

No. 770,683.

PATENTED SEPT. 20, 1904.

A. A. DU BOIS.  
PRINTING MACHINE.

APPLICATION FILED MAR. 31, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

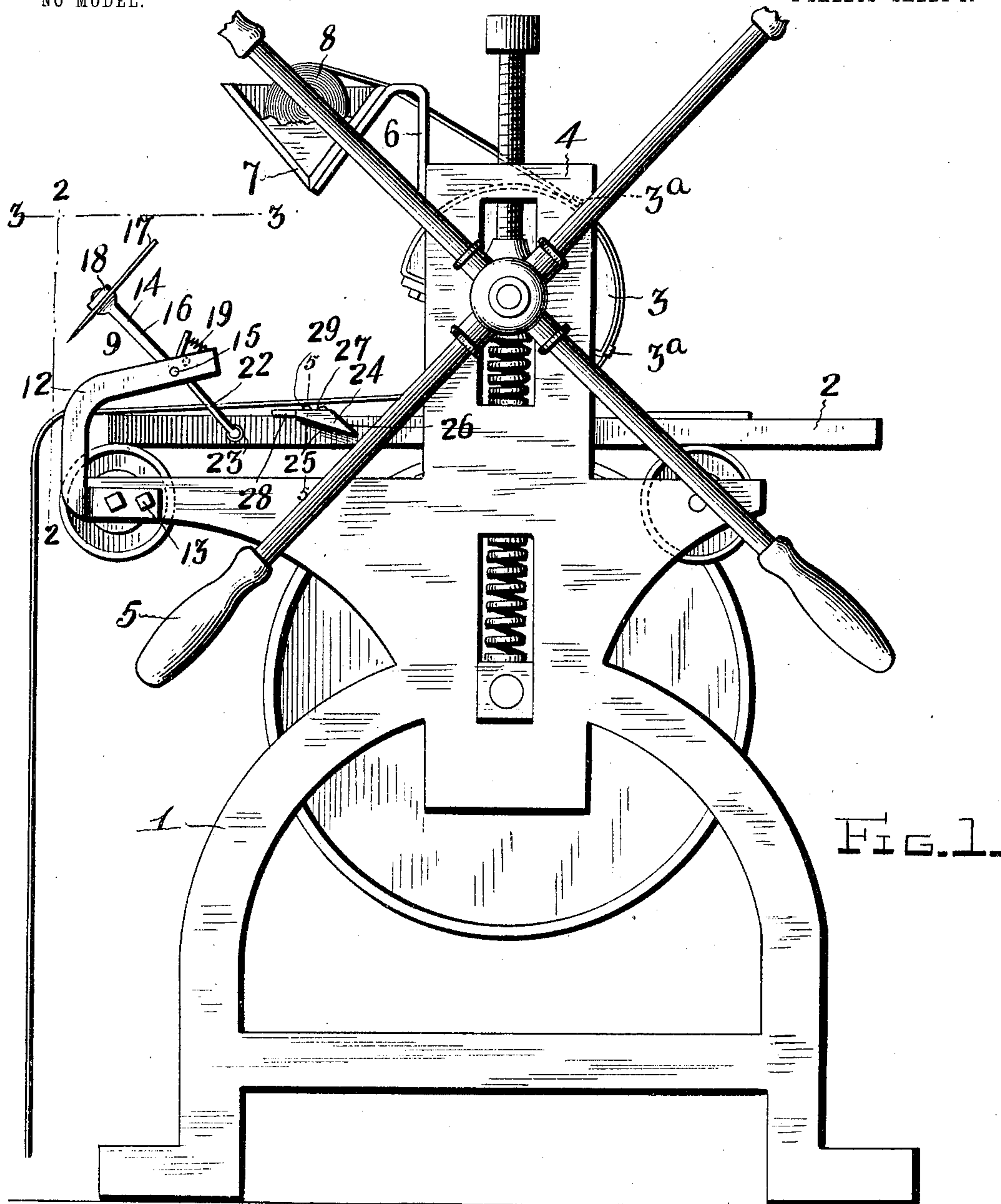


FIG. 1.

