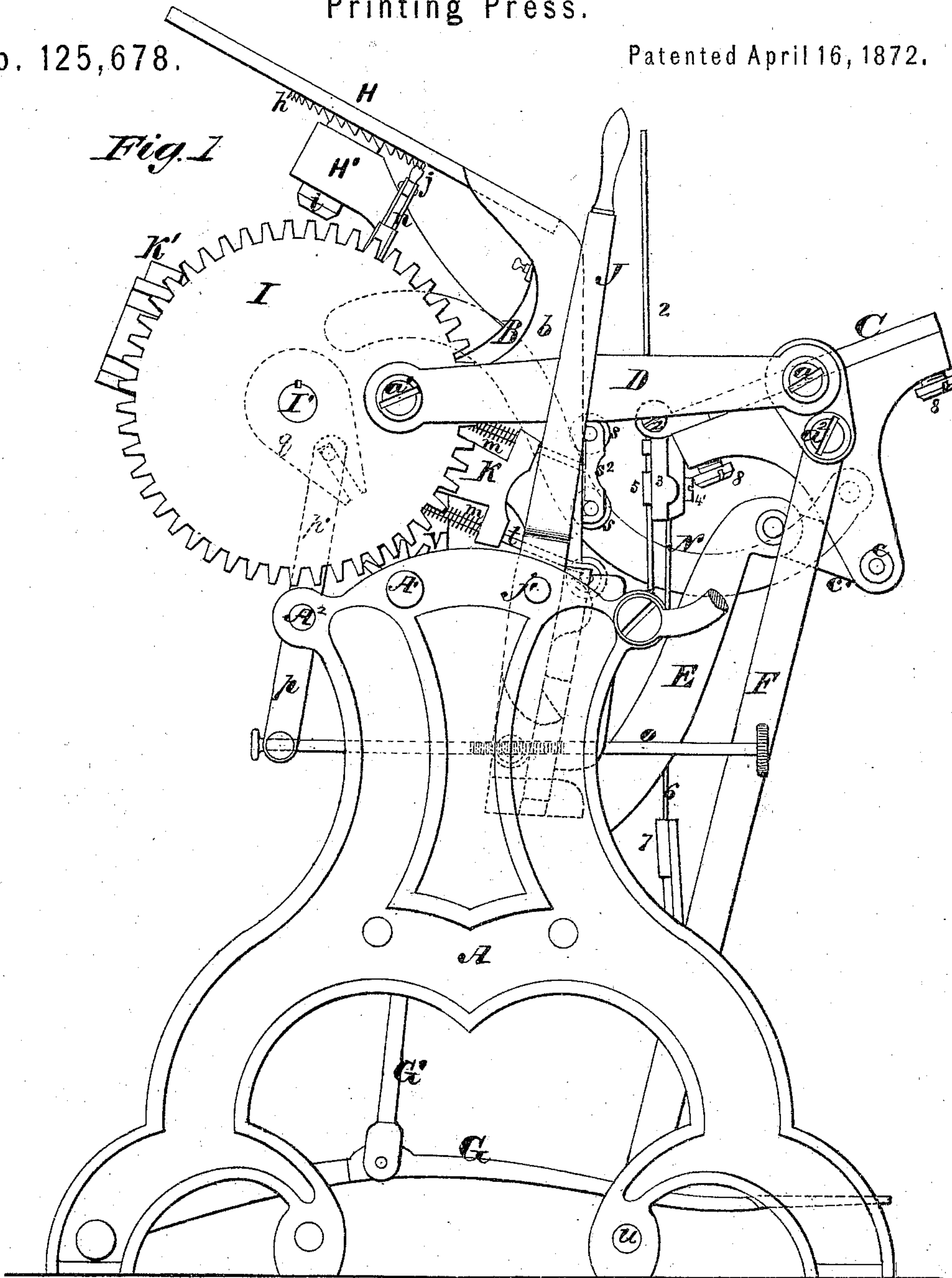


Fig. 1



Witnesses:
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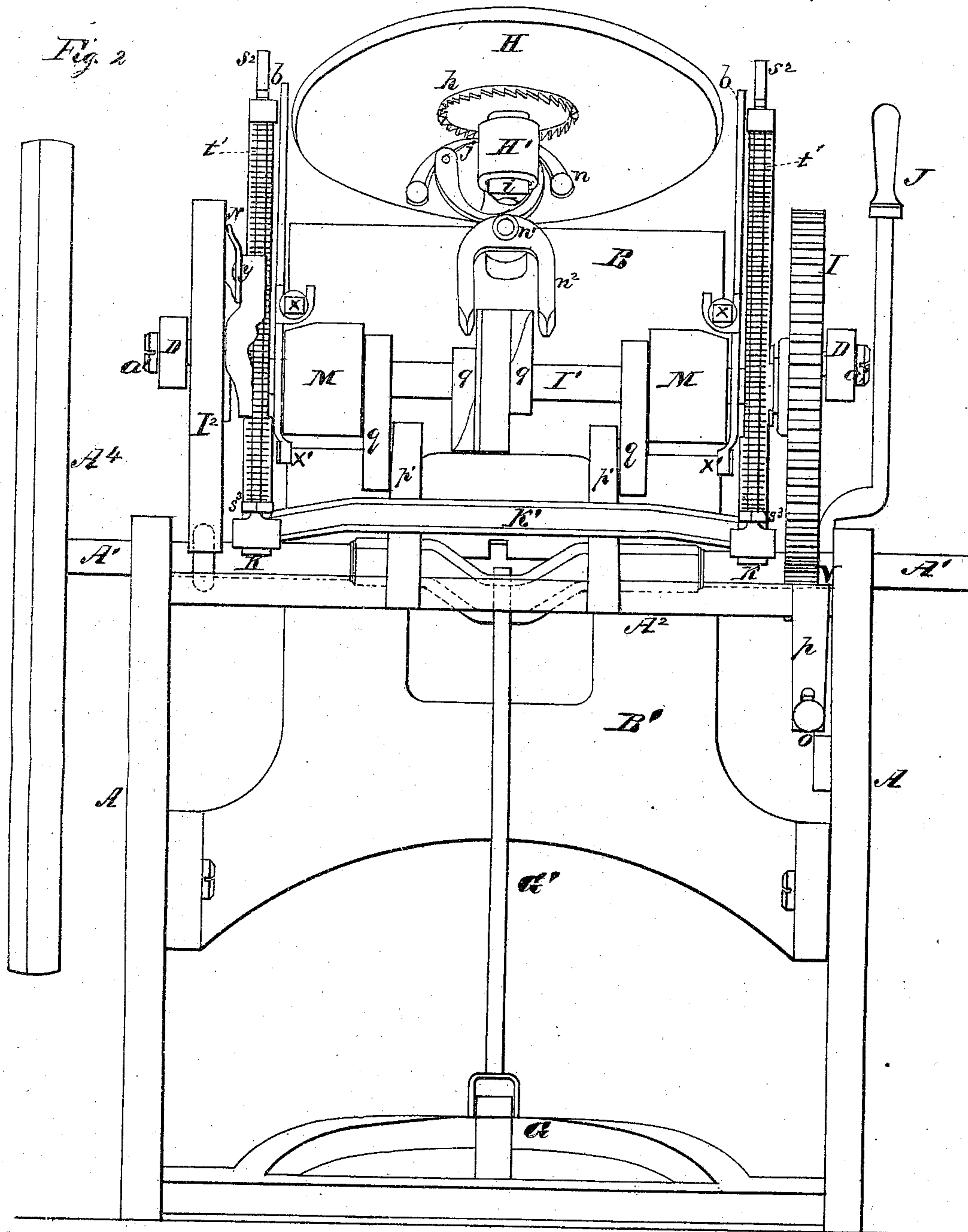
Inventor
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by
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WILLIAM HECKERT
