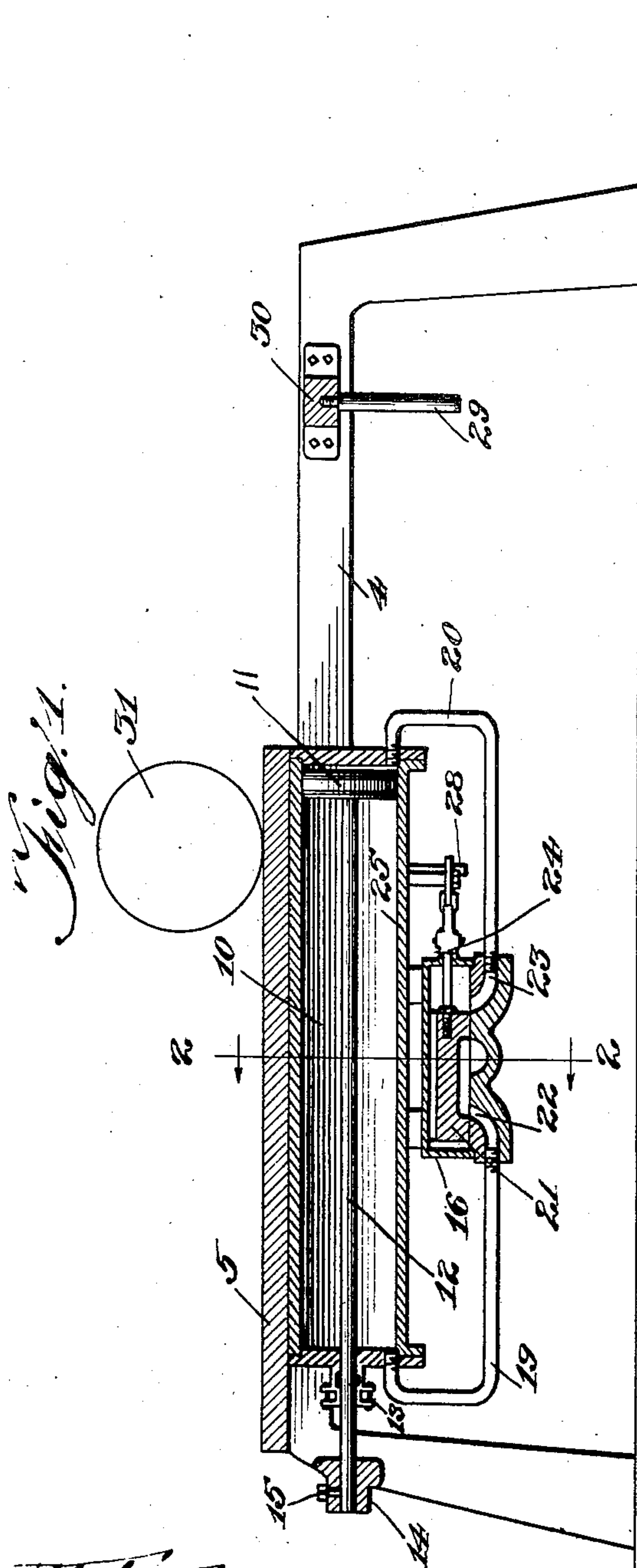


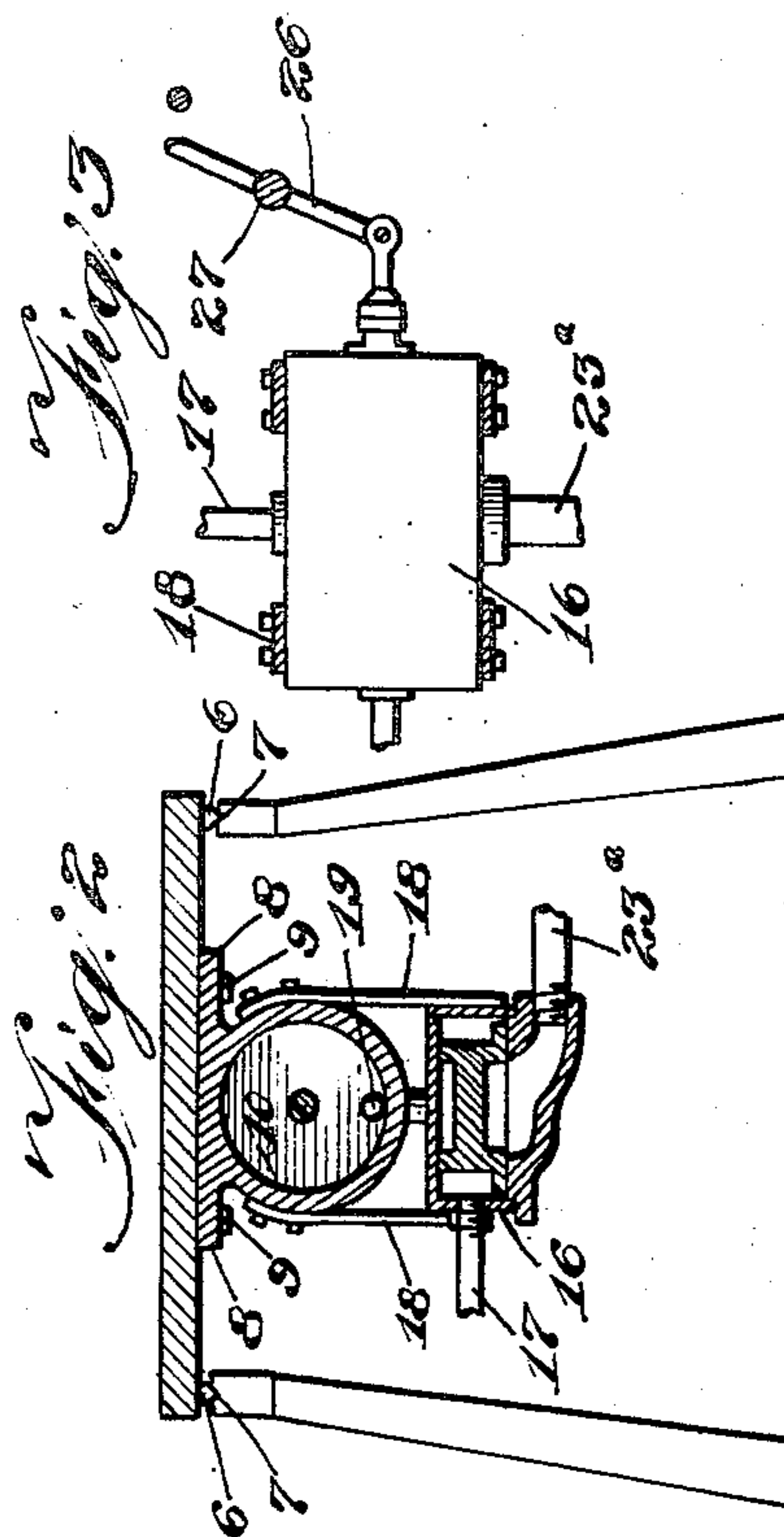
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PATENTED MAR. 26, 1907.

F. A. VENNEY.  
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# UNITED STATES PATENT OFFICE.

FELIX A. VENNEY, OF DALLAS, TEXAS.

## PRINTING-PRESS.

No. 848,330.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed April 20, 1905. Serial No. 256,544.

*To all whom it may concern:*

Be it known that I, FELIX A. VENNEY, a citizen of the United States, residing in the city of Dallas, county of Dallas, and State of Texas, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

This invention relates to improvements in printing-presses, in which the reciprocation of the bed-plate in one direction is produced by a pinion connected by a train of gearing with a power-shaft and its backward movement by engagement of the same pinion with another rack-bar in a plane below that which the pinion has when in engagement with the bed-plate rack-bar, and my invention also relates to printing-press movements in which the pinion referred to has a planetary movement about a two-sided rack-bar for the purpose of producing the backward-and-forward movement of the bed-plate of the machine.

The object of my invention is to substantially increase the rapidity of the reciprocation of a printing-press bed-plate and at the same time substantially reduce any jarring thereof or other parts of the machine and to accomplish these ends with an entire absence of all shaft and gearing mechanism.

With these ends in view my invention consists of certain features of novelty in construction, combination, and arrangement of parts by which said objects and certain other objects are hereinafter attained, all as fully described with reference to the accompanying drawings and hereinafter pointed out in the claims.

In said drawings, Figure 1 represents a longitudinal section through the bed-plate of a printing-press and propelling mechanism therefor embodying my invention; Fig. 2, a vertical transverse section on the line 2 2 of Fig. 1 and more particularly showing the location of the pipes supplying the medium for actuating the propelling devices, and Fig. 3 a side elevation of a steam-chest adapted for the purposes of my invention and more particularly showing the means for reversing the slide-valves thereof at the limit of each movement of the bed-plate.

