

No. 627,089.

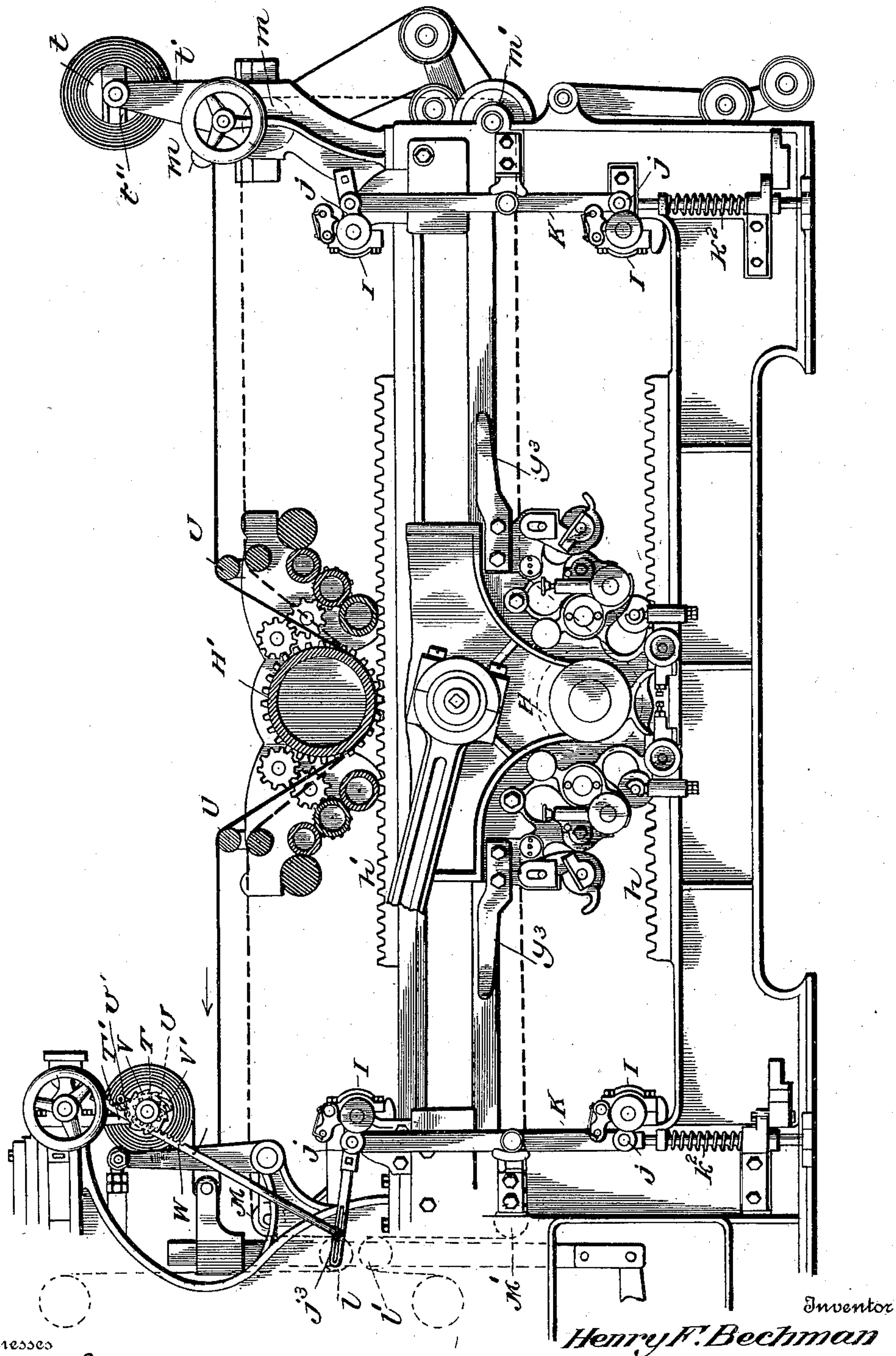
Patented June 20, 1899.

H. F. BECHMAN.

SHIFTING TYMPAN FOR PRINTING PRESSES.

(Application filed Sept. 28, 1897.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

HENRY F. BECHMAN, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO THE  
DUPLEX PRINTING PRESS COMPANY, OF SAME PLACE.

## SHIFTING TYMPAN FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 627,089, dated June 20, 1899.

Application filed September 28, 1897. Serial No. 653,289. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. BECHMAN, of Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Shifting Tym-  
5 pans for Printing-Presses; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms  
10 part of this specification.

This invention is an improvement in printing-presses, and has especial reference to web-printing machines printing from flat forms, its object being to provide a shifting tympan  
15 for the cylinder.

The invention is applicable to various forms of flat-bed cylinder-presses, and is particularly designed for use with the Cox duplex presses, such as are shown in Cox's patents,  
20 No. 478,503, of July 5, 1892, and No. 502,618, of August 1, 1893. The accompanying drawing illustrates the invention as applied to the upper or perfecting cylinder of such a press; but I do not limit myself to its employment in such press, as it is applicable to  
25 various other forms of web-printing machines.

