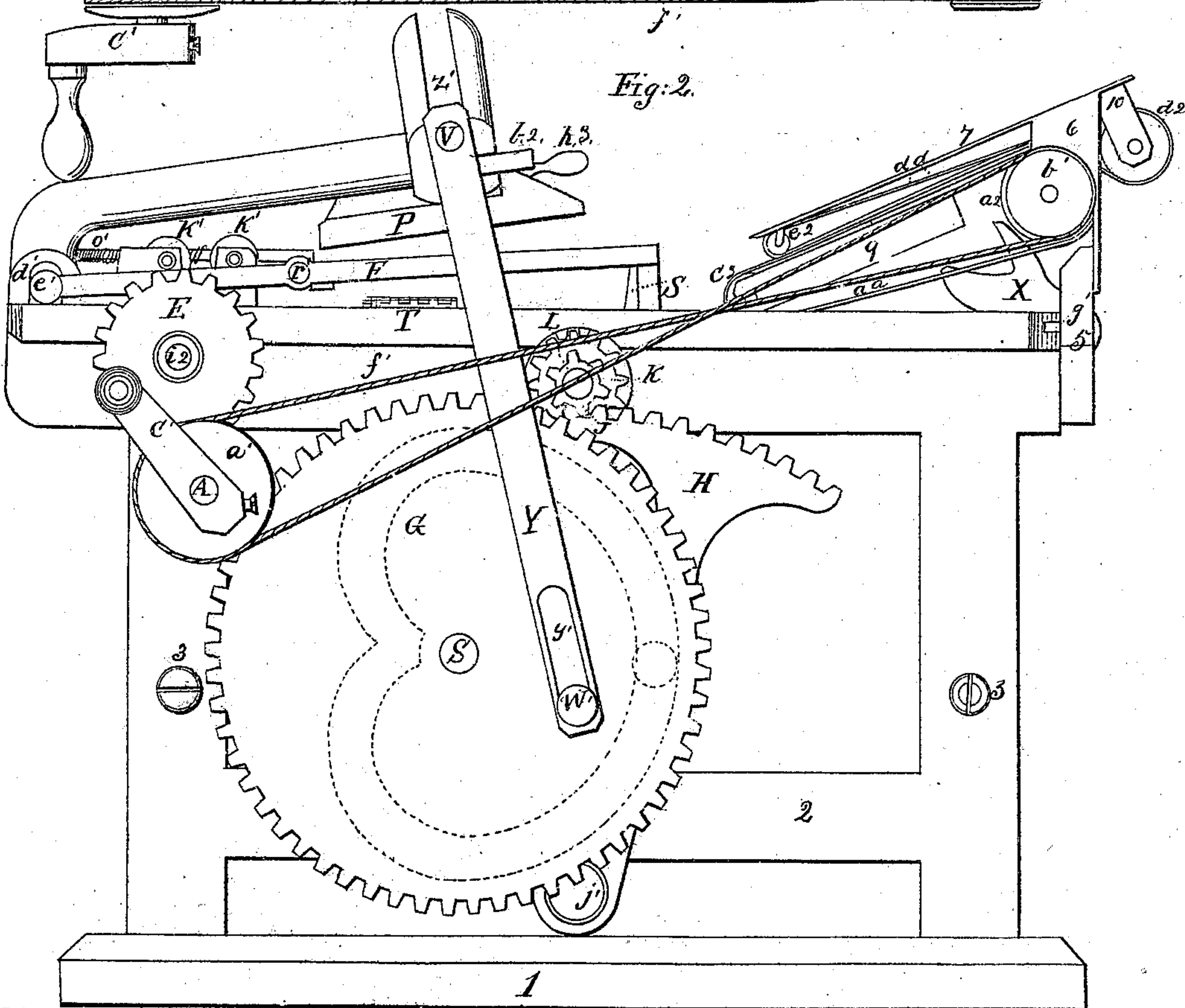
