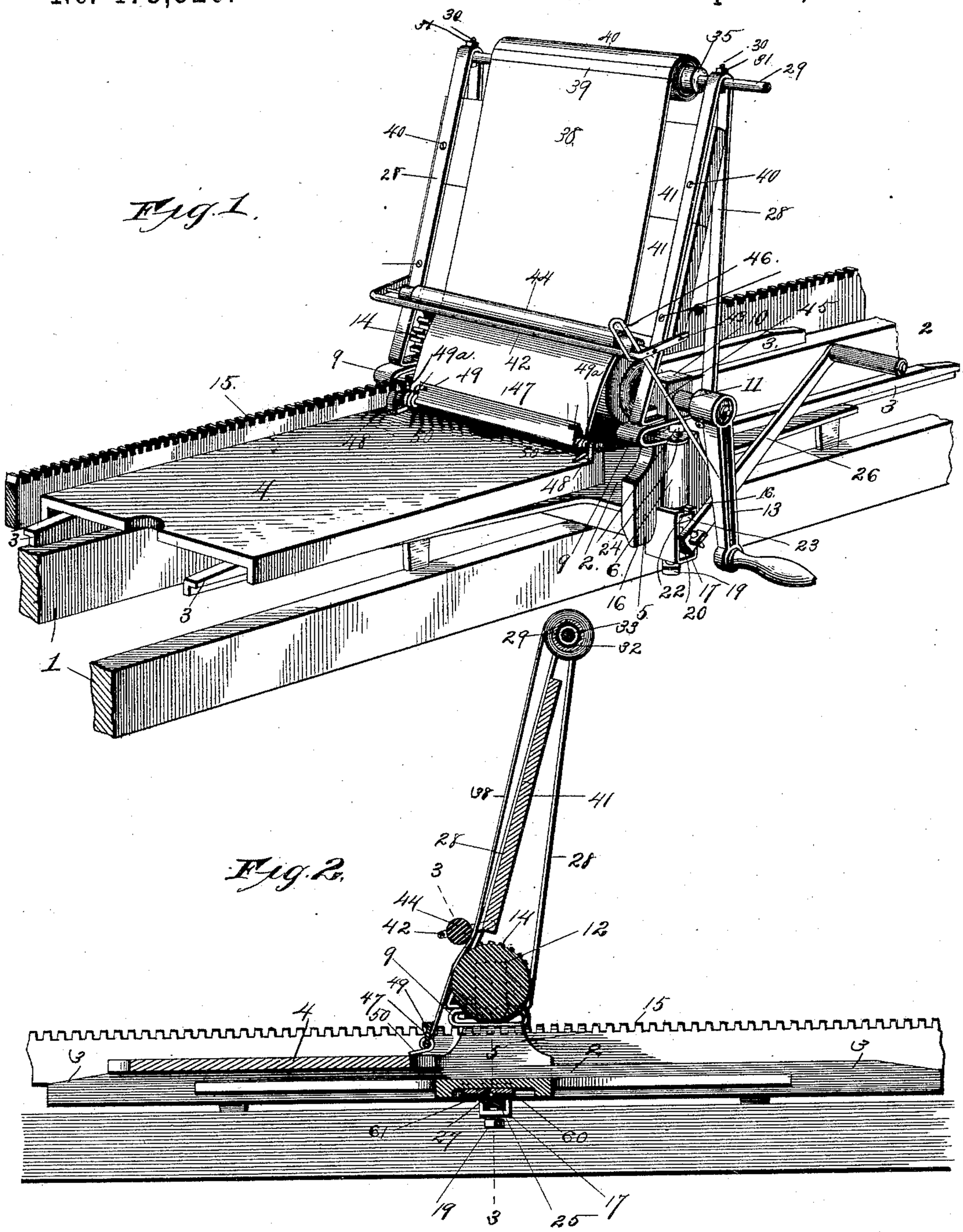
(No Model.) 3 Sheets—Sheet 1.

J. C. PADGETT & W. E. BOLTON.

PRINTING PRESS.

No. 473,520. Patented Apr. 26, 1892.

Fig. 1.



