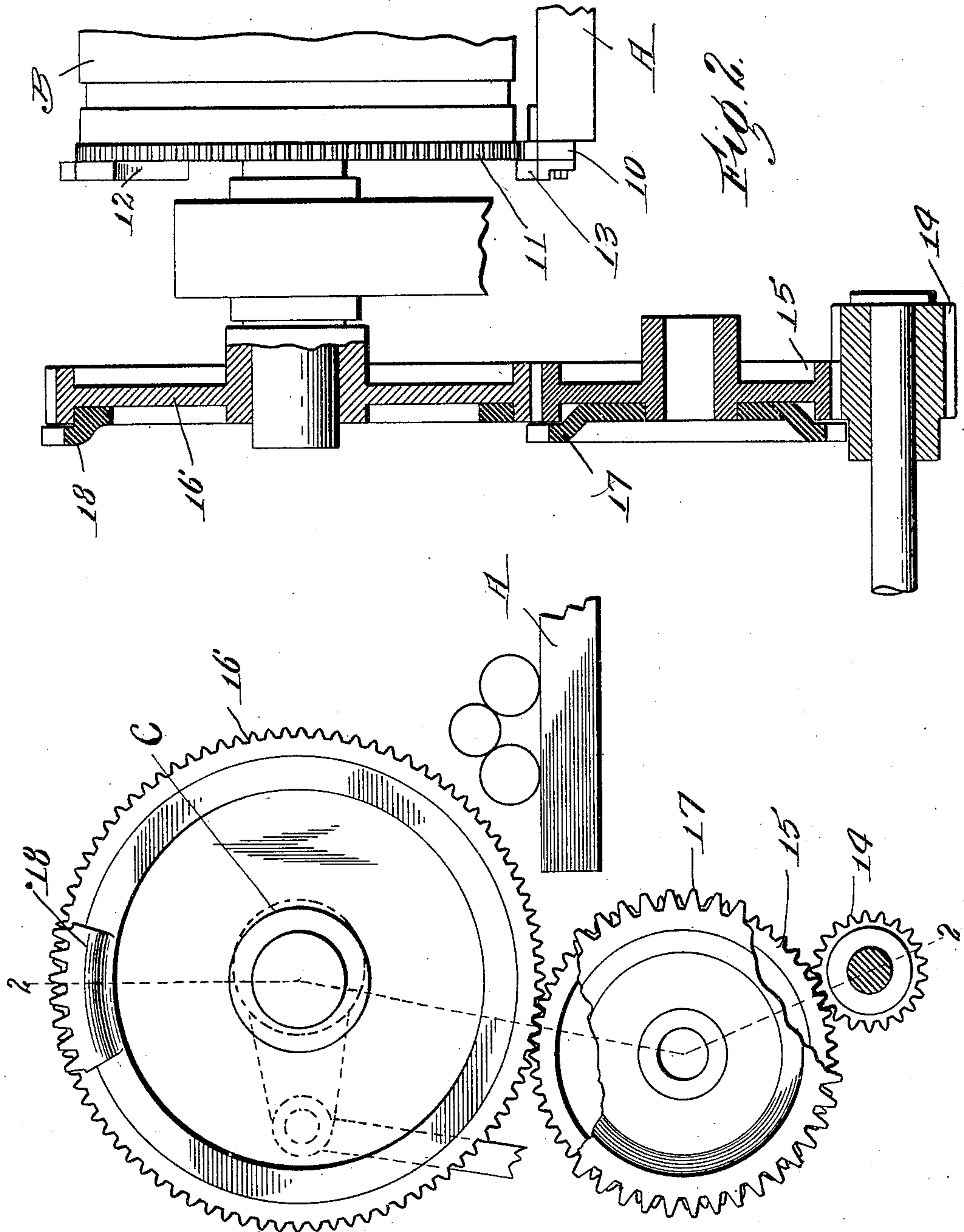


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CYLINDER DRIVING MECHANISM FOR PRINTING PRESSES.  
APPLICATION FILED JULY 27, 1905. RENEWED NOV. 10, 1909.

962,962.

Patented June 28, 1910.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ROBERT T. JOHNSTON, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE CAMPBELL PRINTING PRESS & MANUFACTURING COMPANY, OF TAUNTON, MASSACHUSETTS.

CYLINDER-DRIVING MECHANISM FOR PRINTING-PRESSES.

962,962.

Specification of Letters Patent. Patented June 28, 1910.

Application filed July 27, 1905, Serial No. 271,473. Renewed November 10, 1909. Serial No. 527,310.

*To all whom it may concern:*

Be it known that I, ROBERT T. JOHNSTON, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Cylinder-Driving Mechanism for Printing-Presses, of which the following is a specification.

The object of this invention is to provide a new and improved mechanism for driving the cylinder of printing machines.

In Patent to H. A. W. Wood, No. 492,505, dated February 28, 1893, an impression cylinder is shown as provided with registering gears at each end thereof which registering gears are of fine pitch and which mesh with registering racks secured to the bed; the vertical rising movement of the cylinder being sufficient to disengage this registering when the bed makes its return movement. A starting segment and rack are also shown as attached to the cylinder.

