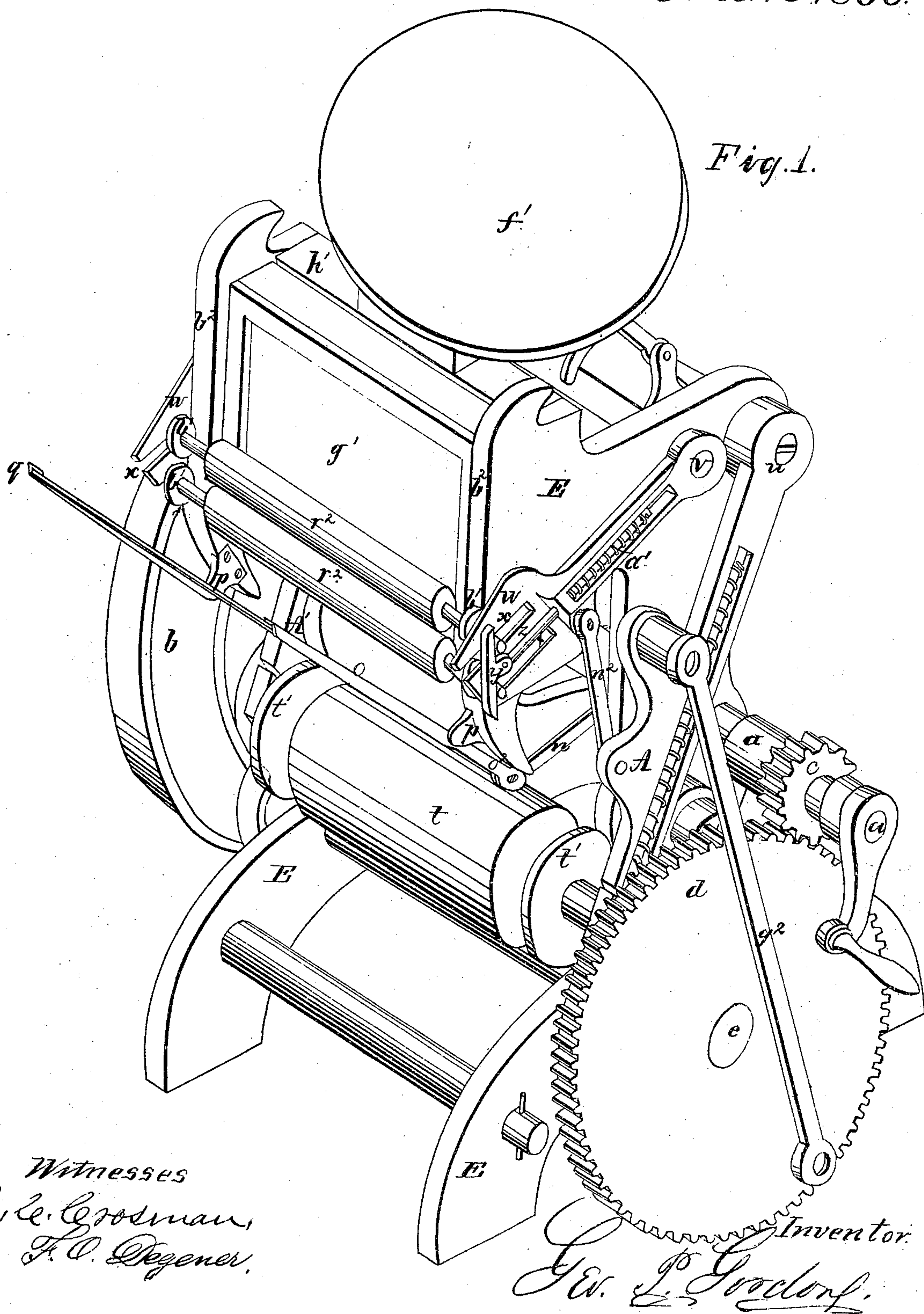


*G. P. Gordon. Sheet 1 of 4 Sheets.*  
*Printing Press.*

*Nº 20761.*

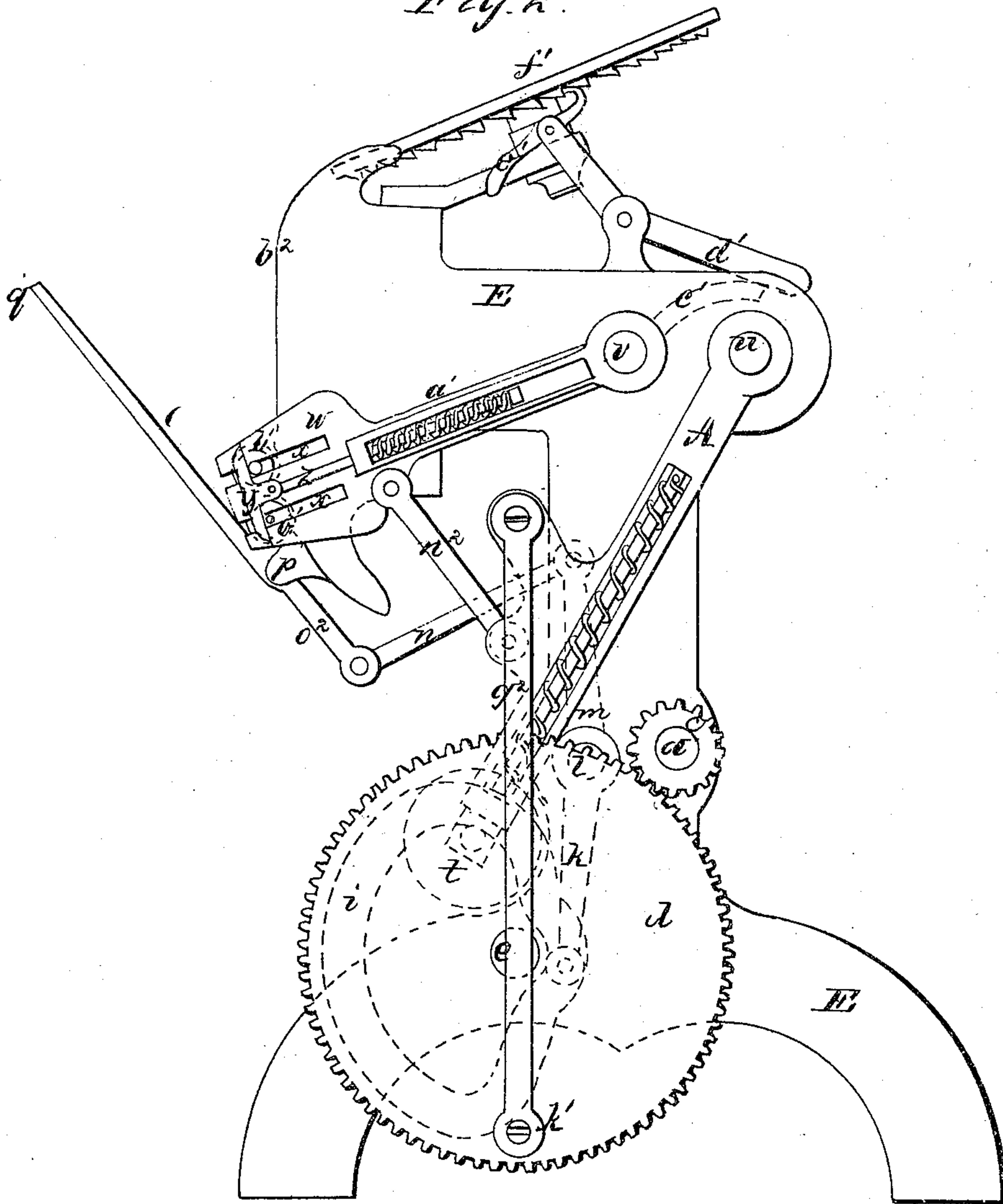
*Patented Jan. 10. 1860.*



*G. P. Gordon* Sheet 2. of 5 Sheets.  
*Printing Press.*

*N<sup>o</sup> 26761.*

*Patented Jan. 10. 1860.*  
*Fig. 2.*



*Witnesses.*

*J. C. Grossman.*  
*F. O. Degeuer.*

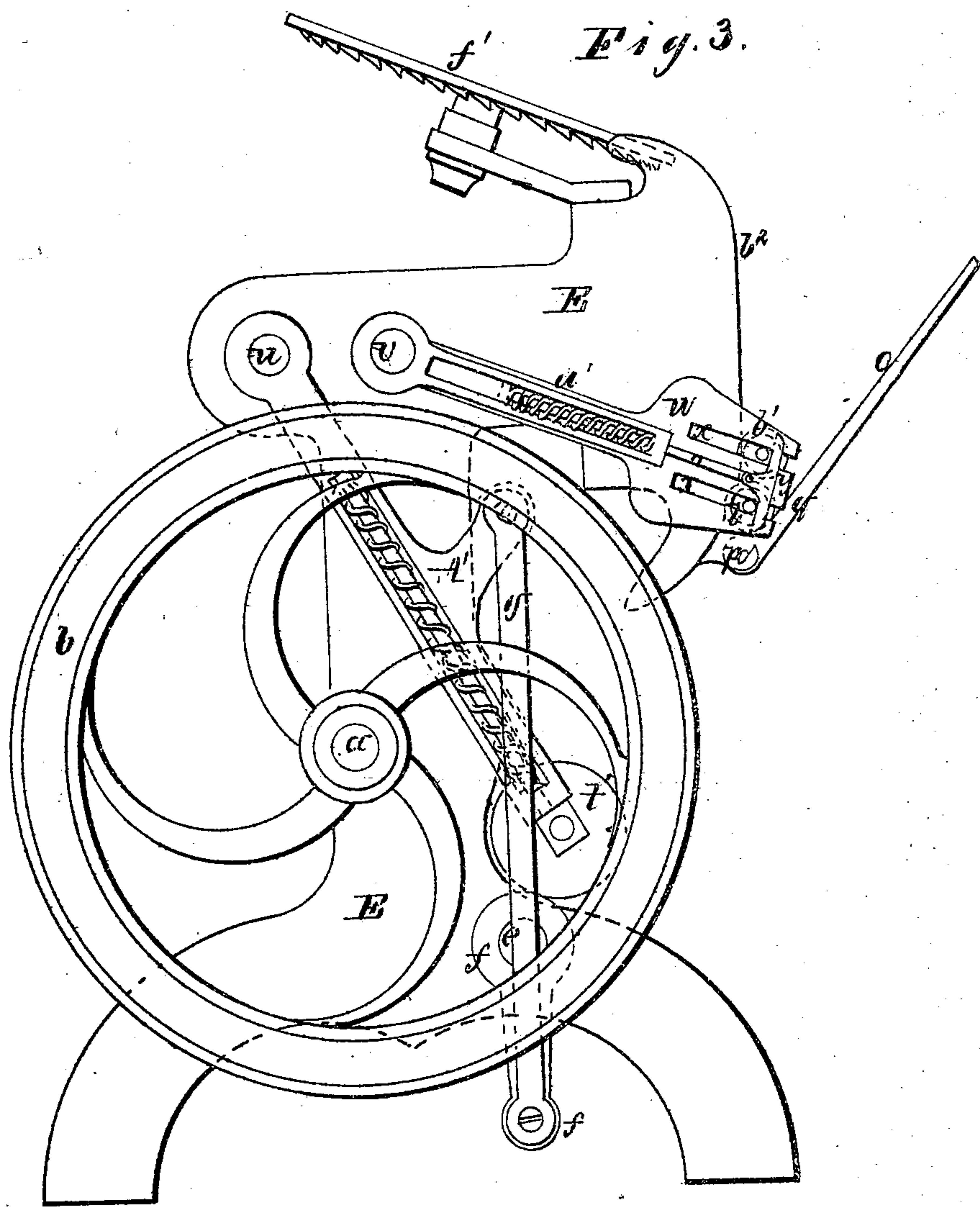
*Inventor*

*G. P. Gordon.*



*G. P. Gordon. Sheet 3. 4 Sheets*  
*Printing Press.*

*N<sup>o</sup> 26761. Patented Jan. 10. 1860.*



*Witnesses.*

*J. C. Grosman*  
*J. A. Dejonger*

*Inventor*

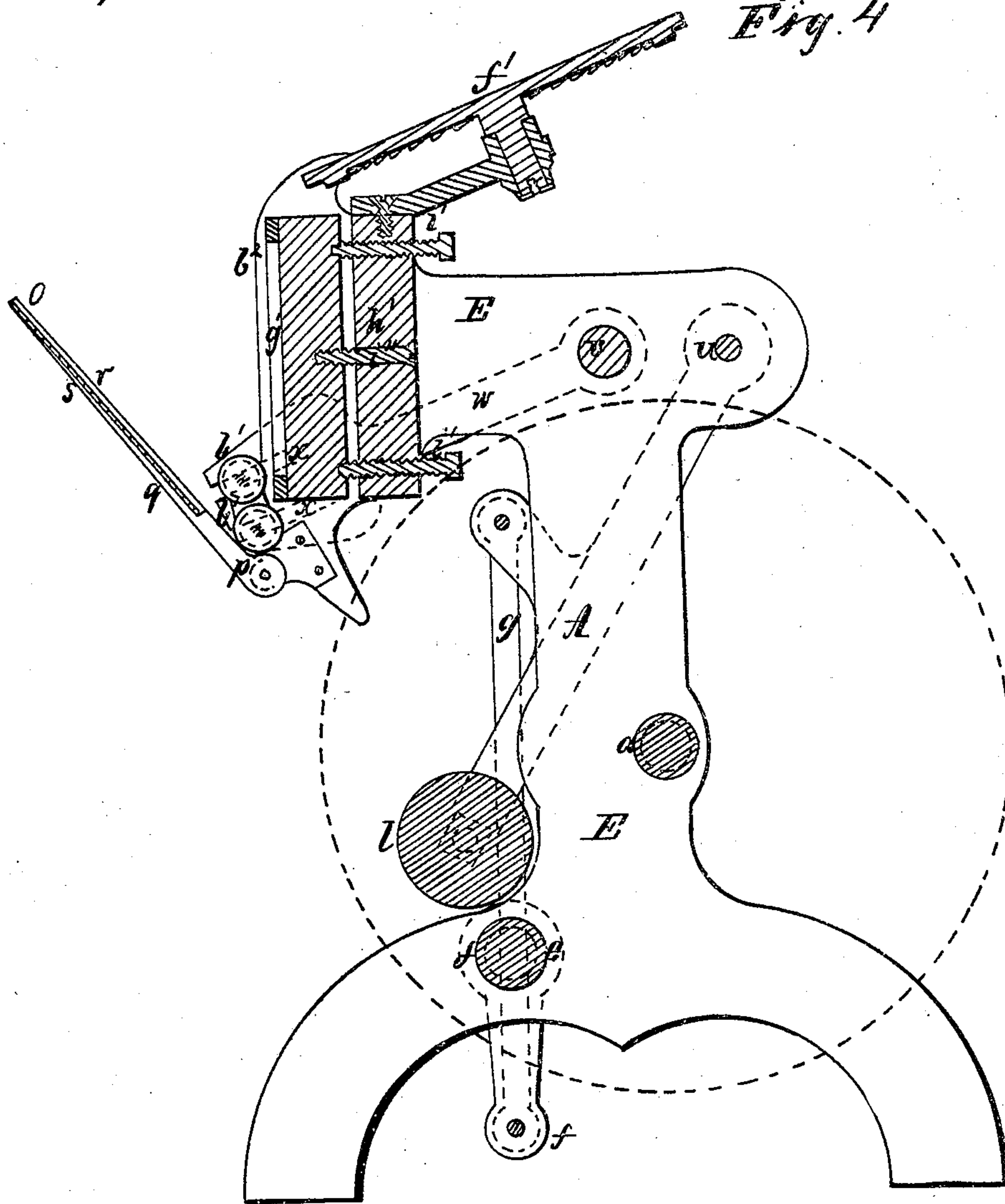
*G. P. Gordon.*

*G. P. Gordon. Sheet 4 of 5 Sheets*  
*Printing Press.*

*No 26761.*

*Patented Jan. 10. 1860.*

*Fig. 4*



*Witnesses.*

*J. C. Crossman*  
*H. C. Degener*

*Inventor*

*G. P. Gordon.*



