

G. W. HUNT.
Printing-Presses.

No. 139,156.

Patented May 20, 1873.

Fig. 2.

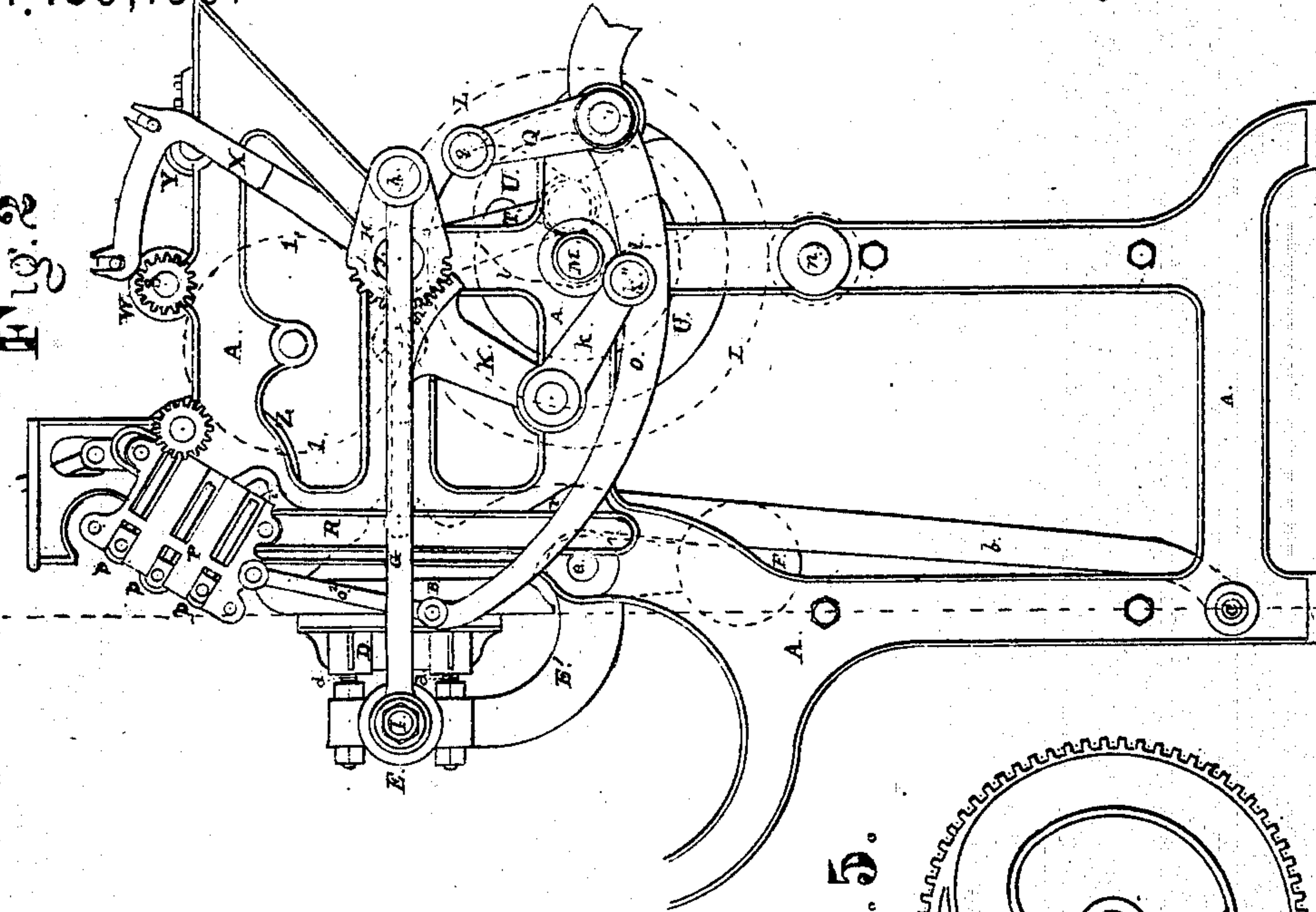


Fig. 3.

