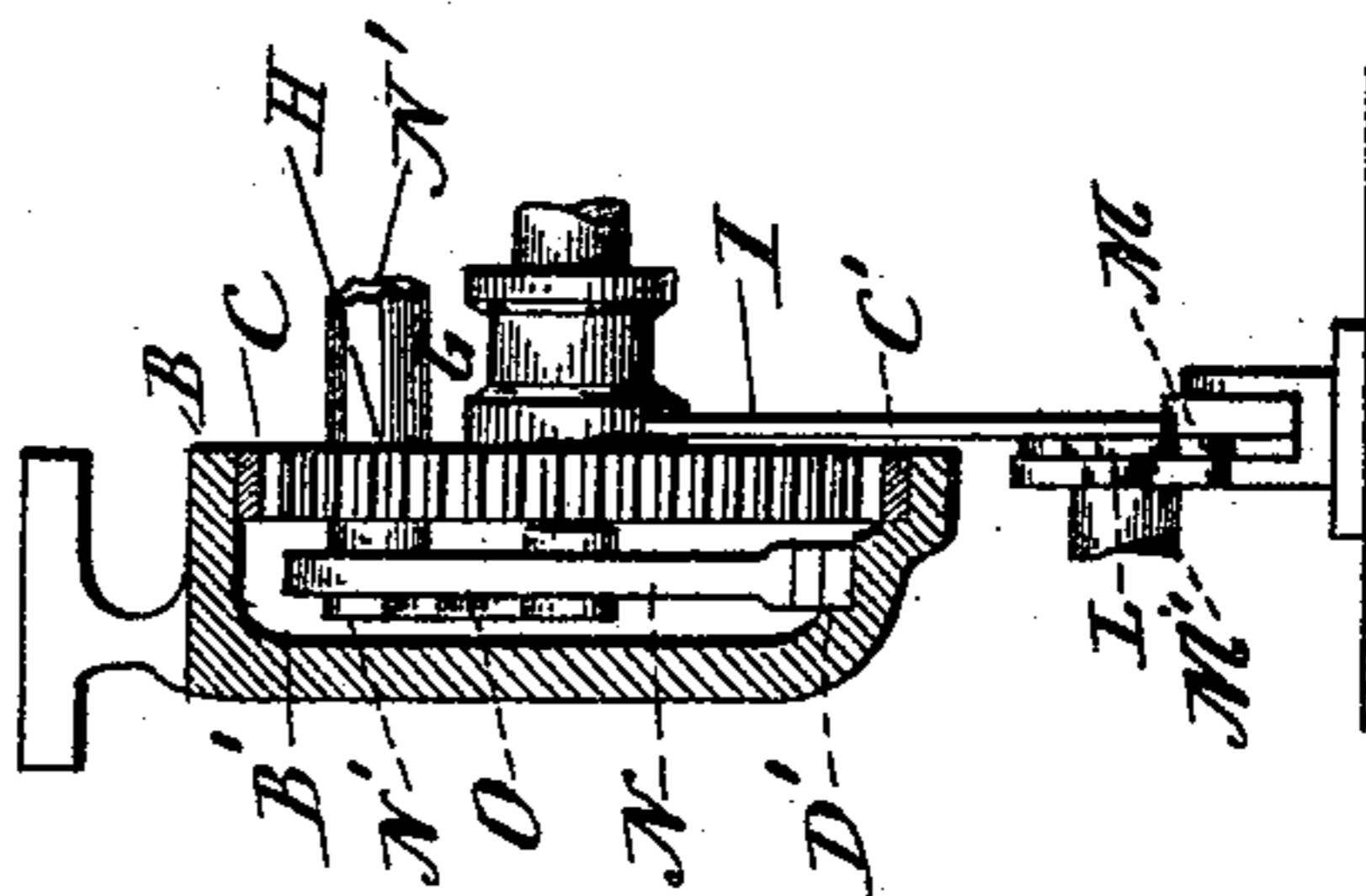


2 Sheets—Sheet 1.

Patented Nov. 1, 1892.



