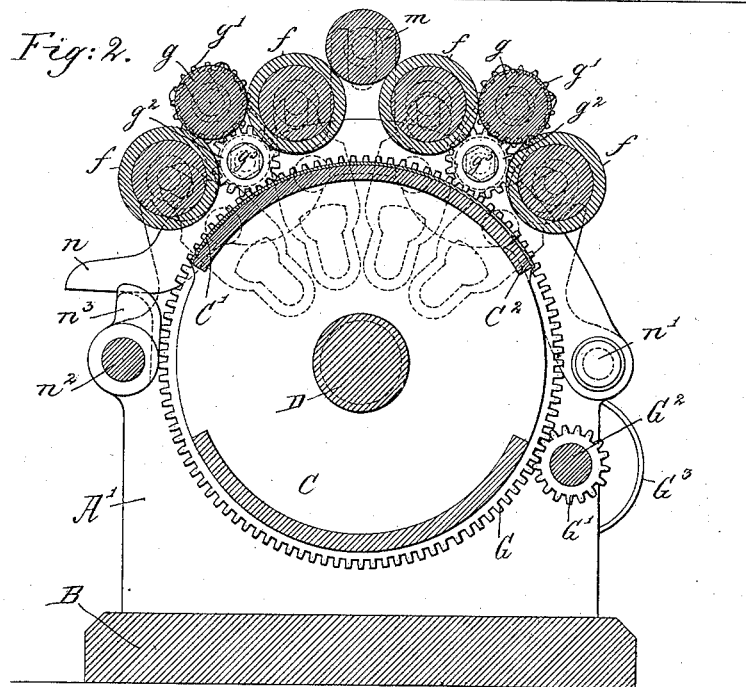
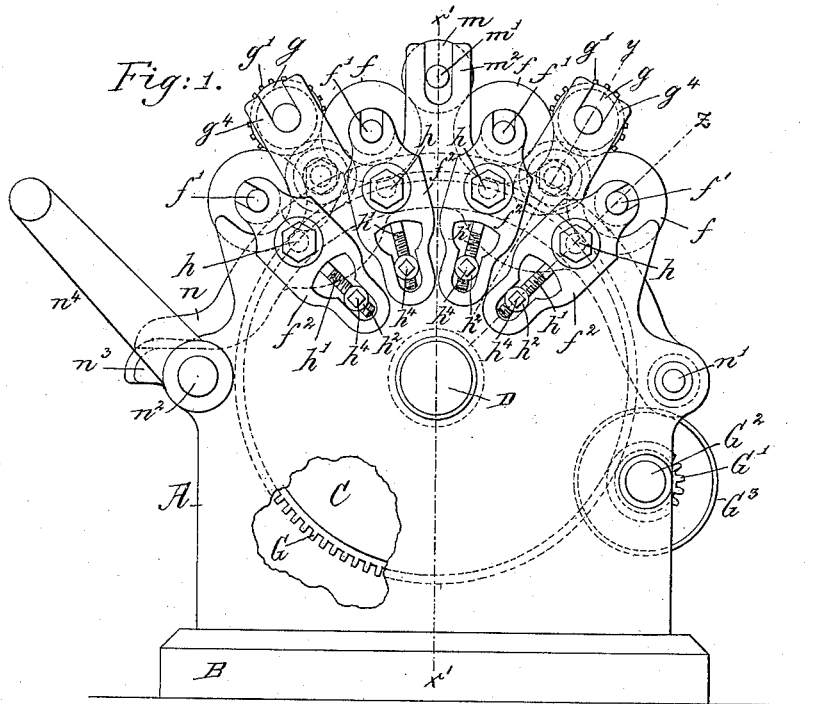


B. HUBER.

INKING APPARATUS FOR PRINTING MACHINES.

No. 344,107.

Patented June 22, 1886.



Witnesses.

Arthur Zippelien.
F. L. Emery

Inventor.