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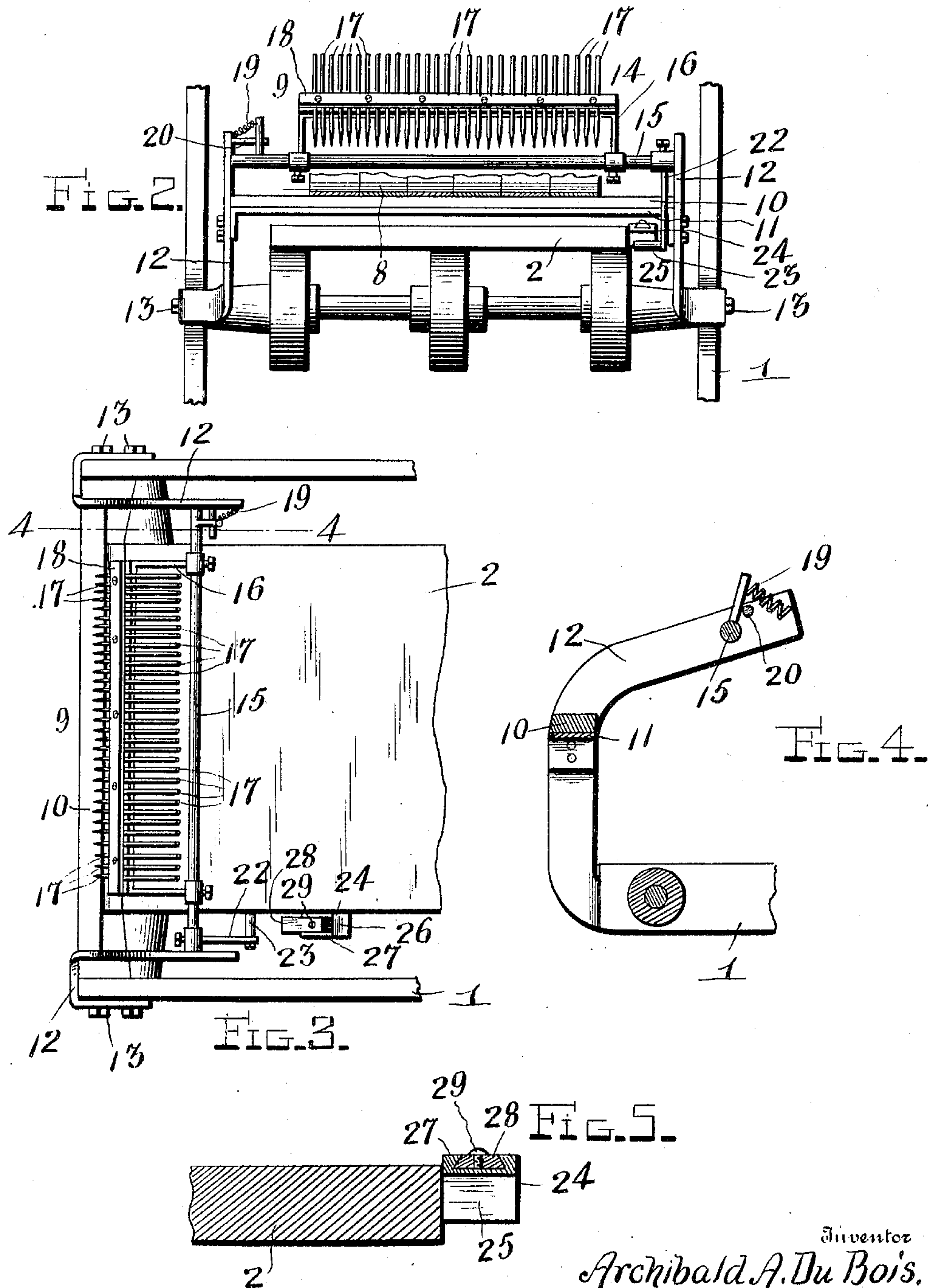
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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OF NEW YORK, N. Y., A FIRM.

## PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,683, dated September 20, 1904.

Application filed March 31, 1904. Serial No. 200,955. (No model.)

*To all whom it may concern:*

Be it known that I, ARCHIBALD A. DU BOIS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Printing-Machines; 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.

My invention relates to improvements in printing - machines, more particularly the plate-press type; and its object is to provide a simple and efficient means for feeding a continuous web, strip, or ribbon to be printed upon over the printing plate or type.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of a plate-press printing-machine with my improved web or ribbon feeding device applied thereto. Fig. 2 is a vertical transverse sectional view through the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a partial top plan view. Fig. 4 is a detail sectional view taken on the line 4 4 of Fig. 3, showing the manner in which the movable jaw of the gripping device is held in its normal position. Fig. 5 is a detail sectional view taken on the line 5 5 of Fig. 1, showing the manner in which the cam is adjusted.

Referring to the drawings by numeral, 1 denotes a stationary or main frame; 2, a reciprocatory bed which carries the printing plate or type; 3, a pressure D-roller mounted to oscillate in standards 4 of the main frame 1; and 5, a handle adapted to simultaneously oscillate said D-roller and reciprocate said bed, the movement of the former being imparted to the latter by any of the well-known means. (Not shown.)

