

(No Model.)

2 Sheets—Sheet 1.

J. BROOKS.
PRINTING PRESS.

No. 274,558.

Patented Mar. 27, 1883.

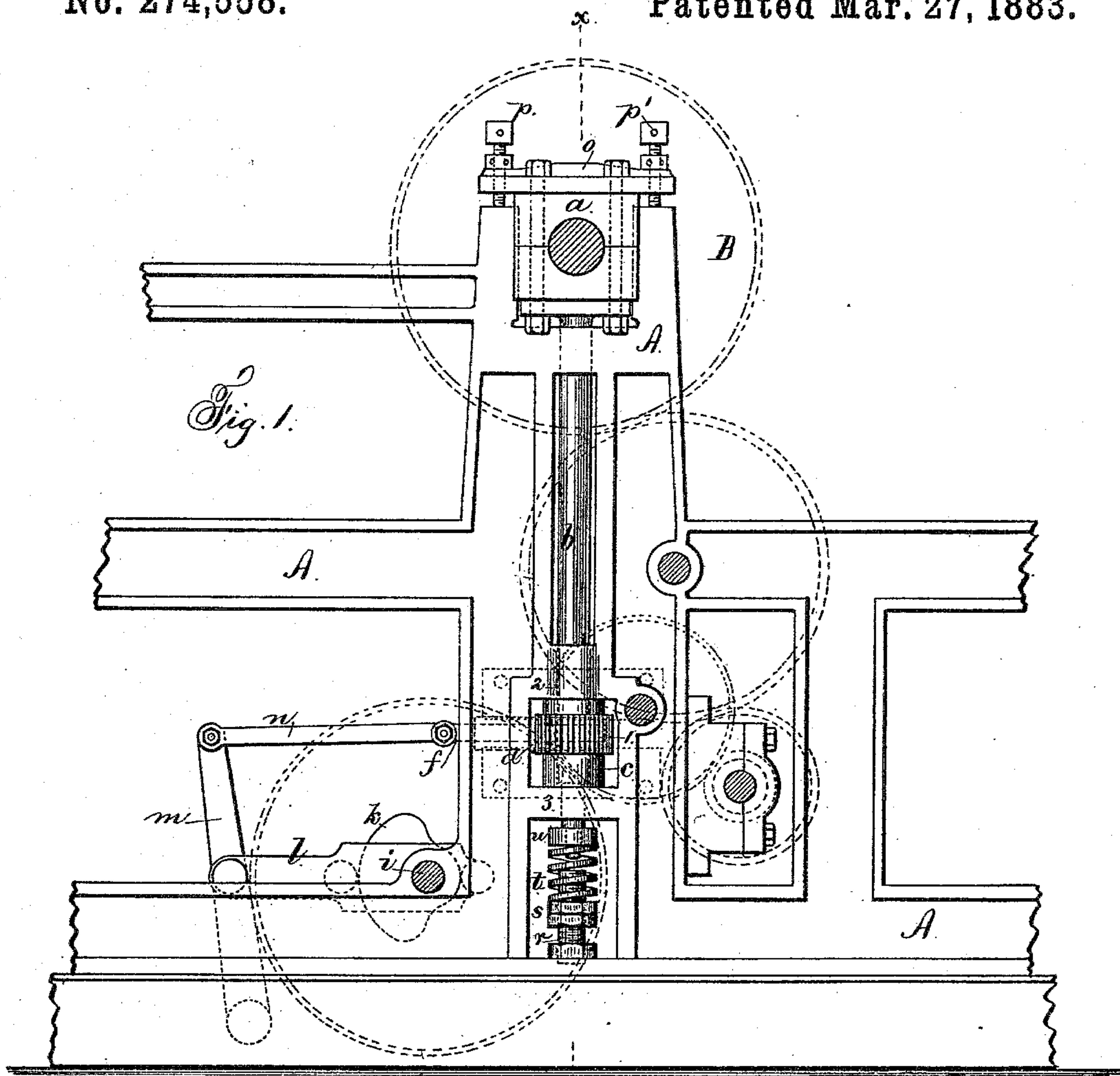
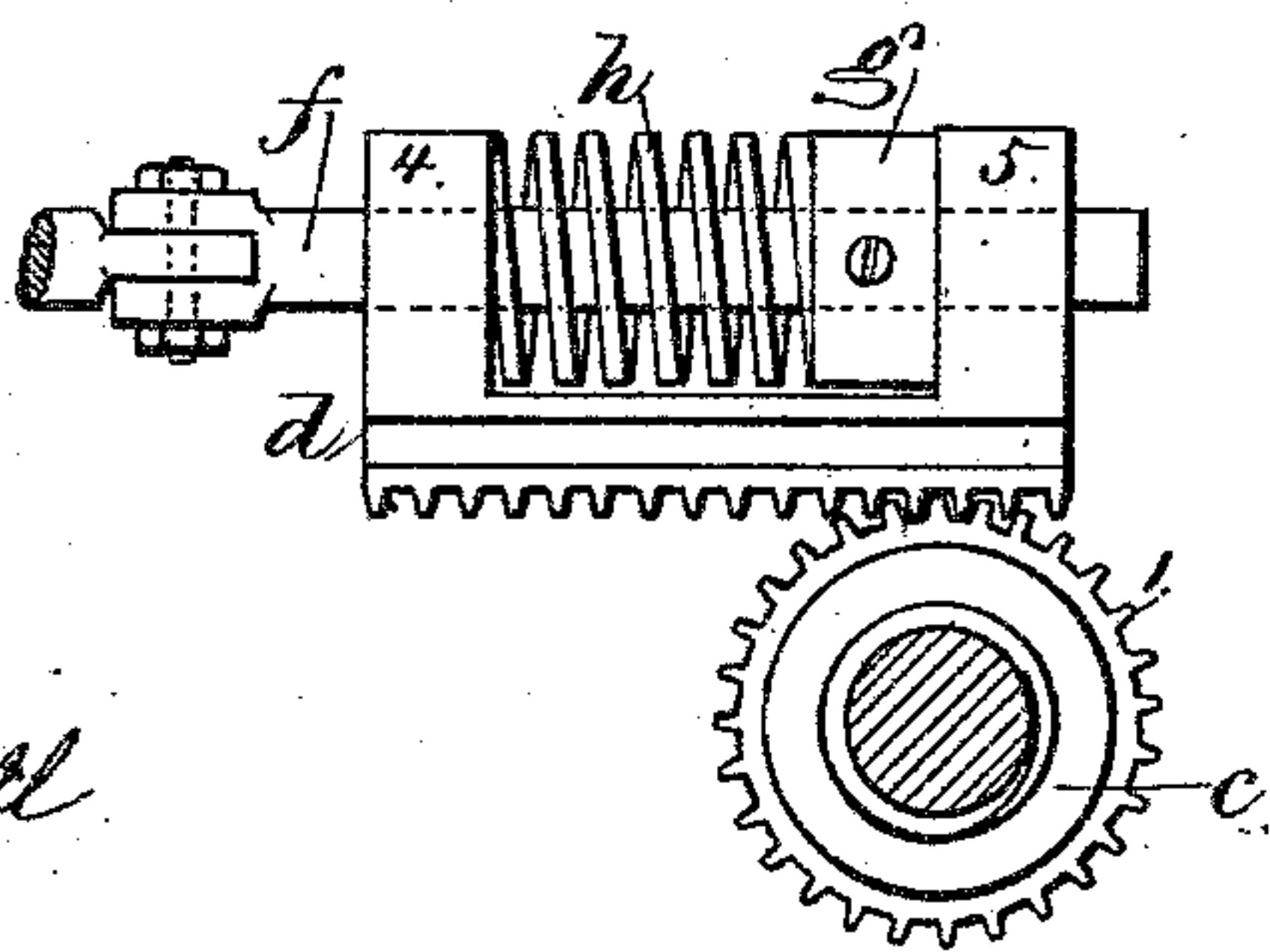