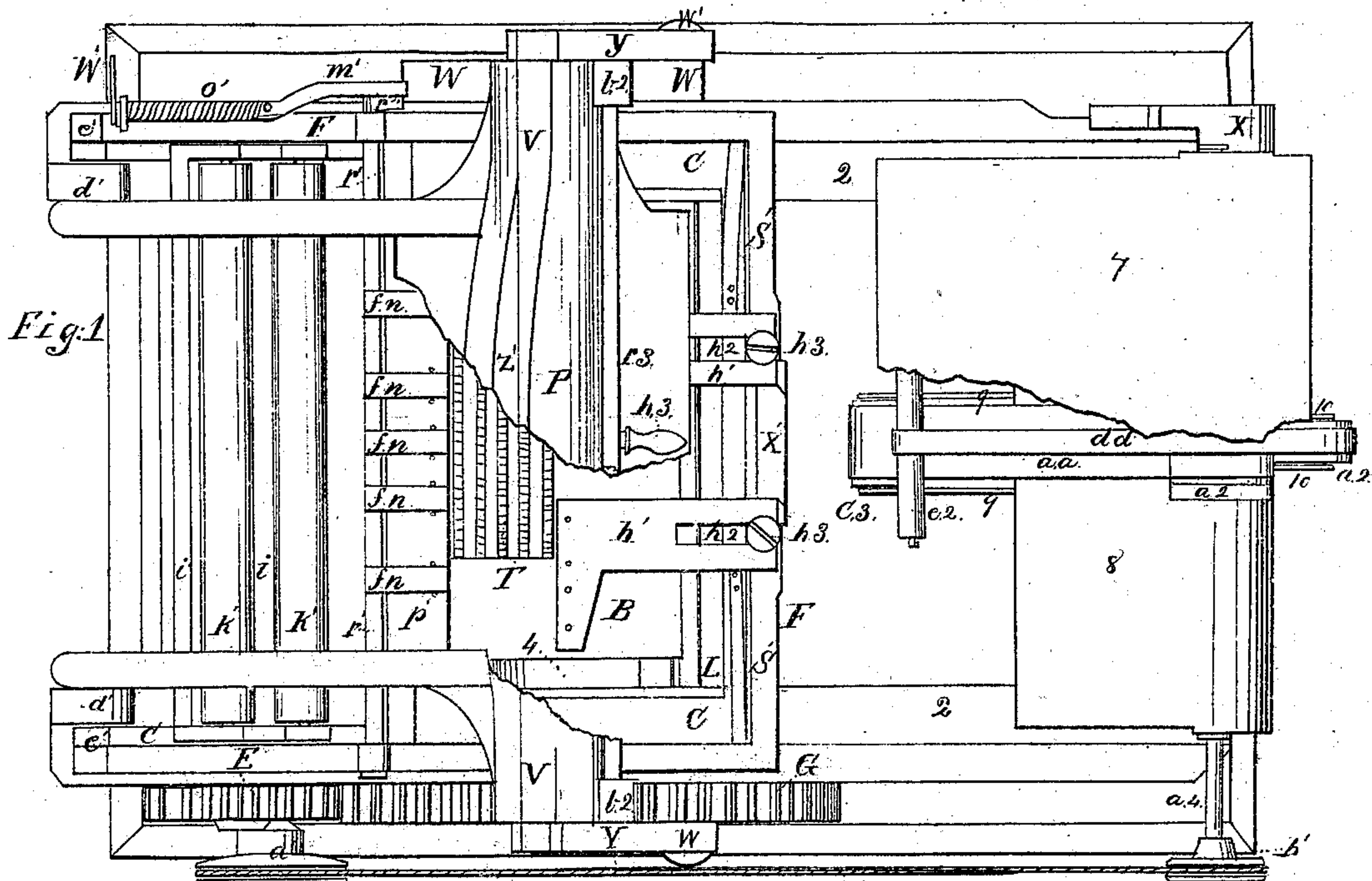