# UNITED STATES PATENT OFFICE.

GEORGE P. GORDON, OF NEW YORK, N. Y.

PRINTING-PRESS.

Specification of Letters Patent No. 26,761, dated January 10, 1860.

*To all whom it may concern:*

Be it known that I, GEORGE P. GORDON, of New York, in the county and State of New York, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the printing press, taken when the tympan is open, and the inking rollers are at the most distant point from the ink-distributing table. Fig. 2 is a side elevation of the driving side. Fig. 3 is a side elevation of the opposite or fly-wheel side, and Fig. 4 is a vertical section cut through the center of the press.

The same letters refer to similar parts in all the drawings.

The nature of my invention consists in providing a stationary type-bed,—a frame, or set of arms, to carry an impression cylinder,—a frame, or set of arms, or their equivalent, to carry the inking rollers;—and a vibrating tympan, all so arranged as to act in harmony with one another.

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

Letters E denote the frame-work of the machine.

A strong shaft, *a*, is provided with a fly-wheel, *b*, and a pinion, or toothed wheel, *c*, which gears into the gear-wheel *d*. The gear-wheel-shaft, *e*, has upon it, at one end, a crank, *f*, from which extends a connecting rod, *g*. A similar rod, *g*<sup>2</sup>, extends from the crank *h*' on the side of the gear-wheel *d*, eccentric from its center, so that the two rods, *g*, and *g*<sup>2</sup>, move in harmony, and carry the impression-cylinder-arms, *A*, and *A*', the impression cylinder, *t*, and the inking-roller-frame *w*, and the inking-rollers, *r*<sup>2</sup>, *r*<sup>2</sup>, simultaneously,—and thus give to both of the said frames a rotating and reciprocating movement.

