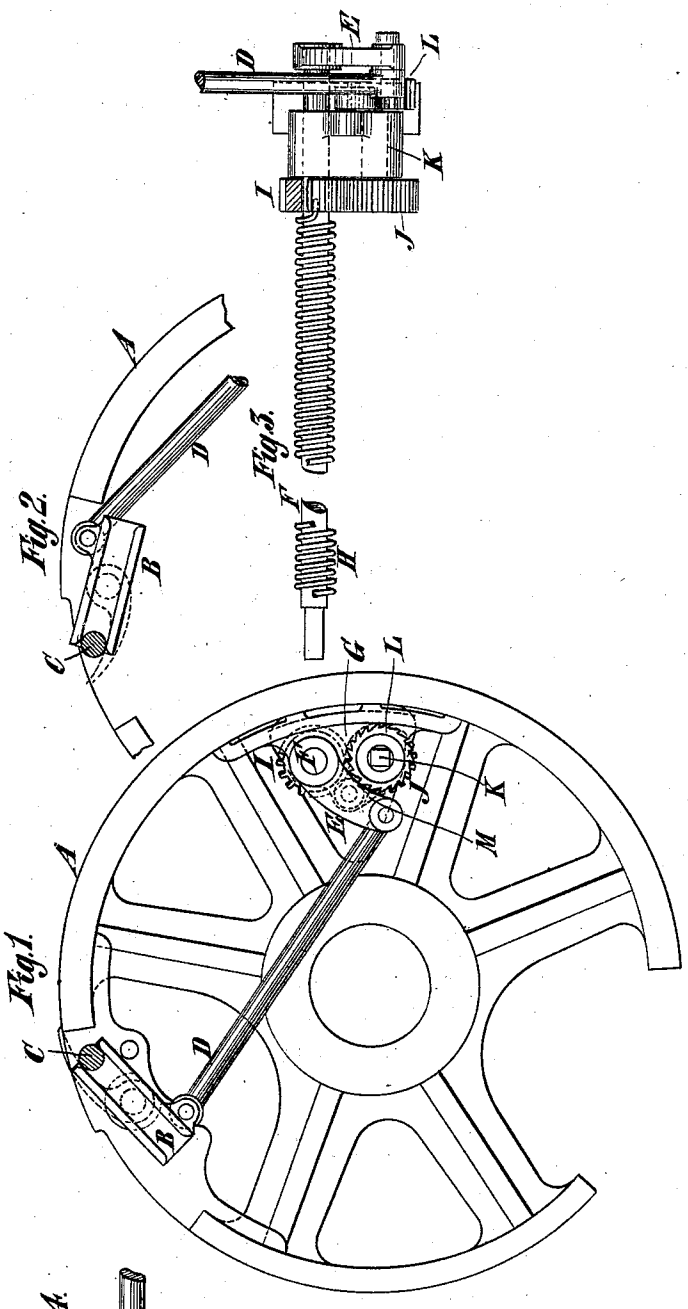
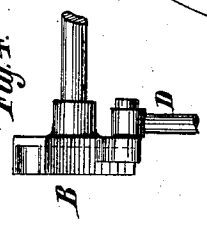
(No Model.)

C. B. COTTRELL.

TUMBLER MOTION FOR GRIPPERS OF PRINTING PRESSES.

No. 280,583. Patented July 3, 1883.





Witnesses
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George Bott

Inventor
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UNITED STATES PATENT OFFICE.

CALVERT B. COTTRELL, OF WESTERLY, RHODE ISLAND.

TUMBLER-MOTION FOR GRIPPERS OF PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 280,583, dated July 3, 1883.

Application filed August 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, CALVERT B. COTTRELL, of Westerly, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Tumbler-Motions for the Grippers of Cylinders of Printing-Presses, of which the following is a specification.

This improvement relates particularly to what are known as "two-revolution printing-presses," or, in other words, to those printing-presses whose impression-cylinders revolve twice—first, in a raised position to clear the forms, and a second time in contact with the forms, while making the impression. The impression-cylinders are so small in these presses that when a spring is applied in the usual way to the tumbler mechanism for operating the grippers it is difficult, if not impossible, to get it to work satisfactorily.

The object of the improvement is to provide for applying the spring so that a more satisfactory operation will be attained.

