

(No Model.)

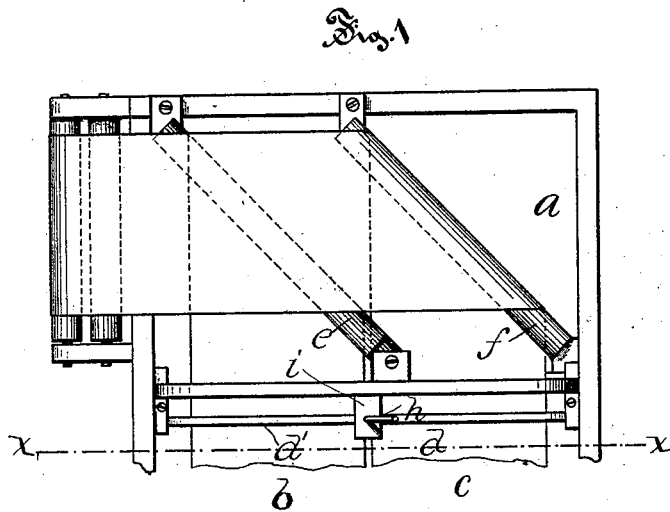
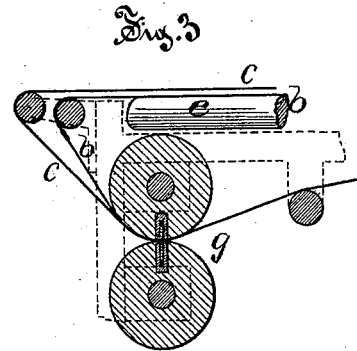
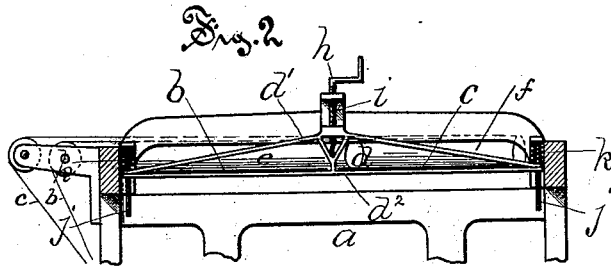
2 Sheets—Sheet 1.

W. J. SHEA.

TENSION DEVICE FOR PRINTING MACHINES.

No. 347,966.

Patented Aug. 24, 1886.



Witnesses:
W. M. Sporkman
H. R. Williams.

Inventor:
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by Simonds & Burdette,
Attys.

(No Model.)

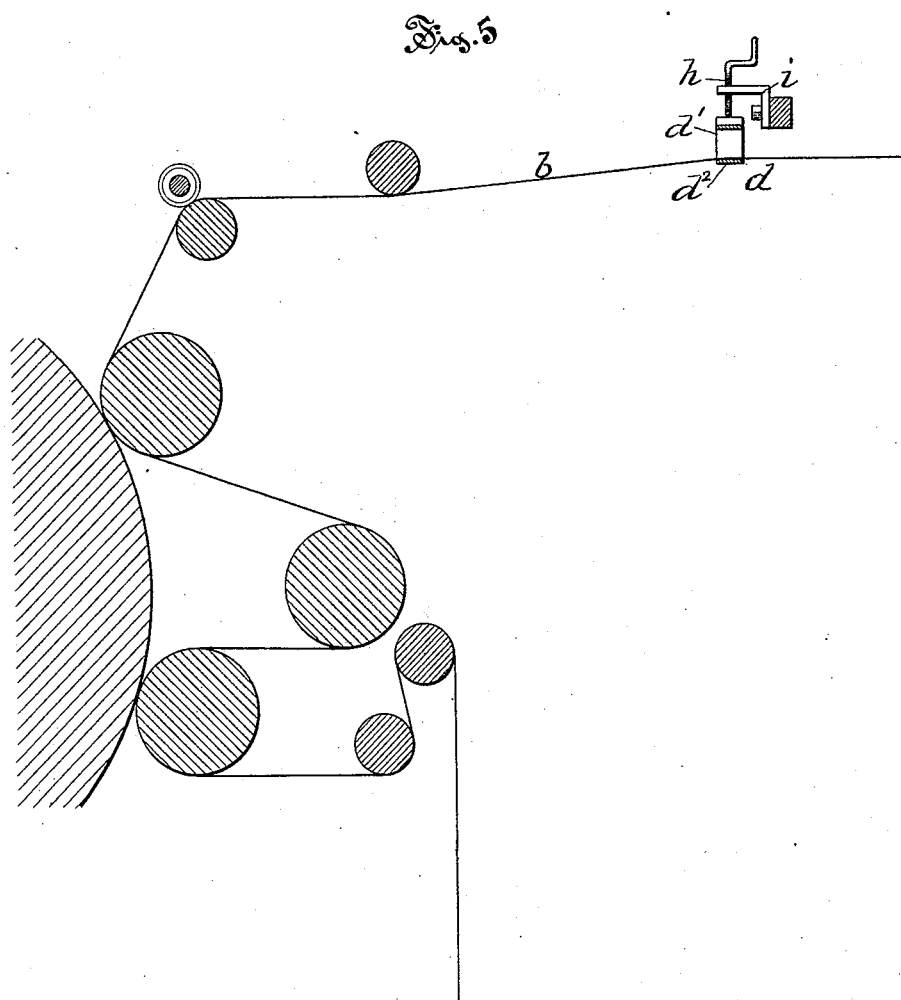
2 Sheets—Sheet 2.

