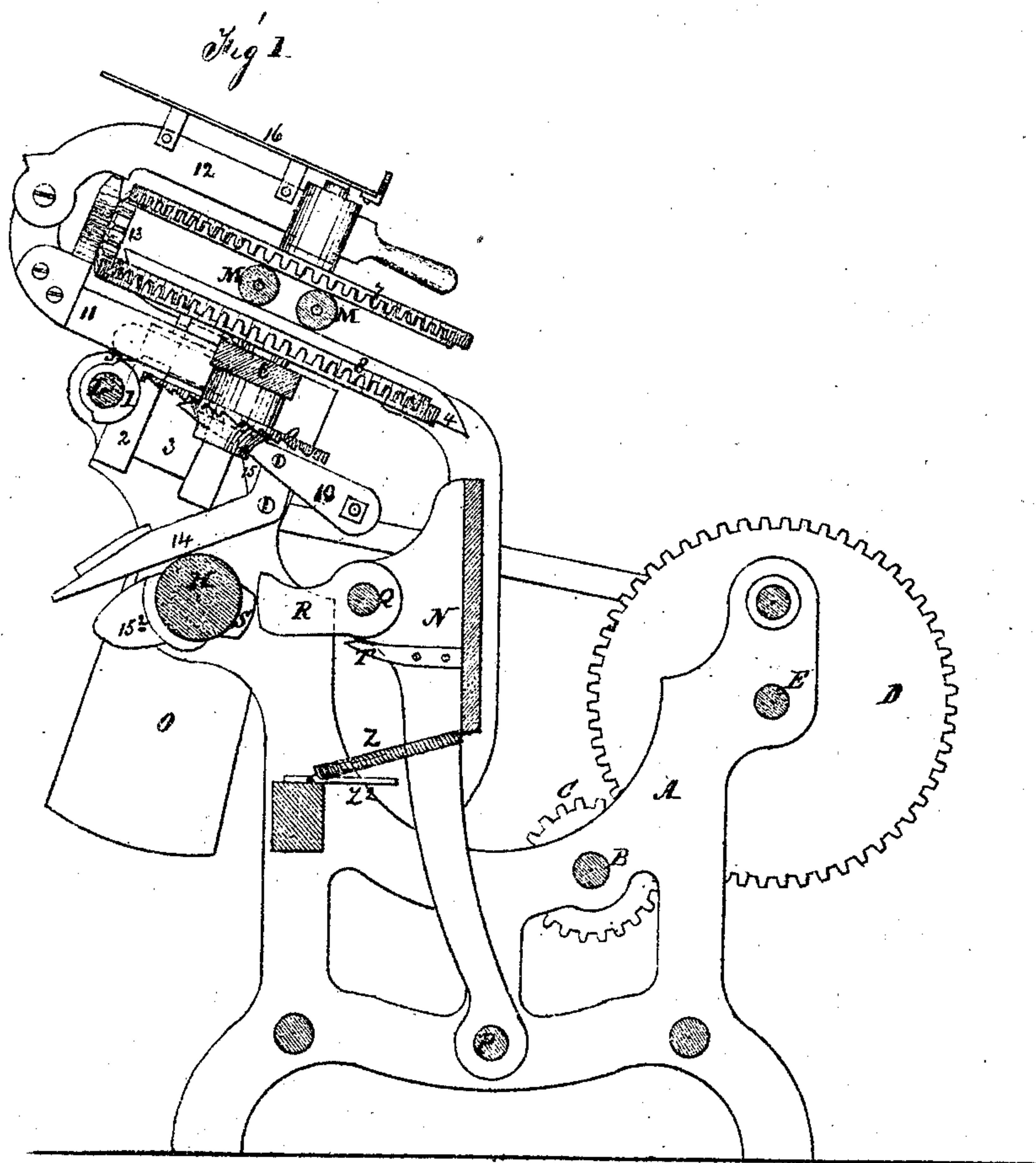


George P Gordon
Printing Press

No. 120,377.

Patented Oct. 31, 1871.