Fig. 2.



Witnesses
Harold Ferrell
Chas. H. Smith

Inventor
John Brooks
Lemuel W. Ferrell
att'y

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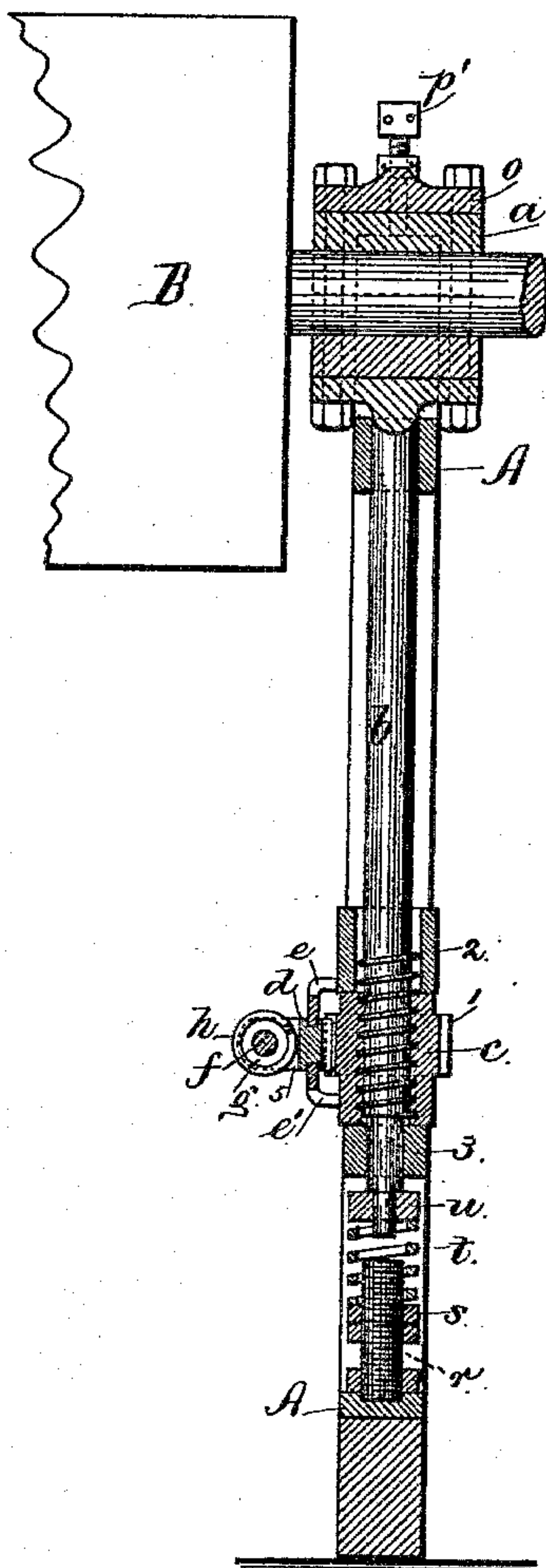


Fig. 3.

Witnesses,
Harold Ferrell.
Chas. H. Smith

Inventor
per John Brooks
Lemuel W. Ferrell atty

UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF PLAINFIELD, NEW JERSEY.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 274,558, dated March 27, 1883.

Application filed June 12, 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 a new and useful Improvement in Printing-Presses; and the following is declared to be a correct description of the same.

In printing-presses that are usually known as "two-revolution presses" the impression-cylinder makes one revolution while the type-bed is moving in one direction, and the other revolution while the type-bed is moving the other way, and in order to be able to revolve the impression-cylinder continuously it is necessary to separate the impression-cylinder from the types. This has been done by raising the impression-cylinder during one revolution and lowering it during the next revolution; but the means employed for this purpose do not always insure a reliable raising and lowering movement; hence the impression in printing is not always perfect in consequence of variations in the pressure upon the paper. I combine with the impression-cylinder and its journal-boxes two screws and nuts for the same, one at each side of the press, and mechanism for revolving such nuts automatically upon said screws as the bed terminates its stroke in one direction to lift the impression-cylinder bodily, and for turning the nuts the other way to lower and hold down firmly the impression-cylinder as the bed terminates its stroke in the other direction. Devices for effecting these objects are described in an application filed by me February 25, 1882.

The special features of my present invention consist in combining with the journal-boxes of the impression-cylinder adjustable screw-stops, so that the position occupied by the cylinder during printing can be positively determined, and, further, in the combination of springs with the racks that revolve the raising and lowering nuts, which springs yield to the further movement of the actuating mechanism after the impression-cylinder is screwed down to place, so that injury to any part is prevented.

In the drawings, Figure 1 is an elevation of part of the frame and of the mechanism for raising and lowering the journal-box at one side of the impression-cylinder. Fig. 2 is a

plan of the pinion and rack and contractile spring, and Fig. 3 is a vertical cross-section at the line *x x* of Fig. 1.

The frame *A* is to be of any desired character. The impression-cylinder and type-bed are of the usual construction.

