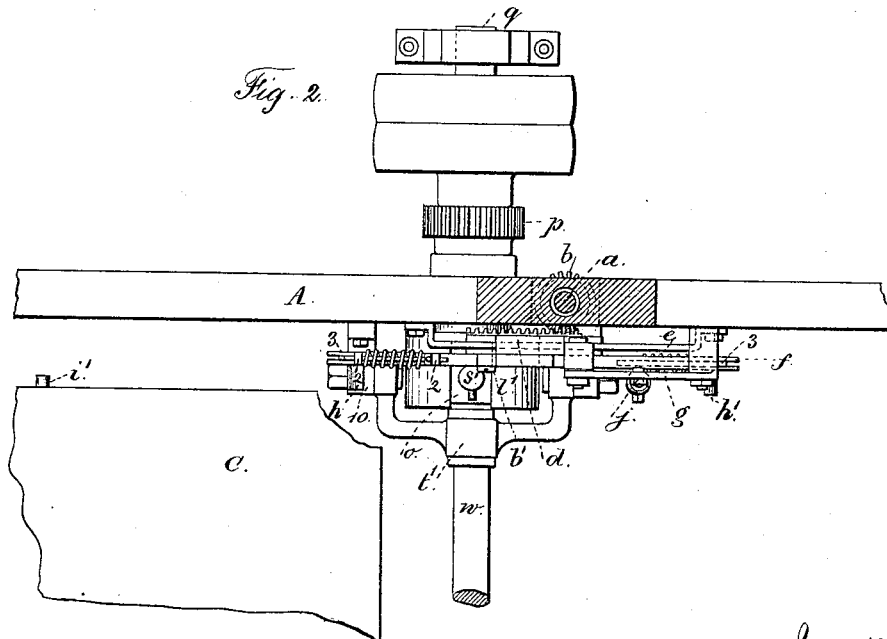
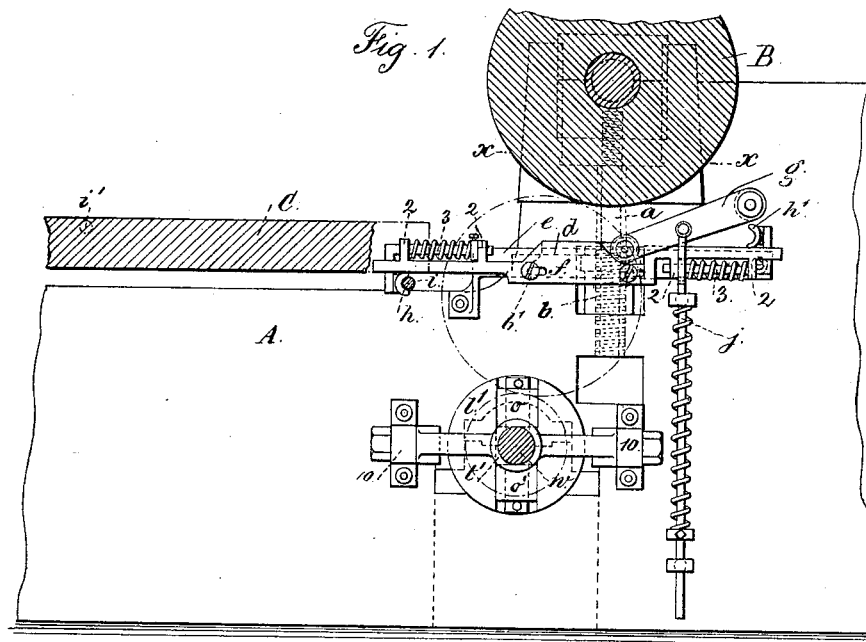


J. BROOKS.
PRINTING PRESS.

No. 266,759.

Patented Oct. 31, 1882.



Witnesses

Char. H. Smith
Harold Ferrell

Inventor

John Brooks
per Lemuel W. Ferrell atty

(No Model.)