Upon the inside of the gear-wheel, *d*, is a grooved cam, *i*, which controls the movements of the tympan, *o*. Said grooved cam, *i*, is so formed or shaped, that, while the other parts of the machine are in motion, said cam will give, through the cranks *h* and *m*, and the connecting rod *n*, and arm *o*<sup>2</sup>, to the tympan its proper period of rest for the re-

ception of the sheet to be printed,—its upward movement to carry and present the sheet properly to the type,—its requisite rest, or "dwell," for the impression cylinder to pass and re-pass over it to give an impression,—and its downward movement to bring it into its first position for the purpose of receiving the succeeding sheet to be printed. In the grooved cam, *i*, works the friction roller *h*<sup>2</sup>, which is attached to the crank *h*,—said friction roller being fitted to the groove in said cam. The crank, *h*, is centered on shaft, *l*, and said shaft has also upon it the crank, *m*,—and said crank, *m*, by means of the connecting rod, *n*, is connected to the lower part, or projecting arm, *o*<sup>2</sup>, of the tympan, *o*. The axis of the tympan, and upon which it vibrates, is shown at *p*. The tympan, or sheet receiver and holder, consists of a substantial frame, *q*, on which is placed, or fixed, a sheet of some elastic material, (I prefer vulcanized india rubber,) and at the back of said india rubber I fasten a flexible metallic plate, so fixed that it will keep said elastic material from changing its position while the impression is being given. The india rubber is indicated at *r*, and the flexible metallic plate at *s*. See Fig. 4.

