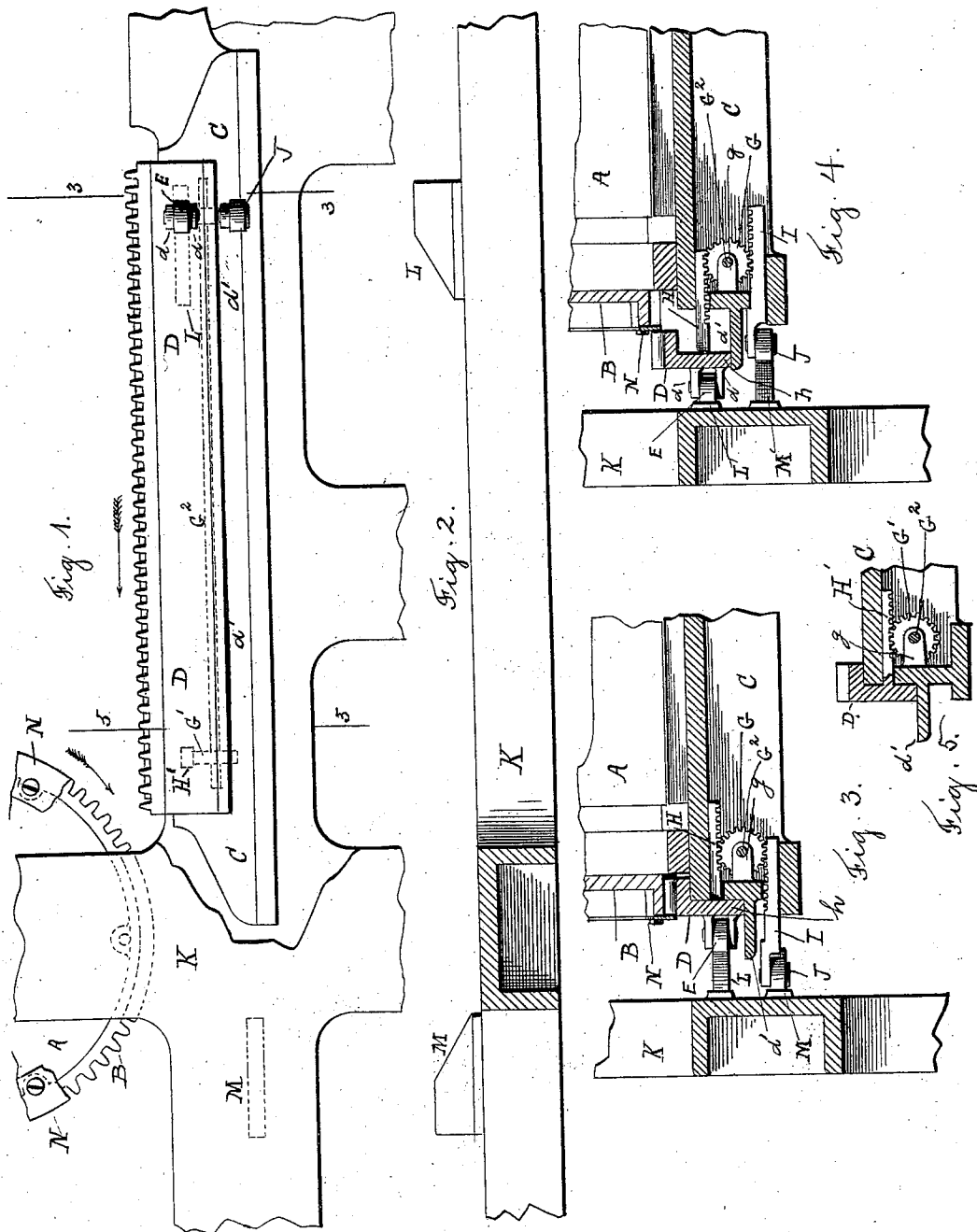


2 Sheets—Sheet 1.

REGISTERING MECHANISM FOR PRINTING PRESSES.

Patented Feb. 23, 1897.



Inventor

Chas. F. French
E. M. Healy.

W. S. Huever -

By his Attorney
Louis W. Southgate.