It has been found advisable in some classes of machines, to drive the cylinder on its printing movement entirely through its registering gearing and to render the driving gearing for the impression cylinder practically inoperative during the printing movement. To accomplish this purpose I so arrange the driving gearing for the impression cylinder that the same will have considerable back-lash or play and I provide a correcting or starting mechanism in this gearing so that the impression cylinder will take up correctly when the bed starts on its printing movement.

The details of the gearing are shown in the accompanying sheet of drawings referring to which,

Figure 1 is a side elevation of the gear, and Fig. 2 is an end elevation partly in section thereof.

Referring to the drawing and in detail, A designates the reciprocating bed and B the impression cylinder. The impression cylinder is arranged to rise and fall vertically by any of the usual mechanisms such as the usual eccentric bushings C. Secured to the sides of the bed are registering racks 10 and registering gears 11 are secured to the ends of the impression cylinder. A starter segment 12 is secured to the side of the cylinder and a starter rack 13 is secured to the bed. These parts are arranged as shown in said patent. The starter segment

and rack bring the bed and cylinder accurately into register when the bed starts on its forward or printing stroke and this register is continued by the registering racks and gears 10 and 11. The engagement and disengagement of the racks 10 and gears 11 is made entirely by the falling and rising movement of the impression cylinder.

14 designates the driving pinion to which power may be applied. This pinion 14 meshes with an intermediate 15 which latter continuously meshes with the cylinder gear 16. The teeth of the gears 15 and 16 are cut so that there is a considerable amount of back-lash between the same. Secured to the side of the intermediate is a gear or ring 17 which has accurately shaped teeth and secured to the side of the gear 16 is a segment 18 which has accurately shaped teeth and which is set in position to engage accurately with the gear rim 17.

In operation, when the bed makes its forward or printing stroke, it is driven through the registering racks and registering gears, the back-lash between the gears 15 and 16 allowing the registering gearing to do the entire work. On the backward movement of the bed when the cylinder is raised so that the registering gearing is out of action, the cylinder is turned through the gears 15 and 16, the back-lash then not being material as the bed is not printing. As the cylinder lowers and as the bed starts on its forward movement, the segment 18 takes into the gear rim 17 and brings the cylinder in proper time with the rest of the apparatus; and just after or during this movement, the starter segment 12 and starter rack 13 comes into engagement so that the registering mechanism will operate accurately for the next forward or printing movement of the bed. By using the additional starter segment 18 and the gear rim 17, the movements before described can be smoothly and accurately accomplished, these parts forming a correcting mechanism.

The details and arrangements herein shown and described may be greatly varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

Having thus fully described my invention what I claim and desire to secure by Letters-Patent of the United States is:—

1. In a cylinder driving mechanism for



printing machines, the combination of an impression cylinder, a reciprocating bed, a registering mechanism which acts to connect the bed and cylinder on the forward stroke  
 5 of the bed, a gear on the impression cylinder, a driving gear continuously and loosely meshing therewith, and a correcting mechanism for this gearing.

2. In a cylinder driving mechanism for  
 10 printing presses, the combination of a vertically rising and falling impression cylinder, a reciprocating bed, a registering gear carried by the impression cylinder, a registering rack carried by the bed, which registering  
 15 mechanism is put out of and into mesh by the vertical rising and falling movements of the cylinder, a gear on the cylinder shaft, a driving gear continuously and loosely meshing therewith, and a correcting  
 20 mechanism for this gearing.

3. In a cylinder driving mechanism for printing presses, the combination of an impression cylinder, a reciprocating bed, registering gearing between the same which  
 25 comes into operation on the forward or printing movement of the bed, a gear on the impression cylinder, a driving gear loosely meshing therewith, a segment on the cylinder gear, and gear teeth on the driving gear  
 30 which said segment engages to start the parts properly in operation.

4. In a cylinder driving mechanism for printing presses, the combination of a ver-

tically rising and falling impression cylinder, a reciprocating bed, a registering gear  
 35 on the impression cylinder, a registering rack carried by the bed, which registering mechanism is put out of and into mesh by the vertical rising and falling movements of the cylinder, a gear on the impression cylinder, a driving gear continuously and loosely  
 40 meshing therewith, a segment on the cylinder gear, and gear teeth on the driving gear which said segment engages to start the parts properly in operation. 45

5. In a cylinder driving mechanism for printing presses, the combination of a vertically rising and falling impression cylinder, a reciprocating bed, a registering gear carried by the impression cylinder, a registering  
 50 rack carried by the bed, which registering mechanism is put out of and into mesh by the vertical rising and falling movements of the cylinder, a starter segment on said cylinder, a starter rack on said bed, a gear  
 55 on the cylinder shaft, a driving gear continuously and loosely meshing therewith, and a correcting mechanism for this gearing.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing  
 60 witnesses.

ROBERT T. JOHNSTON.

Witnesses:

CHARLES EVERETT MOORE,  
 ROSA C. O'NEIL.