Printing Press.

6 Sheets--Sheet 2.

No. 125,678.

Patented April 16, 1872.



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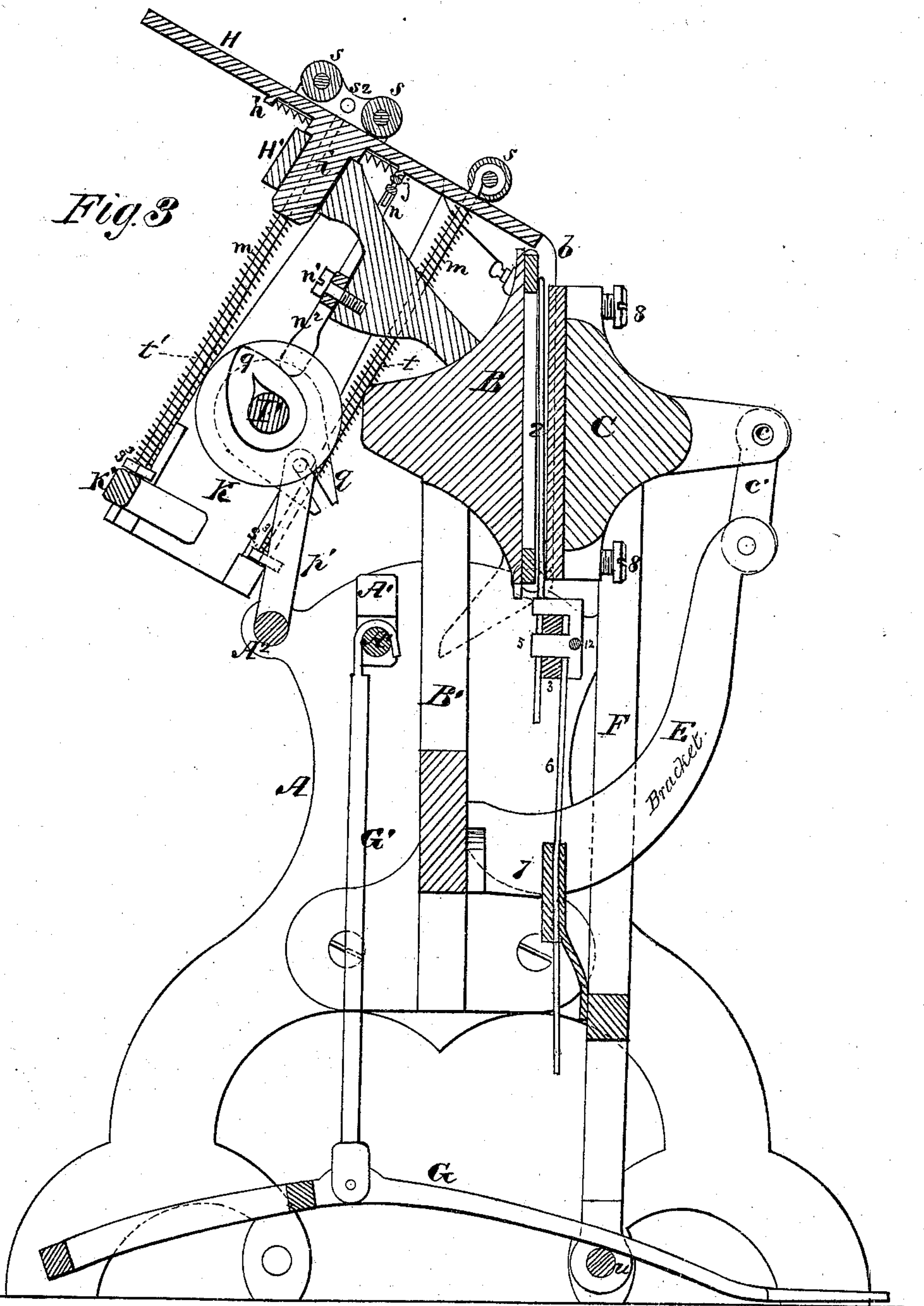
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6 Sheets--Sheet 3.