Similar characters of reference indicate the same parts in the several figures of the drawings.

4 indicates a suitable frame of any ordinary construction adapted to support a printing-press bed-plate 5, which in opera-

tion has and must have a back-and-forth reciprocation on said frame, and to which end see Fig. 2. The bed-plate is provided with the usual bearing 6, fitting in and confined by corresponding depressions or grooves in the upper edge of the frame, which bearing, however, if desired, may be ball-bearers or any other well-known form of bearings commonly employed for similar purposes in printing-presses.

Rigidly secured to the under side of the bed-plate by projecting flanges 8 8 (see Fig. 2) by bolts 9 is a cylinder 10, in which works a piston 11, secured to a piston-rod 12, passing through an ordinary stuffing-box 13 and secured against movement by being projected into a suitable head 14, in which it is held by means of a screw 15 or other suitable device. The cylinder is or may be actuated by steam, air, water-gas, or other medium alternately introduced between the piston and the opposite ends of the cylinder, and whereby the bed-plate is not only reciprocated in both directions, but may be with a rapidity almost without limit, while at the same time it is cushioned at the limit of each stroke by the gas or other medium employed between the piston ends and the cylinder, with the result that there is absolutely no jar or sudden objectionable stopping of the bed-plate at the limit of either of the strokes.

The mediums or material supplied to the cylinder is conducted (see Fig. 2) to a steam-chest 16 by means of a pipe 17, which steam-chest is suspended, by means of straps 18 18 or other suitable means, from the cylinder 10 and connected therewith by means of pipes 19 20, opening through the opposite ends of the cylinder. The steam-chest is provided with an ordinary slide-valve 21, adapted to alternately open the ports 22 and 23, the exhaust being discharged through the pipe 23<sup>a</sup>.

As a simple and effective means for shifting the valve at the limit of the movement of the bed-plate said valve has secured thereto at one end by screw threading or other means a rod 24, projecting through a stuffing-box 25 and having pivoted thereto a lever 26, which in turn is secured on a fixed pin or shaft 27 at a point intermediate the ends of the lever. Lever 26 is in the path of and therefore adapted to engage, at the limit of its back stroke, for example, a pin 28, secured to some stationary portion of the frame of the press, and at the limit of its



forward stroke with a similar pin 29, likewise secured to some fixed part of the machine—as, for example, to a cross-bar 30 thereof.

The operation of the bed-plate of a printing-press by means of a shifting power-cylinder supporting or supported by the bed-plate—that is to say, secured thereto—not only has the advantage of producing an unlimited rapidity of movement of the bed-plate for all practical purposes, but that by actuating the cylinder by means of gases an elastic cushion is formed between the piston and the cylinder at both ends of the stroke of the cylinder and of the very best possible character for securing an entire absence of blows or jerks tending to jar the bed-plate or between any of the parts connecting it with its source of power or which produce an objectionable noise, and, furthermore, I am thereby enabled to dispense with expensive and complex gearing not only for actuating the bed-plate, but other portions of a printing-press deriving their power through the medium of the bed-plate—as, for example, the printing cylinder or roller 31, which obviously may be actuated solely by frictional contact with the bed-plate.

My invention is not limited to the employment of the particular form and construction of steam-chest and valve mechanism shown nor to the employment of the lever and stops for mechanically automatically shifting the valves at the respective limits of the movement of the power-cylinder, for obviously other well-known structures may be employed for the same purpose and secure the same results.

It is proper to observe that the steam-

supply pipe 17 is designed to be a flexible pipe—such, for example, as a rubber hose—and for the purpose of supplying steam to the steam-chest throughout the limit of its movements; but obviously it would be no departure from my invention to dispense with the flexible pipe 17 and supply steam to the steam-chest by any other well-known means adapted to do so throughout the movement of the steam-chest.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a printing-press the combination with a bed-plate, a power-cylinder secured thereto, a fixed piston and piston-rod therefor, a valve mechanism, means connecting said mechanism with each end of the cylinder, a rod secured to said valve mechanism, a lever pivoted to said rod, and stops in the path of said lever, substantially as described.

2. In a printing-press the combination with a bed-plate, a power-cylinder secured to said bed-plate, a fixed piston and piston-rod therefor, a sliding-valve mechanism, pipes connecting said mechanism, respectively with each end of said cylinder, a rod secured to said valve mechanism, a lever pivoted to said rod and stops in the path of said lever, whereby the valve mechanism is actuated mechanically at the limit of both the forward and back movement of the bed-plate, substantially as described.

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