The said drawing represents, partly in side elevation and in section, the printing mechanism of one of said Cox presses with my improved tympan mechanism applied thereto.  
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Referring to the drawing,  $h h'$  are the type-beds,  $H H'$  the cylinders cooperating therewith,  $M M'$  stationary web-guiding rollers, and  $l l'$  movable web-looping rollers, constructed, arranged, and operating substantially as in said patents.  
35

$K K$  are vertically-movable bars connected to rocking levers  $j j$ , carrying pawls that operate the rolls  $I$  of the ink-fountains, said  
40 bars being depressed alternately by means of cams  $y^3$  on the reciprocating cylinder-carriers and uplifted by springs  $k^2$ , substantially as shown and described in Patent No. 502,618 aforesaid.

One tympan-roll  $T$  is supported in brackets  $T'$ , attached to the frame above looping-roller  $M$ , and the other tympan-roll  $t$  is supported in brackets  $t'$ , mounted on the frame above roller  
45  $m$ . The tympan-sheet is led from roll  $t$  to  
50 roll  $T$  above the upper part of the printed

web and passed down under cylinder  $H'$ , between it and the web, being guided to and from the cylinder over the rollers  $U U$ , mounted on the carriage, as shown. By this arrangement it will be at once seen that the  
55 tympan is interposed between the surface of the cylinder and the printed web and that the cylinder rolls back and forth over the tympan, pressing it and the underlying web down upon the type-form, the tympan-web  
60 preventing the printed web contacting with the cylinder.

The tympan may be shifted from one roll to the other, as is usual, to present clean surfaces to the impressions upon the web. The  
65 amount of shifting of tympan and the times of shifting can be easily varied or regulated to suit the will of the constructor. I have illustrated one simple means of gradually shifting the tympan from one roll to the other in  
70 the drawing. Preferably I shift the tympan from roll  $t$  to roll  $T$ , because that movement of the tympan will correspond to the movement of the web. The roll  $t$  therefore may be provided with a friction-disk  $t''$  or other  
75 suitable device to prevent its unwinding by momentum. On the shaft-carrying roll  $T$  may be a ratchet  $V$ , engaged by a stop-dog  $V'$  and by a pawl  $v'$  on a loose gear  $v$ , which is vibrated by means of a rack  $W$ , the lower  
80 end of which is pivotally connected to an extension  $j^3$  of the adjoining fountain-lever  $j$ , as shown. The rod  $W$  may have an adjustable connection with extension  $j^3$ , as indicated in the drawing. This is one simple construction  
85 by which the tympan can be intermittently shifted from roll  $t$  to roll  $T$ . Obviously either or both rolls  $T t$  could be thus mechanically operated. I do not, however, confine myself to such roll-shifting mechanism,  
90 as it can be easily varied according to the construction of press or wishes of the press constructor.

It will be seen that in the press shown it is most advantageous to operate the tympan-  
95 roll at the ends of the strokes of the cylinders, as at that time the web is moving from roll  $m$  toward roll  $M$ , and thus there is the least liability to smear the freshly-printed sheet.



By this invention offset in this class of machines can be prevented and the capability of the press greatly increased.

Having thus described my invention, what I therefore claim as new, and desire to secure by Letters Patent thereon, is—

1. In a printing-press, the combination of a reciprocating cylinder, and tympan therefor, and supports for the ends of the tympan located exterior to the cylinder and beyond the range of movement thereof, with means independent of the means employed for shifting the web for intermittently shifting the tympan after impressions, for the purpose and substantially as described.

2. In a web-printing press, the combination of a reciprocating impression-cylinder, a tympan therefor having its ends wound upon supports exterior to and independent of the cylinder, and interposed between the cylinder and the web, and means independent of the means employed for shifting the web for intermittently shifting the tympan, from one support to the other, after impressions and holding that portion of the tympan over the forms stationary with the web during the taking of an impression, substantially as described.

3. In a printing-press, the combination of a reciprocating impression-cylinder, and a tympan therefor, with stationary supports for said tympan located at opposite sides of the cylinder and beyond the limits of travel therefor, and means independent of the means employed for shifting the web for intermittently shifting the tympan from one support to the other after impressions, and holding it stationary during impressions, substantially as and for the purpose described.

4. In a web-printing press, the combination of a type-bed, a reciprocating cylinder and means for intermittently feeding a web between the cylinder and bed, with a tympan interposed between the web and cylinder and held stationary at its ends beyond the range

of travel of the cylinder, and means independent of the means employed for shifting the web for intermittently shifting the tympan in the direction of travel of the web, after the taking of impressions, substantially as described.

5. In a printing-press, the combination of a type-bed, an impression-cylinder, means for reciprocating the impression-cylinder over the bed and means for leading a web of paper to be printed between said bed and cylinder; with a pair of tympan-supporting guides mounted upon the frame of the machine beyond the range of travel of the cylinder, a tympan extending from one guide to the other and interposed between the cylinder and web, and a mechanism substantially as described for shifting said tympan from one support to the other, said mechanism being operated by the movement of the cylinder-carriage and only after impressions, for the purpose and substantially as described.

6. In a printing-press, the combination of a type-bed an impression-cylinder, means for reciprocating the impression-cylinder over the bed and means for leading a web of paper to be printed between said bed and cylinder; with a pair of tympan-supporting shafts mounted upon the frame of the machine beyond the range of travel of the cylinder, a tympan leading from one shaft to the other and interposed between the cylinder and web, and a ratchet mechanism substantially as described for rotating one of said tympan-shafts, said mechanism being operated by the movement of the cylinder-carriage and only after impressions, for the purpose and substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY F. BECHMAN.

In presence of—

FRANK W. DUNNING,  
CHAS. H. WHEELLOCK.