No. 125,678.

Patented April 16, 1872.

Fig. 3



Witnesses.
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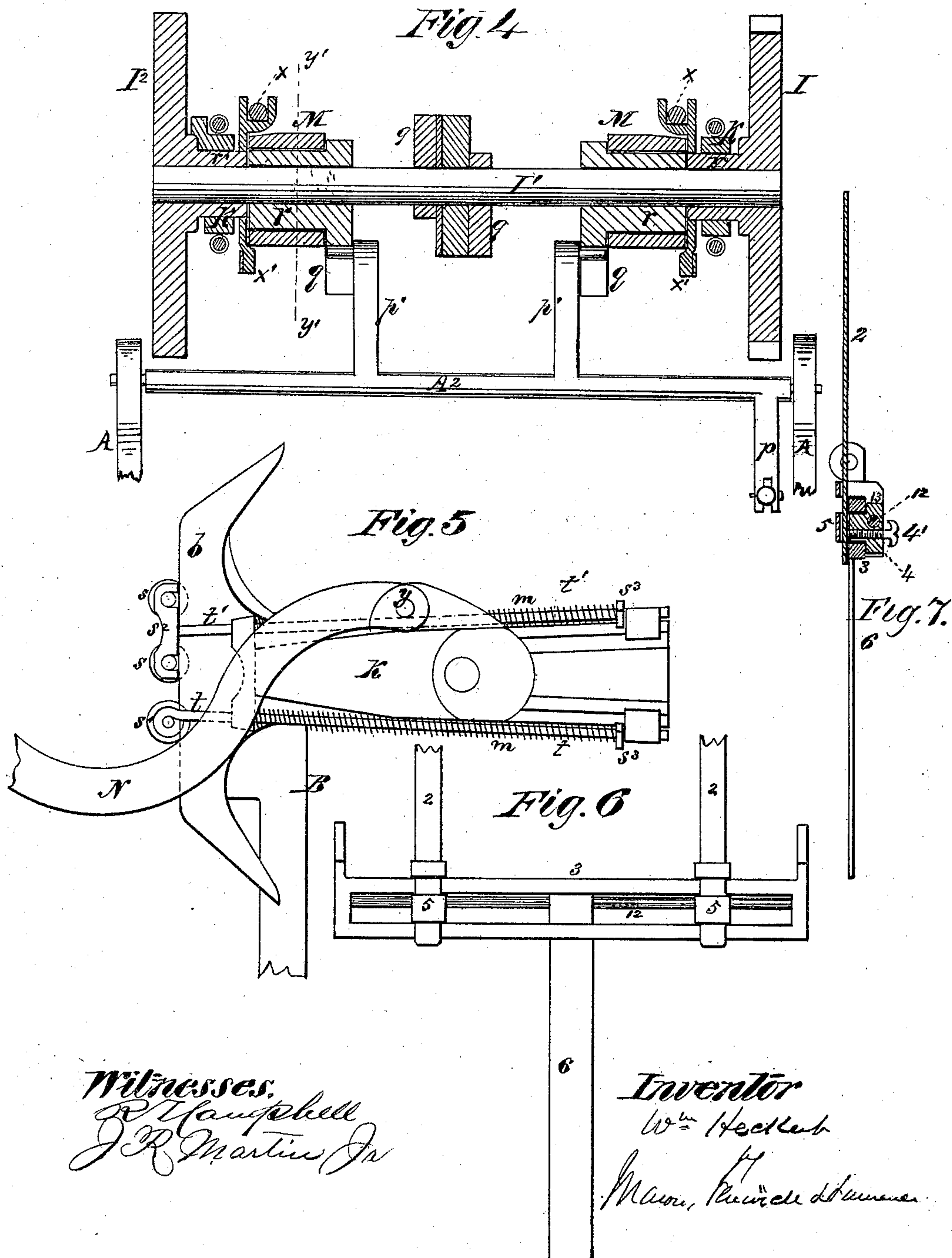
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Printing Press.