John W. Crittine  
Inventor  
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(No Model.)

2 Sheets—Sheet 2.

J. W. CRIBBINS.  
BED MOTION FOR PRINTING PRESSES.

No. 485,458.

Patented Nov. 1, 1892.

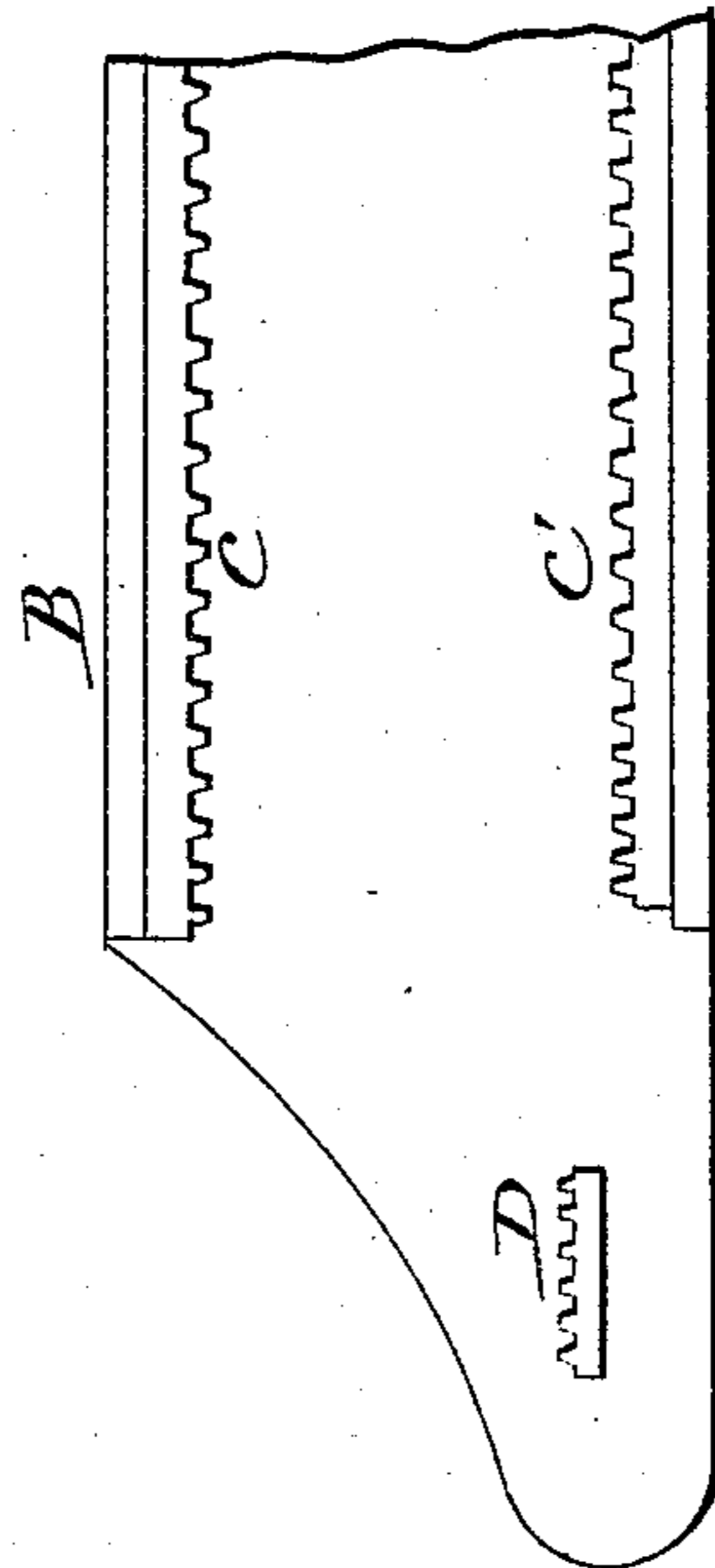
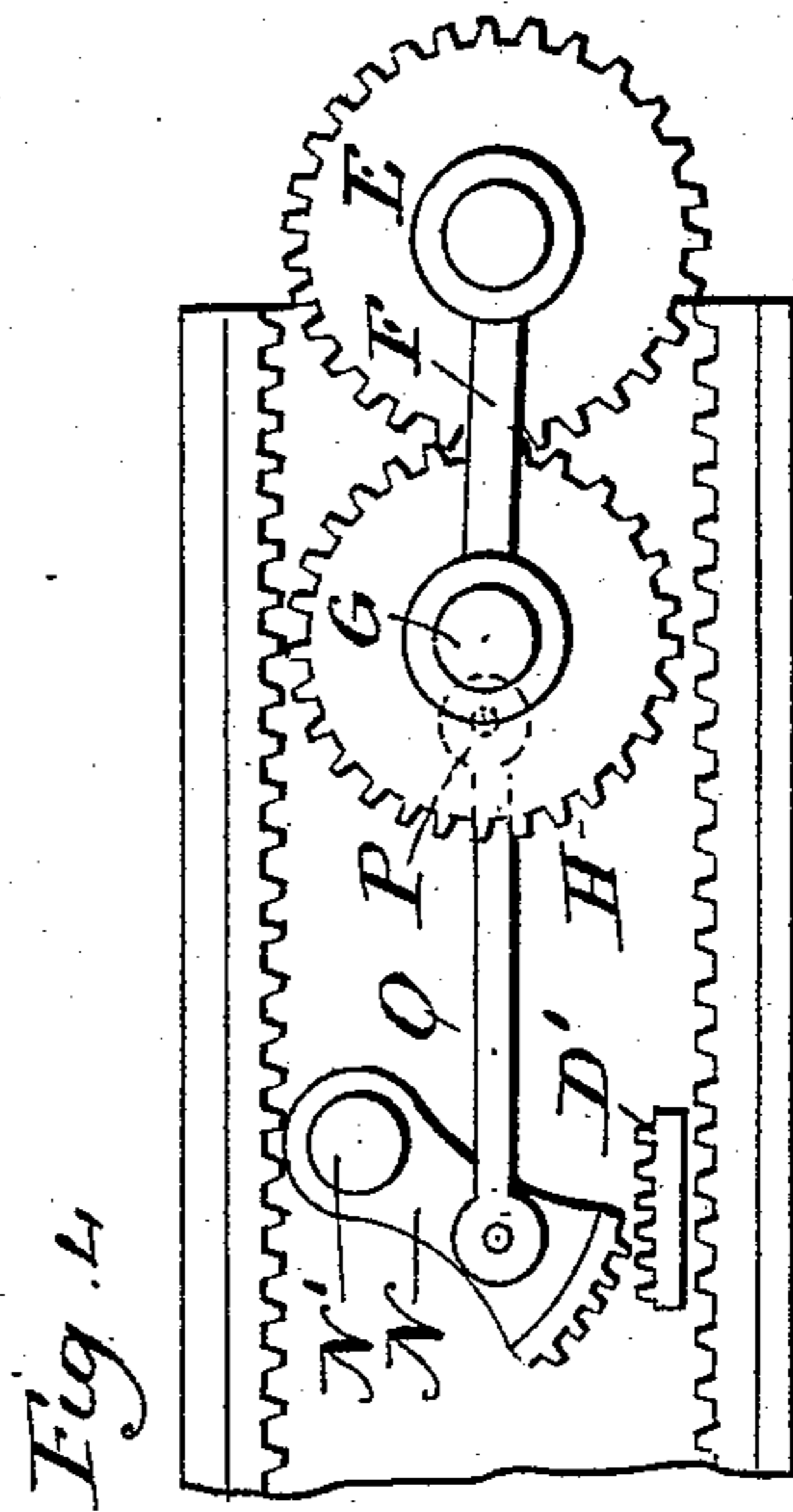
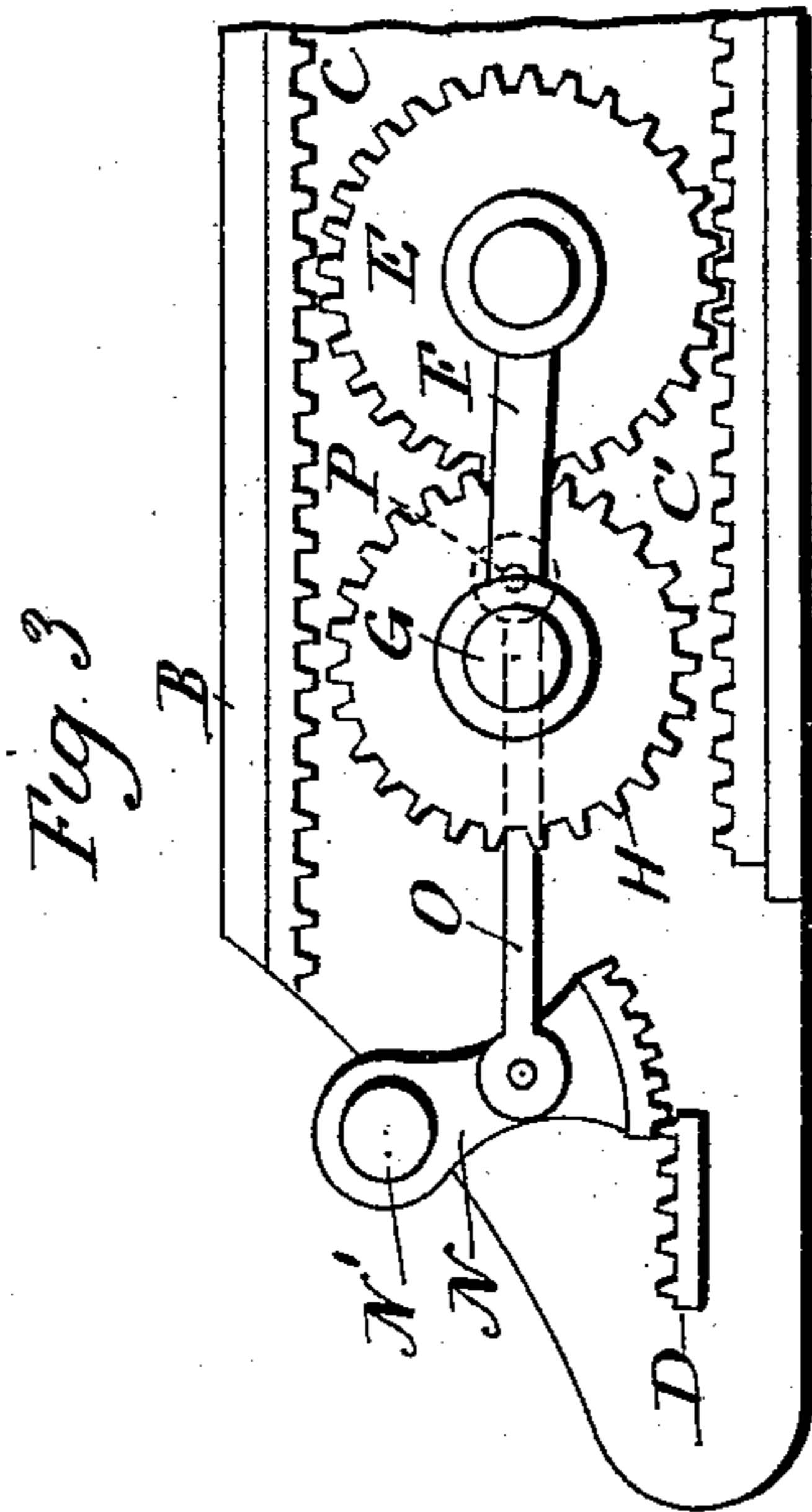


