No. 876,590. PATENTED JAN. 14, 1908.

C. L. ROBINSON.

RECIPROCATING MOTION PRINTING PRESS.

APPLICATION FILED AUG. 9, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

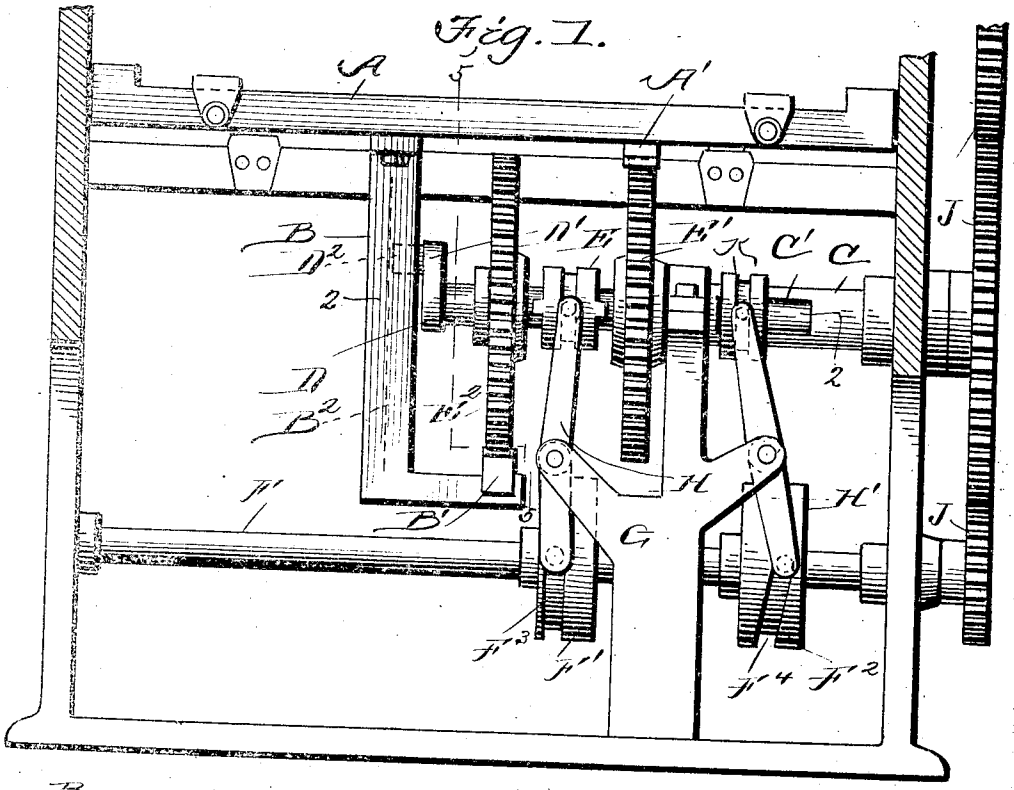


Fig. 2.

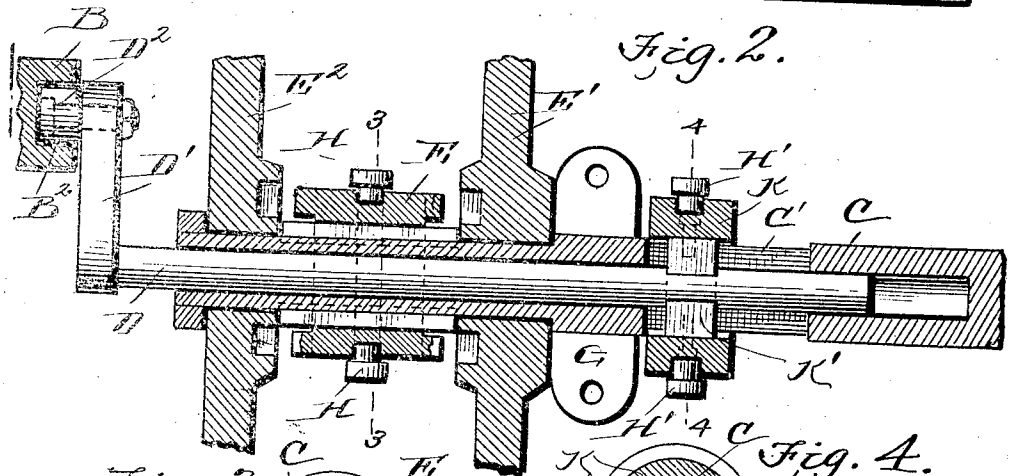


Fig. 3.

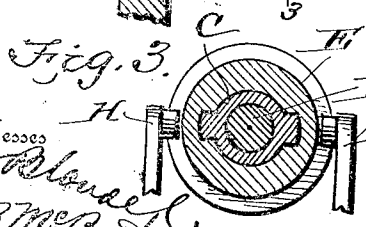
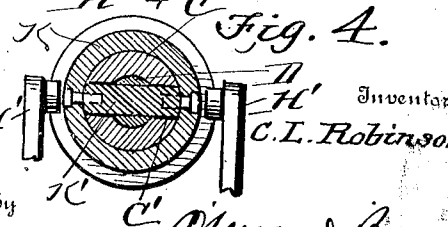


Fig. 4.