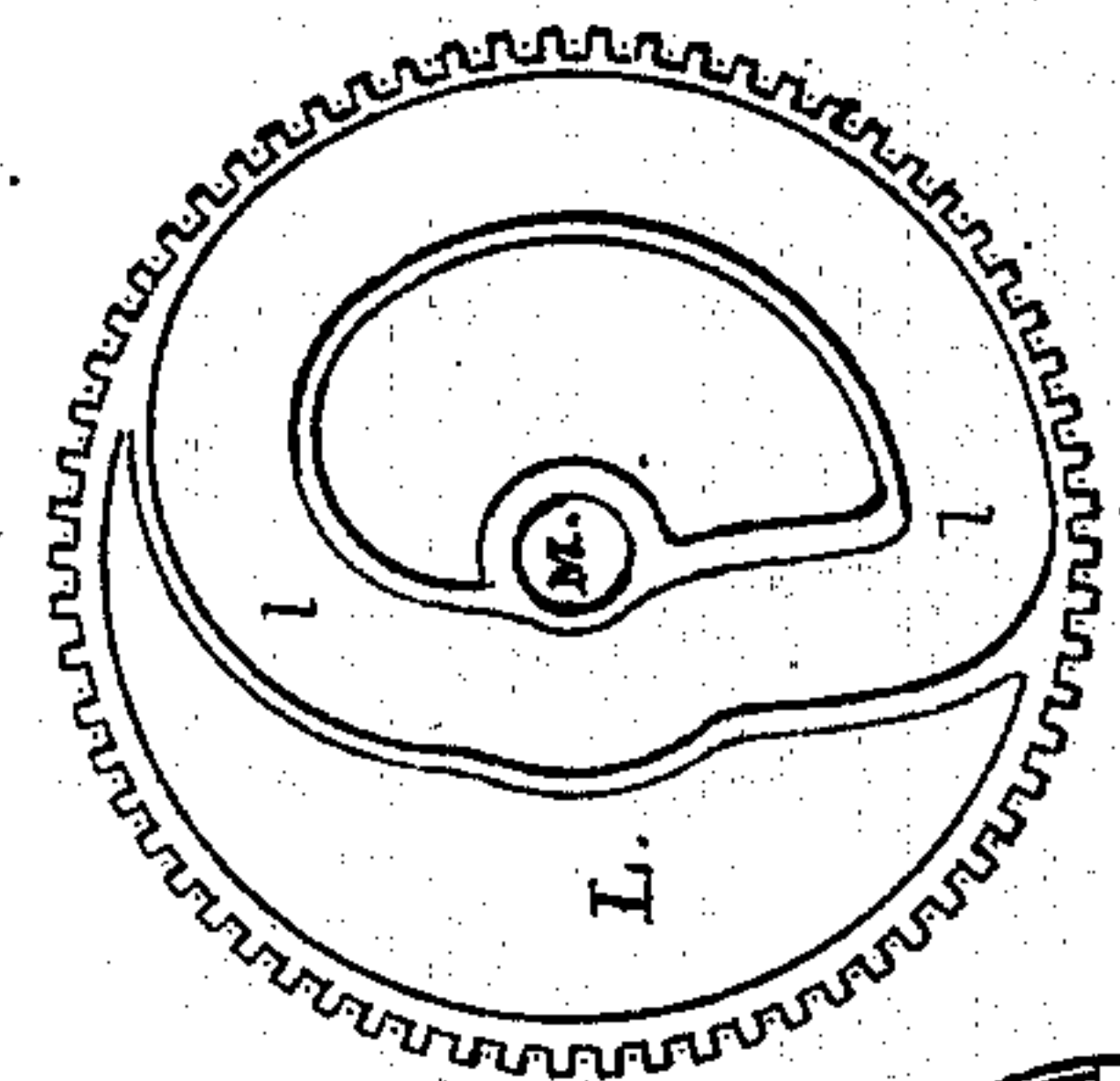
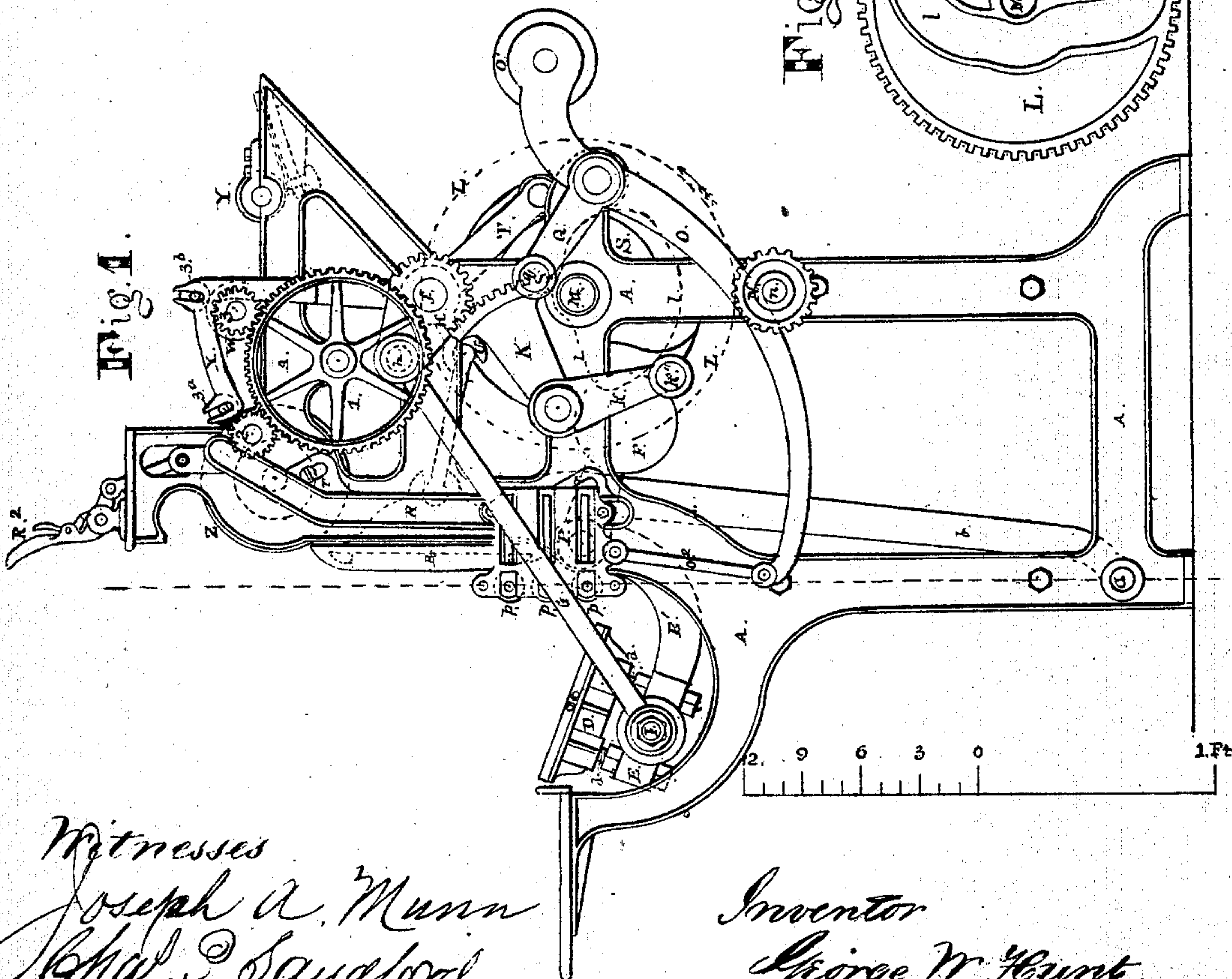