6 Sheets--Sheet 4.

No. 125,678.

Patented April 16, 1872.



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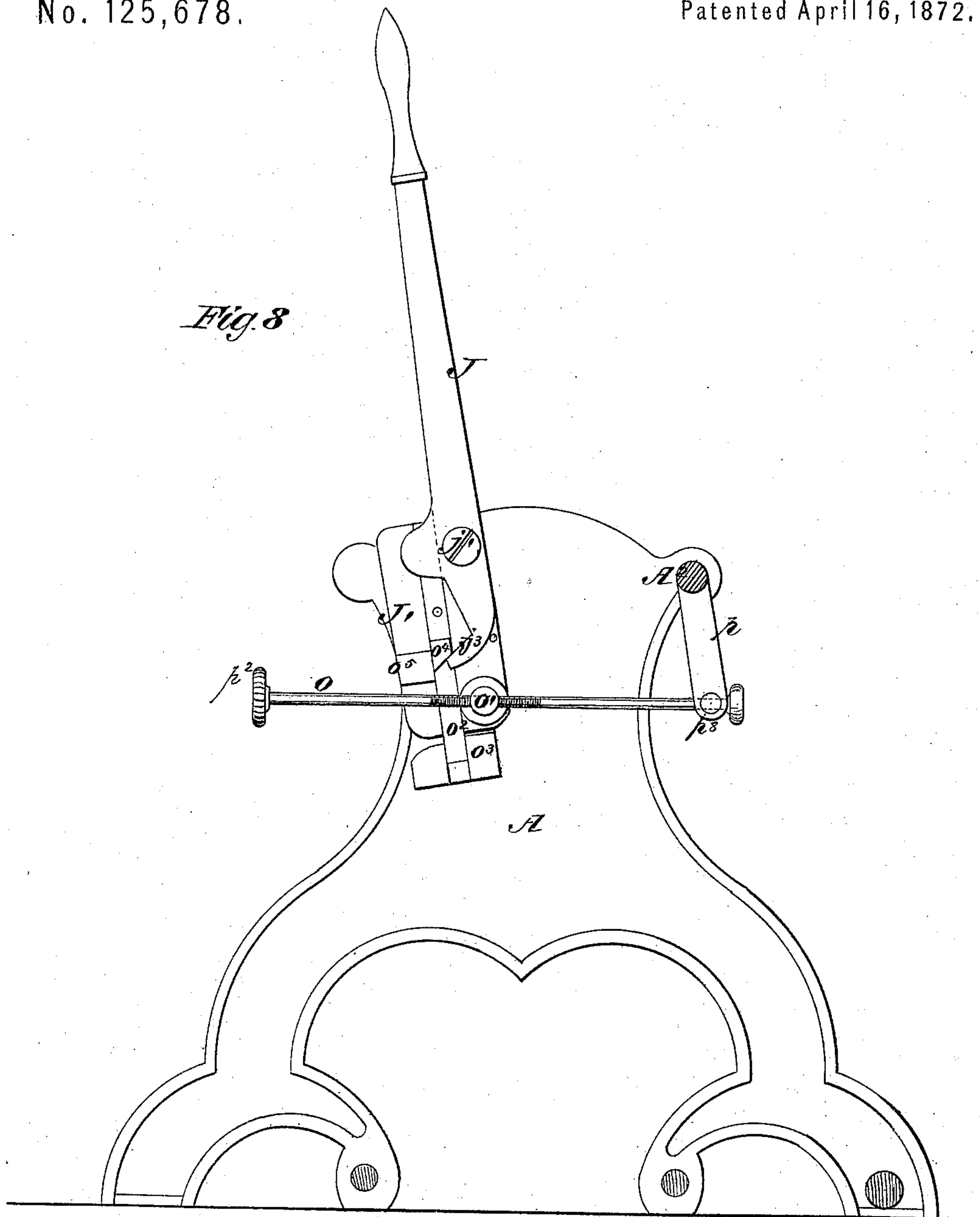
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Printing Press.

6 Sheets--Sheet 5.

No. 125,678.

Patented April 16, 1872.

Fig. 8



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Printing Press.

No. 125,678.

Patented April 16, 1872.

Fig. 9

Sect. on line y, y, of Fig. 4.