The improvement consists in the combination of a tumbler, a shaft extending parallel with the axis of the cylinder, a spring applied to the shaft and fastened at one end to the shaft and at the other to a device which does not turn with the shaft, and a connection between the tumbler and shaft, serving to impart to the shaft a rotary movement from movements of the tumbler.

The improvement also consists in the combination of a tumbler, a shaft extending parallel with the axis of the cylinder, an arm rigidly affixed to the shaft, a rod connecting this arm to the tumbler, a spring applied to the shaft and fastened at one end thereto, and a pawl and ratchet for holding the other end of the spring in positions to which it may be adjusted.

The improvement also consists in other combinations of parts, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an end view of the impression-cylinder of a printing-press and the tumbler mechanism for the grippers. Fig. 2 is a similar view of a portion of said cylinder and a portion of the tumbler mechanism in a reverse position. Fig. 3 is a view of the tumbler mechanism, taken lengthwise of the cylinder; and Fig. 4 is a similar view of a part of the tumbler mechanism in a different position.

Similar letters of reference designate corresponding parts in all the figures.

A designates the impression-cylinder of a printing-press, and B designates the tumbler, mounted rigidly upon the gripper-shaft in the usual way. It is reversed by coming in contact with a stationary pin, C, in the usual manner.

D designates a rod pivoted at one end to the tumbler B and at the other end to an arm, E, rigidly affixed to a shaft, F, which is supported in bearings in brackets G, affixed to the inside of the cylinder.

H designates a spring wound around the shaft F, rigidly fastened to the shaft at one end, and fastened at the other end to a gear-wheel, I, which is loosely mounted on the shaft. The gear-wheel I engages with a gear-wheel, J, rigidly secured to a shaft, K, supported in the brackets G. On the shaft K is affixed a ratchet-wheel, L, with which engages a pawl, M, arranged on one of the brackets G. The tension of the spring H may be varied by adjusting the gear-wheel I upon the shaft F. This may be done by applying a key or wrench to the end of the shaft K, which is squared to admit of this being done. When the gear-wheel I is properly adjusted, the pawl will serve to retain it in position. A spring may be employed to keep the pawl in engagement with the ratchet-wheel. When the gear-wheel I is being adjusted to increase the tension of the spring, the pawl will play over the teeth of the ratchet-wheel; but when the gear-wheel I is being adjusted to relax the tension of the spring the pawl will have to be disengaged from the teeth of the ratchet-wheel, and afterward re-engaged.

In the operation of the tumbler mechanism the end of the spring which is affixed to the gear-wheel I is held stationary, while the other is wound or unwound by the movement of the shaft F.

By my improvement a long spring can be used, even on a small cylinder. So long a spring can be used that the variation of its tension

during the operation of the tumbler mechanism will be immaterial, and the working of the press will not be appreciably affected.

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

1. In a printing-press, the combination of a tumbler, a shaft extending parallel with the axis of the cylinder, a spring applied to the shaft and fastened at one end to the shaft and at the other to a device which does not turn with the shaft, and a connection, substantially as herein described, between the tumbler and the shaft, serving to impart to the shaft an oscillating movement from movements of the tumbler, substantially as specified.

2. In a printing-press, the combination of a tumbler, a rod connected thereto, a shaft extending parallel with the axis of the cylinder, a spring applied to the shaft and fastened at one end to the shaft and at the other to a device which does not turn with the shaft, and an arm rigidly affixed to the shaft and connected to the rod aforesaid, substantially as specified.

3. In a printing-press, the combination of a tumbler, a shaft extending parallel with the axis of the cylinder, an arm rigidly affixed to the shaft, a rod connecting this arm to the tumbler, a spring applied to the shaft and fastened at one end thereto, and a pawl and ratchet carried by the cylinder, for holding the other end of the spring in position, substantially as specified.

4. In a printing-press, the combination of a tumbler, a shaft extending parallel with the axis of the cylinder, an arm rigidly affixed to the shaft, a rod connecting this arm to the tumbler, a spring applied to the shaft and fastened thereto at one end, a gear-wheel loosely mounted on the said shaft, a gear-wheel engaging with the gear-wheel first named, and mounted on another shaft, and a pawl and ratchet applied to the shaft, substantially as specified.

C. B. COTTRELL.

Witnesses:
FREDK. HAYNES,
GEORGE H. BOTTS.