Witnesses:
Wm. Thorpe,
Jno. L. Condron

Inventors,
J. C. Padgett, and
W. E. Bolton,
By Higdon & Higdon,
Attorneys.

(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

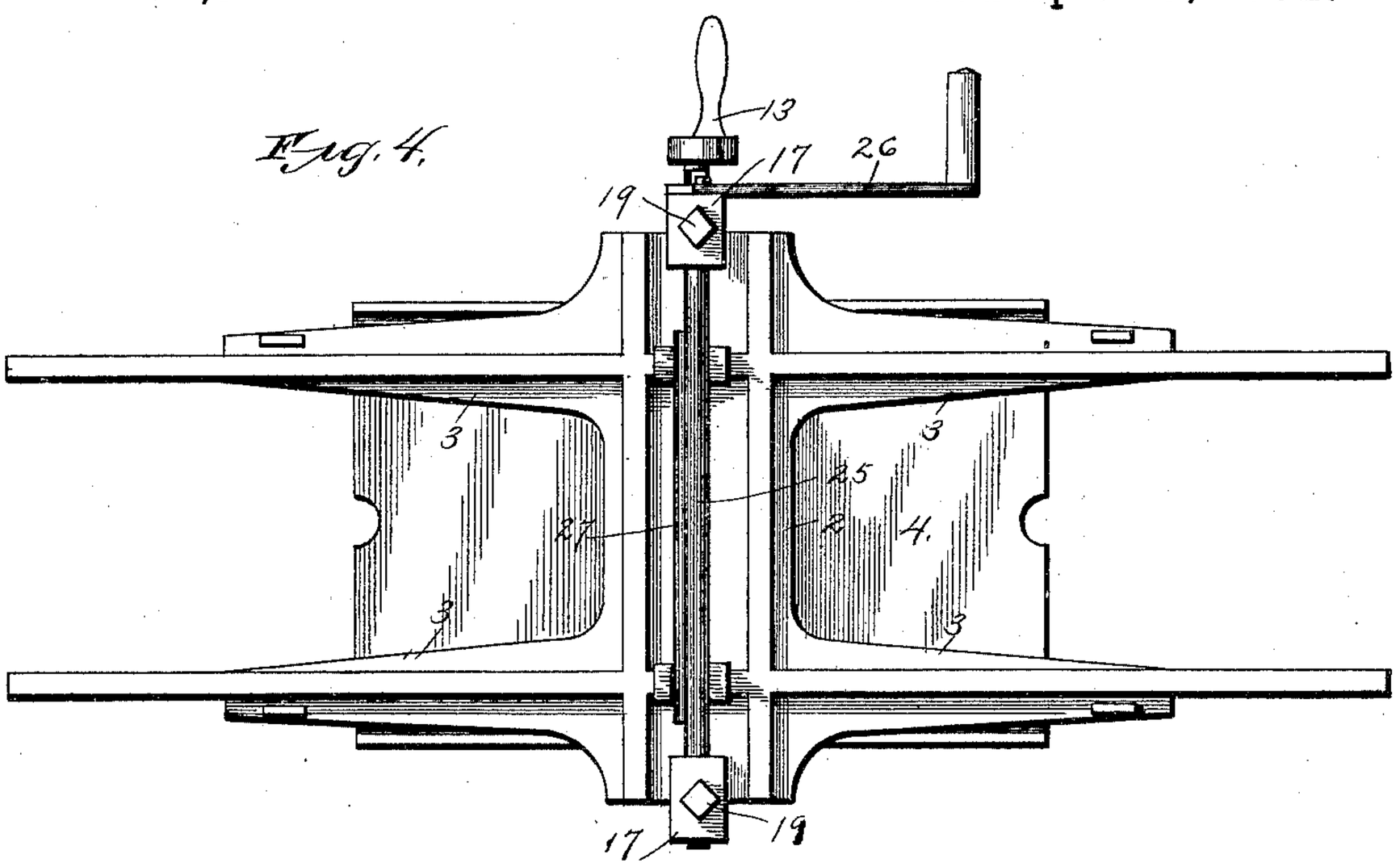
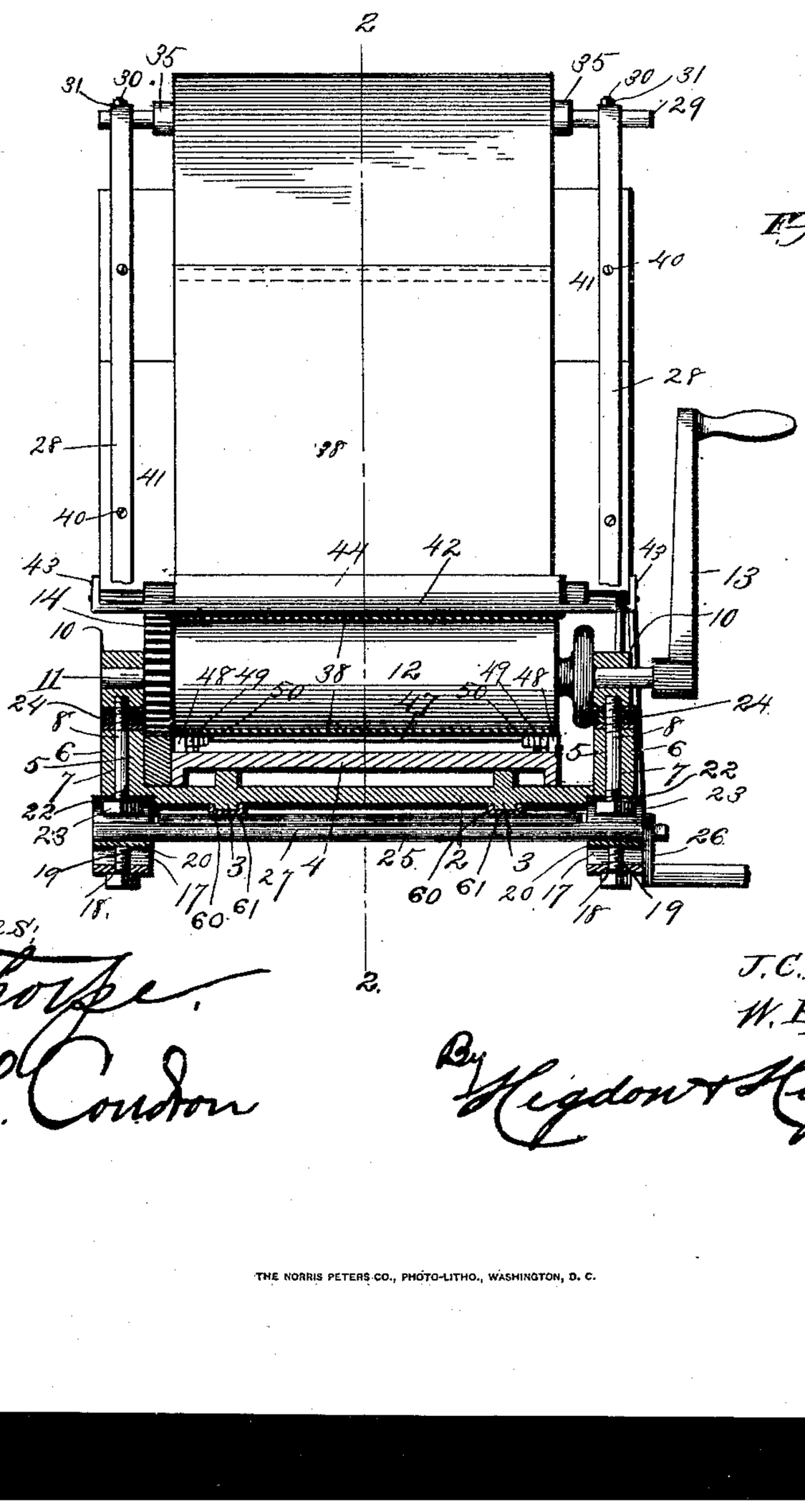