UNITED STATES PATENT OFFICE.

WINFIELD S. HUSON, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE CAMPBELL PRINTING PRESS AND MANUFACTURING COMPANY, OF NEW YORK.

REGISTERING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 577,554, dated February 23, 1897.

Application filed May 28, 1892. Serial No. 434,813. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. HUSON, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Registering Mechanism for Printing-Presses, of which the following is a specification.

The aim of this invention is to produce a new and improved registering mechanism for printing-presses which will secure absolute and perfect register between the impression-cylinder and the reciprocating bed of a printing-press.

The invention is especially designed and adapted for use in connection with the two or multi revolution single or multi cylinder printing-press, though of course the same may be adopted and used with any form of cylinder printing-press, and with this understanding I will further describe my invention as applied to the ordinary well-known two-revolution cylinder printing-press.

My invention consists of the device described and claimed in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a printing-press with my invention applied thereto, the front framing being broken to show the bed. Fig. 2 is a sectional plan of one of the side frames, showing the cams mounted thereon. Figs. 3 and 4 are sectional views taken on line 3 3 of Fig. 1, Fig. 3 showing the registering-rack in mesh and Fig. 4 the registering-rack out of mesh. Fig. 5 is a section taken on line 5 5 of Fig. 1, the parts being in the same position as shown in Fig. 3; and Figs. 6 and 7 are views similar to Figs. 3 and 4, illustrating a modification.

Referring to the drawings and in detail, A represents the impression-cylinder of a cylinder printing-press, and B a registering gear or segment secured to the side of the same in any of the well-known ways. The usual reciprocating bed is represented by C, and on the bed is mounted the laterally-shifting registering-rack D. This registering-rack consists of the rack proper, which is adapted when moved to engage the registering-gear

to lie partly on the bed C, as shown in Fig. 3, and the rack has a downward-extending arm H, which rests on a plate or offset-shelf d' , formed on the side of the bed, whereby the rack will always be supported. Near the right end of the rack D, on the side of the same, are formed the arms d , in which is journaled the roller E. Extending inwardly from the rack D, opposite this roller E, is a small rack H, which fits under the top of the bed, as shown.

Secured to or formed with the bed C are suitable arms or bearings g , in which is journaled a shaft G^2 , which extends nearly the whole length of the bed, as indicated in dotted lines in Fig. 1, and fastened on this shaft is a gear or pinion G, with which rack H meshes. Another rack I is fitted so as to slide laterally into the bed under the shelf d' , and this rack I engages the under side of the pinion G, as shown. On the outside of this rack I is secured or fastened a roller J. On the other end of the shaft G^2 is fastened another pinion G' , similar to pinion G, and extending inwardly from the rack D, opposite to this pinion G' , is the rack H' , similar to rack H, which engages the top of the pinion G' . Thus as the shaft G^2 is oscillated the rack D will be moved outwardly and inwardly at two points. Of course by adding other gears in the case of a long bed the rack could be moved at more than two points.

On the side frame K are arranged two cams L and M. These cams are arranged in different horizontal planes, as shown, and are oppositely inclined, and are so arranged that when the bed has reached the limit of its forward or printing stroke to the left the roller J will coact with the cam M and, by means of rack I, gear J, and rack H, will shift the rack D laterally outwardly or so that the same will clear the registering-gear A.

The cam L is arranged to engage roller E when the bed has completed its retrograde movement to the right, and whereby the rack will be moved laterally inwardly to engage the registering-gear B.

It will be seen that by arranging the rollers and cams in different horizontal planes they will always properly act, no matter if the bed

should be "backed up," as it is technically called.

If the cam-surfaces were arranged in the same plane and the rollers also in the same plane—if the bed should be backed up, for instance, before the proper roller has acted—the wrong roller would engage one of the cams, as when one roller is moved inwardly the other is moved outwardly.

On the side of the registering-gear is secured a guard-ring N, which extends outwardly to a little more than to cover the outside of the teeth, and the function of this guard-ring N is to keep the rack in mesh with the gear after the same has been moved inwardly, as shown in Fig. 3, and to keep the rack out of mesh when the same is shifted to clear the gear, as shown in Fig. 4.