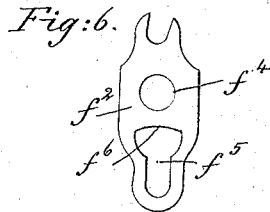
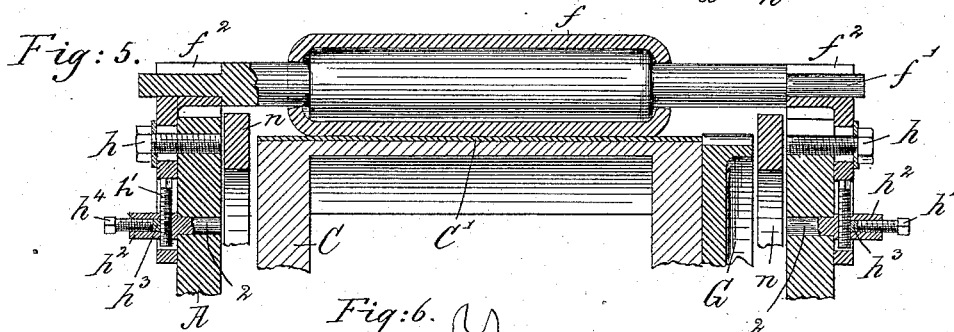
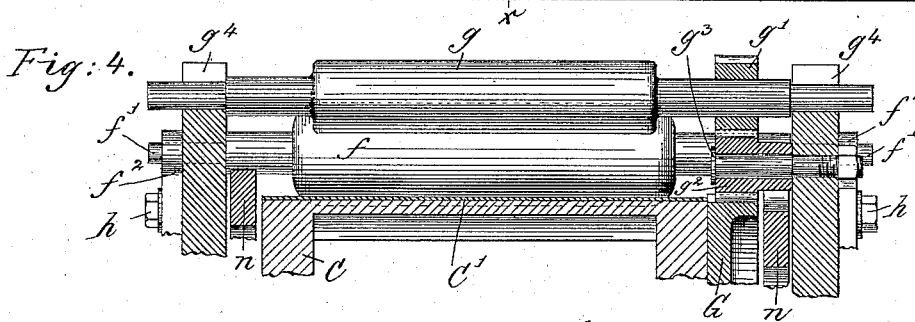
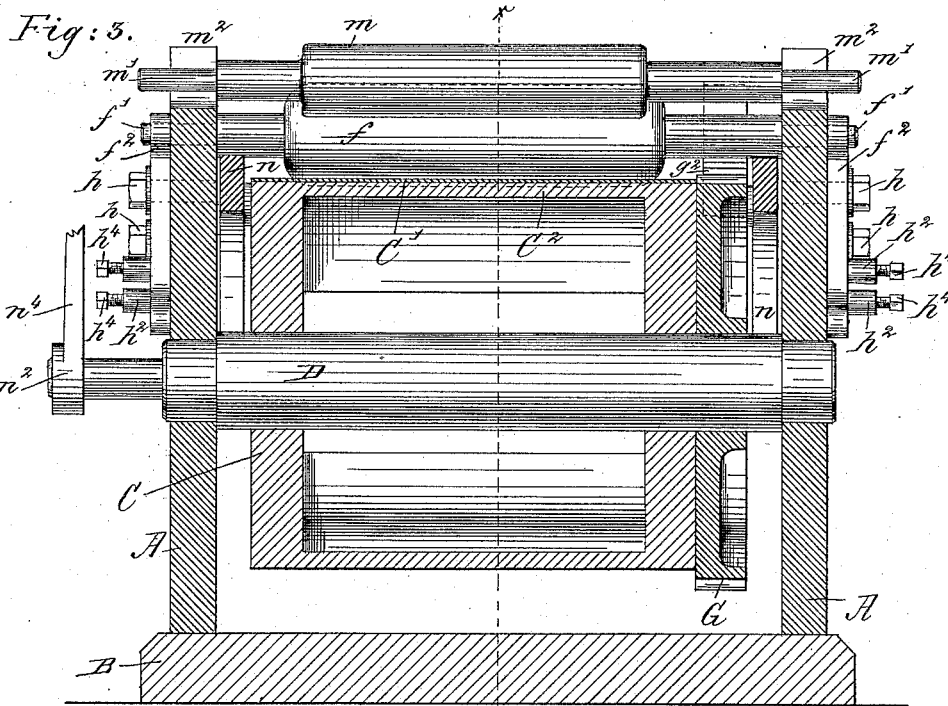
by Berthold Huber.
by Crosby & Gregory
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Berthold Huber
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UNITED STATES PATENT OFFICE.

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

INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 344,107, dated June 22, 1886.

Application filed October 29, 1885. Serial No. 181,276. (No model.)

To all whom it may concern:

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

10 This invention has for its object to provide means whereby the form-rolls may be readily removed from contact with the form attached to the form-carrier while the press is in motion.

15 In presses heretofore devised, so far as known to me, the form-rolls when moved away from the form have been accompanied by the usual distributor-rolls, and the gear driving the latter has been disengaged from the gear which actuates them, thus stopping the rotation of not only the form but the distributor rolls. The disengagement of the gearing driving the distributor-rolls, as described, is objectionable, because the stopping of the said rolls impairs the distribution of the ink, and it is frequently necessary to stop the press in order to bring the form-rolls in proper contact with the form without liability of breaking the gearing used to operate the distributor-rolls.

20 In accordance with my invention, the form-rolls may be readily moved away from the form without disturbing the distributing-rolls, and without removing the form-rolls from their contact with the distributor-rolls.