Fig. 3.



Witnesses:
Chas. F. Burke.
Jno. L. Condon

Inventors.
J. C. Padgett and
W. E. Bolton,
By Higdon & Higdon.
Attorneys.

(No Model.) 3 Sheets—Sheet 3.

J. C. PADGETT & W. E. BOLTON.

PRINTING PRESS.

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Fig. 6

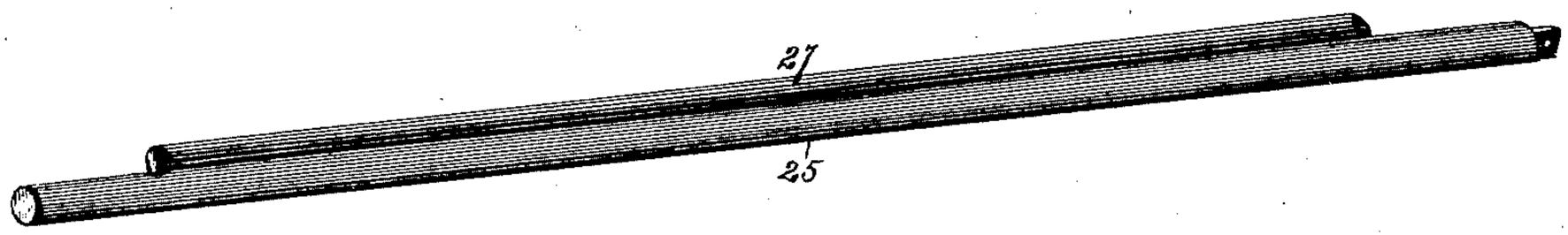

Fig. 7.

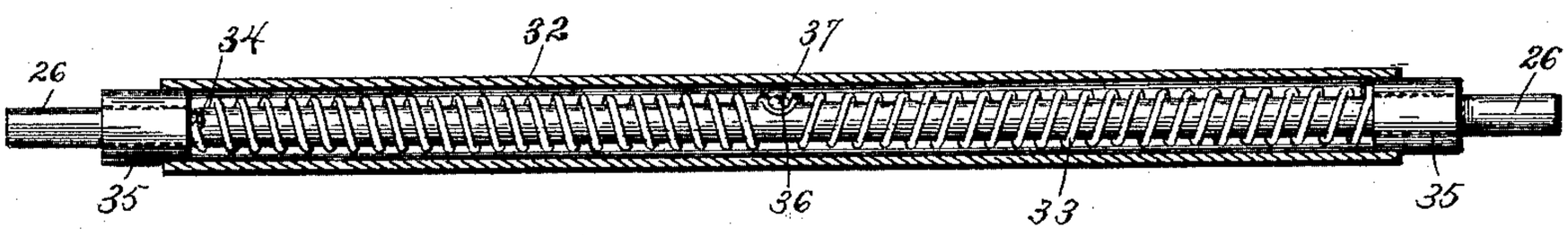

Fig. 8

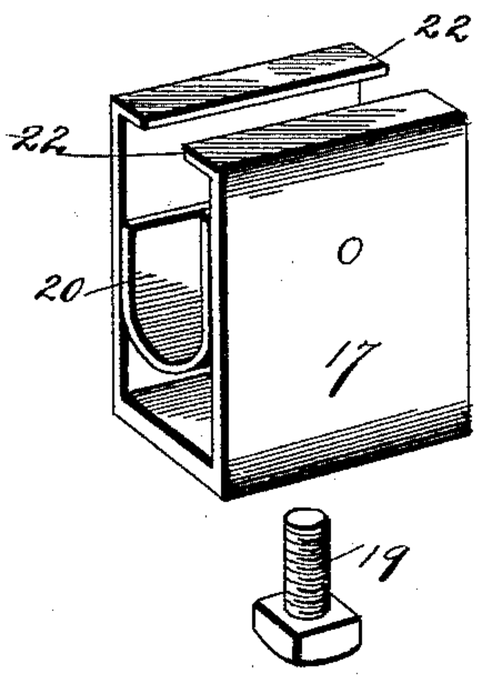

Fig. 9.