Fig. 5

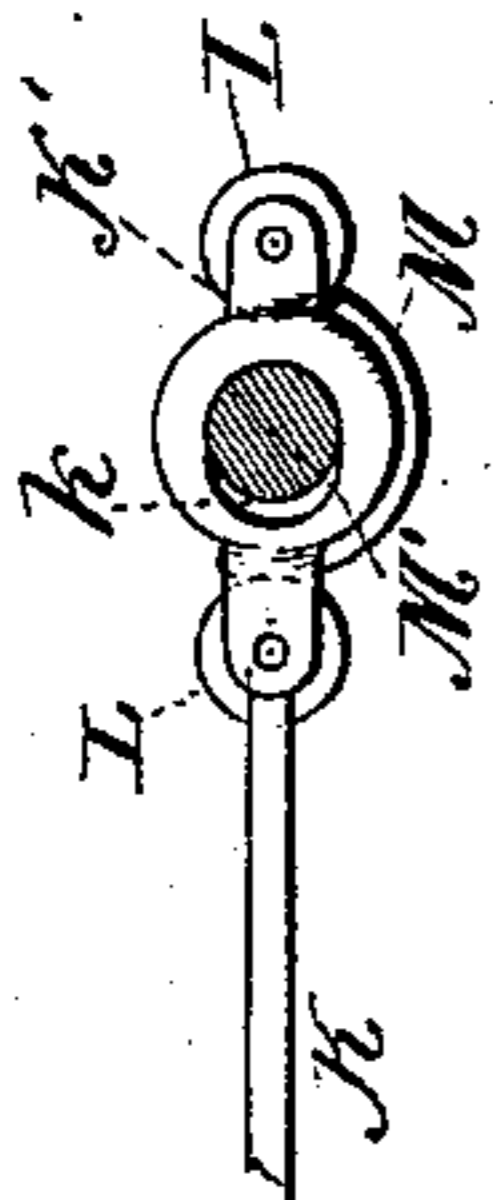
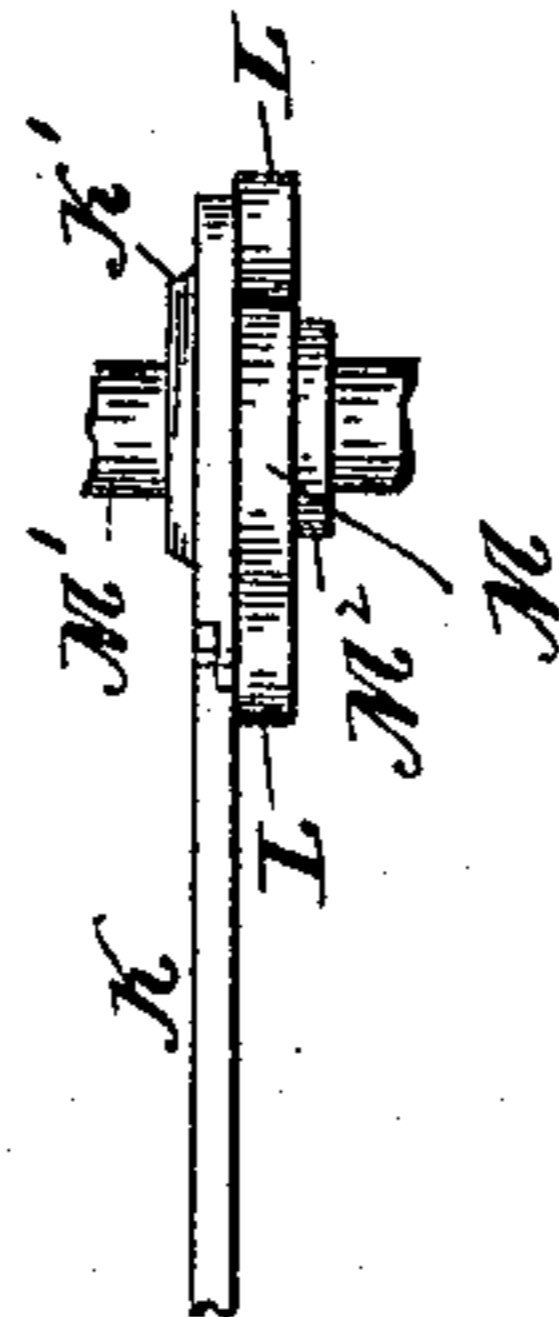


