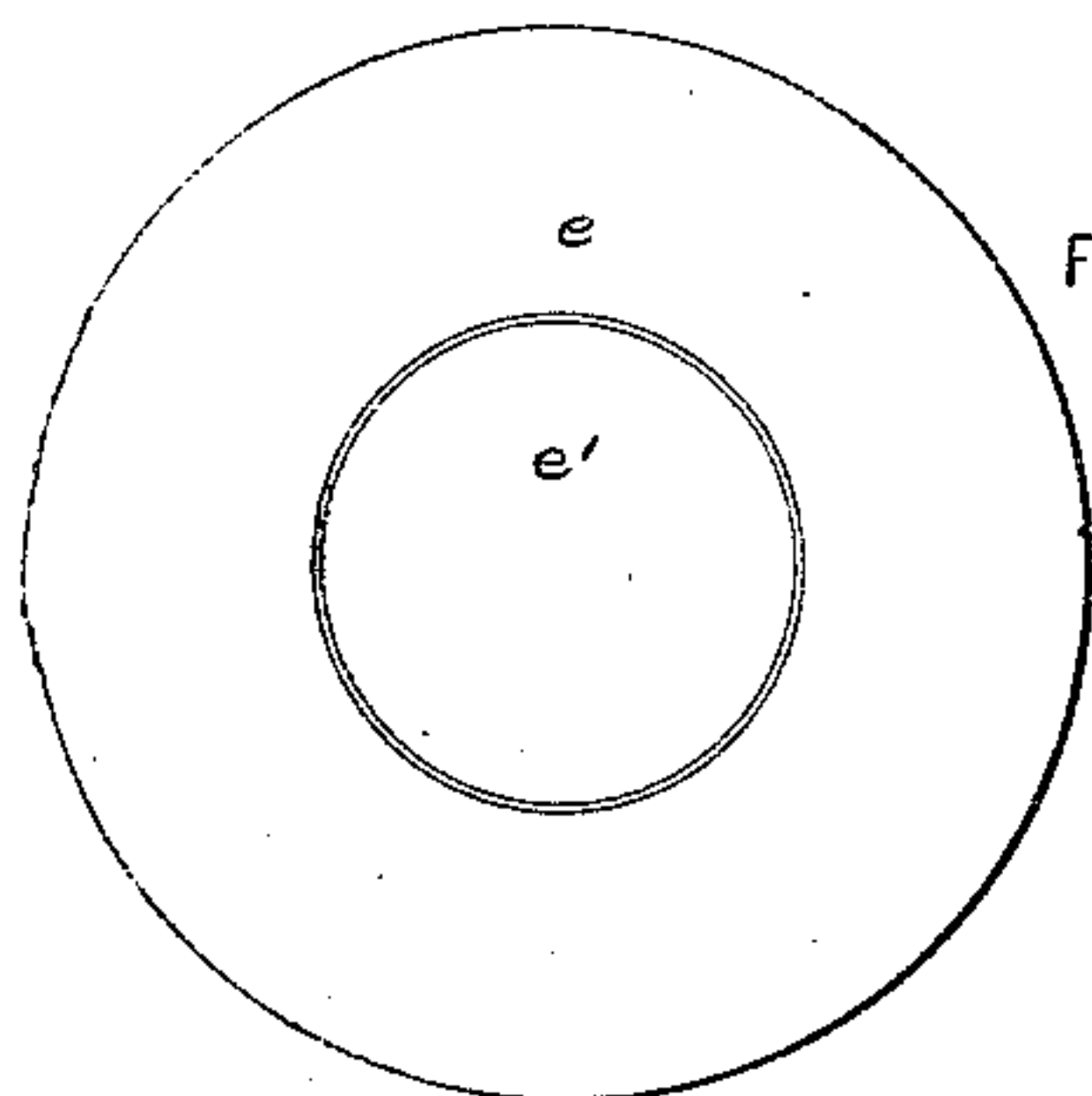