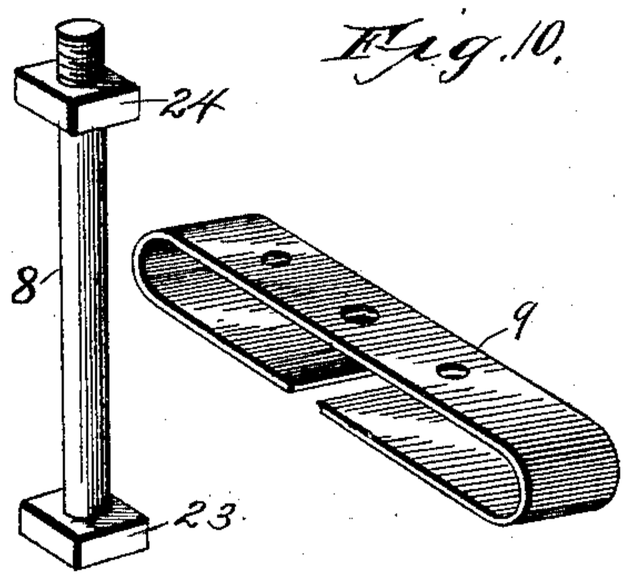

Fig. 10.

Fig. 11.

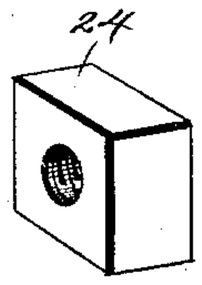

Fig 13

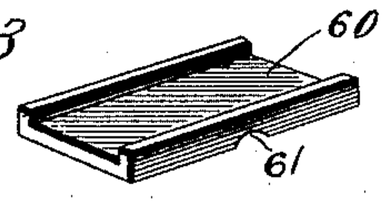

Fig. 14.

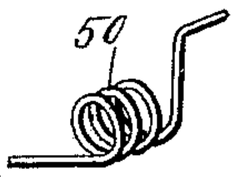

Fig. 5.