B. M. Spears
J. S. German

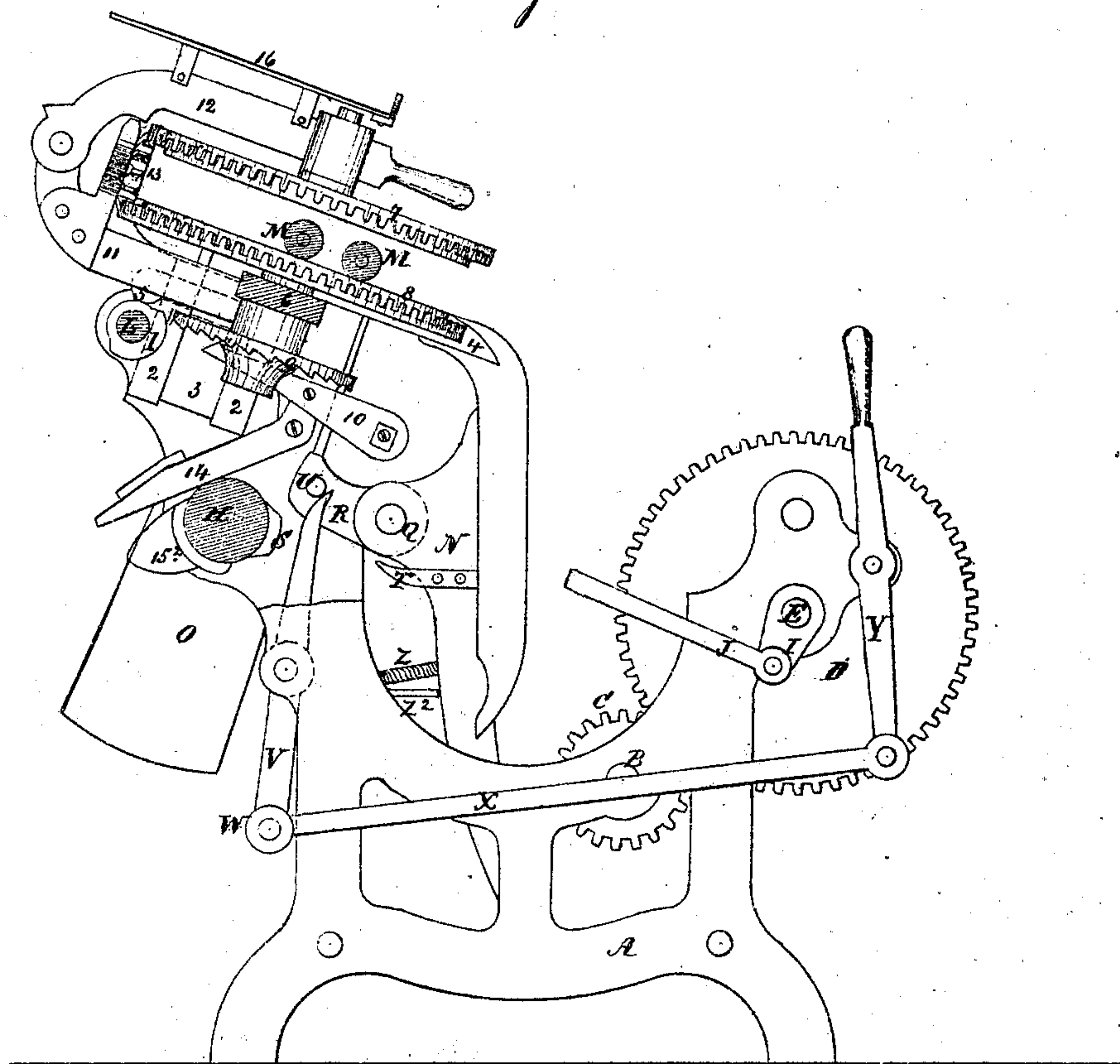
George P Gordon by his atty
Alfred, Dore

George P. Gordon
Printing Press

No. 120,377.

Patented Oct. 31, 1871.