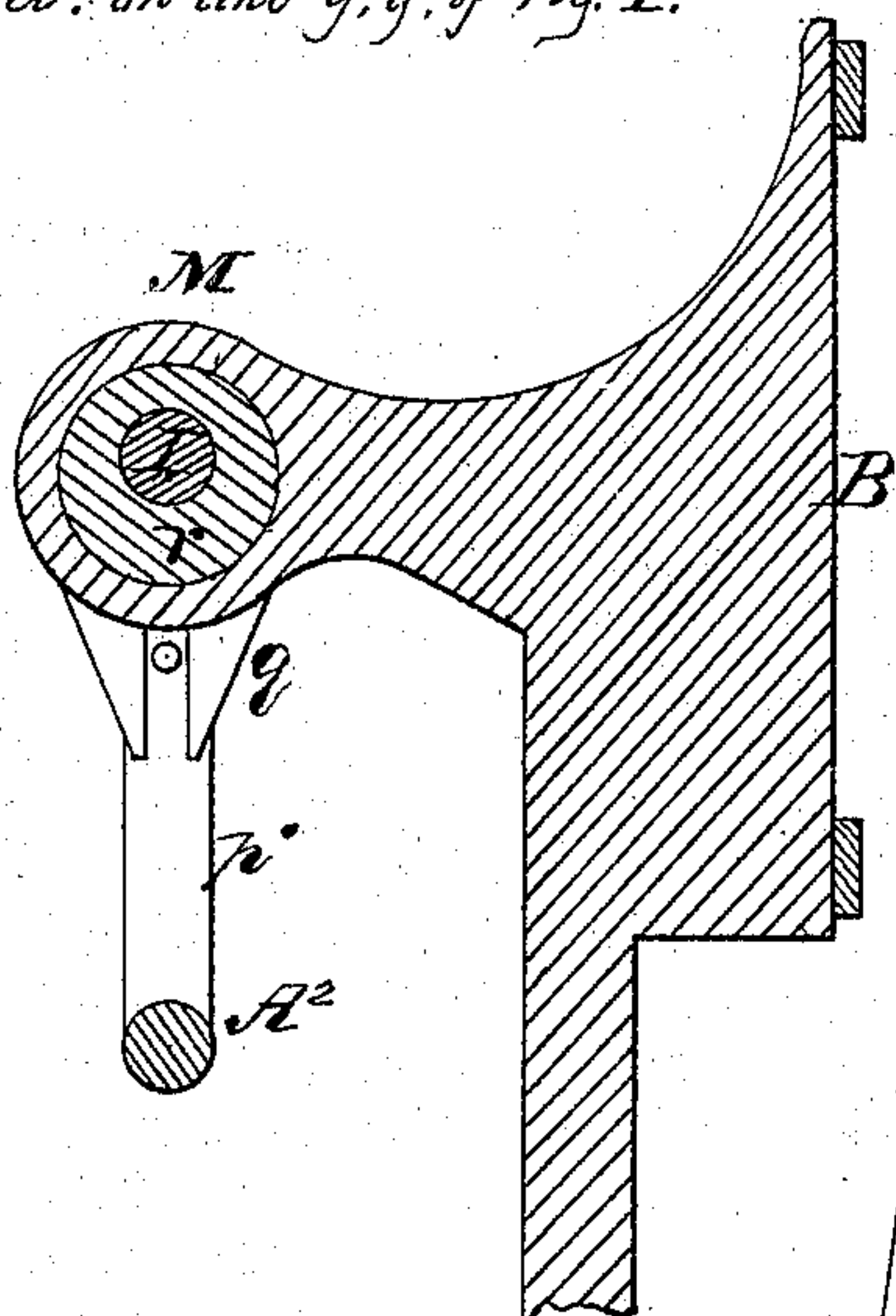


Fig. 10

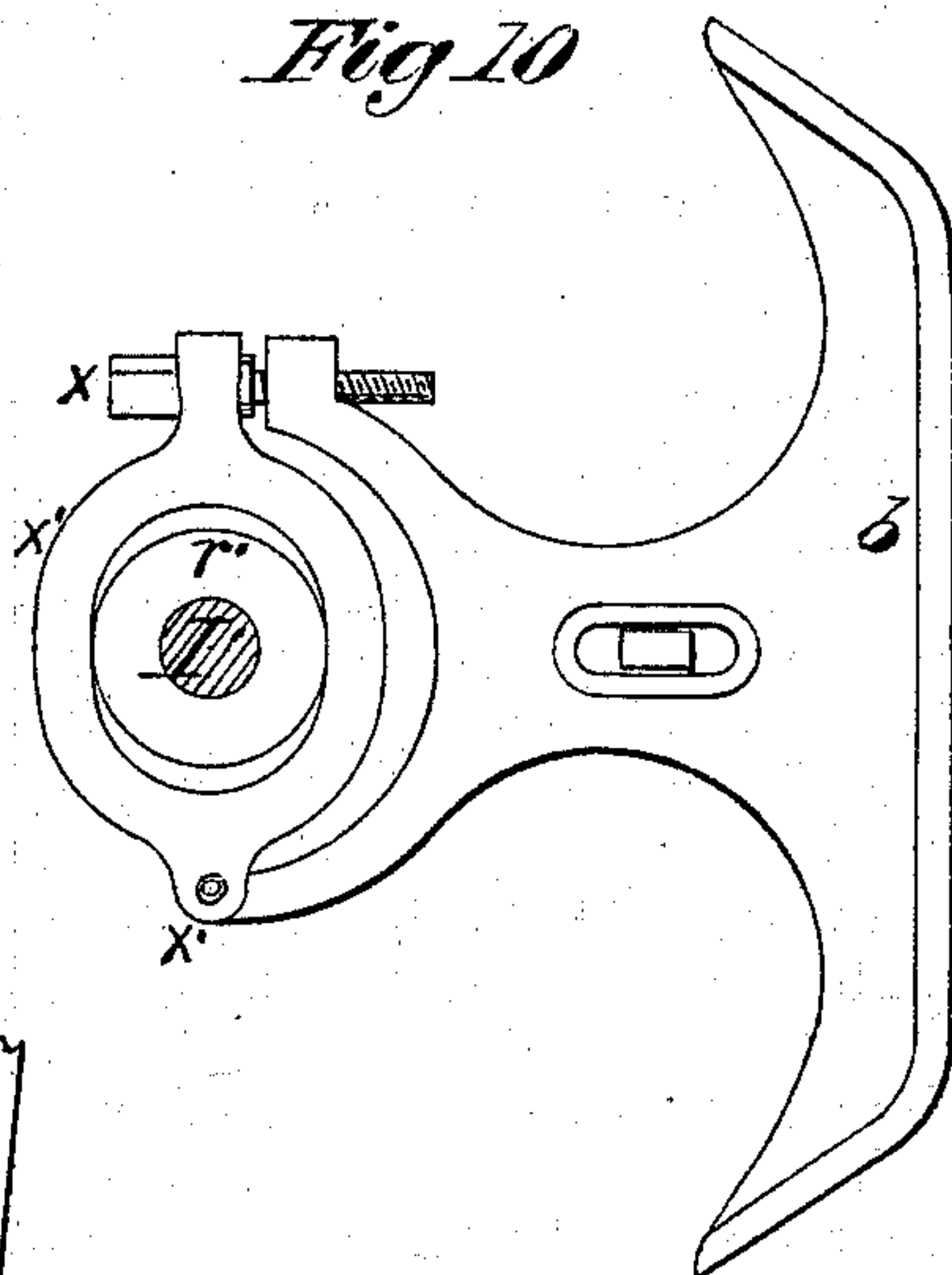