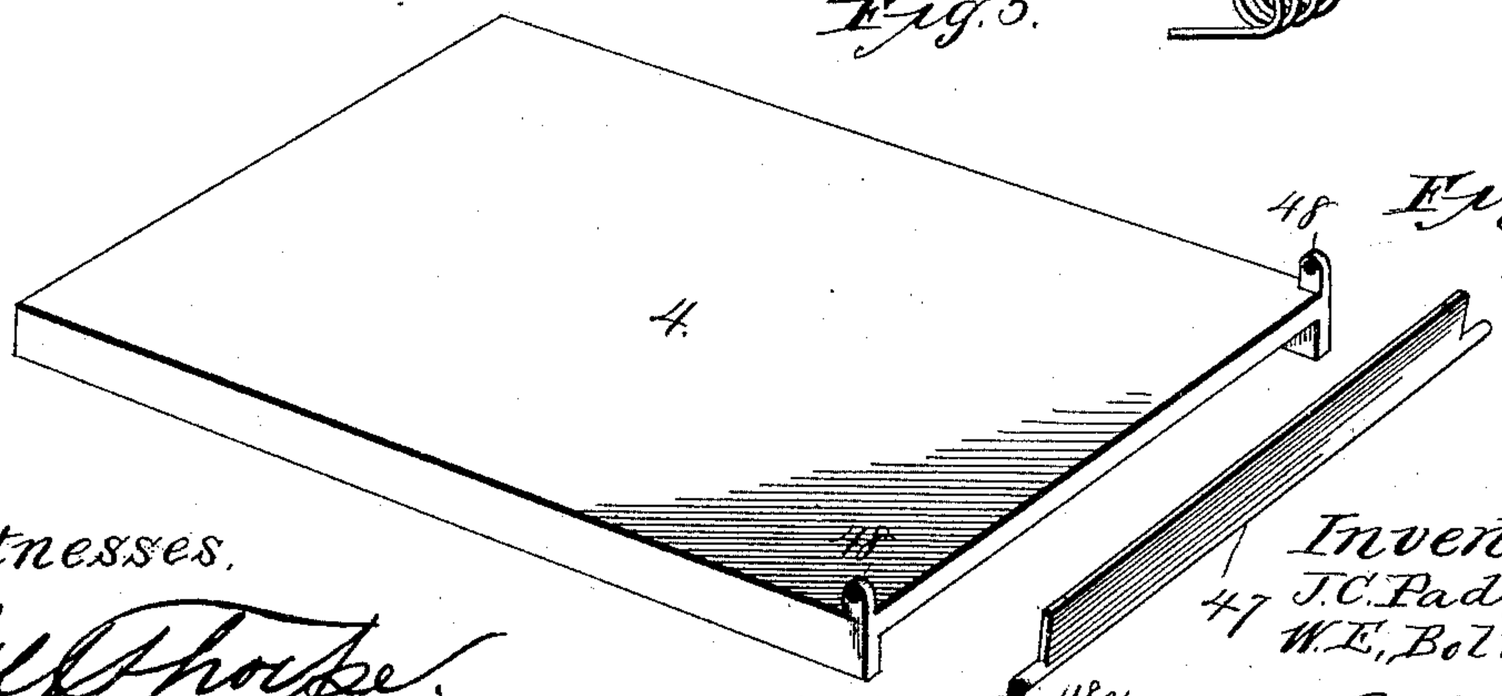

Fig. 12.

Witnesses.

Geo. H. Thorpe.

Jno. L. Condron

Inventors

J. C. Padgett and

W. E. Bolton

By Keigdon & Keigdon

Attorneys.

UNITED STATES PATENT OFFICE.

JOHN C. PADGETT, OF ALTA VISTA, AND WILLIAM E. BOLTON, OF GREENSBURG, KANSAS.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 473,520, dated April 26, 1892.

Application filed July 20, 1891. Serial No. 400,120. (No model.)

To all whom it may concern:

Be it known that we, JOHN C. PADGETT, of Alta Vista, county of Wabaunsee, and WILLIAM E. BOLTON, of Greensburg, county of Kiowa, Kansas, have invented certain new and useful Improvements in Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to the type of presses known as "army" presses; and the objects of our invention are to produce a press of this type which shall be simple, compact, and durable in construction, rapid in operation as compared with former army presses, and entirely free from all possibility of blurring during the printing operation.

To the above purposes our invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

In order that our invention may be fully understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a printing-press embodying our invention. Fig. 2 is a vertical longitudinal section of the same on the line 2 2 of Fig. 3. Fig. 3 is a transverse vertical section of the same on the line 3 3 of Fig. 2. Fig. 4 is an inverted plan view of the same. Fig. 5 is a detached perspective view of the movable bed. Fig. 6 is a detached perspective view of the cylinder-depressing shaft. Fig. 7 is a view, partly in central longitudinal section and partly in side elevation, of the winding-shaft and sleeve for the apron. Fig. 8 is a detached perspective view of one of the U-bearings for the cylinder-depressing shafts and the casing of said bearing, said view also including a detached perspective view of the adjusting-bolt for the bearing. Fig. 9 is a detached perspective view of one of the bolts for connecting the adjustable bearings with the bearing of the cylinder. Fig. 10 is a detached perspective view of one of the springs for sustaining the cylinder. Fig. 11 is a detached perspective view of one of the nuts, which is interposed between the arms of the spring. Fig. 12 is a detached perspective view of the shaft for retaining the lower end of the paper while it is being printed. Fig. 13 is a detached perspective view of one of the slides. Fig. 14 is a detached perspective view of one of the retaining-springs for the shaft, which retains the lower end of the paper while said paper is being printed upon.

In said drawings, 1 designates two parallel horizontal supports, upon which the machine, hereinafter described, is shown as resting, but which are to be understood as forming no essential part of the machine, said machine being placed upon any suitable table or support of any preferred kind.

2 designates an I-shaped base upon which the operative parts of the press are mounted and upon the oppositely-extending pairs of horizontal arms 3, on which rests and travels the bed 4, the form being laid upon and carried by said bed. Upon each side of the base 2, midway of its length, are formed two upright portions 5, each of which is formed with a vertical swell 6, in which is formed a vertical channel 7. Through each of these channels extends a bolt 8, the upper end of which passes through the arms of a spring 9, to be hereinafter more fully described. Upon the upper sides of the upper arms of these springs 9 rest two bearing-blocks 10, in which are journaled the ends of the shaft 11 of the cylinder-roll 12. This roll extends horizontally of the machine above the bed 4 and one end of its shaft carries a crank-arm 13, while its opposite end carries gear-pinion 14, which meshes with a rack 15, located at one side of the bed 4. It will thus be seen that as the shaft 11 is rotated by the crank-arm 13 the gear-pinion 14 will, through the rack 15, impart longitudinal movement to the bed in one or the opposite direction, according as the shaft is rotated one way or the other.