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No. 876,590.

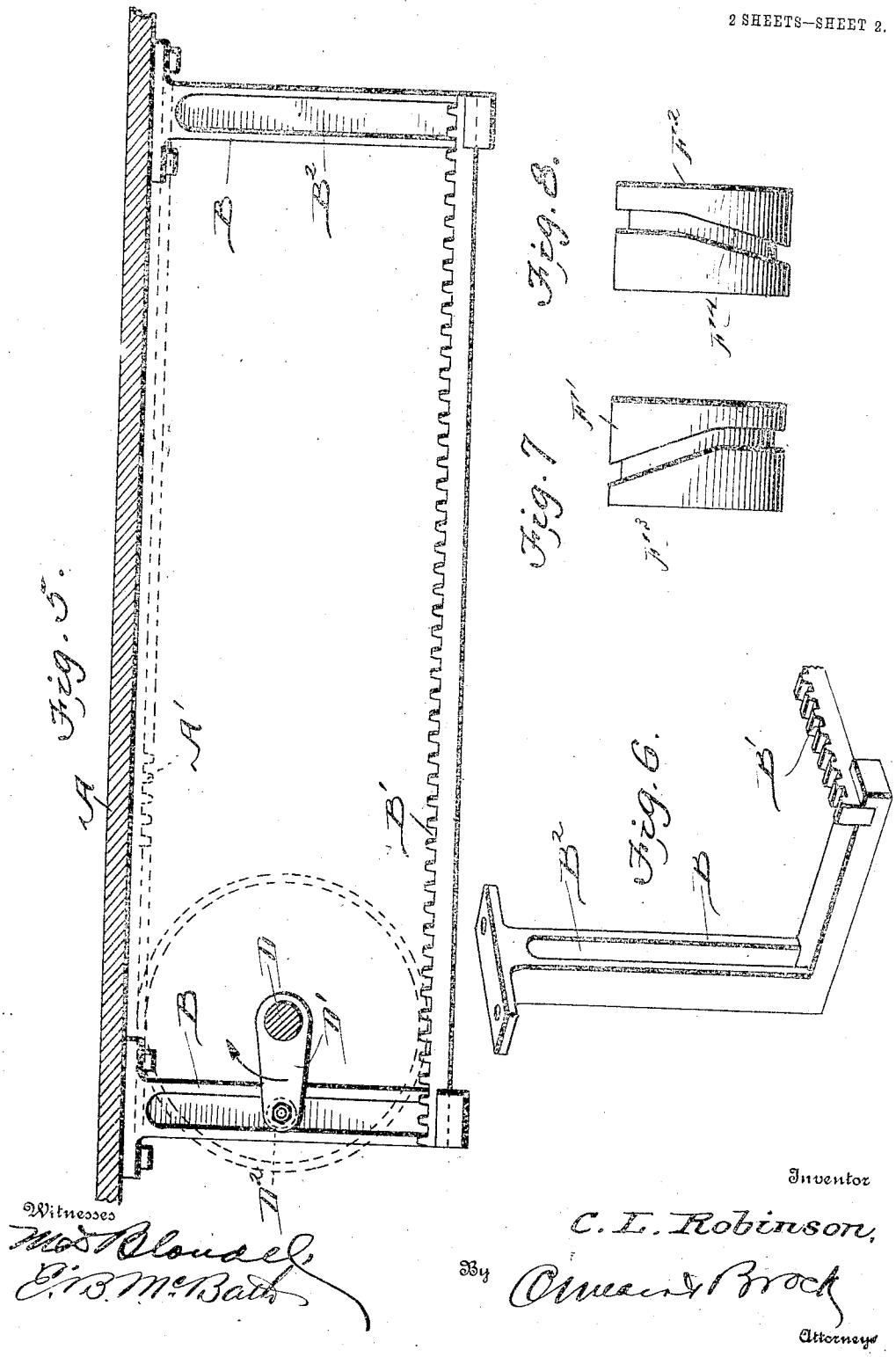
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UNITED STATES PATENT OFFICE.

CLIFFORD LAVENDER ROBINSON, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD TO FRANK S. STREEP, OF NEW YORK, N. Y.

RECIPROCATING-MOTION PRINTING-PRESS.

No. 876,000. Specification of Letters Patent. Patented Jan. 14, 1908.

Application filed August 9, 1906. Serial No. 329,835

To all whom it may concern:

Be it known that I, CLIFFORD LAVENDER ROBINSON, a citizen of the United States, residing at New York, State of New York, have invented a new and useful Improvement in a Reciprocating-Motion Printing-Press, of which the following is a specification.