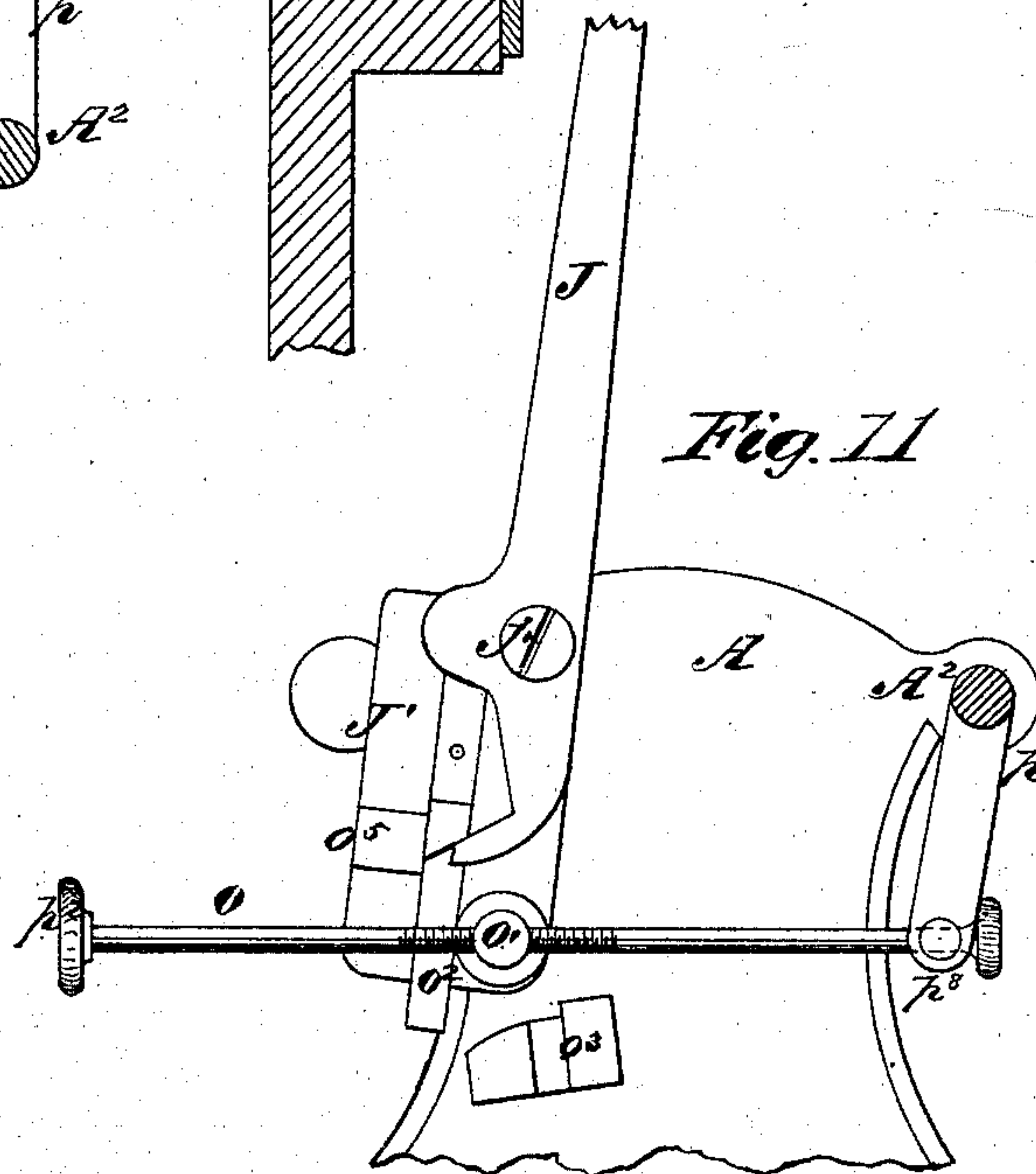


Fig. 11



Witnesses.
R. V. Campbell,
J. N. Campbell.