Fig. 6



Witnesses  
J. H. Hummery  
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# UNITED STATES PATENT OFFICE.

JOHN W. CRIBBINS, OF SHELTON, CONNECTICUT.

## BED-MOTION FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 485,458, dated November 1, 1892.

Application filed June 13, 1892. Serial No. 436,512. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. CRIBBINS, of Shelton, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Bed-Motions for Printing-Presses; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in inside elevation of the hanger of the printing or type-carrying bed of a printing-press, showing my improved mechanism; Fig. 2, a view showing the hanger in cross-section on the line *a b* of Fig. 1 and showing portions of my said mechanism in end elevation. Figs. 3 and 4 are broken views showing the rack at the extreme limits of its throw; Fig. 5, a detached view, in outside elevation, of the connections between the horizontal arm K and the cam-shaft M', from which it is operated; Fig. 6, a plan view of the said connections.

My invention relates to an improvement in bed-motions for printing-presses, the object being to provide mechanism which shall be at once simple, durable, and light-running for reciprocating the printing-bed.

With these ends in view my invention consists in the combination, with a printing-bed having a depending hanger and two long corresponding parallel main racks located opposite each other in the same vertical plane and two secondary or interval racks located in line with each other in the same horizontal plane and arranged to be brought into play at the respective ends of its stroke, of a pinion located in line with and substantially between the said main racks, means for driving the said pinion and for moving it to engage the said main racks alternately, an oscillating rack arranged to engage with the said secondary racks, which are respectively brought under it when the bed is at the ends of its throw, and means for actuating the said oscillating rack.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

The bed A of the printing-press is provided

with a depending chambered hanger B, which is furnished with two long corresponding parallel main racks C and C', located opposite each other in the same vertical plane at the top and bottom of the hanger, respectively, and with two secondary racks D and D', which are located out of line with the racks before mentioned, but in line with each other and in the same horizontal plane and sufficiently separated from each other to be brought into play at the respective ends of the throw of the bed A, the said secondary racks being located in the lower portion of the hanger. The said racks C and C' are alternately engaged for driving the bed in opposite directions by a driven pinion E, which is located in line with and substantially between them and adapted to be moved so as to be engaged with them alternately. As herein shown, this driving-pinion is journaled in the outer end of a carrying-arm F, swinging on the main shaft G, carrying a driving-pinion H, which is constantly in mesh with the pinion E, before mentioned. The arrows *a* and *b*, located on the said pinions, show the direction in which they are revolved.

A lifting-arm I, connected with the outer end of the swinging arm F, is adjustably attached at its lower end to the lower arm *j* of the bell-crank lever J, mounted in a bearing J', the upper arm *j'* of the said lever having connected with it a horizontal lifting-arm K, having pivoted to its opposite end a plate K', carrying upon its inner face and at its respective ends two antifriction-rollers L L, arranged to engage with the opposite edges of a cam M, mounted on the cam-shaft M' of the machine, the said cam operating through the rollers L L to reciprocate the arm K, and hence raise and lower the driving-pinion E to alternately engage it with the main racks C and C'. A clearance-slot *k*, formed in the said plate, receives the said shaft M' and permits the plate, and hence the arm K, to be moved longitudinally by the action of the cam M on the rollers L L. The collar M<sup>2</sup>, Fig. 6, holds the said parts in place. I would have it understood, however, that I do not limit myself to any particular way of driving the pinion E or of raising and lowering it, although the devices that I have shown and described for that purpose are well adapted thereto. For co-