2 Sheets—Sheet 2.

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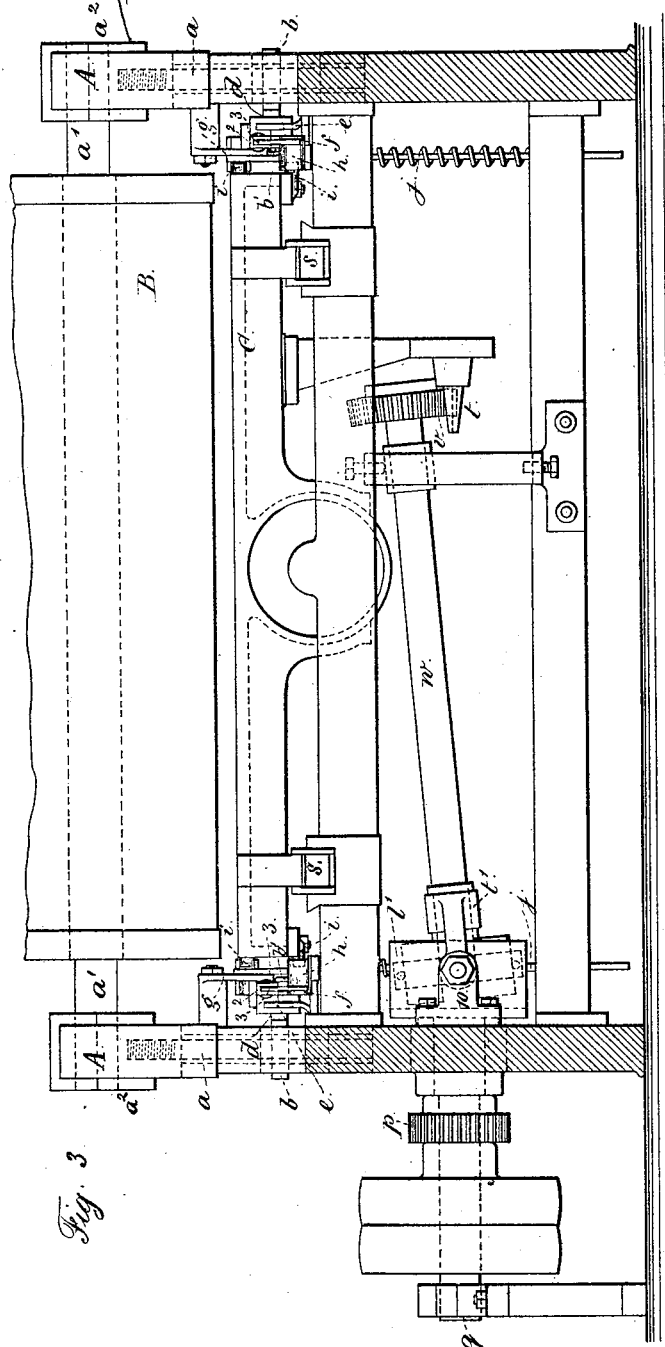


Fig. 3.

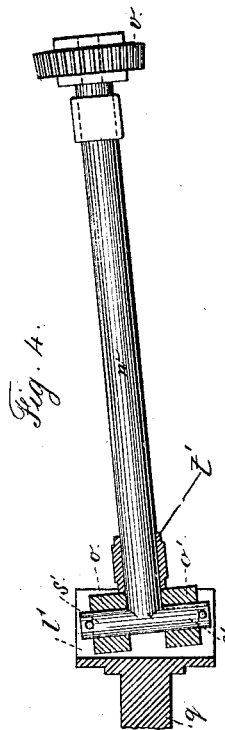


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO HIMSELF AND
C. POTTER, JR., & CO., OF NEW YORK, N. Y.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 266,759, dated October 31, 1882.

Application filed February 25, 1882. (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 an Improvement in Printing-Presses, of which the following is a specification.

This invention relates to a device for giving motion at the end portions of the movement of the bed to screws that act to lift the impression-cylinder after the impression has been taken, so that the types and bed may return back below such cylinder without touching, and then to screw down the cylinder firmly to position before the next impression.

In an application of like date herewith I have described the broader features of said invention. My present improvement relates to peculiar means for actuating the screw-nut, also to the means for giving motion to the bed, as hereinafter more fully set forth.

In the drawings, Figure 1 is a section of the cylinder and bed and an elevation of the actuating mechanism. Fig. 2 is a partial plan at the line *xx*. Fig. 3 is a section of the frame and elevation of the means for actuating the bed, and Fig. 4 is a section of the hub of the universal joint in the parts that move the bed.

The main frame *A*, the reciprocating bed, and the impression-cylinder *B* are of any usual character. The journals *a'* of the impression-cylinder *B* are supported in boxes *a''*, that are fitted to slide accurately in openings in the frame, and there is a vertical screw, *a*, connected with each journal-box *a''*, and passing down through the nut *b*, that fits closely within an opening that is provided for it in the frame. Upon each nut there are gear-teeth, and there is a rack-saddle, *d*, with rack-teeth that engage the teeth on the nut. This rack-saddle is upon a stationary bar, *e*, bolted to the frame. The bar *f* has in it elongated holes for bolts *b'*, by which it is connected with the rack-saddle, and near the ends of this bar *f* there are supports or ears 2 2, through which the rods 3 pass and can slide endwise. There are springs around these rods 3, and said rods are bent at right angles at their ends and provided with cushioning-jaws *h h'*, so that when the stud *i* that projects from the reciprocating bed *C* strikes against the jaw *h* there will not be any

concussion, in consequence of the helical spring allowing the parts to yield; but the bar *f* and rack-saddle are moved endwise, and the nut *b* is revolved in one direction and the impression-cylinder screwed down to its place to give the impression; and when the stud *i'* reaches and moves the jaw *h'* the bar *f* and rack-saddle are moved in the other direction, and the nut revolved to raise the impression-cylinder, so that the said cylinder will not be in contact with the types as they are carried back under the impression-cylinder by the bed *C*.