Supported transversely above the rear of the frame 1 by means of brackets 6, secured to the standards 4, is a hopper or trough 7, preferably in the form of a V-shaped box,

which is adapted to contain one or more rolls of the continuous webs or ribbons 8 to be printed. From said rolls these continuous webs or ribbons are passed forwardly around the D-roller 3, through guides 3<sup>a</sup> upon said roller, then rearwardly over the bed 2, and then through my improved feeding device 9, which comprises a stationary jaw 10, preferably of wood, secured upon a cross-bar 11, having its bent ends secured to brackets 12, which have their lower ends secured, as at 13, to the sides of the rear ends of the main frame 1. Coacting with said fixed jaw 10, over which the webs or ribbons 8 pass, is a swinging jaw 14, comprising in its construction a transverse shaft 15, journaled in the upper end of the said brackets 12, a U-shaped frame 16 upon said shaft, a plurality of needles 17, and a clamping-plate 18, screwed, bolted, or otherwise secured upon said frame 16 to clamp the needles, as shown. The movable jaw 14 is held normally in its raised or elevated position by a spring 19, which holds it against a stop 20, as clearly shown in Fig. 4 of the drawings. Said movable jaw 14 carries an operating-lever 22, upon the outer or free end of which is journaled a friction-roller 23, adapted to coact with a cam 24, provided upon one side of the reciprocatory bed 2. Said cam is in the form of a triangular-shaped projection or lug and has its under side 25 inclined downwardly and forwardly and its upper side formed with an upwardly and rearwardly inclined portion 26 and a horizontal portion 27. The said horizontal portion 27, as shown in Fig. 5, is provided with an adjustable extension-plate 28, which slides in a groove or slot and is held in an adjusted position by a set-screw or other suitable means 29, as shown. By means of this extension-plate 28 the length of the horizontal portion 27 of the cam may be varied in order to regulate the operation of the swinging jaw 14, as presently explained.

The operation of my invention is as follows: When the parts of the machine are in their normal positions, as seen in Fig. 1, and the handle 5 is turned in one direction, the pressure D-roller 3 and the bed 2 will be simulta-



neously operated, the bed being moved rearwardly and the curved portion of the D-roller being moved into contact with the bed to press the webs or ribbons 8 into contact with the printing plate or type and make an impression. The guides 3<sup>a</sup> on the D-roller hold the webs 8 with sufficient tension to unwind them from their rolls in the hopper 7, and hence the portions of the webs upon the rear of the bed will be carried rearwardly between the jaws 10 and 14, the latter jaw, 14, being unaffected by the rearward movement of the bed, since the roller 23 on its operating-lever 22 passes under the cam 24 and only contacts with its extreme lower end, under which end it springs, owing to the resiliency of the lever 22. After the impression has been made upon the webs 8 the handle 5 is turned in the reverse direction to restore the parts to their original positions, and in the return or forward movement of the bed the cam 24 will pass under the roller 23, so that the latter will be caused to ride over the portions 26 and 27 of the upper side of said cam. Owing to the engagement of said roller with the cam, the lever 22 will swing the jaw 14 downwardly toward the jaw 10, and the needles of the jaw 14 will press the webs 8 upon the jaw 10 and hold them against movement while the D-roller is being returned to its normal position. Since the webs 8 are thus held stationary, they will be drawn through the guides 3<sup>a</sup> as the D-roller oscillates, and a fresh portion of them will be drawn around the curved surface of the roller ready to be printed upon when the machine is again operated. It will be seen that the length of the horizontal portion 27 of the cam 24 determines the duration of the time during which the webs are held against movement and the distance the webs are moved rearwardly at each operation of the machine. Hence by adjusting the plate 28 as previously stated the movement of the webs may be varied.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the inven-

tion will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A printing-machine of the character described, comprising a frame, a reciprocatory bed, a pressing-roller, brackets secured upon said frame, a transverse bar connecting said brackets, a fixed jaw upon said bar, a transverse shaft journaled in said brackets, a U-shaped frame upon said shaft, a clamp-bar upon said U-shaped frame, needles between said clamp-bar and said U-shaped frame, an operating-lever carried by said shaft, a triangular-shaped cam upon said reciprocatory bed, and a friction-roller upon said lever adapted to ride under and over said cam when said bed is reciprocated, substantially as described.

2. A printing-machine of the character described, comprising a frame, a reciprocatory bed, a printing-roller, brackets secured upon said frame, a transverse bar connecting said brackets, a fixed jaw upon said bar, a transverse shaft journaled in said brackets, a U-shaped frame upon said shaft, a clamp-bar upon said U-shaped frame, needles between said clamp-bar and said U-shaped frame, an operating-lever carried by said shaft, a triangular-shaped cam upon said reciprocatory bed, an adjustable extension-bar upon said cam, and a friction-roller upon said lever adapted to ride under and over said cam when said bed is reciprocated, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARCHIBALD A. DU BOIS.

Witnesses:

MAX ENGEL,

FRANK GIBSON.