operation with the interval or secondary racks D and D', I provide an oscillating rack N, supported in a vertical position within the chamber B' of the hanger B, being hung on a stationary pin N', the support of which is not shown. This hanger may be operated in any desired manner. As herein shown, I have provided for its operation by means of a crank-arm O, connected with it at one end and at its opposite end with a crank-pin P, mounted in the driving-pinion H; but whatever provision I make for oscillating the rack N its operation will be timed so that just before the pinion E is disengaged from one of the main racks it will engage with one of the secondary racks. The pinion and oscillating rack will then co-operate in moving the bed through a distance represented by one or more teeth of the secondary rack engaged, after which the pinion will be disengaged from the main rack into which it has just been meshed. The oscillating rack will then operate alone in carrying the bed for a short distance in the same direction. Then its movement will be reversed, and it will operate alone in starting the bed in the opposite direction, after which the driven pinion will be engaged with the other of the main racks. The pinion and oscillating rack will now move the bed in the reverse direction for a short distance, after which the oscillating rack will be disengaged from the secondary rack and virtually retired, leaving the pinion to do the main part of the work. When the opposite end of the stroke of the bed is reached, the other secondary rack will be brought into position to repeat the same operation with the oscillating rack. It will thus be seen that the oscillating and the secondary racks "bridge over the interval," so to speak, during which the main driving-pinion is being shifted from one of the main racks to the other.

My improved mechanism, as thus described, is very simple and durable, and operates without pounding and may be run at a very high rate of speed.

I would have it understood that I do not limit myself to the exact construction and arrangement of parts herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a printing-press, the combination, with a bed having a depending hanger furnished with two long corresponding parallel main racks located opposite each other in the same vertical plane and with two secondary or interval racks located in line and in the same horizontal plane and arranged to be

brought into play at the respective ends of the stroke of the bed, of a pinion located in line with and substantially between the said main racks, means for driving the said pinion and for moving it to engage the said racks alternately, an oscillating rack arranged to engage with the said secondary racks, which are respectively brought under it when the bed is at the ends of its stroke, and means for actuating the said oscillating rack, substantially as set forth.

2. In a printing-press, the combination, with a bed having a depending hanger furnished with two long corresponding parallel main racks located opposite each other in the same vertical plane and two secondary or interval racks located in line and in the same horizontal plane and arranged to be brought into play at the respective ends of the stroke of the bed, of a driving-pinion, a driven pinion meshing thereinto and located in line with it and substantially between the said main racks, a carrying-arm swung on the shaft of the driving-pinion and having the driven pinion mounted in its outer end, means for raising and lowering the driving-pinion to engage it with the main racks alternately, an oscillating rack arranged to engage with the said secondary racks, which are respectively brought under it when the bed is at the ends of its throw, and means for actuating the said oscillating rack, substantially as set forth.

3. In a printing-press, the combination, with a bed having a depending hanger and two long corresponding parallel main racks located opposite each other in the same vertical plane and two secondary or interval racks located in line in the same horizontal plane and arranged to be brought into play at the respective ends of the stroke of the bed, a driving-pinion, a driven pinion meshing thereinto and located in line with and substantially between said racks, a carrying-arm swung on the center of the driving-pinion and having a driven pinion mounted in its outer end, means for raising and lowering the driving-pinion to engage it with the main racks alternately, an oscillating rack arranged to engage with the said secondary racks, which are successively brought under it when the bed is at the ends of its throw, and a crank-arm connecting the said oscillating rack with the driving-pinion, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN W. CRIBBINS.

Witnesses:

ED. TOELLES,  
CHAS. T. CHURCH.