F. L. Bailey Sheet 1. 2 Sheets
Printing Press.

N^o 1168.
32/72.

Patented Apr. 30. 1861.



WITNESSES.

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Fig. 4.

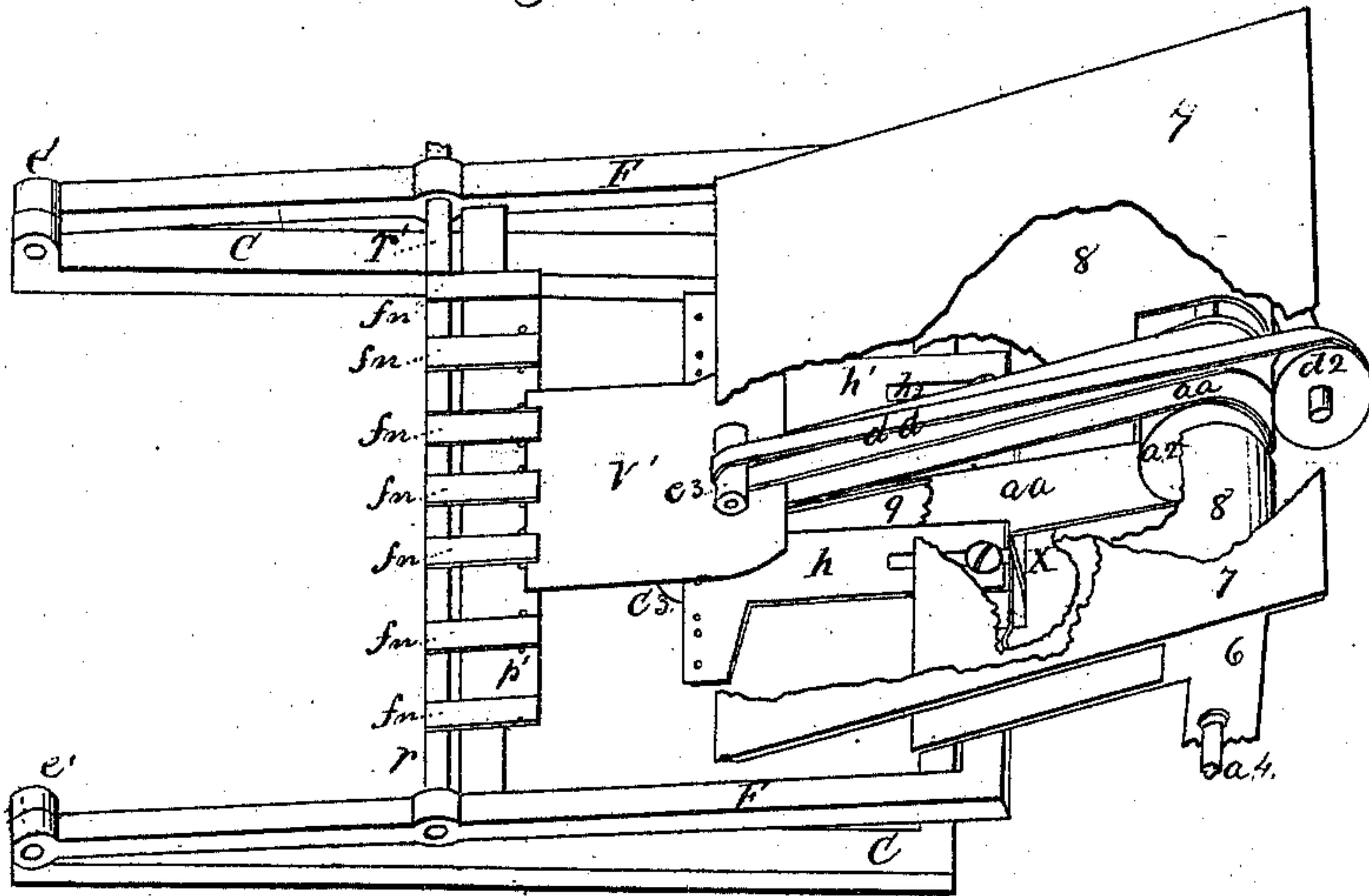
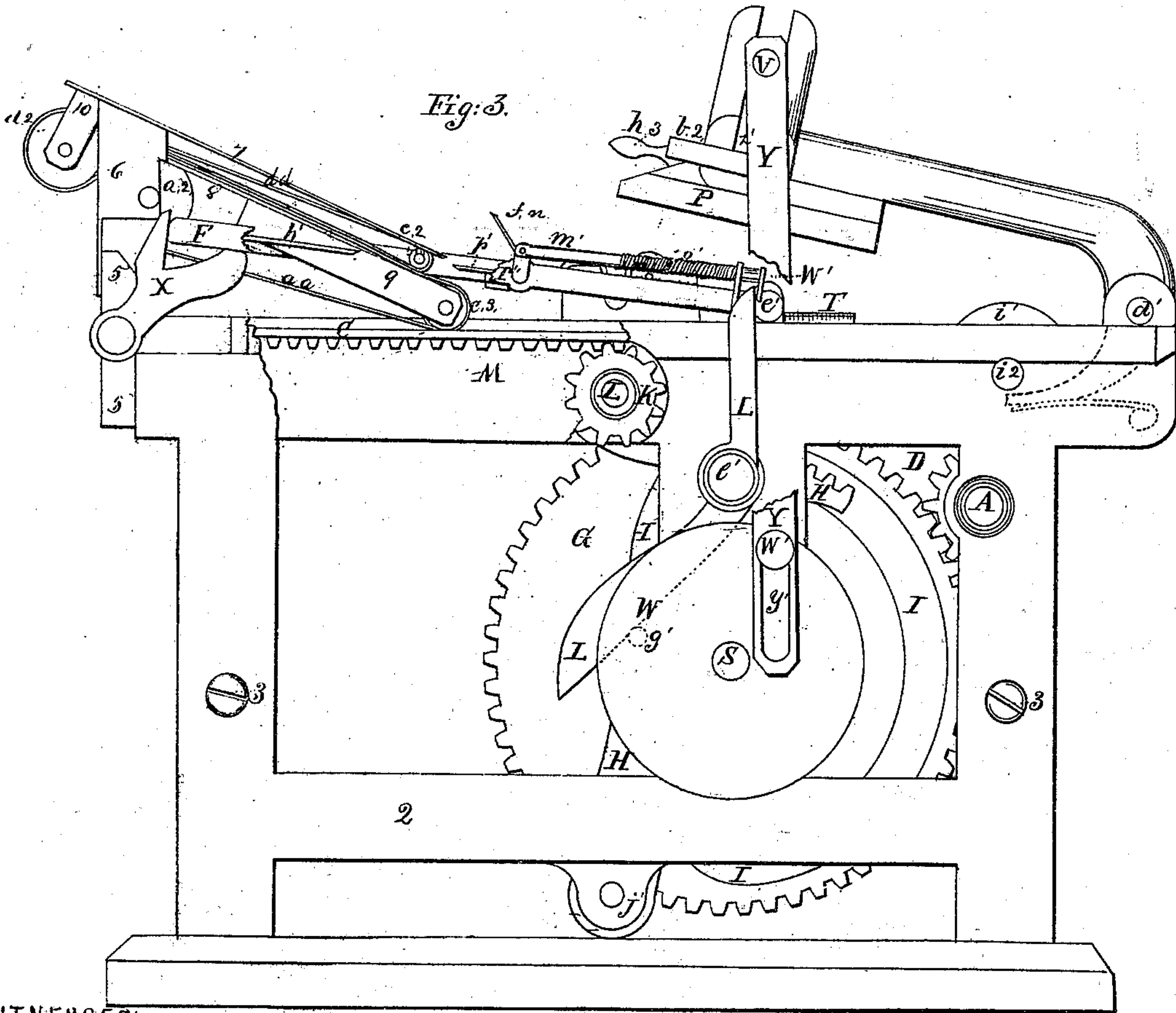


Fig. 3.