The impression cylinder, *t*, is held in a frame, or set of side arms, *A* and *A*', presently to be described. The impression-cylinder has wheel bearers, *t*', at, or near, each end of it—said wheel bearers being on the arbor which passes through said impression-cylinder. Said wheel bearers, *t*', bear upon the ways of bearers, *b*<sup>2</sup>, upon the bed, *g*'. Instead of the cylinder, *t*, shown in the drawings, if it is desired to use the press as a lithographic or copper-plate printing-press, a segment of a cylinder or a "scraper" may be used—thus varying the method of giving the impression as occasion may require. The journals of the said impression-cylinder work in boxes,—one at each end,—and these boxes form a part of the rods in the arms *A* and *A*'. The arm, *A*, is on the driving side of the press, and both the arms, *A* and *A*', work upon the center, *u*.

Each of the impression-cylinder-arms, *A* and *A*', is formed so that it will contain a rod within a spring—enabling said spring to act on the said rod in such a manner as to hold the impression-cylinder, *t*, up to the point of impression while said impression-cylinder is passing over the tympan and type. On the fly-wheel-side of the press,



Fig. 3, is shown the arm  $A'$ ; which arm acts in connection and conjunction with the arm,  $A$ , on the driving side of the press, Fig. 2,—said arms,  $A$  and  $A'$ , holding and carrying the impression cylinder,  $t$ .

From the driving side of the press, I connect the impression cylinder frame, or arm, with the inking-roller-frame, by means of the connecting-rod,  $n^2$ . The inking-roller-frame is so arranged that it will move, by means of this connection, by and with the impression-cylinder-frame. Each of the inking-roller-arms forms a part of the inking-roller-frame, and moves upon a given center, which center is the shaft  $v$ . They are so constructed and operated that they will hold and carry the inking-rollers both forward and backward over the type for each impression, and thus thoroughly ink the types. The inking-roller-arms,  $w$ , are constructed with slots, or other suitable arrangement, to hold springs, or their equivalents, to control the action of the inking-rollers, so that said inking rollers shall be held in the proper position in relation to the distributing table,  $f'$ , and the form of types. The journals of the inking-rollers are held in the slots,  $x$ ,  $x$ , by means of a cross-piece, or saddle,  $y$ , attached to the end of a rod,  $z$ , which is within the spring,  $a'$ .

The two frames,—that of the impression-cylinder, and that of the inking-rollers,—receive their motions from one crank, and work in perfect harmony, each doing its duty in its proper time and turn. The inking-rollers,  $r^2$ ,  $r^2$ , have a further government by means of the friction-rollers,  $b'$ ,  $b'$ , which impinge, or bear, against the bed-bearers,  $b^2$ ,  $b^2$ , or ways, or some other fixtures, to give said inking-rollers a proper bearing on the face of the type.

The shaft  $v$ , has upon it a toe-cam,  $c'$ , which gives motion to the double lever  $d'$ , one end of which holds the pawl,  $e'$ , that causes the distributing-table,  $f'$ , to revolve. The ink distributing table,  $f'$ , consists of a plate revolving upon its center,  $f^2$ , and has notches, or teeth,  $f^3$  on its under side, in which the pawl,  $e'$ , catches as it is moved by the toe-cam  $c'$ .

The bed,  $g'$ , has a back, or foundation,  $h'$ ,—said back being a stationary piece or part of the frame-work, through which the regulating screws,  $i'$ ,  $i'$ , pass, so that the impression may be regulated. The bed,  $g'$ , rests upon the regulating screws  $i'$ ,  $i'$ , and is held in place by the screw,  $i''$ . Said bed has the usual facilities for making ready and holding the form, and also has bearers, guides, or ways,  $b^2$ , on each side, to control the relation of the impression-cylinder and the inking-rollers, to the form of type.