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by
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UNITED STATES PATENT OFFICE.

WILLIAM HECKERT, OF NEWCASTLE, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO EDWARD S. DURBAN AND DANIEL H. WALLACE, OF SAME PLACE.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 125,678, dated April 16, 1872.

To all whom it may concern:

Be it known that I, WILLIAM HECKERT, of the city of Newcastle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in the Construction of Job and Card Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Plate 1, is an elevation of one side of the machine. Fig. 2, Plate 2, is an elevation of the rear side of the machine. Fig. 3, Plate 3, is a section taken vertically and longitudinally through the machine. Fig. 4, Plate 4, is a section taken transversely through the cams which operate the inking-plate pawls and inking-roller plates, and through which the shaft of the inking-roller cam passes. Fig. 5, Plate 4, is a side view of one of the roller-shaft bearings and one of the vibrating roller-carriers, showing connecting-rod which operates the latter. Figs. 6 and 7, Plate 4, are views in detail of the gripper-frame. Fig. 8, Plate 5, is an inside view of the device for regulating and suspending the impression. Fig. 9, Plate 6, is a section taken in the plane indicated by dotted line $y'y'$, Fig. 4. Fig. 10 shows one of the roller-shaft bearers and the yoke and screw for adjusting it. Fig. 11 shows the device of Fig. 8 in a different position.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements of printing-presses, which are usually denominated job and card presses, wherein the form-bed is stationary, and the platen is caused to vibrate toward and from said bed, assuming, during the taking an impression, a vertical plane, and, during the opposite stroke, an inclined position for admitting the ready introduction of the sheets or cards to be printed.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, A represents the frame of the press, consisting of two side standards, which are secured together by transverse rods, and also by means of a strong vertical casting, B', at the upper end of which is the form-bed B. This form-bed B presents a vertical face toward a vibrating platen, C, and on its posterior side extensions are formed, which terminate in eye-bearings M M, shown in Figs. 2 and 4. These bearings M M receive in them hubs $r r$, which are formed on slotted arms $q q$, through which hubs a shaft, I¹, passes eccentrically, and carries on its extremities crank-wheels I I². Both of the crank-wheels last named have inside hubs $r' r'$, and are keyed on the shaft I¹. The wheel I is also a spur-wheel, and engages with a pinion, V, which is on a driving crank-shaft, A¹, carrying a fly-wheel, A⁴, and receiving motion from a treadle, G, through connecting-rod G'. On the hubs $r' r'$ of the crank-wheels yokes $x' x'$, and also two roller-carriers, K K, are loosely applied. To lugs on the lower ends of the yokes $x' x'$, Fig. 10, the rear lower ends of two roller-bearers, $b b$, are pivoted, and to the upper bifurcated ends of said yokes the rear upper ends of the roller-bearers are attached by adjusting-screws $x x$. The vertical edges of the roller-bearers $b b$ extend beyond the face of the form-bed B, at the sides thereof, and afford bearings for the ends of the inking-rollers while moving over the form-bed; and the upper inclined edges of the bearers $b b$ guide the inking-rollers from and to the form and inking-plate H. By means of the screws $x x$ the bearers can be adjusted for inking-rollers of different sizes. The slots in arms $q q$ receive pins which are on two arms, $p' p'$, and these arms are connected to an oscillating shaft, A², which has its bearings in frame A, and which is connected to a rod, o, by means of an arm, p. By moving a hand-lever, J, backward the bearers $b b$ will be moved forward far enough to prevent the inking-rollers from impinging on the face of the form while passing over the same. This adjustment of the bearers is due to the oscillation of the eccentric hubs $r r$, through which

