

(No Model.)

2 Sheets—Sheet 1.

F. A. BURNHAM.
PLATEN PRINTING PRESS.

No. 572,405.

Patented Dec. 1, 1896.

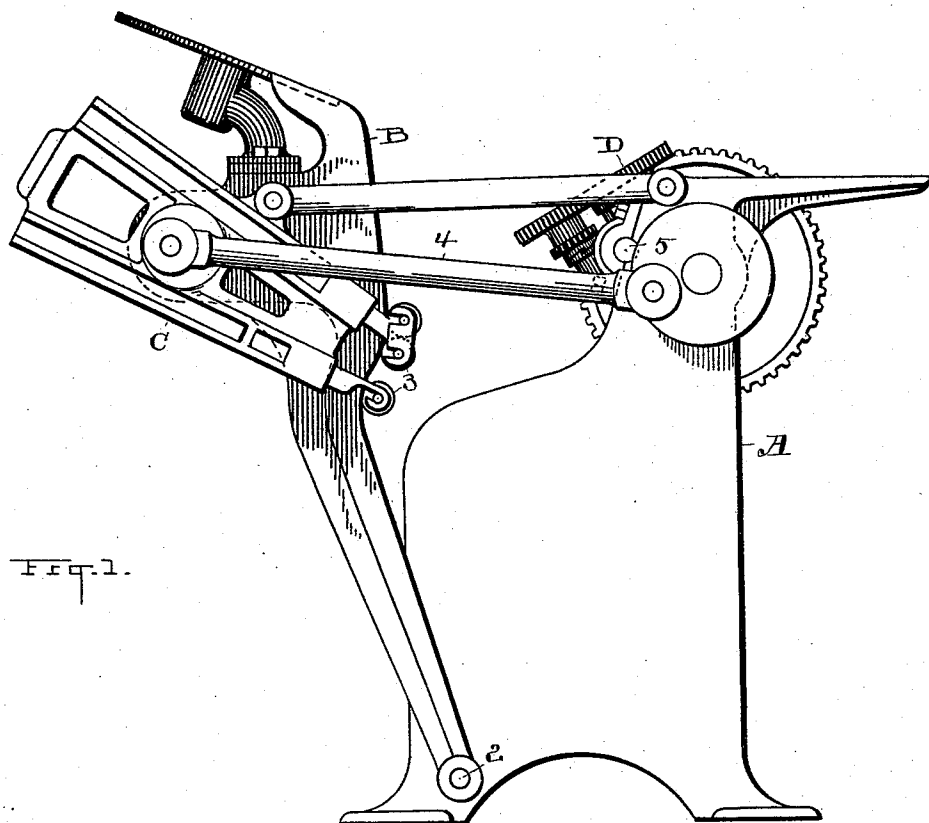


Fig. 1.

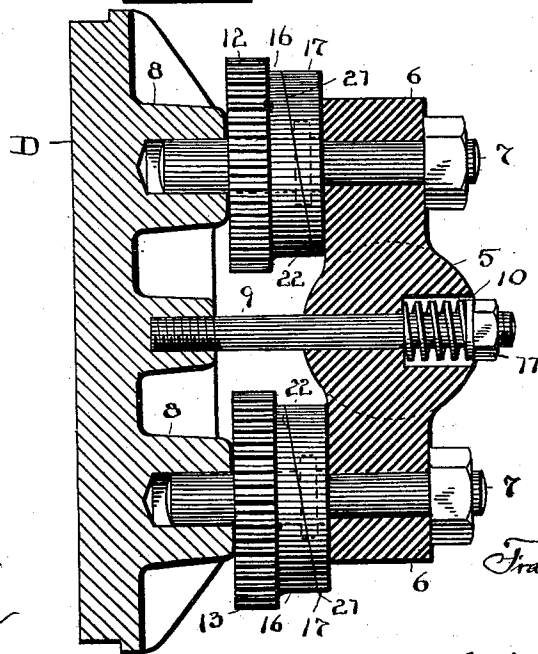


Fig. 4.