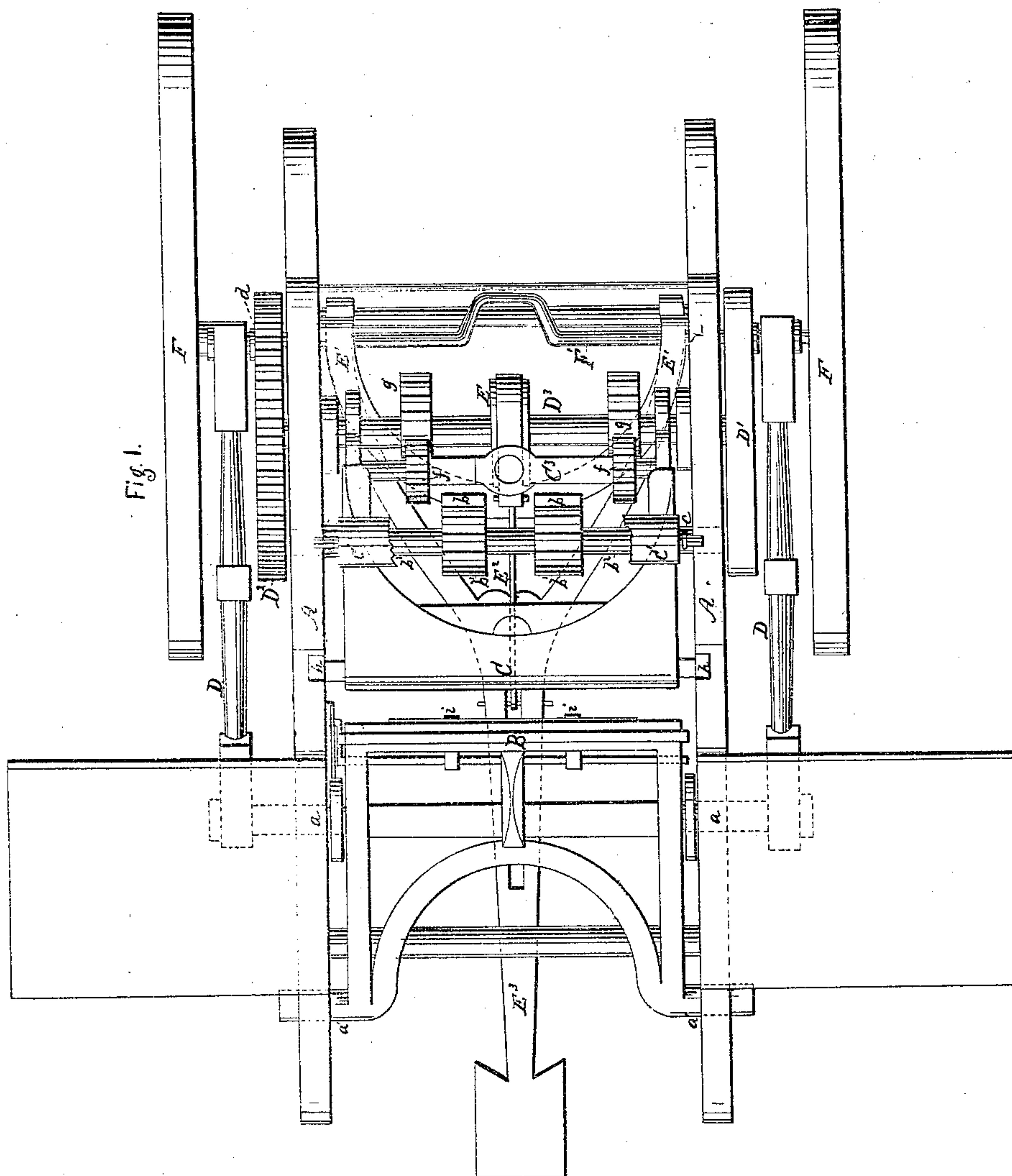