Fig. 1.



Witnesses
Joseph A. Munn
Chas. P. Sanford

Inventor
George W. Hunt.

G. W. HUNT.
Printing-Presses.

No. 139,156.

Patented May 20, 1873.

Fig. 4.

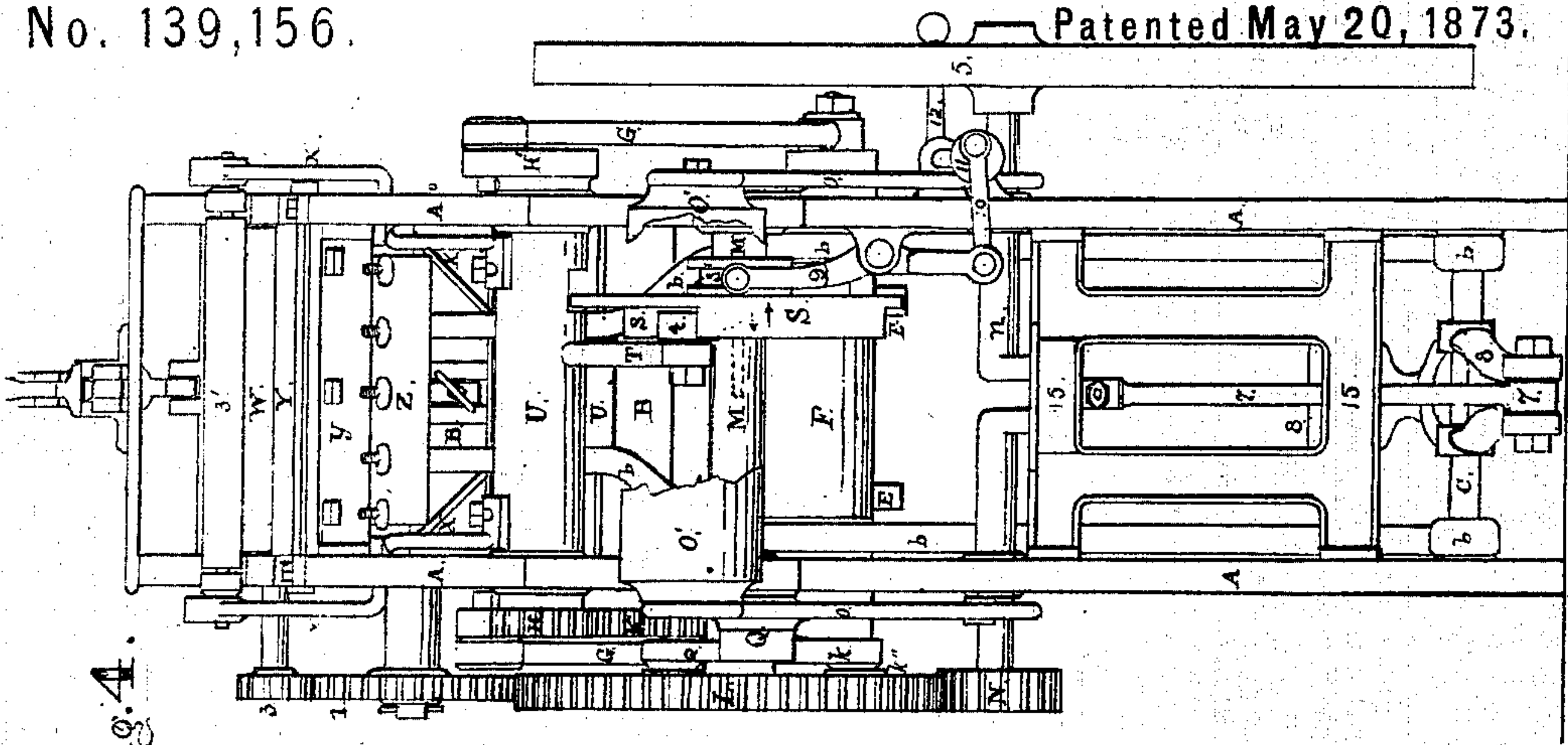
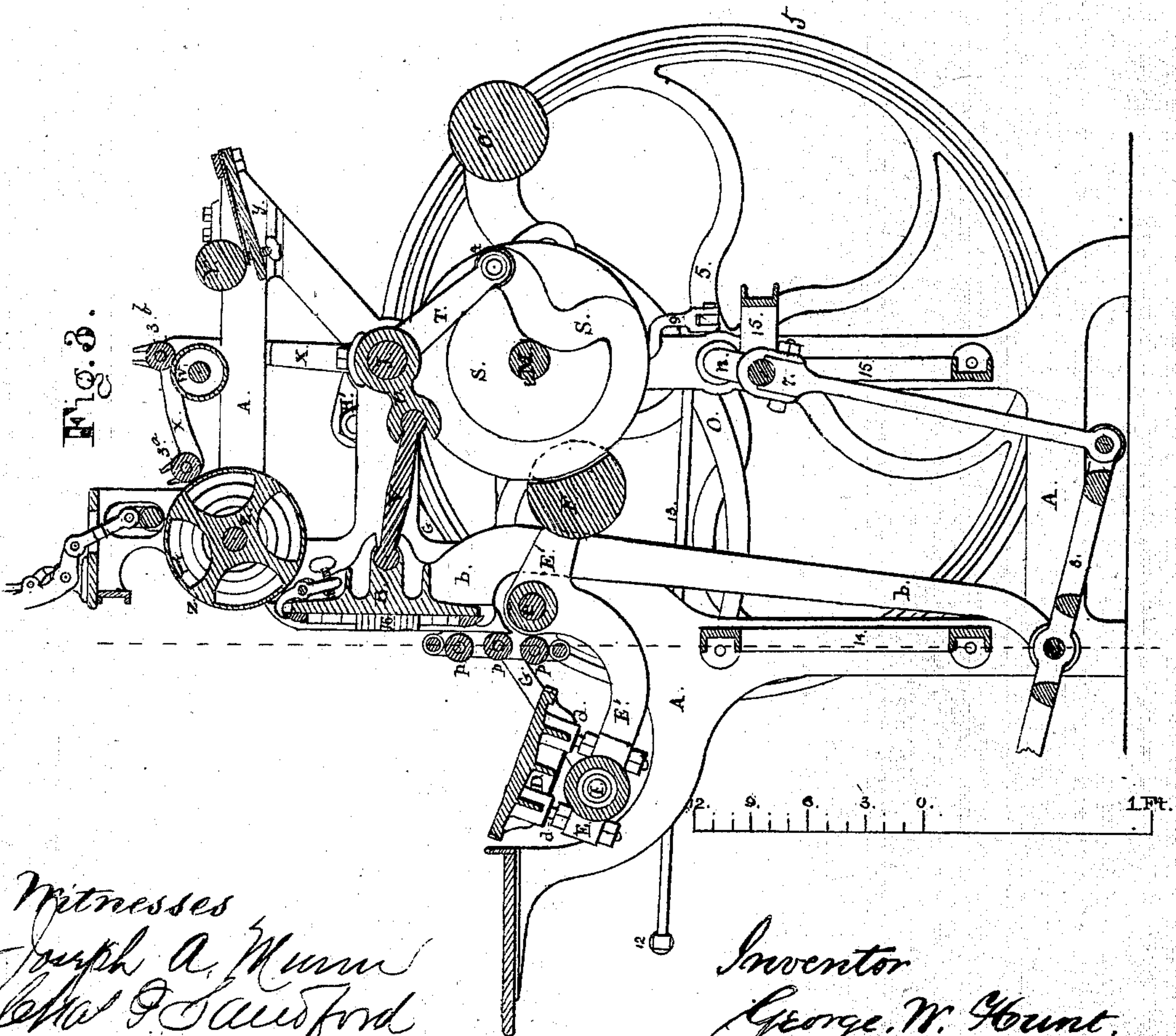