This invention relates to reciprocating printing press beds and the object of the invention is to relieve the gears and racks employed in moving the said bed from the strain which would otherwise be thrown upon them when the direction of movement of the bed was changed, and this object is accomplished by providing means independent of the rack and gears for starting the bed upon its travel in either direction, and the invention also consists in means for automatically bringing the starting mechanism into operative position, and for withdrawing it after the bed has been started in either direction.

The invention also consists in the novel features of construction hereinafter fully described pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is an end view of a traveling bed showing in elevation the mechanism employed by me. Fig. 2 is an enlarged sectional view upon the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a section on the line 4—4 of Fig. 2. Fig. 5 is a section on the line 5—5 of Fig. 1. Fig. 6 is a detail perspective view of an arm and a portion of a rack bar. Figs. 7 and 8 are detail face views of certain cam disks employed.

In these drawings A represents the movable bed which upon its under face is provided with a rack bar A′, and which adjacent each end carries a depending angled arm B, and these arms support a rack bar B′ parallel to but in a lower plane than the bar A′. A shaft C^2 is suitably journaled beneath the bed A and transverse thereto and this shaft which is tubular is slotted upon one side as shown at C′. A shaft D is slidably held in the shaft C and projects therefrom and at its projecting end is provided with an arm D′ upon the free end portion of which is mounted a roller D^2.

The depending angled arms B are vertically grooved as shown at B^2 and the roller D^2 is adapted to travel in the said groove at certain predetermined times. Upon the shaft C are mounted a clutch E, and gear wheels E′ and E^2, arranged respectively upon opposite sides of the clutch. The clutch E is adapted to slide upon the shaft C in the usual manner and to be brought into engagement with either of the gear wheels E′ and E^2 which are loose upon the shaft.

Arranged below the shaft C is a shaft F upon which are fixed cam disks F′ and F^2 provided respectively, with cam grooves F^3 and F^4. A suitable supporting bracket G provides the bearings for the shafts C and F and also serves as a support for levers H and H′ which are pivotally connected intermediate their ends to the said bracket, and the lower end of the lever H is provided with a suitable point or pin or if desired a roller which engages the cam groove F^3 while its upper end is adapted to engage the usual groove formed in the clutch E. It will be understood that there are two of the levers H parallel to each other and engaging opposite sides of the clutch and cam disks as it will be obvious from Figs. 2 3 and 4. In a like manner the lower end of the lever H′ is in engagement with the cam groove F^4 and the upper end in engagement with a clutch K which clutch is provided with a pin K′ which passes through a slot C′ of the shaft C, and secures the clutch K to the shaft D through which the pin K′ passes, and it will be obvious from Fig. 2 that the sliding of the clutch K will slide the shaft D within the shaft C. The shafts C and F are driven by any suitable means as for example, the gear train J.

The operation of the device is as follows:— The shafts C and F are continuously rotated but as above stated the gear wheels E′ and E^2 are loose upon the shaft. Assuming that the bed A has reached the limit of its travel, in one direction, and that the cam disk F^2 is in the position shown in Fig. 1, the clutch K will then move toward the arms B and shift the shaft D bringing the roller D^2 into engagement with the groove B^2 in one of the arms B. The cam disks F′ will have reached such a position, that the clutch E will be disengaged from both of the gears E′ and E^2 and both will then be idle. It will be obvious that the pin K′ will also lock the shaft D to the shaft C and that the arm D′ will be revolving and as the roller D^2 is in engagement with the groove B^2 the bed A will be started upon its travel in the direction op-

posite to that it had previously taken. Immediately after this movement however, the further rotation of the cam disk F^2 will slide the shaft D in the opposite direction and withdraw the roller D^2 from engagement with the groove B^2 and at the same time the cam disk F' will throw the clutch E into engagement with one of the gears E' or E^2 according to the direction of travel of the table and the further movement of the table will be continued by the rotation of the gear. When the table reaches the limit of its travel again this operation will be repeated substantially as above described.

It will be obvious from this description that the strain occasioned by stopping the travel in one direction and starting it in the other, will be thrown upon the shaft D and its parts and not upon the gears E' and E^2 and rack bars A' and B'.

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

1. The combination with a printing press bed movable in opposite directions, of loosely mounted gear wheels, of oppositely arranged rack bars supported by the bed and adapted to be engaged respectively by said gear wheels, a clutch slidably mounted between said gear wheels and adapted to engage alternately with each, means for holding said clutch out of engagement with both of said gears when the bed reaches its limit of travel in either direction, and means for starting the bed upon a return movement independently of the gear wheels.

2. In a device of the kind described, upper and lower rack bars, a shaft, gear wheels loose on the shaft and engaging respectively the rack bars, a sliding clutch between the gear wheels, a second shaft, a grooved cam thereon, and levers pivoted midway their ends, the ends of the levers engaging respectively opposite sides of the peripheries of the cam and clutch as and for the purpose set forth.

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Witnesses:
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