Fig 2



B. W. L. Sears
J. S. German

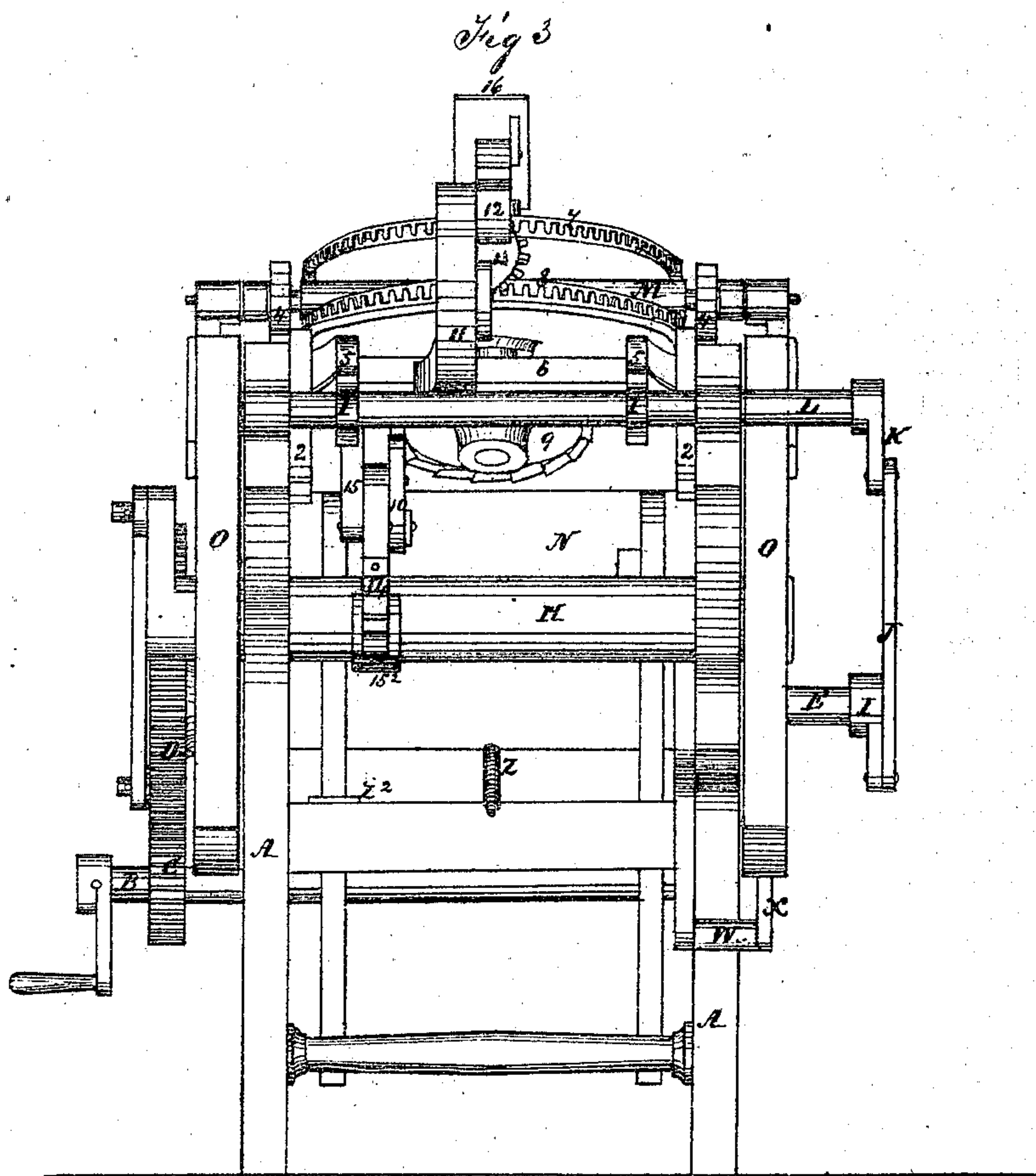
George P. Gordon by his atty
Abner D. Stone

George P Gordon
Printing Press

3 Sheets--Sheet 3.

No. 120,377.

Patented Oct. 31, 1871.



B. M. Speers
J. S. German

George P Gordon by his atty
Atkin, Ames

UNITED STATES PATENT OFFICE.

GEORGE P. GORDON, OF RAHWAY, NEW JERSEY.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 120,377, dated October 31, 1871.

To all whom it may concern:

Be it known that I, GEORGE P. GORDON, of Rahway, Union county, New Jersey, have invented, made, and applied to use certain new and useful Improvements in Printing-Presses; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure I is a longitudinal sectional view of my invention, the form-inking rollers being shown in contact with the upper ink-distributing surface and the bed in position to give an impression. Fig. II is a side elevation of my invention, the form-inking rollers being shown in contact with the lower ink-distributing surface and the impression being suspended. Fig. III is an end view of my invention, showing more particularly the means employed to raise the movable bearers

In the drawing, like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists:

- (a) In supplying the ink to the form-inking rollers of a printing-press by or with two ink-distributing surfaces, between which the form-rollers shall pass and receive their ink from each distributing surface in turn for each impression.
- (b) In revolving in opposite directions to each other the inking-surfaces, placed, as shown, for the purposes more fully hereinafter set forth.
- (c) In the combination of the two opposite ink-distributing surfaces with the movable form-roller bearers, as more fully set forth.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows the frame for supporting the operative parts of my improved printing-press, composed of the side and cross-pieces, secured together in the usual manner. B shows the driving-shaft of the machine, held in boxes in the frame A, and having upon one end the pinion C, gearing into the cog-wheel D secured upon one end of the shaft E held in boxes in the frame A. This cog-wheel E has inserted in it a stud, over which is passed one end of a connection, the opposite end of said connection being passed over a stud inserted in a crank-arm held upon one end of the rock-shaft H passed through the rear portion of the frame A. Upon the opposite end of the shaft