ATTEST.

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INVENTOR.

Frank A. Burnham

BY *H. J. Foster* ATTY

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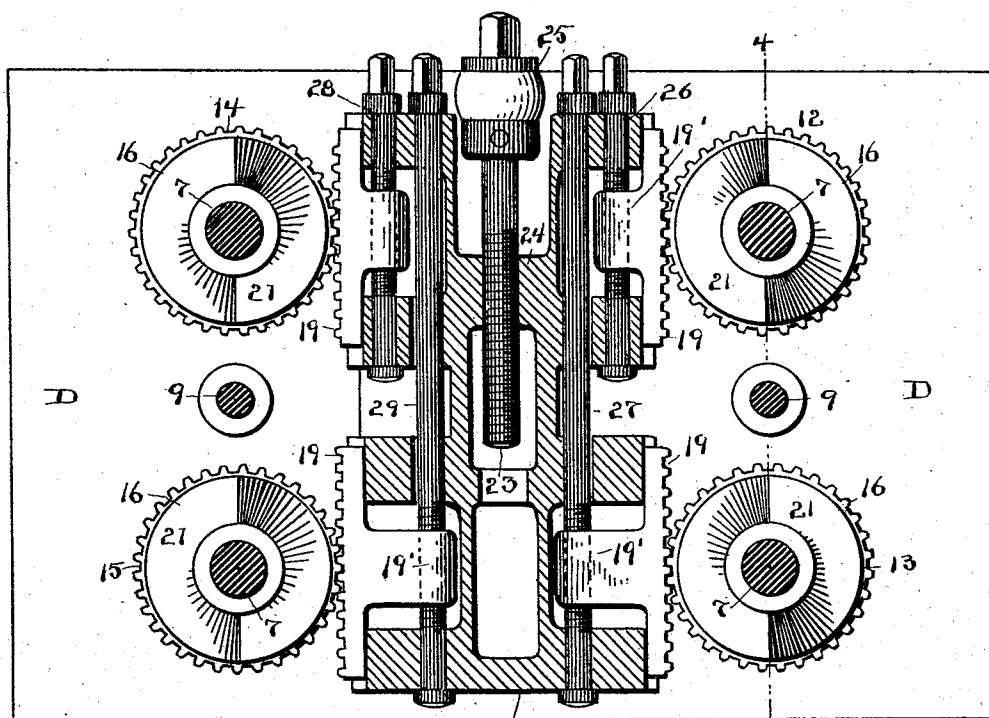
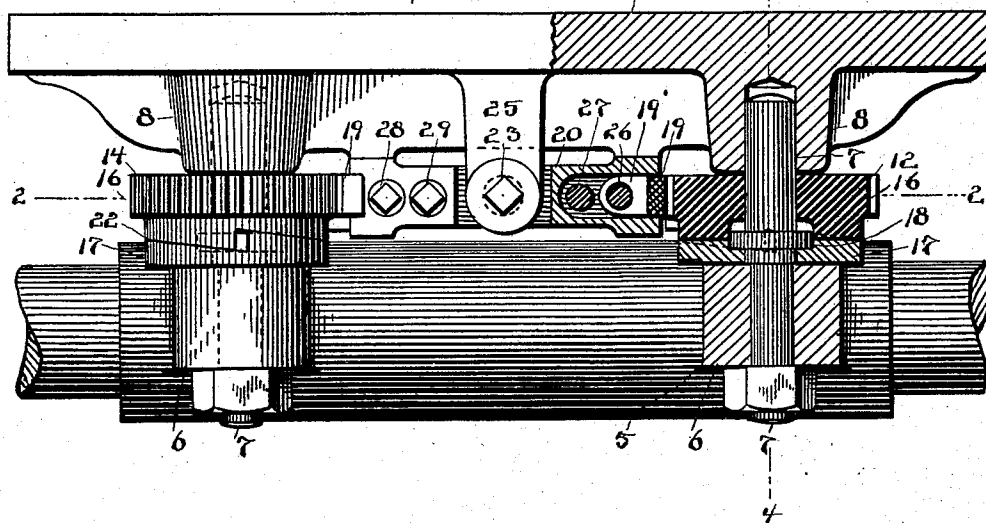


Fig. 2.