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FRANKLIN L. BAILEY, OF BOSTON, MASSACHUSETTS.

PRINTING-PRESS.

Specification of Letters Patent No. 32,172, dated April 30, 1861.

To all whom it may concern:

Be it known that I, FRANKLIN L. BAILEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Printing - Presses; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the characters of reference marked thereon.

To enable others skilled in the art to make use of my invention I will proceed to describe its construction and operation.

Figure 1, is a top view of the press. Fig. 2, is a view from the left side. Fig. 3, is a view from the right side with a portion of the frame broken away showing the carriage, rack, &c. Fig. 4, is a detached perspective view of the nipper frame, feed table and belts showing their relative positions as a sheet is being taken off.

The two sides of the press are seen at 2, 2, (Figs. 1 and 2).

In Fig. 1, at 4, is seen a cross-beam which connects the two sides and which, with the girts 3, 3, (Fig. 2) the vase 1, (Figs. 2 and 3,) together with the two sides form a rigid and firm frame to which all the other parts of the press are attached.

Above the cross-beam and resting on it for support is the type-bed B, which has on its upper surface the form of type T, which are face upward. Directly over the bed B, and type T, is suspended the platen P, which being hinged to the frame at d' , d' , and having its plane surface on its under side is made to give the impression, by swinging or vibrating downward against the type. This platen is kept from falling by its own weight against the type by a spring $s s s$ situated near one of the hinges d' , as seen dotted in lines in Fig. 3, which presses it upward.

A, (Figs. 1 and 2) is the shaft to which power is applied to operate all the machinery. c' , is a crank fixed to the outer end of this shaft. Also a pinion D, (Fig. 3) is fixed to this shaft. This pinion is made to join with the gear E, on the end of the ink cylinder shaft i^2 , to which shaft the ink cylinder i' , (Fig. 3,) is also fixed. The said pinion D also joins and revolves the large gear G, Fig. 3, which is on one side and also the wheel W, on the opposite side of the press, by the shaft S, to which said gear and wheel are firmly fixed.

On the outer surface of the gear G, and

also of the wheel W, at a point one side of the center of motion are fixed the wrists or crank pins W' , W' , (Figs. 2 and 3) which, with the connecting rods Y, Y, and the slots y' , y' , on their lower ends, square rod V, that joins their upper ends, and the cavity or groove Z' , in the platen, constitute, (by the continued rotation of the shaft S,) the means of giving the impression and of giving to the platen P, its period of rest while the printed sheet is being removed. Although the cavity Z' , in the platen and the slots y' , y' , are both described, yet either one alone can be adopted with precisely the same effect. To prevent an impression being taken at any time, it is "thrown off" by withdrawing the blocks b^2 , b^2 , on the platen P, by means of the rod r^3 , and handle h^3 , Fig. 1, (which are connected to the blocks) from beneath the ends of the square rod V, so as to allow it to descend farther in the cavity Z' , and not press the platen so far as to give an impression. The use of these movable blocks or wedges, and their connections is a part of this invention.

C, is the carriage which carries the frisket frame F, and ink rollers K' , K' , which ink the type. This carriage has a horizontal, longitudinal movement in grooves g' , g' , (Fig. 2) in the sides of the frame 2, 2. The necessary motions and periods of rest are given to this carriage by the cam groove I, (Fig. 3,) (seen in dotted lines on the gear G, Fig. 2), on the inner surface of the large gear G. The vibrating segmental rack H, which is hinged to the frame at j' , carrying on its outer surface a roller which fits into and follows the groove I, receives a motion, which it imparts to the carriage C, by means of the pinion J, which it joins, shaft L, and small gears K, K, which in turn join the rack M, on the carriage C; all seen in Figs. 2 and 3—the pinion J, and gears K, K, being firmly fixed to the shaft L.