E is secured a crank-arm, I, provided with a stud, over which is passed one end of the connection J, the opposite end of said connection being passed over a stud inserted in the crank-arm K secured upon one end of a rock-shaft, L, held in boxes in frame A. Upon the rock-shaft H, on each side of the bed N, are secured the roller-arms O, constructed as I have heretofore constructed them, intended to receive and carry to and fro over the form or types secured upon the bed N the rollers to supply ink to said form or types. N shows the bed of my improved printing-press, hung upon a rod, P, held in the frame A, so that a vibrating movement may be imparted to the bed when desired. Through lugs in the rear of the bed is passed a rod, Q, upon which are secured the forward ends of the toggles R. These toggles have their rear ends flattened or turned in the true arc of the circle from the center upon which they are hung, and are made of sufficient length to allow their flattened ends to impinge upon or be brought into contact, when desired, with the surface-cams S cast or secured upon the rock-shaft H in line with the toggles. Upon the rear end of the bed, directly beneath one of the toggles, and projecting a short distance beyond the bed, is secured a curved arm, T, intended to prevent the toggles falling below the desired point, while in the side of the opposite toggle is secured a pin, U, the object of which is more fully hereinafter explained. V shows a cam-lever held upon a stud inserted in the side of the frame A, while its lower end has inserted in it a stud, W, to which is secured one end of a rod, X, the opposite end of which is secured to a handle, Y, held upon a stud inserted in the forward end of the frame A. Z shows a spiral spring, one end of which is secured to the rear cross-piece of the frame, while its opposite end is attached to the rear end of the bed N. This spring is employed to assist the bed, after a forward movement has been imparted to it, to return to its former position. Z² is a stop projecting from the cross-piece, and having a bearing upon one of the legs of the bed N. This stop Z² is employed to prevent the bed vibrating back too far after it has been advanced to give an impression. Upon the rock-shaft L, properly positioned for the purpose intended, are secured the surface-cams 1, and upon the sides of the frame A, directly in advance of the rock-shaft L, are secured the inclined ways 2, in which move the beveled

plates 3, to the upper portion of which are attached the bearers 4, over which the inking-rollers M, held and carried in the roller-arms O, travel in receiving their supply of ink from the ink-distributing surfaces. Upon the sides of these plates 3 are secured the curved plates 5, operated by the cams upon the rock-shaft L. 6 is a saddle-piece supported upon the frame A, intended to support the ink-distributing apparatus of the machine. The inking apparatus consists, in the present instance, of two revolving ink-distributing tables, 7 and 8, the spindle of the lower ink-distributing table 8 passing through the saddle 6 about centrally, and having secured upon its lower end the disk 9, provided on its under side, near its outer edge, with a series of ratchet-teeth, with which a ratchet, 10, engages. The lower table 8 has cut upon its outer edge a series of teeth, with which the gear-wheel 13 engages. Over the spindle of the lower table also is passed the forward end of a curved arm, 11, the rear end of which rises and has hinged or secured to it, in any convenient manner, the rear end of the curved arm 12, intended to support the second or upper ink-distributing table 7, the spindle of which table 7 is passed through the arm 12 and is pinned in position. This upper table 7 is also provided with a series of teeth upon its outer edge, and when turned down into position directly above the lower table 8 the gear-wheel 13 engages with these teeth. Secured upon the forward end of an arm, 14, held upon a plate, 15, projecting from the saddle-piece 6, is the ratchet, 10, engaging with and operating the disk 9, the arm 14, to which this ratchet 10 is attached, being raised, thus giving a forward movement to the ratchet 10 by means of a cam, 15², secured upon the rock-shaft H, and the arm 14 being weighted to secure its return movement as the cam 15² is returned to its former position through the return movement of the shaft H. 16 shows an ink-slab placed over or above the upper ink-distributing table 7, upon which the ink to be supplied to the tables may be broken up as desired. Any form of platen to receive the sheet to be printed and properly present the same to the type may be used, the movement of the same being governed by the movements of the other parts of the press.