Fig. 3.



Witnesses
Joseph A. Munro
John D. Sanford

Inventor
George W. Hunt.

UNITED STATES PATENT OFFICE.

GEORGE W. HUNT, OF NEWBURG, NEW YORK.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. **139,156**, dated May 20, 1873; application filed May 31, 1872.

To all whom it may concern:

Be it known that I, GEORGE W. HUNT, of Newburg, county of Orange, State of New York, have invented certain Improvements in Printing-Presses, of which the following is a specification:

The invention relates to the bed and the manner in which the same is operated to a small extent, in combination with a platen having a greater motion. The bed has a movement to and from the platen at a period while the said platen is held stationary. The bed after the impression is given is drawn back, and remains at rest while the inking-rollers pass down and up over its face and type, and rest upon and receive their ink from a cylinder placed over it. The invention also relates to the method of attaching or hinging a vibrating platen to a shaft placed in front of the line of its face, in order to shorten the point of vibration, and at the same time allow the inking-rollers to pass down between said shaft and the platen as required in inking the form or type, and the means employed to vibrate said platen to and from the operator, and hold the same stationary while at the extreme of each movement. At one extreme it is held stationary in a position nearly horizontal with its face up to receive the sheet to be printed. At the other extreme it is held stationary in a vertical position to receive the impression, which is given by the forward movement of the bed. The invention further relates to ink-carrier rollers in connection with a second or intermediate cylinder, the object of which is to break up and even the ink as received in a crude state, or from the fountain, by which means the ink is evenly and smoothly laid upon the distribution-cylinder, and transferred from the same to the form-rollers. The invention further relates to adjustable guides or ways, by which the carrier-frame and the form-rollers suspended in said frame are kept in their position, and made to move parallel with the face of the bed and type, and to be deflected from a right line to receive the ink from the cylinder. These ways are so constructed and attached to side frames as to admit of their being moved toward or away from the face of bed by means of a hand-lever upon the top of press to which they are con-