The frisket frame F, which carries the series of finger nippers $f n$, $f n$, &c. on their rod r' , and the adjustable clasps or nippers h' , h' , is hinged to the carriage C, at e' , e' , and will swing down toward the type as the platen descends and presses it, with its sheet of paper to get an impression, there being springs attached to the carriage and bearing up under the said frame at S' , S' , (Fig. 1,) it will rise as the pressure of the platen is removed by its upward motion. As this frame has its center of

motion near that of the platen the paper held between the fingers $f\ n$, and nipper plate p' , and resting also on the upper side of the adjustable clasps h' , h' , will always
 5 be pressed (evenly) and properly down to the type. The clasps h' , h' , are made to be set by the slots h^2 , h^2 , and screws h^3 , h^3 , as the size of the sheet of paper may require, so that their inner edges will come under one
 10 margin of the sheet—the immovable nippers $f\ n$, $f\ n$, &c. which have hold of the opposite margin, governing this adjustment.

The frisket frame F, is made to swing upward when its carriage C, is near the extremity of its outward movement, by means
 15 of the button or fork X, (Fig. 3,) against which the frame in moving out comes in contact and on which it rolls at the same time it is lifted. The frame F, is lifted at
 20 this point that the upper surface of the plate p' , may come just beneath the margin of the sheet which projects over the edge of the feed-table 7; the fingers $f\ n$, $f\ n$, $f\ n$, &c. having previously been lifted as seen in Fig.
 25 3 come over the same margin, so that just previous to the return of the carriage they may drop and with the said plate p' take hold of the margin of the sheet which is to be printed. The nippers $f\ n$ &c., are closed
 30 by the spiral spring O' , which is on and operates the sliding rod m' , this rod being pivoted to the crank r'' , on the end of the rod r' . The rod m' , passing through a stud on the frame F, has an arm on it which comes
 35 in contact, as the carriage C, moves out, with the upper end of the vibrating lever L, and is made to slide in its stud and open the nippers. The lever L, being operated by a
 40 pin q' , on the inner surface of the wheel W, bearing against its lower end (as dotted in Fig. 3). The pin at the proper time moves away from and allows the lever to drop and the nippers to close by the force of the spring O' .

45 The feed table, on which the sheets to be printed are laid, is supported from the frame by the standards 5, 5, and 6, 6. This table, which is inclined, has attached to its lower edge and under side the pulley e^2 , also from
 50 beneath its upper edge the pulley d^2 , over which pulleys runs the belt $d\ d$, under the feed table and inclined in the same direction is the sub-table or sheet supporter 8, and upon the upper surface of which the sheet
 55 slides as it is going off) being at its highest point bent into a perpendicular direction. From the lower edge of this sheet supporter project the arms 9, 9, which support the pulley e^3 and end of the belt $a\ a$.

60 Through the standards 6, 6, is suspended the shaft a^4 , which has fixed to it the pulley a^2 , which is so placed that its upper surface appears just above the curved surface of the table 8, through an aperture therein; and
 65 along which surface runs the belt $a\ a$, as it

goes upward and over said pulley a^2 . The above mentioned belt $d\ d$, rests on the belt $a\ a$, and receives from it, its motion. The belt $a\ a$, pulley a^2 , and shaft a^4 , receive their
 70 motion by the pulley b' , and belt f' , from the pulley a' , on the propelling shaft A. By using the vibrating platen P, it is not necessary that the form be placed on the center of the bed B, in order to insure an even im-
 75 pression. As the series of nippers $f\ n$, &c. and their plate p' , are fixed, one margin or edge of the form is placed alongside of these nippers at such a distance as the required
 80 margin on the printed sheet may determine; the finger nippers taking hold of this margin on one side of the sheet as it projects from the feed table 7, before mentioned. The
 85 clasps $h'\ h'$, are adjusted so their inner edges or ends will come under the opposite margin of the sheet wherever that may be. In case of printing large sheets, it sometimes, may
 90 be necessary to draw some strings from holes in the inner edge of the clasps, to corresponding ones in the plate p' , so the side margins of the sheets will rest on them, forming with the plate p' and clasps $h'\ h'$,
 95 a frame, as it were, (excepting the space between the clasps in the outer side of the form and frame F, at x' , which is made for the belt $a\ a$, or substitute) upon which the sheet rests when on its inward movement, and
 while being removed from the type, and also in its outward movement, until removed by the belt $a\ a$.

