed, the inking-roller frame is taken out, and the upper end of the link 51 is disconnected from lever 16. The lower arms of the yoke are then drawn up until the yoke is in an approximately horizontal position and confined in place by a suitable strap or holding member *x*. The pivot-pin 19 is then shifted to the rear opening 18 of the frame, and the lever is connected at a point closer to the bar 30. The connection between the upper end of the rod 22 and the lever 16 is shift ed to the rearmost hole, and in similar man ner the pin 29 is moved from the forward opening 28 of the pedal to the rear opening 27, so that being closer to the pivot greater pressure may be exercised. The operation is the same as in printing, and, owing to the difference in leverage, much greater force will be exerted.

With a device of the character described it is possible for a photographer to print and emboss photographic mounts and the like without employing separate and expensive machines, and while the apparatus is intended principally for photographers' use it will be understood that it may be employed in many places and used for printing and embossing purposes generally without departing from the invention.

Having thus described the invention, what is claimed is—

1. In a press of the class described, a type-carrier, a bar supporting the same, and a bar-operating lever having two independent fulcrum-points at different distances, respectively, from the bar, and at either of which the lever may be connected in accordance with the pressure desired.

2. In a press of the class described, a type-carrier, a supporting-bar therefor, a frame having a plurality of openings disposed, respectively, at different distances from the bar, and a bar-operating lever, the end of which may be fulcrumed at one or other of the openings in accordance with the pressure to be exerted.

3. In apparatus of the class described, the combination with a type-carrier, of a bar supporting the same, a frame, a bar-operating lever having one end fulcrumed to the frame, an operating member to which the opposite end of the lever is connected, the several connections and the fulcrum-point of the

lever being adjustable in accordance with the force to be exerted on the bar.

4. In apparatus of the class described, the combination with a type-carrier, of a bar secured to the same, an operating-lever for moving said bar in one direction, a pedal-lever, and means for connecting the pedal-lever to the operating member, all of the connections of the levers being adjustable to alter the pressure exerted on the bar.

5. In apparatus of the class described, the combination with a type-carrier, of a supporting-bar therefor, an operating-lever having two adjustable fulcrum-points, a pedal-lever, a rod connecting the two levers and having separate points of connection with each to alter the effective pressure exerted on the bar.

6. In apparatus of the class described, the combination with a frame, of a type-carrier, a bar supporting the same, an operating-lever pivoted to the frame and bearing on the bar, a yoke pivoted to the frame, means for connecting the yoke to the lever, an arcuate inking-table, and inking-rollers carried by the arms of the yoke and movable over the table and type-carrier.

7. In apparatus of the class described, the combination with a frame, of a type-carrier, a bar supporting the same, means for elevating the bar, an operating-lever for depressing the bar, a detachable arcuate inking-table having spaced end guides on opposite sides of the type-carrier, a yoke pivoted to the frame, an inking-roller-carrying frame supported by the arms of the yoke, inking-rollers movable over the table, and type-carrier, and means for connecting said yoke to the operating-lever.

8. In apparatus of the class described, the combination with a frame, of a pedal-lever, a type-carrier, a bar supporting the same, means for guiding the bar, a spring for elevating the bar, an operating-lever having an adjustable connection with the pedal-lever, the pivot or fulcrum point of said lever being adjustable with respect to the bar, a detachable ink-table and roller-guide supported by the frame, a yoke pivoted to the frame and carrying inking-rollers, an arm projecting from the yoke, and a link detachably connecting said yoke to the operating-lever.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM ALBERT BILLMAN.

Witnesses:
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J. C. HASS.