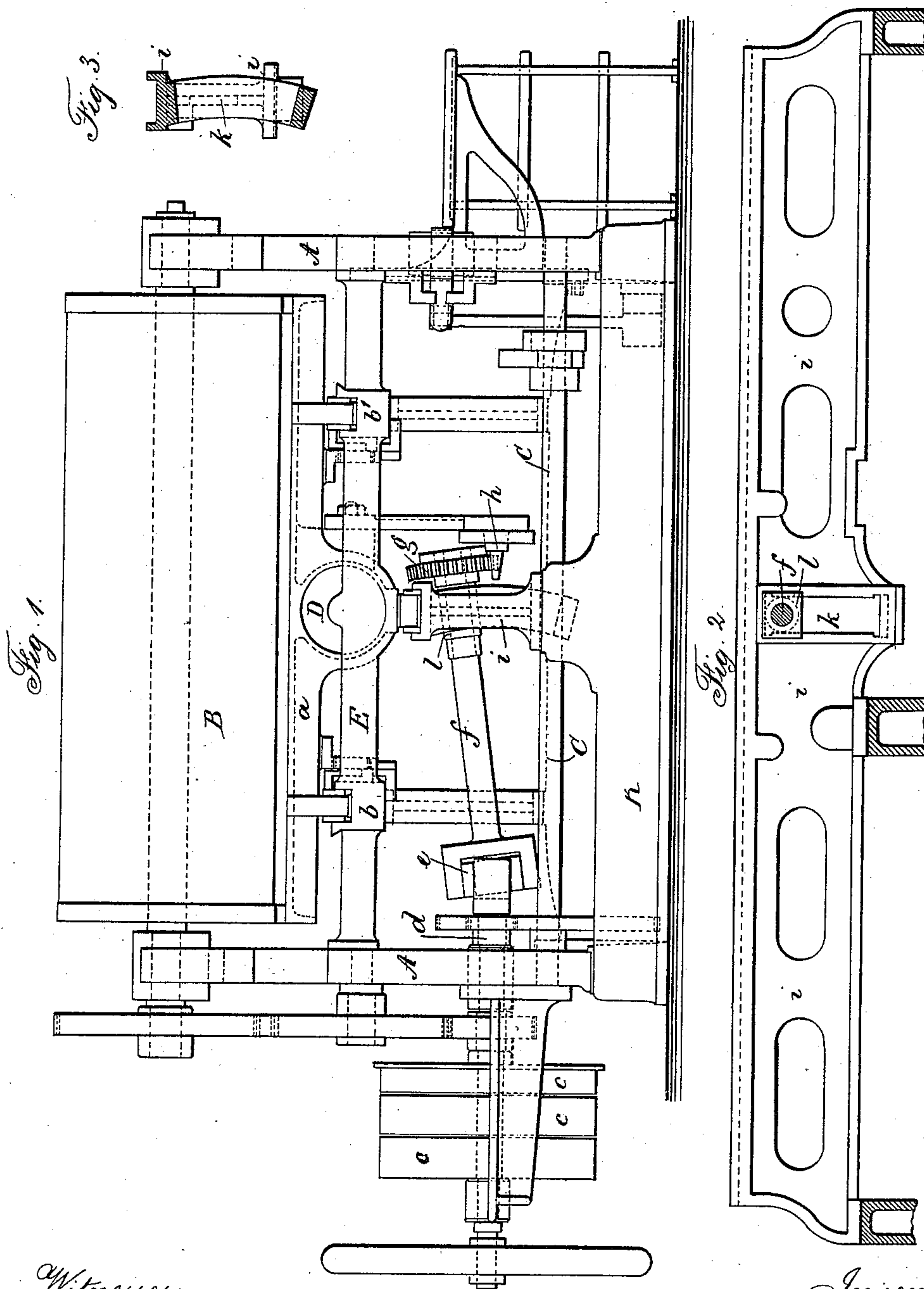


(No Model.)

J. BROOKS.
PRINTING MACHINE.

No. 300,842.

Patented June 24, 1884.



Witnesses:
J. Stair
Chas. H. Smith

Inventor
John Brooks
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att.

UNITED STATES PATENT OFFICE.

JOHN BROOKS, OF PLAINFIELD, NEW JERSEY.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 300,842, dated June 24, 1884.

Application filed August 28, 1883. (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-Machines, of which the following is a specification.