J. H. FREY & W. HECKERT.
PRINTING PRESS.

No. 61,186.

Patented Jan. 15, 1867



Witnesses.

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ASSIGNORS TO THEMSELVES AND E. A. WHEELER.

Letters Patent No. 61,186, dated January 15, 1867.

IMPROVEMENT IN PRINTING PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JAMES H. FREY and WILLIAM HECKERT, of Sharon, in the county of Mercer, and State of Pennsylvania, have invented a new and improved Job Printing Press; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the press with the inking plates and a portion of the inking roller removed.

Figure 2 is a top view of the inking plates.

Figure 3, sheet 2, is a longitudinal section taken in a vertical plane through the centre of the press, showing the platen thrown back from the form-bed in a position for receiving a sheet or card.

Figure 4 shows the platen in a position for making the impression.

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

This invention relates particularly to improvements on job or hand printing presses, which have vibrating platens that are so arranged and operated as to move in the arc of a circle from an inclined to a vertical plane, the form-bed receiving, simultaneously with such movement, a reciprocating movement in a right line. The nature of this invention consists in so arranging and operating the platen, that it shall receive not only a curved movement, as hitherto, but it shall also receive a movement up to and from the form-bed in a right line, thereby obviating the necessity of moving both the form-bed and platen in the act of taking an impression, as will be hereinafter described. The invention further consists in constructing the inking table of two circular plates arranged in the same plane so as to receive rotation in different directions, and to ink the roller for different-sized forms without wasting the ink, as will be hereinafter described.

To enable others skilled in the art to understand our invention, we will describe its construction and operation.

In the accompanying drawings, A represents the frame of the press, which is suitably adapted for containing and supporting the platen B, the form-bed C, and the mechanism for operating the platen and other parts necessary to be used in printing. The platen B is constructed with four bearing arms, $a a a^1 a^1$, projecting from its sides, which arms are supported and guided in slots $a^2 a^2$ in the sides of the press frame. Those arms which are nearest the face of the platen, and which are lettered $a a$, reciprocate in the horizontal or straight portions of the slots a^2 , and the arms $a^1 a^1$ reciprocate in the curved portions of said slots; when the arms or bearings a^1 are at the lower termination of the curved portions of said slots, the platen is in the inclined position shown in fig. 1, ready to receive upon its face the sheet to be printed, and as the platen is moved toward the form-bed C its face is brought to a position which is exactly parallel to the face of the form of type that is locked in the form-bed, as shown in fig. 4. This parallel position of the platen B is attained before the impression is made, and as soon as the arms $a^1 a^1$ arrive at the highest point or termination of the curved slot, and when the platen has attained such position it is moved up to the form in the form-bed C in a right line. To the projecting arms $a a$, of the platen B, pitman rods D D are attached, which rods are again attached to wrist-pins or crank-pins on the sides of the crank-wheels $D^1 D^2$. As these wheels are rotated they impart a reciprocating movement to the platen. It will be observed that the arms $a a$ do not descend into the curved portions of the slots a^2 when the platen is moved back; these arms enable the platen to be moved bodily in a right line, while the arms $a^1 a^1$, moving in the curved portions of the slots a^2 , tilt the platen from an inclined plane to a vertical plane, and *vice versa*. The horizontal transverse shaft D^3 of the crank-wheels $D^1 D^2$ carries an eccentric, E, which is connected by means of a strap to the bow-crank E^1 . This crank has two toothed segments $b b$ secured to it, which engage with pinion spur-wheels $b^1 b^1$, on a rock-shaft, b^2 , to which rock-shaft the slotted arms $c c$, which carry the inking roller c^1 , are secured. Near the lower ends of the segments $b b$ is a transverse rod, c^2 , which receives the upper end of the treadle rod E^2 , and by means of this rod and the treadle E^3 , together with the fly-wheels F F, motion is imparted to the several parts of the press. The shaft F^1 of the fly or balance-wheels F has a crank formed on it, as shown in fig. 1, to which the treadle rod E^2 should be attached when it is desired to work the press slower than is required when said rod is attached to the segments on the bow-crank E^1 . The treadle rod can be changed from one crank to another at pleasure for working the press fast or slow. The balance-

