

2 Sheets—Sheet 1.

No. 432,800.

Patented July 22, 1890.



Inventor

Berthold Huber,

by Leroby & Gregory

Atty

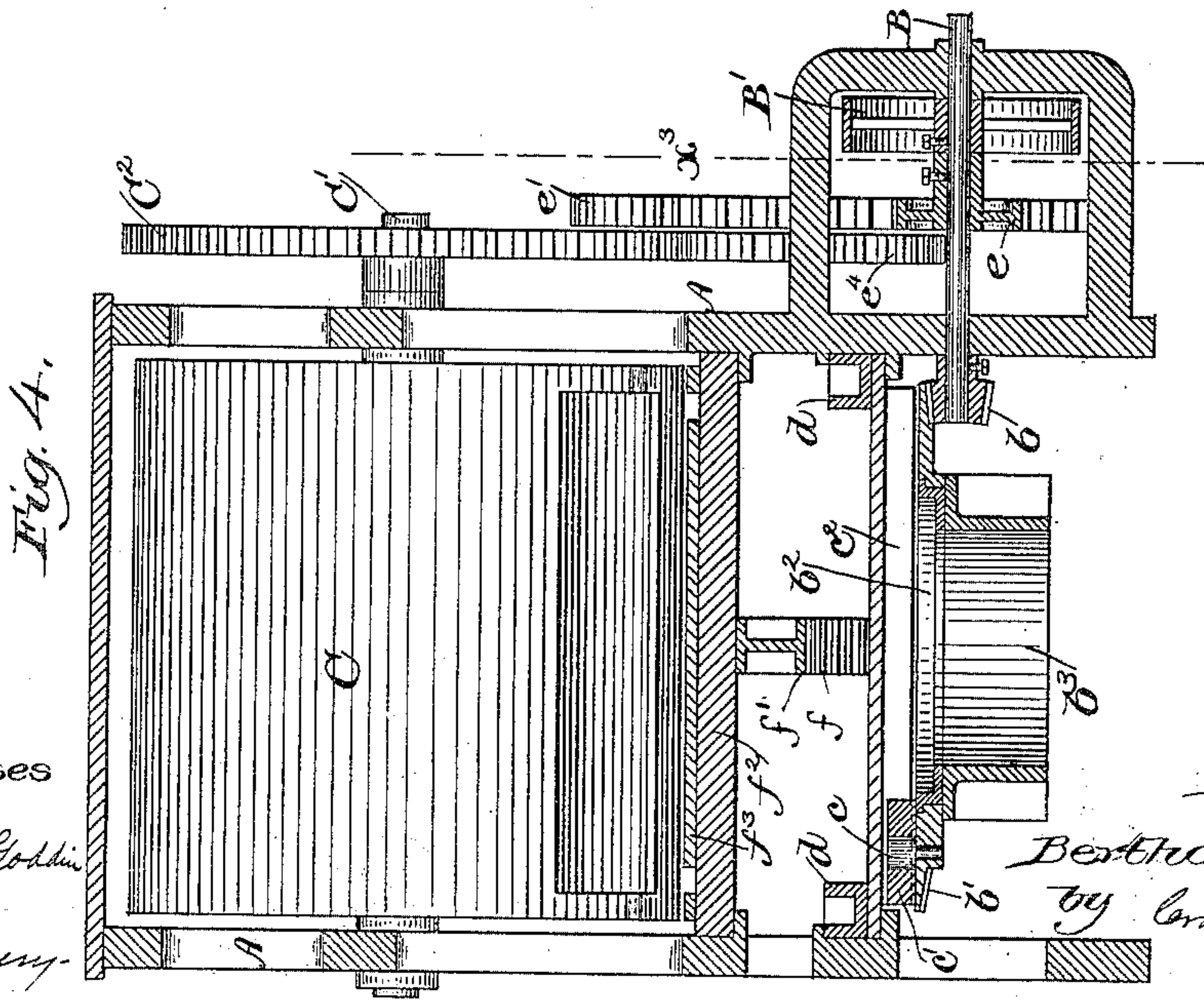
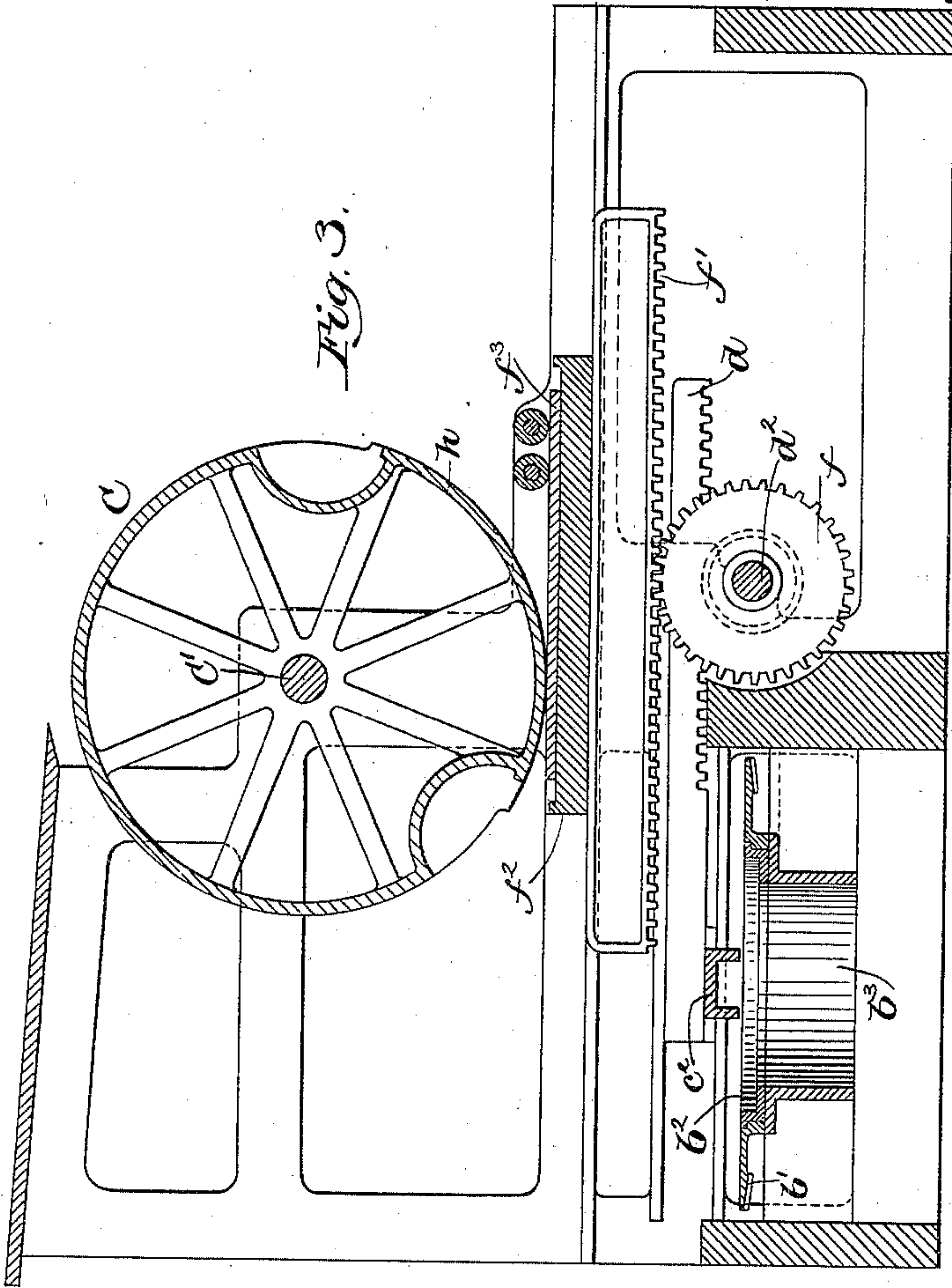
(No Model.)