The lower parts of the portions 5 of the base are each bifurcated and the downwardly-extending pair of arms 16 thus formed at the lower part of each portion 5 embrace a U-shaped frame 17. The lower part of each of these frames 17 is formed with an internally-screw-threaded opening 18, through which extends upwardly a screw-bolt 19. The upper end of each of these bolts comes into contact with a U-shaped bearing 20, which is located within the U-shaped frames 17, so as to pre-

sent its open sides transversely of the machine. The upper ends of the arms of each of the U-shaped frames 17 are also formed with inwardly-extending lips or flanges 22, which engage over the upper sides of one of two nuts 23, each of which is screwed upon the lower end of one of the bolts or rods 8. It is to be understood, however, that, if desired, the nut 23 may be integral with the lower end of its rod or bolt, thus assuming the form of the head of a bolt. Upon the upper part of each rod or bolt is screwed a nut 24, which lies between the arms of the corresponding spring 9 and which presses against the under side of the upper arm of said spring, the upper end of each rod or bolt 3 being screwed into the upper side of the corresponding cylinder-bearing 10, or, if preferred, being formed integrally with said bearing-block. Transversely beneath the base 2 extends a shaft 25, the ends of which rest upon the upper sides of the bends of the U-shaped bearings 20, and which shaft at one end is provided with a crank-arm 26. This shaft is formed or provided with an elongated rib or flange 27, which is preferably of two-thirds round form, as shown, and which extends between the two U-shaped bearings 17 and which also engages at times with the recesses 61 in the under sides of the slides 60 upon the under side of the base 2.

Upon the upper sides of the upper arms of the two springs 9 rest the lower ends of two rearwardly-inclined inverted-V-shaped standards 28. Beneath the bends of these standards extend the ends of a rod 29, and through each end of this rod passes a bolt 30, which also passes upward through the bend at the top of the corresponding support 28. It will thus be seen that the rod 29 is held against turning by the bolts 30. A suitable nut 31 is screwed upon the upper end of each bolt 30, and these nuts serve to retain the bolts 30 in position.

Between the supports 28 the rod 29 is surrounded by a tubular sleeve or drum 32, and the part of the rod 29 which is surrounded by the sleeve or drum 32 is also surrounded by a coiled spring 33, the ends of which are secured by screws 34 or equivalent means to the inner ends of two blocks 35, which surround the end portions of the rod 29 and which turn thereon, the said blocks being plugged into the ends of the sleeve or drum 32, so as to turn with the latter. The coiled spring 33 is bent into two oppositely-coiled portions, and the bend 36 thus formed at the middle of the spring embraces a screw 37 or a pin or other equivalent projection, located midway of the length of the rod 29. Around the sleeve or drum 32 is wound an apron 38, the upper edge of said apron being suitably secured to the sleeve or drum and the lower edge of said apron being attached to one end of the bed 4, as hereinafter more fully explained. It is to be understood that this apron is of rubber fabric preferably, and that it may either extend entirely from the point of connection with the bed 4 to the point of connection with the drum or sleeve 32, or that it may terminate short of the point of connection with the sleeve or drum, as shown at 39, the remaining portion 40 being plain cloth or other suitable fabric. To the rear sides of the front arms of the standards 28 are secured by screws 40 or other equivalent means a board 41, which thus stands in inclined vertical position, and the upper and lower edges of which terminate below the upper end of the support 28 and the lower end of the same, respectively.

42 designates a U-shaped hanger, which extends across the apron 38 above the bed 4 and the arms of which are pivoted, as at 43, to the lower parts of the sides of the board 41. In the outer part of this hanger is mounted a presser-roll 44, which lies across and in contact with the apron 38 and the ends of which are journaled in the arms of the hanger at points adjacent to the union of said arms with the body portion of the hanger. A rod 45 is connected at its lower end to the crank-arm 26, and the upper end of this rod is formed with a loop 46, which embraces one end of the body portion of the hanger, for a purpose to be presently explained.