As the present improvements relate to improved means for suspending the impression and to improved means for distributing the ink to be supplied to the form-inking rollers, the following description of these parts of the press will be sufficient: It will be observed that as motion is communicated to the driving-shaft of the press the pinion gearing into the cog-wheel through the connection causes a rocking motion to be imparted to the rock-shaft H, by which the cams secured upon the same directly behind the toggles, the forward ends of which are attached to the lugs of the bed, are brought into contact with the toggles, and an advance movement is given to the bed in which is secured the form or types, and the platen having been brought into the proper position and presenting the sheet to the form an

impression is given. Now, when it is deemed necessary to prevent an impression being given by the forward movement of the bed the arm attached at the forward end of the frame is thrown forward, by which the connection, attached as described, is drawn back, advancing or raising the cam-lever, which, in turn, elevates the pin secured in one of the toggles, and thus the rear ends of the toggles are elevated, so that the cams upon the rock-shaft will not be brought into contact with these rear ends, and, as a result, no forward movement will be given to the bed of the press. The handle being drawn back the operation just described will be reversed, the toggles will be restored to their former position, and upon the continued movement of the rock-shaft the bed will have a forward movement imparted to it, as already set forth. That the operation of the ink-distributing surfaces may be fully understood, we will suppose the movable bearers to have been depressed and the form-inking rollers to be resting upon the lowest ink-distributing surface. These rollers (the press having been set in motion) pass down over this lower surface, from which they receive a supply of ink, and down over the form or types secured in the bed, inking the same, and, having passed over the form, reach the lowest point of their vibration. After the form-inking rollers have passed over and off of the lower ink-distributing surfaces the cam 15² upon the rock-shaft H is brought into contact with the arm 14, (upon the forward end of which the ratchet 10 is secured,) raising the same and giving a forward movement to the ratchet 10, which ratchet engages with the teeth upon the underside of the disk 9, secured upon the spindle of the lower ink-distributing surface, and partially rotates the same, by which the lower ink-distributing surface is partially rotated in turn. As the same is partially rotated the gear-wheel 13 engages with the teeth upon the lower ink-distributing surface, and also with the teeth upon the under side of the upper ink-distributing surface, and as this gear-wheel, through the partial rotation of the lower ink-distributing surface, is rotated in one direction, the upper ink-distributing surface is rotated in the opposite direction. The form-inking rollers now commence their return movement from the lowest point of their vibration, the bottom of the bed, and as they do so the crank-arm upon the shaft E, through the connection and crank-arm, causes the shaft L to be rocked up, the surface-cams 1 are brought into contact with the curved plates 5 attached to the plates 3 supporting the bearers 4. As these cams are brought to bear upon the curved arms the plates attached to the bearers are elevated, raising the bearers to their full extent, so that as the form-inking rollers are carried over the same they are brought into contact with the upper ink-distributing surface, receiving a supply of ink from the same. When the rollers have passed under and in contact with this upper ink-distributing surface they have reached the extent of their upward movement, and as they commence their downward movement

the cams, already described, through the continued movement of the rock-shaft, are withdrawn from contact with the curved plates attached to the plates supporting the movable bearers, the bearers are depressed to their full extent, and the inking-rollers are brought into contact with and pass over the lower ink-distributing surface, from which they receive a second supply of ink, which, with the ink received by them from the upper ink-distributing surface, is imparted by them to the form or types. Thus it will be seen that, by the use of an upper and under ink-distributing surface, as just described, double the inking surface is in constant use than if one inking-surface were employed, and that this is accomplished with no increased expenditure of power.

A second feature of importance in connection with the present ink-distributing apparatus is that, as the upper and lower ink-distributing surfaces are partially rotated during the time that the rollers leave these surfaces and pass down and over the form or types, and return over the same to these ink surfaces and are partially rotated in opposite directions, the supply of ink received by the rollers is received first from one surface and then from the other. The ink is cross-cut upon the rollers prior to their passing over the form, the cross-cutting of the ink enhancing the distribution.

While in the present instance I have shown two flat surfaces upon which the ink is to be dis-

tributed, I do not wish to be understood as intending to confine myself to the same, as I am well aware that two cylinders may be supplied in the place of the tables, or that a cylinder and table may be combined together and the same result effected. Again, the use of movable bearers, as shown, I do not wish to confine myself to, as the bearers might be dispensed with; and the ink-surfaces employed, instead of being stationary, might be vibrated up and down or down and up, and thus be made to supply the form-inking rollers with ink in turn.

Having thus set forth my invention, what I claim as new is—

1. Supplying the ink to the form-inking rollers by or with two ink-distributing surfaces, between which the form-rollers shall pass and receive their ink from each distributing-surface in turn for each impression, substantially as described.

2. Revolving in opposite directions to each other, the inking-surfaces placed as shown, for the purposes fully described.

3. The combination of the two opposite ink-distributing surfaces with the movable-form roller-bearers, substantially as and for the purposes set forth.

GEO. P. GORDON.

Witnesses:

A. SIDNEY DOANE,
WM. HASTINGS.

(117)