2 Sheets—Sheet 2.

B. HUBER.
CYLINDER PRINTING PRESS.

No. 432,800.

Patented July 22, 1890.



Witnesses

Edgar A. Goddard

J. L. Emery

Inventor

Berthold Huber,

by Emory & Gregory

Attys

UNITED STATES PATENT OFFICE.

BERTHOLD HUBER, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE
HUBER PRINTING PRESS COMPANY, OF SAME PLACE.

CYLINDER PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 432,800, dated July 22, 1890.

Application filed December 6, 1889. Serial No. 332,762. (No model.)

To all whom it may concern:

Be it known that I, BERTHOLD HUBER, of Taunton, county of Bristol, State of Massachusetts, have invented an Improvement in
5 Cylinder Printing-Presses, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide
10 a printing-press with means whereby a reciprocating bed to carry the type or form and a co-operating cylinder having a tympan may be moved at the same surface speed for most of the length of the stroke of the bed, to thus
15 obviate any blurring of print or injury to the paper.

My invention consists in the cylinder, its attached gear, an annular plate, and a radially-slotted uniformly-rotating gear support-
20 ed upon said plate near its circumference, combined with a ring-gear mounted upon the circumference of said plate, and a crank-pin between it and the uniformly-rotating gear sliding in the slot in the latter to rotate the
25 ring-gear at a variable speed, the latter engaging and actuating the gear attached to the cylinder, substantially as will be described.

Other features of my invention will be pointed out in the claims at the end of this
30 specification.

Figure 1 is a partial side elevation and section in the line x^3 , Fig. 3, of a printing-press embodying my invention. Fig. 2 is a section in the line $x x$, Fig. 1. Fig. 3 is a section in the irregular line x' , Fig. 2. Fig. 4 is a section in the line x^3 , Fig. 1.