W. J. SHEA.

TENSION DEVICE FOR PRINTING MACHINES.

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Patented Aug. 24, 1886.



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UNITED STATES PATENT OFFICE.

WILLIAM J. SHEA, OF HARTFORD, CONNECTICUT.

TENSION DEVICE FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 347,966, dated August 24, 1886.

Application filed October 20, 1884. Serial No. 145,918. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. SHEA, of the city and county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Tension Devices for Printing-Presses, of which the following is a specification.

Figure 1 is a plan view of a part of the folder of a Hoe perfecting printing-press with my improvement. Fig. 2 is a view in cross-section on plane denoted by line *xx* of Fig. 1, showing my tension device in elevation. Fig. 3 is a detail view in vertical section through a part of the cutter-cylinders and rolls and the folder-frame. Fig. 4 is a detail plan view of a part of the printed sheet, showing the position of the outside columns of the first and eighth pages of two adjoining papers before being cut apart; and Fig. 5 is a view in vertical longitudinal section of a "perfecting" press, the frame being omitted, the said view being intended to illustrate the relative location of the printing-roll, impression-cylinder, guide-rolls, cutter, and tension device.

My invention relates to the class of combined printing-presses in which a continuous sheet of paper is printed, cut, and folded, and it is particularly adapted for use with the Hoe perfecting printing-press.

My invention consists in the combination, with such a machine, of the improved means for producing tension upon the web, as hereinafter particularly described and claimed.

In the accompanying drawings, the letter *a* denotes a part of the frame of the press and folder; *b* and *c*, the printed web after it has been severed lengthwise into two webs or sections; *d*, my improved tension device, that is attached to the frame in the plane of the moving webs or sections which pass over the lower bar of the device; *e* and *f*, the guide-rollers, arranged at an angle of forty-five degrees with the path of the webs or sections as they pass through the machine, the cylinder being attached to the upper part of the folder-frame. The webs, by means of these guides, are changed so as to move in a path at an angle of ninety degrees to their first direction and in a position one over the other, instead of side by side, as they were moving when passing through the

press. These webs ride over a series of rollers, and finally come in contact between the cutter-cylinders *g*, where a revolving knife cuts both webs at once across their length, the cylinders being so arranged as to diameters as to separate one complete paper at each revolution of the cylinder.

The press and my improvement as herein referred to are used in the printing of newspapers, and prior to my invention great difficulty has been experienced in exactly determining the position of the line of spacing between the first and the eighth pages of the paper in cutting the papers apart. At times the line would come close to the column of type on the eighth page, and sometimes close to the column on the first page. My improvement, however, when applied to a press or folder, thoroughly corrects this difficulty, and enables me to exactly determine the position of this line of separation between these columns, and thus to secure a uniform margin on the first and eighth pages of the paper, or on those between which the cut may be made.

My tension device *d*, as herein illustrated, is made up of the frame *d'*, suspended by a threaded shaft, *h*, from a bracket, *i*, that is fast to the folder-frame, and this frame *d'* slides on the guide-pins *j*, that are also fast to the folder-frame at opposite ends of the bar *d''* of the tension device. The coiled springs *k* are so secured on the guide-pins as to tend to press the bar *d'* downward. The rate of progression of the paper through the press and folder is not constant for any length of time, and this irregularity of the feed causes, in machines without my device, the cutting-cylinders to so cut as to make bad work and no little waste, by reason of scant margins. By means of my improvement the rate of feed is regulated by increasing the tension on the webs of paper by raising the tension device, as by turning the threaded shaft *h*, or by decreasing it by lowering the device, and this causes regular margins by keeping the cutting-line half-way between the columns.

I claim as my invention—

1. In a printing-press of the class described, the web-conducting rollers and frame sup-

porting the same, combined with the tension device herein described, consisting of the frame having the bar d^2 , springs for acting on said bar to hold the same in position, and
5 means, substantially as described, for adjusting said frame to produce the proper tension on the web, for the purpose set forth.

2. In combination, the frame a , having

guide and cutting cylinders and a bracket or support, i , a tension-bar, d^2 , adjustably secured to the bracket, and guides j and springs k , all substantially as described.

WILLIAM J. SHEA.

Witnesses:

CHAS. L. BURDETT,
H. R. WILLIAMS.