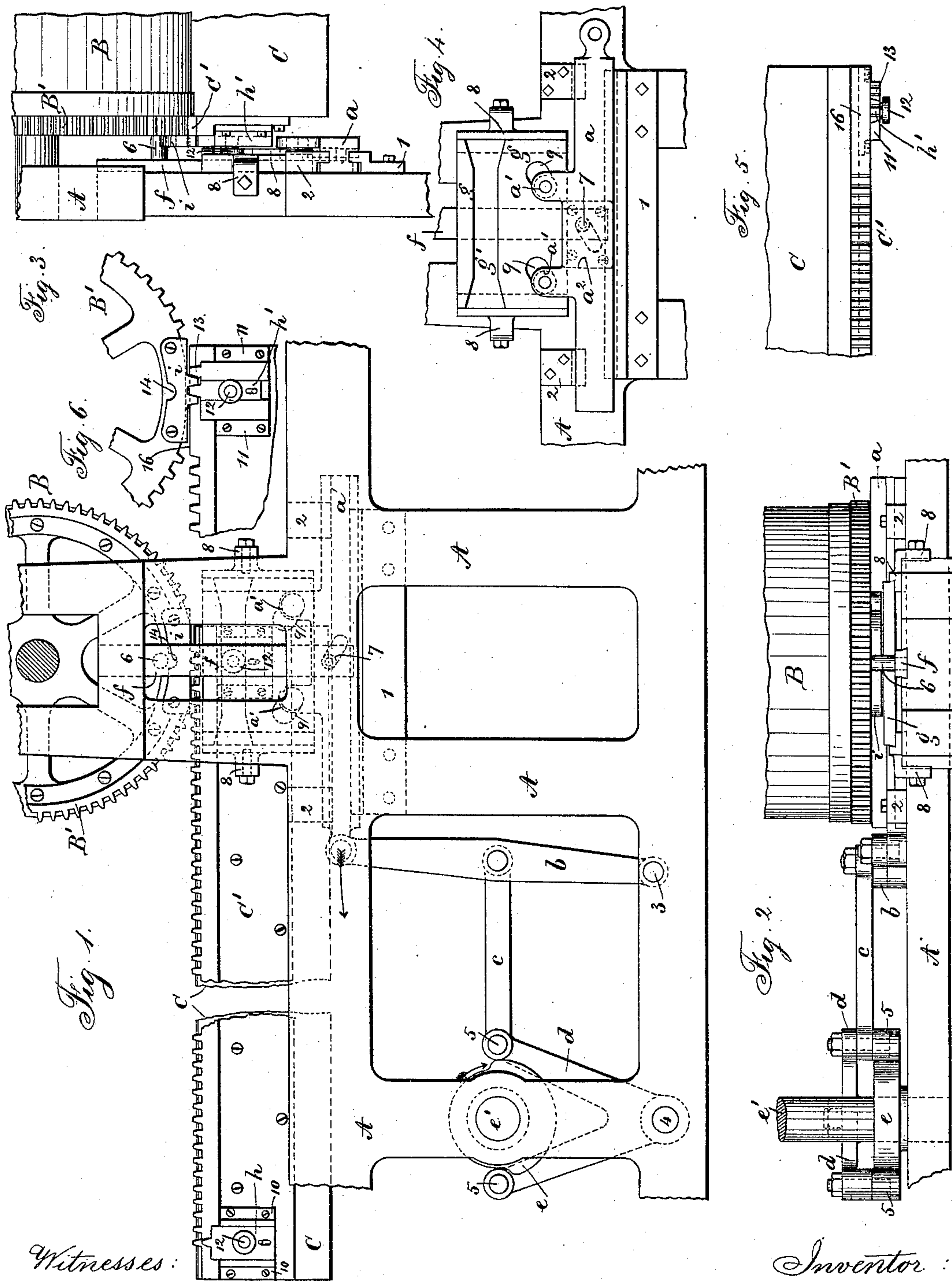


(No Model.)

J. BROOKS.  
PRINTING MACHINE.

No. 322,091.

Patented July 14, 1885.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF PLAINFIELD, NEW JERSEY.

## PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 322,091, dated July 14, 1885.

Application filed March 2, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BROOKS, of Plainfield, in the county of Union and State of New Jersey, have invented a certain new and useful Improvement in Printing-Machines, and the following is declared to be a description of the same.