Printing-presses have been made with an impression-cylinder and a bed that is reciprocated by a pinion acting upon a rack. In this class of presses difficulties have arisen from two sources. The bed is liable to spring in the middle under the pressure from the impression-cylinder. This arises from the rails or bearing-slides being beneath the outer portions of the bed, so as to allow sufficient room for the cushioning-cylinders, rack, and other parts beneath the middle part of the bed. The rack beneath the bed is acted upon by a pinion. Said pinion during the movement in one direction is beneath the rack, and when the rack and bed are moving in the other direction the pinion is above the rack; hence the shaft of the pinion has to be provided with a universal joint to the driving-shaft, and the box or bearing of the pinion-shaft moves vertically in the slot of a bracket, below the reciprocating bed, such bracket projecting from the frame of the press. This bracket is liable to spring under the severe strain to which it is subjected, so that the reciprocating bed does not move its entire distance, and the bracket is often broken. In some instances the bed has been supported by either one or two wheels upon a cross-shaft beneath the impression-cylinder and bed, and the under side of the bed has been made with ribs or bearings resting upon such wheels.

My invention is made for avoiding both the before-mentioned difficulties, and relates to a longitudinal girder beneath the middle part of the printing-press bed, the top edge of which girder forms a slide for supporting the bed or the intermediate rolling carriage, the bed itself having a central bearing-rib extending from one end to the other, the lower edge being below, and preferably formed with the air-cushioning cylinders. In the longitudinal girder there is a vertical slot, in which is the bearing-box of the pinion-shaft, so that said box and shaft are supported firmly, but al-

lowed to rise and fall as the pinion passes the ends of the rack, thus insuring uniformity in the end movement of the press-bed, as well as preventing risk of the parts springing or breaking.

In the drawings, Figure 1 is an end elevation of a printing-press with my improvements thereon. Fig. 2 is a side elevation of the longitudinal girder, and Fig. 3 is a cross-section, at the slot, of the girder.

The printing-press is provided with the side frames, A A, the impression-cylinder B, cross-girt C, and the reciprocating bed *a*. There are also pulleys *c* upon the driving-shaft *d*, and a universal joint at *e* connecting the driving-shaft *d* to the pinion-shaft *f*, and the pinion *g* at the end of shaft *f* acts upon the rack *h* to reciprocate the bed. These parts are similar to those heretofore in use, and hence do not require further detailed description.

The bed *a* is usually supported by the longitudinal rails or bearing-slides *b b'*, there being carriages with rollers in the grooved upper surfaces of these rails or bearing-slides *b b'* for the bed to roll upon.

The air-cushioning cylinders D are beneath the bed *a*, and the piston-rods and pistons are supported by the end frames, E, as usual.

I make use of a longitudinal girder, *i*, that is central, or nearly so, beneath the press-bed, and at its ends it is connected with and rests upon the end frames, K, and at the middle portion upon the cross-girt C, so that said girder *i* is firmly held in place, and it also strengthens the frame of the press. The top edge of the girder is grooved in a manner similar to the top edge of the rails or bearing-slides *b b'*, and there is a longitudinal downwardly-projecting rib on the under side of the bed *a*, extending below and preferably formed with the air-cushioning cylinders D, which rib is above and rests upon the upper edge of the girder *i*, or upon the roller-carriage in the grooved upper edge of the said girder *i*. By this construction the central part of the type-bed is firmly supported throughout its entire length, and risk of the same springing under the pressure from the impression-cylinder is effectually prevented. In this longitudinal girder *i* there is a vertical slot, *k*, through

which the pinion-shaft *f* passes, and in which is the bearing-box *l* of the same. This box moves up or down when the pinion passes the end of the rack *h*, and the girder *i* firmly sustains the box *l* and shaft *f* against the lateral pressure as the bed is being reciprocated, and none of the parts are liable to spring or be broken.

I do not claim a central bearing-rail with two side bearing-rails, as these have been used with racks and wheels moved longitudinally by cranks.

I claim as my invention—

The combination, with the impression-cylinder, type-bed, rack, driving-shaft, pinion,

and pinion-shaft, of side supports below the type-bed, a longitudinal girder beneath the type-bed and supporting the same, the side frames, the cross-girt, and end frames to which the girder is fastened, said girder having a vertical slot through which the pinion-shaft passes, and in which the bearing-box of the same slides, substantially as set forth.

Signed by me this 25th day of August, A. D. 1883.

JOHN BROOKS.

Witnesses:

HAROLD SERRELL,
WILLIAM G. MOTT.