The guard-ring N is important because by the use of the same the registering rack and gear cannot become accidentally engaged or disengaged to affect the proper operation or smash the teeth.

In Figs. 5 and 6 the registering-rack R instead of being mounted to slide laterally is pivoted so as to turn laterally out of engagement with the gear B. In this case the rack R is secured to an arm S, which is fastened on a shaft Q, which is journaled on the side of the bed, as shown, and on this shaft Q are fastened gears G and G' similar to those in the previous device. Rack I, having a roller J, is mounted underneath the gear G, as in the previous device, and rack P, having a roller E, is mounted to engage the gear G, and this rack P corresponds to the rack H of the previous device. The rollers and cams are arranged in this modification substantially as in the other device, so that the roller E will engage when the bed is at its right-hand extreme and move the rack laterally inwardly, and so that the roller J will engage when the bed is at its left-hand extreme and move the rack laterally outwardly. Thus the action of this modification is substantially the same as that of the previous device. The guard-ring N is also used in this device to perform the same function as in the previous device. Thus it will be seen that I have invented a device by which the bed and cylinder are positively geared together on the printing-stroke and by which they are entirely independent on the retrograde stroke of the bed, and a device by which the rack will be prevented from improperly engaging the registering-gear, and whereby the same is held in engagement with the gear at the proper time. A starter segment and rack might be added, if desired, to help the registering gear and rack to properly engage.

The device 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 fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a cylinder printing-press the combination of an impression-cylinder having a registering-gear connected to the same, a reciprocating bed having a registering-rack adapted to coact with said registering-gear, and means for shifting said rack laterally so that the rack and the gear will be in mesh on one stroke, and out of mesh on the other stroke of the bed, substantially as described.

2. In a cylinder printing-press, the combination of the impression-cylinder having a registering-gear secured to the same, the reciprocating bed having a registering-rack mounted on the same, means for moving one of the members of said registering mechanism laterally, and a guard secured to the stationary member of the registering mechanism, whereby the moving member of the registering mechanism will be held in place while the mechanisms are cooperating, substantially as described.

3. In a cylinder printing-press, the combination of the impression-cylinder having a registering-gear, the reciprocating bed carrying a cooperating registering-rack, means for moving said rack laterally, so that the same will alternately engage and disengage said registering-gear, and a guard secured to the side of said gear, substantially as described.

4. The combination in a cylinder printing-press of the impression-cylinder A having the registering-gear B secured to the same, the reciprocating bed C having the registering-rack D, suitable rollers mounted to move said rack, and stationary cams on the frame, the whole arranged so that the rack will be moved in to mesh with the gear as the bed makes its forward or printing stroke, and so that the rack will be moved laterally out to clear the registering-gear as the bed makes its retrograde or return stroke, substantially as described.

5. The combination in a cylinder printing-press of the impression-cylinder A having the registering-gear B secured to the same, the reciprocating bed having the registering-rack D mounted on the same, said rack having a roller E and rack H, pinion G which said rack engages, and rack I engaging the other side of pinion G and having a suitable roller J on the outside end thereof, and suitable cams mounted on the side frame, the whole arranged to operate as described.

6. The combination in a cylinder printing-press, of the impression-cylinder having a registering-gear secured to the same, the reciprocating bed having a registering-rack adapted to coact with said registering-gear, means for shifting said rack laterally in and out of engagement with said registering-gear, and connections whereby said rack will be positively operated at two different points, substantially as described.

7. The combination in a cylinder printing-press, of the impression-cylinder A having the registering-gear B secured to the same, the reciprocating bed having the registering-

rack D mounted on the same, said rack having a roller E and rack H, a pinion G which said rack engages, shaft G² on which said pinion is mounted, rack I engaging the other
5 side of pinion G, and having a suitable roller J on the outside end thereof, suitable cams mounted on the side frame, arranged to operate as described, pinion G' mounted on said shaft G² and rack H' cooperating with
10 said pinion G' whereby said rack D will be

shifted at two points, substantially as described.

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

WINFIELD S. HUSON.

Witnesses:

LOUIS W. SOUTHGATE,
E. M. HEALY.