My improvements relate, especially to presses employed for lithographic printing; and the object of my invention is to stop and lock the impression-cylinder at the end of the movement of the reciprocating bed in one direction, and to hold the impression-cylinder as locked while the bed is moving in the other direction, and then to unlock the cylinder so that it is revolved by the rack upon the bed as said bed makes its return movement in the other direction. I employ in connection with the usual impression-cylinder, toothed wheel, reciprocating bed, and toothed rack, a toothed plate upon the toothed wheel of the cylinder, sliding toothed blocks which carry rollers and are moved vertically in slideways upon the rack of the bed. At the inner side of the frame of the machine I have a horizontal sliding bar with lugs and rollers, to move a horizontally-slotted plate, and said bar also actuates a locking-bar having a pin and roller. The horizontal sliding bar receives motion at each extreme movement of the reciprocating bed by a rocker-arm or lever-link, V-rocker, and a cam upon the main shaft. The slotted plate as it is moved raises or lowers one of the toothed blocks to stop or start the impression-cylinder, and the locking-bar as it is depressed or raised locks and holds or releases the impression-cylinder. A portion of the teeth of the toothed wheel upon the cylinder are removed to form a flat bearing-surface, and one end of the rack upon the reciprocating bed is left with a plain bearing-surface, and at the time the impression-cylinder is stopped and locked these parts are in contact, and the stopping of the cylinder is insured.

In the drawings, Figure 1 is an elevation of parts of the bed, the wheel on the impression-cylinder, and my sliding tooth, and means for actuating the same. Fig. 2 is a plan of the gear-wheel, and part of the impression-cylinder, and the devices at the inner side of the

frame. Fig. 3 is an elevation endwise of the frame and the parts supported on it. Fig. 4 is an elevation of the inner face of the bar and slotted plate. Fig. 5 is a detached plan view of one end of the bed, and Fig. 6 is a detached elevation of one of the sliding tooth-blocks and its adjacent parts.

A represents the frame of the machine; B, the impression-cylinder, and B' the toothed wheel upon the same. C is the reciprocating bed, and C' the rack upon said bed. These parts are of ordinary construction. The bar *a* is supported in slideways 1 2, upon the inner side of the frame A, and said bar *a* is provided with lugs and gudgeons projecting horizontally and provided with rollers *a'*, and there is a diagonally-slotted plate, *a*<sup>2</sup>, fastened to one side of the bar *a*. The lever *b* is pivoted to the frame A at 3, and connected at its upper end to the bar *a*. The link *c* connects the arm *b* to the V-rocker *d*, that is pivoted to the frame A at 4, and said V-rocker *d* carries rollers 5 upon which the cam *e* upon the main shaft *e'* acts. This shaft and cam are to revolve in the direction of the arrow once during a forward and backward movement of the reciprocating bed C. The locking-bar *f* is moved vertically in slides upon the inner surface of the frame, and it has a locking pin, 6, at its upper end, and a roller, 7, at the lower end, said roller being within the diagonally-slotted plate *a*<sup>2</sup> upon bar *a*, the endwise movement of said bar *a* raising and lowering the bar *f*. The plate *g* is made with a horizontal slot, *g'*, the ends of which diverge, as shown in Fig. 4. This plate *g* slides vertically in guides 8, secured upon the frame of the machine, and said plate has diagonal slots 9, that receive the roller *a'* upon lugs. The endwise movement of the bar *a* raises and lowers the plate *g* by means of said rollers and diagonal slots.

Upon one end of the reciprocating bed C and its rack C' there are slideways 10 receiving a toothed block, *h*, that receives a vertical movement, limited, however, by a slot and pin, and upon the face of the block *h* there is a roller, 12. Upon the other end of the press bed and rack there are slideways 11, receiving a toothed block, *h'*, whose movement is



also limited by a slot and pin, and there is a roller, 12, upon the face of this block *h'*, and a tooth, 13, upon one of the slideways 11. The rack *C'* at one end is made without teeth, as a plain bearing-surface, 16, and a portion of the teeth of the wheel *B'* are removed to form a flat bearing-surface, and this surface is located at the point where the toothed plate *i* is secured. At the time the impression-cylinder is stopped and locked, these flat surfaces are contiguous, and the proper stopping of the impression-cylinder is made sure. The toothed plate *i* is secured upon the toothed wheel *B'* of the impression-cylinder *B*, and it has two teeth on its outer edge, and a notch, 14, in its inner or upper edge, and this notch is intended to receive the locking-pin 6 on the bar *f*.