Fig. 3.



ATTEST

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By H. J. Fisher ATT'Y

UNITED STATES PATENT OFFICE.

FRANK A. BURNHAM, OF CLEVELAND, OHIO, ASSIGNOR TO THE CHANDLER
& PRICE COMPANY, OF SAME PLACE.

PLATEN PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 572,405, dated December 1, 1896.

Application filed July 6, 1896. Serial No. 598,274. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. BURNHAM, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Platen Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in platen printing-presses, and particularly to mechanism for adjusting the platen toward and from the bed, whereby may be effected such slight changes as may be necessary in printing paper of different thicknesses or in printing alternately thin paper and cardboard, or the greater changes necessary to print heavy cardboard, or on the covers of bound pamphlets and the like, or for adjusting any one or more corners of the platen independently, substantially as shown and described.

In the accompanying drawings, Figure 1 illustrates a side elevation of a well-known form of printing-press in which my improved platen is embodied. Fig. 2 is a sectional view taken on line 2 2 of Fig. 3, looking in at the rear of the platen and its operative parts. Fig. 3 is a plan edge view of the platen and its parts supported on the rock-shaft and having one side partly broken away and in section to more clearly show the interior construction. Fig. 4 is a cross-section view taken on line 4 4 of Figs. 2 and 3.

A represents the frame of a printing-press; B, the bed pivoted at 2; C, the inking-roller frame; 3, the inking-rollers, and 4 the operating-arm connected to the eccentric and main shaft. The platen D is mounted on a rock-shaft 5, pivoted in the sides of the frame and operated in the usual manner. This rock-shaft has four lugs 6, through and to which the posts 7 are bolted. These bolts 7 extend into bosses 8 on the rear of the platen D, and the platen is thus supported, but free to slide in and out on these bolts 7; but to keep the platen in place and to limit the in-and-out movement a rod 9 is screwed into the platen at each side and a spring 10 is interposed be-

tween the rock-shaft 5 and a nut 11 on the end of the rod 7, which keeps the spring in place and allows an adjustment of the tension. Now to obtain this in-and-out adjustment necessary to true the face of the platen to the face of the type cams 12, 13, 14, and 15 are sleeved upon bolts 7 between platen D and lugs 6 on rock-shaft 5. These cams consist of two parts 16 and 17, and part 16 is free to rotate on bolt 7, while part 17 is clamped against lug 6 by an enlargement 18 on bolt 7. Part 16 has gear-teeth cut upon its periphery, which, when engaged by rack 19, supported in a frame 20 on the platen D, is adapted to be rotated, and when rotated the inclined face 21 of part 16, riding upon the inclined face 22 of part 17, forces the platen out away from the rock-shaft. If rotated in the reverse way, the spring 10 on bolt 9 draws the platen in and keeps the face of the cams or inclined surfaces together. This construction is the same for the four cams 12, 13, 14, and 15, with this exception that cams 14 and 15 have their inclined surfaces reversed from 12 and 13. The racks being right and left rotate the gears at each side right and left, so both inclined surfaces on 12 13 and 14 15 must be so inclined as to throw the platen in and out together.