wheel shaft F^1 communicates or receives motion to or from the shaft D^3 by means of a pinion spur-wheel, d , engaging with the spurred crank-wheel D^2 , as shown in fig. 1. The form-bed C is pivoted to the crank-wheel shaft D^3 so that it can be thrown up to the position shown in red lines, fig. 4, when it is desired to apply the form to or remove the form from it. When the form-bed is in the position shown in the figs. 1, 2, and 3 in black lines, the inking table is in a horizontal plane. The form-bed C receives no motion during the operation of printing, the only movement which it is allowed to receive being that above mentioned. The inking table over which the roller c^1 is carried by the arms $c c$ after every impression, consists of two plates $e e^1$, whose surfaces are in the same plane. The plate e is in the form of a ring and surrounds the circular plate e^1 ; both plates are supported by a central axis, e^2 , upon a bridge-tree, C^3 , which extends transversely across the frame of the form-bed and forms a brace therefor. Both plates $e e^1$ are allowed to turn freely, and they are rotated in opposite directions by means of pinion spur-wheels $f f'$ which turn loosely upon the cylindrical portions of the bridge-tree C^3 . These pinions receive an intermittent rotary motion from segments $g g$ on the shaft D^3 , as this shaft is revolved. The pinion f is arranged to engage with teeth on the bottom of the plate e , and to rotate this plate in one direction, and the pinion f' engages with teeth on the plate e^1 and rotates this plate in an opposite direction. By slipping the pinion f out of gear from the teeth on the ring-plate e , the plate e^1 will only be moved; this is done when a small form is locked in the form-bed and only a portion of the inking roller c^1 requires to be inked. The ends of the inking roller pass through their slotted arms or carriers $c c$, and move in slots $h h$ in the frame A during the passage of said roller over the surface of the type. The fingers $i i$, which holds the sheets or cards to be printed upon the surface of the platen whilst making the impressions, are connected to a transverse rod, j , which is pivoted beneath said platen, and which has crank-arms k formed on its ends, which arms are guided and moved in slots or curved guides l on the press frame, so as to cause said fingers to be thrown from the face of the platen as the latter recedes from the form, and then to move up to and hold the sheet upon the face of the platen, as this platen assumes a vertical position parallel to the face of the type on the form-bed, as shown by the figs. 3 and 4.

Having thus described my invention, what we claim as new, and desire to secure by Letters Patent, is—

1. So constructing and operating the platen B that it shall move bodily in a right line up to and from the form-bed C , and also assume an inclined position when at the termination of its outward stroke, the said platen performing these movements without revolving, substantially as described.

2. Supporting and guiding the platen B by means of four bearings $a a a^1 a^1$, which move in slots a^2 , substantially as described.

3. Communicating motion in opposite directions to the plates of the inking table, and also a separate and independent motion to either of the plates $e e^1$ at will, all by means substantially as described.

4. Communicating motion to the rock-shaft of the inking roller arms $c c$, by means of segments $b b$, which are on a crank E^1 that is connected to the shaft D^3 , substantially as herein described.

5. Providing for giving a rapid or slow motion to the platen and its appendages by the employment of two cranks in conjunction with the treadle and its rod, either one of which cranks will communicate motion to the shaft of the crank-wheels $D^1 D^2$, substantially as described.

Witness our hands in the matter of our application for a patent for an improved printing press.

J. H. FREY,
WM. HECKERT.

Witnesses:

E. A. WHEELER,
JOHN WINTER.