Referring to the drawings, A represents a frame-work of suitable shape to sustain the various working parts. The frame-work A
40 has suitable bearings for the reception of the main shaft B, provided with a suitable belt or other pulley or wheel B', by which power is applied to rotate the said shaft. The shaft B has a beveled gear b at its inner end, which
45 engages a beveled ring-gear b' , fitted to turn about an annular guide b^2 , suitably supported upon a brace or stand b^3 . The beveled gear referred to has a crank pin or stud c , which enters a block c' , free to travel in a slot or
50 way formed in the under side of a girt or bar c^2 , (see Figs. 3 and 4,) forming part of an actu-

ating-slide, having at its opposite sides two like rack-bars d , adapted to slide in guides at the inner sides of the frame-work, as best represented in Fig. 3. The rack-bars d of the
55 actuating-slide engage like gears d' , (one shown fully in Fig. 2 by breaking away one of the said rack-bars,) the said gears being fast on a shaft d^2 , each gear being located just inside the frame-work. The shaft d^2 has upon
60 it near its center a gear f , which engages a toothed rack f' , attached to the bed f^2 , on which is placed the usual form f^3 . The bed f^2 , reciprocated through the rack-bars d of the actuating-slide engaging the pinions d' ,
65 is moved at a speed which varies as the bed arrives at the ends of its stroke and is about to be reversed, there being more or less of a dead-point due to the employment of the crank c in the groove of the girt or bar c^2 . The shaft
70 B also has upon it a pinion e , which engages a toothed gear e' , mounted on a stud e^2 , (shown best in Fig. 2 as supported upon and near the circumference of an annular plate e^3), suitably secured to the outer side of the frame-
75 work of the machine. The annular plate referred to (see Fig. 2) is reduced to receive upon it a ring-gear e^4 , provided with a stud e^5 , surrounded by a block e^6 , which block enters a radial slot e^7 in the toothed gear e' , the said
80 gears e' and e^4 thus being mounted eccentrically one with relation to the other, as described. The rotating cylinder C, having the tympan h , is mounted upon a shaft C, having
85 attached to it near one end a toothed gear C', the said gear being engaged by and deriving its movement from the ring-gear e^4 , which is rotated at a variable speed through the sliding crank-pin e^5 , carried by the gear e' , the
90 variation in speed of the ring-gear being so proportioned as to cause the surface speed of the bed and the form thereon and of the tympan h of the cylinder C to travel at substantially the same surface speed so long as the
95 face of the tympan is opposed to the form f^3 , the said form being opposite the tympan for most of the time that the bed is moving from one to the other end of the stroke. The reciprocating plain surface or bed and the cylindrical surface C are common to bed and
100 cylinder printing-presses. The rotating cylinder C and the reciprocating bed f^2 are both act-

uated by gearing on one and the same driving-shaft, and in actuating both the cylinder and the bed there is interposed between the shaft and cylinder in one instance and the shaft and bed in the other instance, a crank, so that the surface speed of the cylinder varies during each rotation, and so, also, the surface speed of the bed varies during each complete stroke, yet these variations are so arranged as to time that while the tympan of the cylinder is opposite the form on the bed and printing is being done the surface of the cylinder and the surface of the bed move at substantially the same speed.

I have shown my invention as applied to a printing-press; but I desire to hold the same if applied to any other class of machine wherein like movements are desired.

I claim—

1. The combination, in a printing-press, of the following instrumentalities, viz: a cylinder having a tympan, a bed to support the form, a main driving-shaft provided with pinions, and intermediate mechanism between the said shaft and the said cylinder and the said shaft and the said bed, each of the said intermediate mechanisms containing as one member a crank, whereby on the rotation of the said main shaft the surface speed of the rotating cylinder and the surface speed of the reciprocating bed are made to correspond at all times while the tympan is opposite to the bed, as when printing is being done, the combination being and operating substantially as described.

2. The cylinder, its attached gear C^2 , the

annular plate e^3 , and the radially-slotted uniformly-rotating gear e' , supported upon said plate near its circumference, combined with the ring-gear e^4 , mounted upon the circumference of said plate eccentric to the gear e' , and a crank between it and the latter gear sliding in the slot therein to rotate the gear e^4 at a variable speed, the said gear engaging and actuating the gear C^2 , substantially as described.

3. The bed f^2 and its attached rack, the shaft d^2 , having pinions d' f , and the actuating-slide having a rack, combined with a rotating gear b' , and a crank-pin actuated by it to reciprocate the said actuating-slide, substantially as and for the purposes set forth.

4. In a printing-press, the following instrumentalities, viz: a rotating cylinder having a tympan, a gear C^2 , the gear e^4 , engaging the gear C^2 , the gear e' , mounted eccentrically with relation to the gear e^4 , a movable crank to connect it with the gear e^4 , a reciprocating form-carrying bed having a rack, the shaft d^2 , having gears d' and f , the actuating-slide having a rack and slotted, as described, the beveled gear b' , and crank-pin to connect it with the said actuating-slide, combined with the shaft B, having the gears b and e , to operate substantially as described.

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

BERTHOLD HUBER.

Witnesses:

W. K. HODGMAN,
FRED M. ATWOOD.