nected, and by which and through angular slots in the ears on the back of said ways, an upward and downward and angular movement is given, and the form-rollers, when required, moved away from the type and cylinder, and pass clear from each. By this arrangement the form-rollers are prevented from resting upon the type or cylinder, or from taking or distributing the ink only as required in printing, thus avoiding the serious evil due to superfluous ink. It also holds the rollers entirely clear when the mechanism is at rest. The invention further consists in the combination, with an adjustable cam imparting motion to the bed, of a novel shipping mechanism, for throwing the cam in and out of gear, with the devices intermediate between it and the bed, as occasion may require. The invention further consists in connecting the bed and the platen in such a manner that the latter will form a counteracting abutment against the reaction of the former in making the impression.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawing forms a part of this specification.

Figure 1 is a side view of my improved press, showing the platen in a position to receive the sheet to be printed; also the operating parts connected thereto. Fig. 2 is a side view, showing the platen raised and receiving the impression from the bed. Fig. 3 is a vertical section, showing interior of press. Fig. 4 is a rear view of the same. Fig. 5 is an inside view of spur-wheel detached from its position, in order to more clearly show the operating parts of the press and the grooved cam upon its inner face.

Similar letters of reference indicate like parts in all cases.

A is the frame of press, substantially constructed of cast-iron, and connected by cross-girths 14 and 15, to which the sides are bolted; B, the bed, upon the face of which the form or chase containing the type is secured by the hook projections at the bottom and the clamp-hook at the top, as shown. This bed B is supported by the standards *b b* upon the shaft C near the bottom of press; said shaft

has end bearings in the sides A. A forward-and-backward movement is given to the bed B by the attached link V and impression-beam U, operated by means of the arm T, stud and roller 4, by the cam S, carried upon the shaft M. Upon the outer end of this shaft M the spur-wheel L is attached and operated by the pinion N upon the crank-shaft *n* by the treadle 8, momentum being given by the fly-wheel 5. It will be understood that power may be applied, if desired. Upon the inner side of the spur-wheel L is a cam-shaped groove, *l*. By the revolving of said wheel and the formation of the cam an intermittent vibratory movement is imparted through the arm *k* and stud and roller *k''* to the segment K, and thus to the matched segment which is fast to and forms a part of the crank H, keyed to the rocking shaft J and crank H' on the opposite end of the rock-shaft J. This crank H, with another similar one, H', gives motion, by the connecting-rods G G, to the platen D. Said platen D is adjusted and attached by the impression-screws *d d d d* to the platen-beam E, and suspended upon the shaft *e* by the beam-arms E', and counterbalanced by the weight F at their opposite ends. Two cylinders, W and Z, are mounted above the bed B, and on top of the frame A, and an ink-fountain, *y*, and its roller Y. One of these, a revolving and vibrating cylinder, Z, is placed over and a little back of the face of the bed. Directly behind, and between said cylinder and ink-fountain, parallel with it, is mounted a smaller or intermediate ink-breaking cylinder, W. These cylinders W and Z derive their motion from the spur-wheel L and an intermediate gear-wheel, 1, meshing into pinions 2 and 3 on the ends of their respective shafts. Attached to the impression-beam U, and projecting upward, are carrier-arms X X, supporting two rollers, 3^a and 3^b, resting in slots in the top of the same. As the beam U rocks to give the movement to the bed B it also vibrates the arms X X, and moves the rollers 3^a and 3^b forward and backward, conveying ink, by the roller 3^b from the fountain-roller Y, to the intermediate cylinder W, and conveying the ink, well broken and evenly laid by the roller 3^a, from the cylinder W to the distributing-cylinder Z. To the sides of press, and directly behind the bearers of bed B, are mounted adjustable ways or grooved guides R, into which play rollers attached to the under side of the carrier-frame P. These ways are provided with ears attached to their backs, in which are angular slots, and they are held in position by screw-pins *r*, with flat heads, fitted to the slots, and screwed into the side frames A. The tops of these ways R are connected together by a cross-girth, to the center of which is attached a link connecting with the hand-lever R² placed above it. This hand-lever is provided with a pawl, which drops into niches in the top of the stand in which the lever R²

