

(No Model.)

C. POTTER, Jr.

CUSHIONING DEVICE FOR PRINTING MACHINES.

No. 246,033.

Patented Aug. 23, 1881.

Fig. 2.

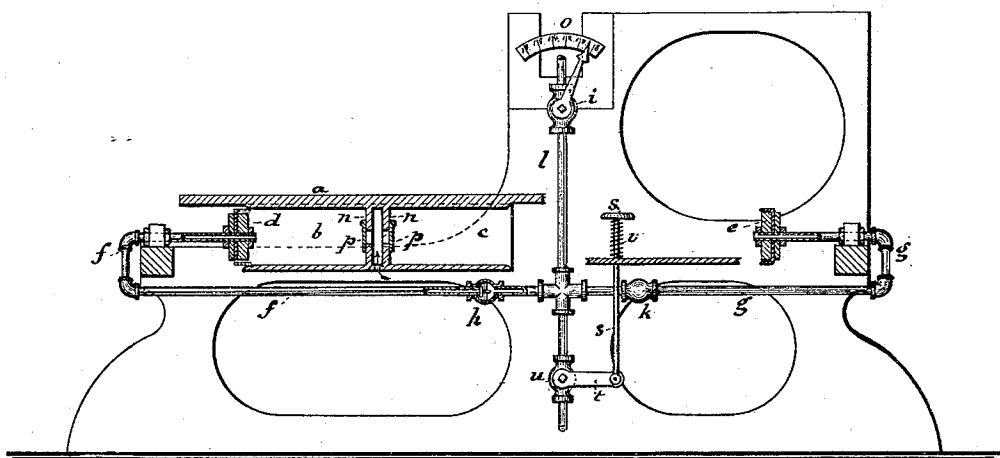


Fig. 1.

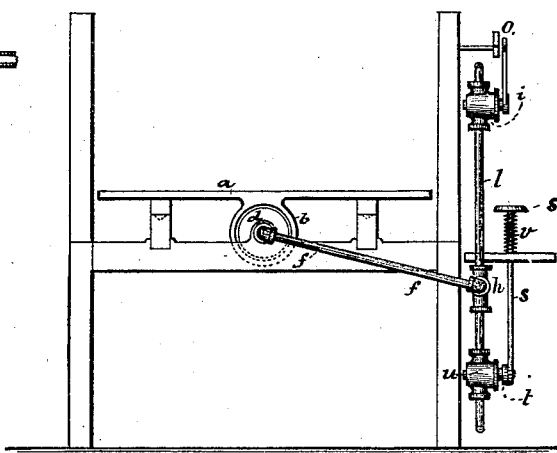


Fig. 3.



Witnesses

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CHARLES POTTER, JR., OF PLAINFIELD, NEW JERSEY.

CUSHIONING DEVICE FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 246,033, dated August 23, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES POTTER, JR., of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Cushioning Devices for Printing-Machines, of which the following is a specification.

In printing-machines the reciprocating bed has been provided with two air-cylinders, and one has moved over a stationary piston at each end of the stroke, and the air confined in the cylinder has acted as a cushion to arrest the movement of the bed and lessen the strain and concussion on the operative parts that would result from overcoming the inertia of the bed and form.

I make use of the air-cushioning cylinders and pistons similar to those before employed; but I combine with them air-pipes and check-valves, that open for the passage of the air and close to prevent the air passing from one cylinder to the other, and a single discharge-cock, which is placed conveniently for the operative, and this cock is opened more or less, so that the cushioning action at both ends of the stroke will be in proportion to the speed of the press; or the cock may be opened entirely when the press is being moved by hand. I provide an indicator-arm upon the cock, and divisions or marks, so that the cock may be set at the proper point for the particular speed of press. Furthermore, I provide a cock and foot-lever, by which the cushioning action may be thrown off instantly, if necessary, without altering the adjustment of the blow-off cock.

In the drawings, Figure 1 is a diagram view endwise of the bed, and Fig. 2 is a diagram view sidewise of the bed, showing the bed and the operative's platform in section. Fig. 3 is a section of a check-valve.

The bed *a*, cylinders *b c*, pistons *d e*, and the frame-work of the press are of any desired character. I have shown the cylinders as made with the bed *a*; but they may be stationary and supported upon the frame, the pistons being transposed into the positions of the cylinders.

The pipes *f* and *g* lead from the air-cushioning spaces to the check-valves *h* and *k*, which serve to prevent the air passing in both directions, and compel the air that escapes from either cylinder to enter the pipe *l* leading to the regulating-cock *i*. The check-valves are of ordinary character, such as seen in Fig. 3. Each one opens by the air-pressure as the air is passing from the cylinder to the cock *i*; but

it closes in the opposite direction, to prevent the air passing from one cylinder to the other. By opening the regulating-cock wider the air will escape more rapidly and the cushioning operation will be lessened, and the reverse, so that the cock can be set to suit the speed at which the bed is reciprocating or the weight of the form, and the cushioning will be the same at both ends of the stroke. By providing an arm and index, *o*, the position of the cock, when adapted to various speeds and weights, will be indicated.

The treadle *s* and lever *t* are employed for opening the blow-off cock *u* instantly, in case it is desired to relieve the bed from the cushioning action, and the spring *v* restores the parts, automatically closing the cock. This renders it unnecessary to change the adjustment of the cock *i* in removing the air-cushions temporarily.

I make use of a double perforated partition, *n*, between the two air spaces or cylinders, so that air can pass freely in between these partitions and into the cylinder that is drawing off the stationary piston as soon as the pressure in the cylinder is less than that of the atmosphere, to prevent a retarding or vacuum action.

There are ordinary valves *p*, that close outwardly, to confine the cushioning air in the respective cylinders when moving upon the respective pistons.

I claim as my invention—

1. The combination, with the air-cushioning devices in a printing-machine, of air-pipes, check-valves, and one air-escape valve, all substantially as set forth.

2. The combination, with the air-cushioning devices in a printing-machine, of one air-escape valve, an index to denote the extent of opening of the cock, and pipes leading to the air-cushioning cylinders, all substantially as set forth.

3. The combination, with the air-cushioning devices in a printing-machine, of check-valves, a single escape-valve, and their connecting-pipes, and a blow-off valve and its actuating mechanism, all substantially as specified.

Signed by me this 9th day of May, A. D. 1881.

CHARLES POTTER, JR.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.