The operation of the parts is as follows: In Fig. 1 the parts are shown in the position where the impression-cylinder is stopped but not locked. The cam *e* and shaft *e'*, revolving in the direction of the arrow, now move the V-rocker *d*, link *c*, lever *b*, and change the position of the bar *a*. By this movement, and through the agency of the diagonally-slotted plate *a'*, the locking-bar *f* is pulled down, and the pin 6 enters the notch 14 in the plate *i*, and locks the impression-cylinder securely, and the rollers *a'*, acting in the diagonal slots 9, pull down the slotted plate *g*, and the roller 12, upon the toothed block *h'*, being within the slot *g'*, it and the toothed block *h'* are pulled down, and its tooth is freed from contact with the teeth of the plate *i*, and thus the impression-cylinder is held and the movement in the other direction of the bed does not move the impression-cylinder. In the farther movement of the bed *C* the toothed block *h* and its roller 12 approach the slotted plate *g*, which plate remains at its lowest position. Its slot *g'* is in line with the roller 12, and said roller 12 enters the slot to a central point, where the limit of the movement of the bed is reached. At this point the cam *e* again acts upon the V-rocker *d*, link *c*, lever *b*, and bar *a*, and shifts said bar *a* back to the position shown in Fig. 1. This action forces up the locking-bar *f*, withdrawing the pin 6 from the notch 14, and releasing the cylinder *A*, and at the same time the same movement forces up the slotted plate *g* and toothed block *h*, bringing the tooth of *h* into mesh with the teeth of plate *i*, and when the bed starts back in the opposite direction the tooth of *h* turns the impression-cylinder until the teeth of the wheel *B'* and the rack *C'* engage each other. The printing is performed during this movement of the bed. As the bed *C* completes its movement in the last-named direction, the toothed block *h* and its roller 12 approach the slotted plate *g*, which is now elevated, and as the roller 12 strikes the slot *g* at the lower part of its diverging open end said roller and toothed block *h* are elevated, and the tooth on *h* is gradually brought into position and engaged with the teeth of the plate *i* as the movement of the bed is completed and

the teeth of the wheel separate from the rack. The tooth 13, bearing against the tooth on plate *i*, acts to steady the cylinder as it is stopped, and the plain bearing-surfaces at 16 upon the rack *C'* and upon the toothed wheel *B'* also act in the same capacity, and the cylinder is stopped and the parts brought again into the position shown in Fig. 1, ready for the repeating of the movement heretofore described.

I claim as my invention—

1. In a printing-press, the combination, with the impression-cylinder *B*, toothed wheel *B'*, reciprocating bed *C*, and rack *C'*, of the toothed plate *i* upon the wheel *B'*, the toothed blocks *h h'* and their rollers 12, the sliding bar *a*, the lugs and rollers *a'* and slotted plate *a'*, the locking-bar *f*, its pin 6 and roller 7, the slotted plate *g*, the slideways for the respective parts, and mechanism, substantially as set forth, for imparting movement to the bar *a*, substantially as specified.

2. In a printing-press, the combination, with the shaft *e'*, cam *e*, V-shaped rocker *d*, rollers 5, link *c*, and lever *b*, of the sliding-bar *a*, its lugs and rollers *a'*, and slotted plate *a'*, the locking-bar *f*, its pin 6, and roller 7, the slotted plate *g*, and mechanism, substantially as specified, for stopping and holding the cylinder during the movement of the bed in one direction, substantially as set forth.

3. In a printing-press, the combination, with the impression-cylinder *B*, wheel *B'*, bed *C*, and rack *C'*, of the toothed plate *i*, the toothed blocks *h h'*, the locking-bar *f*, and pin 6, and mechanism, substantially as specified, for operating the parts and stopping and locking the cylinder at the end of the bed movement in one direction, and connecting the gear of the impression-cylinder with the rack and unlocking such cylinder at the end of the movement of the bed *m* in the other direction, substantially as set forth.

4. In a printing-press, the combination, with the impression-cylinder *B*, wheel *B'*, bed *C*, and rack *C'*, of the toothed plate *i*, having two teeth, the sliding toothed blocks *h h'*, and the tooth 13, and mechanism, substantially as specified, for operating the parts, whereby the tooth on *h'* and the tooth 13 act against the teeth on plate *i*, to stop and steady the cylinder until it is locked, substantially as set forth.

5. In a printing-press, the combination, with the impression-cylinder *B* and bed *C*, of the toothed wheel *B'*, a portion of the teeth of which are removed to form a flat bearing-surface, and the rack *C'*, having a plain bearing-surface at one end, substantially as specified.

6. In a printing-press, the combination, with the impression-cylinder *B* and bed *C*, of the toothed wheel *B'*, a portion of the teeth of which are removed to form a flat bearing-surface, the toothed plate *i* upon the wheel *B'*, the rack *C'*, having a plain bearing-surface upon one end, the toothed blocks *h h'*, and means, substantially as specified, for operat-



ing the parts and stopping and locking the cylinder, substantially as set forth.

7. In a printing-press, the combination, with the impression-cylinder B, wheel B', bed C, and rack C', of the toothed plate *i*, the toothed block *h*, the roller 12, the slotted plate *g*, and mechanism, substantially as specified, for moving the parts and elevating the tooth and block *h* into mesh with the teeth on the plate *i*,

whereby the same can be utilized to start the movement of the cylinder B, substantially as set forth.

Signed by me this 14th day of February, A. D. 1885.

JOHN BROOKS.

Witnesses:

GEO. T. PINCKNEY,  
HAROLD SERRELL.