the shaft I¹ of the crank-wheels passes, moving this shaft forward and backward, and with it the parts which are applied on it, as will be hereinafter more fully described. The inking-rollers *s s* have their end bearings in plates *s*², which are on the ends of rods *t'*, and the inking-roller *s*¹ has its bearings in the ends of rods *t*. The rods *t t'* pass freely through eyes which are formed on the front ends of vibrating arms or carriers *K K*, and the rear ends of these rods are secured to slides on said vibrating arms. Between the eyes and the slides springs *m* and nuts *s*³ are applied on the rods, which springs act to draw the inking-rollers up to their work with more or less force, which is regulated by means of the nuts *s*³. The two roller-carrying arms *K K* are applied loosely on the hubs *r' r'*, and their rear ends are connected together by an arched bar, *K'*, as shown in Fig. 2. One of the arms *K* has an extension formed on it just in advance of its bearing on hub *r'*, to which extension a curved connecting-rod, *N*, is pivoted at *y*. This rod extends forward, and is pivoted to one side of the platen-head *C* in line with the three pivots *a a*² *c*, so that the movements of the platen impart vibrations to the two arms *K K*. On the shaft I¹ cams *g g* are applied, which give lateral vibration to a pawl-carrier, *n*², which is pivoted at *n*¹ to a bracket, *H'*, on the back of the form-bed *B*. The pawl *j* engages with the teeth *h* on the bottom of the inking-plate *H*, and the gravitating-arm *n* keeps the pawl *j* thus engaged. The inking-plate *H*, which is inclined, is supported, by means of a central stud, *i*, in the bracket *H'*, so as to receive an intermittent rotary motion from the pawl *j* when the press is in operation, and thus distribute the ink uniformly on the inking-rollers as they are carried over the plate. The back extensions on the platen-head *C* have pivoted to them at *c c* two links, *c' c'*, which latter are pivoted to the upper extremities of two bracelets, *E E*, that spring from the front side of the casting *B'*. At *a*², on each side of the platen-head *C*, the upper end of a frame, *F*, is pivoted, the lower ends of which frame vibrate about a fulcrum, *u*. At *a a* pitman-rods *D* are pivoted to the sides of the platen-head *C*, which rods are again pivoted at *a*¹ to the crank-wheels I², so that as these wheels rotate the platen is moved up to and from the form-bed. The three pivots *a a*² *c*, on each side of the platen-head, are in the same line, and are so adjusted relatively to each other that the face of the platen is brought squarely up to the form at the termination of one stroke, as shown in Fig. 3, and at the termination of the other stroke the face of the platen is caused to assume the inclined position shown in Fig. 1. During part of the forward and return strokes the platen moves bodily, which movement is allowed by the links *c' c'*. The platen is provided with grippers, the fingers 2 2 of which are adjustable

both in an endwise direction and laterally. The frame 3 is connected by pivots *z* to lugs, which are at the lower corners of the platen *C*, and a tongue, 6, which is rigidly secured to frame 3 at the middle of its length, is received into a sheath, 7, which is secured to the cross-bar of the vibrating frame *F*. The fingers 2 2 are confined to the frame 3 by means of clasps 5 5, which are laterally adjustable, and through which a rod, 12, passes. The rod 12 is secured at its ends to the ends of the frame 3, and passes through blocks 4, which are fitted between the wings of the clasps 5 and the parallel bars of the frame 3. By means of set-screws 4' the clasps are secured rigidly to the frame 3, and by loosening these screws the fingers can be readily adjusted, as above stated. The platen proper is secured to its head by means of screws 8 8, two of which are shown in Fig. 1. The lever *J*, which I have above referred to for adjusting the shaft I forward and backward, is pivoted at *j*¹ to the frame *A*, to which pivot a vibrating plate, *J'*, is also attached, carrying a sliding latch, *o*², that engages with a notched plate, *o*³, on frame *A*, when lever *J* is in the position shown in Figs. 1 and 8. The lever *J* is movable independently of the plate *J'*, and the lower end of this lever is beveled, as at *j*³, for lifting the latch by a beveled lug, *o*⁴, when it is desired to suspend an impression or the inking of the form. When the latch *o*² is released from its notched plate *o*³ the lever *J* and plate *J'* are free to vibrate, as shown by Fig. 11. The connecting-rod *o* is screw-tapped through a nut, *o*¹, on plate *J*, and passes loosely through a pivot at the lower end of arm *p*, as shown in Figs. 1, 2, and 8. By turning this rod about its axis by means of a hand-wheel on its front end, the impression can be very nicely adjusted.

Having described my invention, what I claim as new is—

1. The platen-head *C*, supported by links *c' c'* and frame *F*, and moved by means of pitman-rods *D D*, the pivots of said links, frame, and pitman-rods being arranged in the relation to each other substantially as described.
2. The gripper-frame 3, its clasps 5, blocks 4, set-screws 4', and rod 12, combined with the fingers 2 2, substantially as described.
3. The roller-bearers *b b*, connected to yokes *x' x'* on hubs *r' r'* by means of pivots and adjusting-screws, substantially as described.
4. The crank-wheel shaft I¹, having its bearings in eccentric hubs *r r* in eye-bearings *M M*, in combination with vibrating arms *g g*, *p' p'*, and *p*, connecting-rod *o*, and hand-lever *J*, substantially as and for the purpose described.
5. The adjusting-nuts *s*³ on the rods *t t'*, carrying the inking-rollers, in combination with springs *m* and arms *K K*, substantially as described.
6. The relative arrangement of the point of

attachment of the connecting-rod N to the platen-head C with respect to the points a a^2 c , substantially as described.

7. The releasing-latch o^2 , in combination with the lever J and adjustable shaft I^1 , substantially as and for the purposes described.

8. The regulating-screw connecting-rod o , in combination with lever J and the adjustable shaft I^1 .

9. In a job-printing press, I claim the ad-

justable roller-bearers b and adjustable shaft I^1 combined, substantially as described.

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

WM. HECKERT.

Witnesses:

LAURA HECKERT,
JOS. H. FREY.