The journal-boxes *a* of the impression-cylinder *B* are accurately fitted to slide up and down in slotted bearings in the frame *A*, and to the journal-boxes *a* there are attached vertical screw-rods *b*. As the devices at the two sides of the frame are just alike, it will only be necessary to describe one of them, and to remark that the threads of the screws *b* should be one right-handed, the other left-handed, so that the devices that move the nuts *c* may both be within the frames of the press, or the cams hereinafter described may be set to act in reverse directions. The nut *c* is made as a cylinder with gear-teeth at 1, and this nut is within an opening in the frame below the cross-bar 2 and above the rest 3 for the lower end of the nut. The screw *b* is by preference provided with a plate at the upper end, secured to the under side of the journal-boxes *a* by bolts passing through the same and through the boxes. These will hold the screw so that it cannot be revolved by the nut. As the type-bed is completing its movement in one direction the nuts *c* are turned one way and the impression-cylinder raised, and as the bed is completing its movement the other way the nuts *c* are turned in the other direction, and the impression-cylinder is lowered and held down firmly while giving the impression as the types move beneath it.

The rack-bar *d* slides between the stationary slide-bars *e e'*, that are bolted to the frame. This rack *d* has teeth at one side, that engage in the teeth 1 of the nuts *c*. At the other side of the rack *d* there are two lugs, 4 5, one near each end of the same, and through them the rod *f* passes. Upon the rod *f*, and between the lugs 4 5, there is a nut or washer, *g*, and spiral spring *h*, and the nut or washer *g* is secured to the rod *f* by key or screw.

Upon the shaft *i* there is a cam, *k*, that gives motion to the link *l* and rocking lever *m*, and the upper end of this lever *m* is connected by the link *n* to the rod or bar *f* and rack-saddle *d*.

The shaft *i* should revolve once for every two revolutions of the impression-cylinder, and the cam thereon is so placed and shaped that it moves the lever *m* in one direction as the type-bed terminates its stroke in one direction, and the other way as the bed finishes its stroke in the other direction, and thereby the bar *f* and rack will be made to revolve the nuts and raise and lower the impression-cylinder alternately.

Upon the top of the journal-boxes *a* there is a plate, *o*, and the bolts that hold the boxes together hold this in place as well. I provide two adjustable set-screws, *p p'*, at the ends of the plate *o*, and these screws bear against the top of the frame at the sides of the boxes *a* when the impression-cylinder is lowered, and these screws limit the downward movement of the impression-cylinder and determine its position relatively to the type-bed, so that there is an even and accurate impression by the cylinder upon the types all across its face. If the impression-cylinder reaches the end of its downward movement before the cam *k* assumes the position in Fig. 1, the further movement of the cam would be liable to break or injure some of the parts, were it not for the spring *h* in the jaws of the rack *d* yielding as the cam completes its movement.

There is an opening in the frame *A*, below the bar or rest 3, and the lower end of the screw-rod *b* passes into this opening, and is provided with a movable disk or washer, *u*, against which the spring *t* acts, and there is a screw-rod, *r*, within the spring, and nuts *s*, by means of which the spring can be compressed more or less. Devices of this kind are provided at both sides of the press, and the springs, acting upon the rods *b*, sustain said rods and the impression-cylinder more or less, and said springs may be sufficient to carry the weight of the impression-cylinder and rods, so that the nuts *c* may be relieved of considerable weight and friction in raising and lowering the impression-cylinder.

I claim as my invention.

1. The combination, with the impression-cylinder and its journal-boxes and screws *b*, of the nuts *c*, longitudinal rack-bars, and mechanism, substantially as described, for moving the rack-bars and nuts, and screws for regulating the impression by limiting the downward movement of the cylinder, substantially as set forth.

2. The combination, with the impression-cylinder and its journal-boxes, of the screws *b*, toothed nuts *c*, rack-bars *d*, rods *f*, and mechanism, substantially as described, for moving the same, and the springs *h* and nuts or washers *g*, intervening between the rack-bars *d* and rods *f*, substantially as and for the purposes set forth.

3. The combination, with the impression-cylinder *B*, screws *b*, and nuts *c*, of the screws *p p'*, the springs *t*, screw-standards *r*, and nuts *s*, and the racks *d*, nuts or washers *g*, rods *f*, springs *h*, and mechanism, substantially as described, for moving the rods *f* and raising and lowering the impression-cylinder, substantially as set forth.

4. The combination, with the impression-cylinder, its journal-boxes, the screws *b*, and nuts *c*, of the screws to determine the position of the cylinder, and thus regulate the impression in printing, the rack-bars for moving the nuts, mechanism, substantially as specified, for giving motion to the rack-bars, and springs between the rack-bars and their actuating devices, for allowing said actuating devices to complete their movement after the impression-cylinder has been stopped by the screws *p p'*, substantially as specified.

Signed by me this 27th day of May, A. D. 1882.

JOHN BROOKS.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.