is pivoted, and holds the same in position when operated.

The ink-rollers *p p p* are moved down and up again as follows: Upon either side of the press are curved levers O, having bearings upon studs secured in side frames A, and directly opposite the stud or bearing of segment K and equidistant from the center of shaft M. The back end of these levers O are connected together by a weight, *o*¹, to counterbalance the weight of their front projecting ends and the carrier-frames P, to which they are connected by the links *o*². To one of these levers is an attached arm, Q, provided with a stud and roller, *q*, fitted to the cam-groove *l* on the inner side of the spur-wheel L.

It will be noticed that the levers O and the segment K receive their motion from the same cam-groove *l*, and have their center bearings on opposite sides of the shaft M, in a direct line with the center of the same, and are operated alternately with each other. Thus, when the platen D is down receiving the sheet the levers O are passing the carrier-frame P, with the inking-rollers *p p p* down and up over the face of the bed or type, and when the rollers are returned to the cylinder Z, resting upon and receiving their ink, the platen D is raised and receives the impression, and is lowered again to its former position. The cam S, mounted upon the shaft M by means of a feather, may be moved away from the arm T and its roller *t* at will.

In such case the operation of printing is suspended as follows: The lever 9, pivoted near its center in the bracket on side frame, is forked at the top end and fitted into the groove S' in the hub of said cam. The lower end of said lever is connected to the crank-wheel 11 on the crank-rod 13 by the link 10. The crank-rod 13 is suspended in brackets on the outside of frame, and has a handle, 12, attached to its front end convenient for the operator. By raising said handle, and thus turning the rod and wheel, a forward movement is given to the lower end of the forked lever 9, and an opposite movement to the top or connected end, thus withdrawing the cam, as stated. By lowering the handle 12 again, the said cam is made to resume its former position. The backward strain of the impression is received by the impression-beam U, which has its bearings in the sides A, and is counteracted upon by the crank-shaft J, which passes through and has its bearings on said beam, with attached cranks H H' and the platen D, connected and held in position by the rods G G.

I claim as my invention—

1. The platen D, moved directly toward the bed till nearly in contact therewith, where it remains stationary, in combination with the bed B, moved toward the platen to complete the impression, all substantially as specified.

2. In combination with the above, the vibrating mechanism for the platen, having the

rods G, cranks H H', segment K, arm k, and cam l, arranged to give a lateral motion to the platen from the same shaft M which operates the bed, and to hold it with the crank on the center during the motion of the bed, as set forth.

3. A platen vibrating from a nearly horizontal to a nearly vertical position, and remaining stationary in each extreme position, when mounted on a fixed axis, e, arranged a little in front of the plane of face, as and for the purpose specified.

4. The fountain-roller Y, distribution-cylinder Z, and inking-rollers, in combination with the intermediate ink-cylinder W and traveling-rollers 3^a and 3^b, substantially as and for the purpose specified.

5. The bed and the distribution-cylinder Z,

in combination with the form-rollers and the angular ways R, which are obliquely adjustable for the purpose of removing the form-rollers from both the form and the distribution-cylinder, substantially as specified.

6. The combination of beam U, arm T t, cam S, lever 9, pitman 10, crank 11, and rock-shaft 13 12, operating substantially as specified.

7. The impression-beam U, link V, and bed B, in combination with crank-shaft J, which passes through, and has its bearings in, said beam U, cranks H H' attached to the projecting ends of said shaft, connecting-rods G, and platen D, connected substantially as and for the purpose specified.

Witnesses: GEORGE W. HUNT.

JOSEPH A. MUNN,

CHAS. P. SANDFORD.