In Figs. 2 and 3 the racks 19 and their supporting-frame 20 are clearly shown. Said frame 20 is interposed between the platen and the rock-shaft and adapted to be adjusted and operated by a screw-threaded shaft 23, which is threaded into the said frame at 24 and is held and suspended at the top edge of the platen in an arm 25. The top of the shaft is squared for a wrench or key, so that when the entire frame holding the four racks is desired to be raised or lowered to rotate the four cams a few turns of the shaft will operate all the cams simultaneously. This will force the platen in or out as much as desired. The four cams operating together will force the platen the same distance at all points; but at times one corner of the platen or one side of the platen projects more than another, so that the face of the platen is not true with the face of the type, and to remedy this unevenness the corner or side that is out of place must be brought into proper work-

ing position. This is done as follows: Each rack 19 is adapted to slide at the side of the frame 20, and separate screw-threaded rods 26, 27, 28, and 29 pass through ears 19' on racks 19. Each rack has its own screw-threaded rod, and they are held in the frame 20 and have square heads which project at the top of the frame, where it is an easy matter to apply a wrench or key and turn the same to raise or lower each rack. As hereinbefore stated, when the racks are raised or lowered the corresponding cams are rotated, and the rotation of the cams forces the platen in or out, according to the direction of rotation. When the platen is desired to be moved in or out at all points uniformly and simultaneously, the shaft 23 is alone operated, but if only one corner be untrue and needs adjustment, say, for example, the upper right-hand corner, only that corner-shaft, which in this case is 26, is operated. This construction is positive in its action and brings the adjusting-screws into a central position, where they can be easily gotten at, and thus requiring little time or skill for adjustment of the platen.

The object of shaft 23, as already indicated, is to provide means whereby the platen can be easily and reliably moved inward or outward in a perfectly parallel plane over its entire surface after any definite adjustment thereof at the corners and sides has been made. Such adjustment is desirable on many accounts and needs to be frequently repeated as different jobs of printing follow each other in the work. Sometimes a slightly lighter or heavier impression on the same paper is wanted. Sometimes different kinds or weights of paper require a change, and then when it comes to printing on the covers of bound pamphlets or small books a wider and more extended range of adjustment is needed. This avoids all building up or padding on the platen, as has generally been the practice, to meet the smaller demands for difference in impression, as above indicated, and for the wider range of adjustment avoids the delay and difficulty which a corner-by-corner adjustment involves. With this improvement when once a perfectly parallel or even position of the platen is obtained it can be moved back and forth an indefinite number of times and to greater or less degree and meet any need with absolute certainty that its parallelism has not been destroyed.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a press substantially as described, the platen and a series of cams supporting the same having teeth on their periphery, racks for operating said cams conjointly, and a screw for operating said racks, substantially as described.

2. The platen and a series of supporting-cams therefor arranged in a plane substantially parallel with the platen, a movable frame and independently-adjustable members in said frame to rotate said cams, and an operating-screw engaging said frame, substantially as described.

3. The platen and the cams supporting the platen, racks engaging said cams, a sliding frame connecting said racks and means to operate said frame, whereby the cams are rotated and the platen is raised or lowered, substantially as described.

4. The platen and the supporting rock-shaft having lateral projections, a set of cams for each corner of the platen supported on said projections, and means for operating all said cams at the same time comprising a frame and racks, substantially as described.

5. In a printing-press a platen and a series of separately-controlled cams on which said platen rests, a rock-shaft having lateral projections supporting said cams, a sliding frame between said platen and shaft separately-adjustable racks on said frame to operate said cams, and guides for the platen projecting through said cams, substantially as described.

6. The platen, the rock-shaft therefor having lateral projections, bolts through said projections extending into the platen and cams supporting the platen on said projections, means to rotate the cams and move the platen and spring-pressed connections between the platen and the rock-shaft, substantially as described.

7. The platen and the rock-shaft, a set of cams on the rock-shaft for each corner of the platen, a sliding frame between the shaft and the platen and a separately-adjustable rack in said frame for each of said sets of cams, substantially as described.

Witness my hand to the foregoing specification this 9th day of June, 1896.

FRANK A. BURNHAM.

Witnesses:

H. T. FISHER,
RICHARD B. MOSER.