It is to be understood that the same devices are fitted at both sides of the press, so as to act on both the journal-boxes of the impression-cylinder. The screws and nuts, however, will require to be right and left handed.

A lock-lever, *g*, and rod *j*, with a helical spring around it, may be used to pass behind the end of the rack-saddle and prevent the same moving endwise until the bar *f* by one of its inclined surfaces lifts the locking-lever *g* and allows the saddle to move with the bar *f*. The slots in the bar *f* for the bolts *b'* allow said bar *f* to be moved endwise sufficiently to raise the locking-lever *g* before motion is given to the rack-saddle. This occurs at both ends of the movement of the bar *f* and rack-saddle, so that the locking-lever *g* acts to hold the rack-saddle in either position.

The studs *i i'* are placed in such positions on the bed that the required movements are given to the parts as the said bed completes its reciprocation in either direction.

The bed *C* is supported upon the slideways *s*, and it is provided with the toothed rack *t*, that is actuated by the pinion *v* and shaft *w*, said pinion rolling in contact with one side of the rack-teeth and then passing around the end and rolling in contact with the other side. This is a well-known device, and does not require further description. In this movement, however, the shaft *w* changes its position vertically, as the same is at an upward inclination when the pinion is above the rack and at a downward inclination when the pinion is below the rack. This renders it necessary to employ a universal joint to connect the shaft *w* with the driving-shaft *q*. Great difficulty has been experienced in obtaining a universal

joint that can be relied on at this place, because there is considerable strain thereon. I construct this joint as follows: Upon the driving-shaft *q* there is a disk or slotted hub, *l'*, the slot having parallel sides passing across the face of the disk radially, and it is sufficiently deep to receive the joint-blocks *o o'*, that fit in the same accurately, but are free to move. Each joint-block has a hole through it, and the shaft *w* is T-shaped at the end, there being a short cross-shaft, *s'*, that passes through the holes in the joint-blocks *o o'*, and cross-pins or similar devices hold the parts together. These blocks are in the cross-slot, and can move therein backward and forward in a radial plane passing through the axis of the driving-shaft *q*, and the shaft *w* can rock on the short cross-shaft *s'* within the said blocks, so that the shaft *w* can occupy an angular position to the driving-shaft, and the latter will revolve the former accurately and without any looseness or play, whether the said shaft *w* is at an upward or a downward inclination.

It is necessary to prevent the joint-blocks slipping down out of the cross-slot in the hub *l'*. To effect this the end of the shaft *w* may be a long cone, passing into an enlarged conical hole or wedge-shaped recess in the end of the driving-shaft *q*; or else the shaft *w* may be supported by a journal-box, *t'*, upon a cross-arm or bridle-bar that is hinged or pivoted at its ends to the bearing-pieces 10 on the frame, so that the journal-box *t'* may swing up and down with the shaft *w* as it passes from one side of the rack to the other.

I do not claim the rack-bar upon the bed of the press, nor a pinion to move the same, nor

a bridle to support the shaft near the gearing and to allow such shaft to rise and fall. In these cases it is difficult to avoid looseness between the gear-teeth. By the combination of devices employed by me the parts are firmly connected, looseness is prevented, and at the same time there is but little friction, and perfect registration in printing is obtained.

I claim as my invention—

1. The combination, with the impression-cylinder and reciprocating bed, of screws and nuts to raise and lower the impression-cylinder, and mechanism, substantially as described, intervening between the reciprocating bed and the nuts, to give motion to such nuts in opposite directions near the termination of the reciprocations of the bed, substantially as set forth.

2. The combination, with the bed, of the stops *i i'*, the bar *f*, the spring-cushions *h h'*, the rack-bars and toothed nuts and screws, and the impression-cylinder and its journals, substantially as set forth.

3. The combination of the bed *C*, rack *t*, pinion *v*, and bridle-bar pivoted at its ends, with the shaft *w*, having a T or cross shaft at its end, the joint-blocks *o o'*, and the hub *l'*, having a transverse slot for forming a universal joint between the driving-shaft *q* and the shaft *w*, substantially as set forth.

Signed by me this 18th day of February, 1882.

JOHN BROOKS.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.