The frame F, and also the carriage C, is
 100 bent in a rectangular form at X' , downward, so when the carriage and frame move outwardly, they may pass freely underneath the pulley e^3 , and lower end of the belt $a\ a$,—
 105 (or mechanical substitute used to take the sheets off). The clasps $h'\ h'$, instead of being formed in one wide one, or being placed close together, and reaching the whole width of the form, are separated a little distance
 110 apart, sufficiently to admit the narrow belt $a\ a$, between them—as it also passes below them—when the frame F, on which they are fixed, moves in or out, the edge of the paper at that part of the sheet, which reaches
 115 across the space between the clasps $h'\ h'$, whether the sheet be large or small, will come in contact with the inclined belt $a\ a$, in the course of the outward movement of the carriage, and as the belt $a\ a$, has an upward
 120 inclined motion from a point below to a point above the plane of the movement of the sheet, it will always intercept it and carry it up away from the frame, and clasps, and strings,—which were used for the pur-
 125 pose of separating it from the type—between itself and its dependent belt $d\ d$. In this peculiar arrangement of the clasps or nippers $h'\ h'$, and the space between them, and the displacing or cutting away the frame and carriage where they come in range with
 130

the belt *a a*, (or its mechanical equivalent), so as to allow a free passage for it, to the edge of the different sized sheets, is found one of the important features of this invention, for which I desire Letters Patent. When operating the press a sheet of plain paper is laid on the feed table 7, with its edge projecting over the lower edge of the table. By turning the crank *c'*, the carriage moves out, the nipper frame *F*, rises, the finger nippers lift and come above, and the plate *p'*, beneath the sheet, then close on the edge of the paper, the carriage, then moves inward, the paper falls on the clasps *h' h'*, and is by them partly supported; when it arrives under the platen the impression is taken, the clasps pressing the paper against the platen as it moves down and upward again, by means of the springs *S', S'*, which are under the frame, and aid in separating the paper from the form; when this is done the carriage moves outward, the belt *a a*, enters into the space between the clasps *h' h'*. When the sheet strikes it, it is carried upward by the said belt and dependent belt *d d*, over the upper surface of the sheet holder 8, into its receptacle; the nippers *f n*, having previously been lifted by means of the lever *L*, the carriage now comes to a state of rest, previous to its return again.

What I claim as my invention and wish to secure by Letters Patent, is—

1. The inclined belt *a a*, or its equivalent, and the clasps *h' h'*, or equivalents, when the same are arranged in combination with the nipper frame *F*, and its rectangular depression *X'*, or their equivalents, substan-

tially as above described and for the purpose specified.

2. The stationary nippers *f n* &c. and adjustable clasps *h' h'*, or their equivalents, when the same are in combination with the belt *a a*, or its equivalent substantially as described.

3. The bands *a a*, and *d d*, or their equivalents, when the same are in combination with the sheet supporter 8, substantially as above described and for the purpose specified.

4. Raising the frame *F*, by its own outward movement and the button *X*, or their equivalents substantially as described.

5. The crank *r''*, sliding rod *m'* spring *O'*, and lever *L*, when the same are arranged and operate substantially as above described.

6. The carriage *C*, when the same is in combination with the vibrating nipper frame *F*, or its equivalent, substantially as above described.

7. The combination of the blocks *b², b²*, and rod *V*, when the same are arranged substantially as above described and for the purpose specified.

8. The feed table 7, when the same is in combination with the sheet supporter 8, and belt *a a*, or their equivalents, substantially as above described.

In testimony whereof I have hereto set my signature this twentieth day of September A. D. 1860.

FRANKLIN L. BAILEY.

Witnesses:

B. E. PERRY,
SUMNER ALBEE.