Extending transversely of the bed 4 at the advancing end of the same is an elongated bar or clamp 47, the ends of which are journaled in standards 48, which are located at opposite sides of the ends of the bed 4 and which extend vertically therefrom, as shown in Fig. 5. The lower edge of the apron 38 is attached to this clamp 47 by any suitable number of metal loops 49, which surround the clamp 47 and which also are connected at their upper parts to the lower edge of the apron 38. 50 designates two spiral springs, each of which surrounds one end of the clamp 47 beyond its projection 49, and one end of each of which springs rests against the side of the corresponding end of the flat clamp 47, while the opposite end rests upon the upper side of the bed 4, the tendency of said spring thus being to hold the clamp 47 against the outer side of the apron 38, and thus retain the sheet in proper position during the printing of the same.

The general operation of the above described press is as follows: The sheet of paper to be printed is laid against the outer side of the apron 38, the clamp 47 standing away from the apron a sufficient distance to permit the lower edge of the sheet to be inserted between the projections and the apron. When the press is started, the spring 50 will press the clamp 47 against the outer surface of the lower part of the sheet, thus retaining the sheet in position while being printed upon. The crank-arm 26 is forced downward. This movement of the crank-arm 26 causes the rib or flange 27 of the shaft 25 to act with the slides 60 upon the under side of the base 2, and thus move the shaft 25 downward, low-

ering roll 44 onto the paper, which prevents any creasing either of the apron or of the sheet. This downward movement of the shaft 25 causes the ends of the shaft to move the frames 17 downward and through the rods or bolts 8 to draw the bearings 10 of the cylinder 12 downward, thus depressing the cylinder upon the apron and paper and causing the cylinder to properly press the paper upon the form lying on the bed 4, so as to give the proper impression of the type upon the paper or sheet. The crank-handle 13 is now constantly revolved, so as to cause the bed 4 to travel beneath the cylinder 12, the apron 38 unwinding from the sleeve or roll 32 as its lower end is carried by the bed. As soon as the bed 4 has reached the limit of the movement necessary to completely print the sheet the crank-arm 26 is released and the springs 9 expand and raise the cylinder off of the form and also lift the roll 44 from the apron 38. The crank-arm 13 is now rotated in the opposite direction, so as to return the bed 4 to its original position, during which movement the spring 33 winds the apron upon the roll or sleeve 32, and at the end of which movement the paper is lifted off by the operator of the form and the clamp 49 releases its hold upon the lower edge of the paper. It will thus be seen that the machine is rapid in operation as compared with the usual type of army presses and easy to manipulate, and that there is no possibility of blurring or heavy impression on the sheet during the return movement of the bed.

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

1. An improved printing-press comprising a longitudinally-movable bed, a rock-shaft journaled beneath the base of the machine and having an eccentric portion engaging the under side of the base, an impression-cylinder journaled above the bed, and a pair of rods or bolts connecting the end of the shaft with the end bearings of the cylinder, substantially as set forth.

2. An improved printing-press comprising a rock-shaft located beneath the bed of the machine and having an eccentric portion engaging the under side of the base, an impression-cylinder mounted above the bed, a pair of rods or bolts connecting the bearings of the shaft with the bearings of the cylinder, and a pair of springs, each of elongated form and having underturned separated ends and interposed each between the under side of one of the cylinder-bearings and the upper part of an adjacent portion of the machine-frame.

3. An improved printing-press comprising an apron attached at one end to a winding spring-returned roll, a bed to which the opposite end of the apron is connected, a crank-arm journaled upon the machine-frame, a pivoted hanger carrying a roll to press upon the outer surface of the apron, and a rod connecting one end of the hanger with the crank-arms, substantially as set forth.

4. An improved printing-press comprising an apron attached at one end to a winding spring-returned roll, a longitudinally-movable bed to which the opposite end of the apron is attached, an inclined supporting-frame for the said spring-returned roll, and a flat spring-pressed clamp carried by the bed and arranged to press upon the latter, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN C. PADGETT.
WILLIAM E. BOLTON.

Witnesses:
GEO. P. BOLTON,
W. H. SAWTELL.