The operation of the machine is as follows: Motion being given to the pinion-shaft  $a$ , will turn pinion  $c$  and the gear-

wheel  $d$ ,—which will give motion to all the other parts of the machine. The grooved-cam  $i$ , on the inside of the gear-wheel,  $d$ , moves and controls the operations of the tympan,  $o$ , through the movements of the cranks  $k$  and  $m$ , and the connecting rod  $n$ , attached to the projecting arm,  $o^2$ , connected with the tympan  $o$ , so that the said tympan, with a sheet of paper previously laid upon it, will reach the type at, or just before, the time the impression-cylinder,  $t$ , commences to pass over the tympan to give an impression. Simultaneously with the above described movement of the tympan  $o$ , the gear-wheel  $d$ , through the crank  $k'$ , and connecting rod  $g^2$ , causes the cylinder-arms, with the impression-cylinder  $t$ , to commence their upward movement for the purpose of giving the impression,—and, at the same time, through the connecting rod  $n^2$ , further causes the inking-roller-frame  $w$ , with the inking-rollers  $r^2$ , to commence their upward passage over the type. By the continued rotation of the gear-wheel  $d$ , the said inking-rollers will continue to advance until they have passed over the type and on to the ink-distributing table  $f'$ —said inking-rollers passing over said ink-distributing table while the impression-cylinder is passing over the tympan and type. Upon the reversal of the cranks,  $k'$ , and  $f$ , which will take place by the continued rotation of the gear wheel  $d$ , the movements of the impression-cylinder  $t$ , the tympan  $o$ , and the inking-rollers  $r^2$ , will be reversed, and said impression-cylinder, tympan, and inking-rollers will be brought into the positions shown in the drawings. The printed sheet may now be removed from the tympan and another sheet be placed upon its surface, when the before described operations may be repeated.

It is very obvious that mechanical contrivances, other than those herein described, might be employed to hold the impression cylinder up to the impression—such, for instance, as a weight or cam—and I do not, therefore, mean to confine myself to the use of springs, alone, for such purpose. Nor do I confine myself to the specific method herein described for operating the tympan, as many other devices might readily be employed. Neither do I restrict myself to the herein described method of giving the impression, by passing and repassing the cylinder, or its equivalent, over and upon the type for each impression, as an impression might be given by either the upward or downward movement of said cylinder, or its equivalent.

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

1. I claim the combination of the rotating reciprocating inking-roller-frame, moving as described, upon a center, with the



type, or form-bed, when such center and such bed shall always retain their relative positions toward each other, also the above combination in combination with the  
5 rotating ink distributing table.

2. I claim the combination of the rotating-reciprocating inking-roller-frame, or equivalent, with the impression-cylinder-arms, or their equivalent.

10 3. I claim the rotating-reciprocating cylinder-arms, or their equivalent, for holding and carrying the impression cylinder, or its equivalent, in combination with the ways or bearers, or their equivalent, for causing  
15 the impression cylinder, or scraper, or its equivalent, to move evenly over the tympan and type in giving the impression.

4. I claim combining with an elastic tympan a flexible metallic back, or its equivalent, substantially as described, for the purpose set forth.  
20

5. I claim the combination of a vibrating tympan with a vertical bed, or a bed placed out of a horizontal position, when the impression shall be given by a cylindrical surface. 25

6. I claim the combination of a vibrating tympan, constructed substantially as described, with the impression cylinder, or its equivalent, for the purpose specified. 30

7. I claim giving to a vibrating tympan its periods of motion and rest, for the purposes specified during the continued motion of the other parts of the press, substantially as herein set forth. 35

8. I claim in combination with an impression produced by a cylindrical surface, the use of a rotating ink-distributing table.

GEO. P. GORDON.

Witnesses:

J. C. CROSMAN,  
F. O. DEGENER.