25 I have herein provided adjustable bearings for the journals of the form-rolls, and have so connected the said bearings with the framework of the machine that when adjusted in order to place the form-rolls into proper position with relation to the form the said bearings may be thereafter moved sideways, in order to bring the form-rolls in contact with the distributor-rolls co-operating with them, and that without disturbing the position of the form-rolls with relation to the surface of the form.

My invention in printing-presses consists, essentially, in a form-carrier, its attached

form, and form-rolls and distributor-rolls, 50 combined with bearings for the journals of the form-rolls, the said bearings for each pair of form-rolls having their faces arranged diagonally with relation to each other, as will be described, to guide the journals of the said form-rolls and cause them to be moved in a direction substantially tangential to the surface of the distributor-roll co-operating with them, as will be described; also, in a printing-press, a form-carrier and attached form 60 and form-rolls, and distributor-rolls co-operating with them, and levers to lift the form-rolls, combined with bearings for the journals of the form-rolls, the said bearings having their faces arranged diagonally with relation to each other, as will be described, to guide the journals of the said form-rolls and cause them to be moved in a direction substantially tangential to the surface of the distributor-rolls co-operating with them, as will be described; also, 70 in a form-carrier and form and distributor-rolls and form-rolls and bearings therefor, combined with adjusting-screws for the said bearings, and pivoted holders for the said adjusting-screws, the pivoted holders being independent of the form-roll bearings, whereby the bearings for the form-rolls may be adjusted to place a form-roll at the proper distance from the form, and the said bearings be thereafter moved laterally to place the periphery of the 80 form-roll in contact with the distributor-roll, and at the same time maintain the form-roll at the same distance from the form, as will be described.

Other features of my invention will be 85 pointed out in the claims at the end of this specification.

Figure 1 is a right-hand elevation of a printing-press embodying my invention, a part of the frame-work being broken out to show 90 portions otherwise hidden by it, the form-rolls being shown in operative position. Fig. 2 is a vertical central cross-section of Fig. 1 in the line xx of Fig. 3, the form-rolls being somewhat lifted from contact with the form. 95 Fig. 3 is a partial vertical longitudinal section of Fig. 1 in the line $x'x'$. Fig. 4 is a partial section of one of the distributor-rolls in the

line y . Fig. 5 is a partial section through one of the form-rolls in the line z , Fig. 1, and Fig. 6 represents one of the bearings for the form-rolls detached.

- 5 As herein shown, the uprights $A A'$ and the base B constitute the frame-work of the machine. The printing-cylinder or form-carrier C is secured to a shaft, D , having attached to it at one end of the cylinder a toothed gear, 10 G , the said gear being engaged and driven by a pinion, G' , on the shaft G^2 , having suitable bearings in the frame-work, and provided with a pulley, G^3 , to receive any usual driving-belt. The form C' (shown best in Fig. 2) will be attached in any usual manner to the high part 15 C^2 of the form-carrier C .

- Herein I have shown four form-rolls, f , the journals f' of which are mounted in slots or openings at the upper ends of the bearings 20 f^2 , arranged at the sides of the frame-work. The slots in the said bearings for each pair of form-rolls are placed diagonally, or inclined with relation to each other, as shown, so as to provide faces of such inclination as to compel 25 the peripheries of the form-rolls at their points of contact with a distributor-roll, g , to move in lines tangential with relation to the periphery of the distributor-roll g , with which they co-operate.

- 30 One chief object of my invention is to enable the form-rolls, when lifted in their bearings, to be moved from the position shown in Fig. 1 to the position shown in Fig. 2, or vice versa, without breaking the contact between 35 the form-rolls and distributor-rolls, and without disengaging the gears g' , attached to the shafts of the distributor-rolls, from the gears g^2 on the studs g^3 , screwed into the frame-work and actuated by the gear G , before described.

- 40 The journals of the distributor-rolls, which latter are in practice quite heavy, are shown as placed in open slots in arms g^4 , attached to the side frames. The distributor-rolls g are so heavy that they will be lifted but little, if at 45 all, by the form-rolls, as the journals of the latter are moved tangentially in the slots holding them in the bearings f^2 , and by leaving the slots in the arms g open the distributor-rolls may be handled with greater ease and 50 without loss of time, which would be necessary if the arms contained boxes or caps to cover the journals of the distributor-rolls.

- The bearing f^2 , one of which is shown separately in Fig. 6, has an opening, f^4 , into and 55 through which and into the side frame passes the screw or bolt h , by which the bearing is held in position with relation to the axis of the distributor-roll, the said opening being of greater diameter than the said screw or bolt. The 60 bearing f^2 has an adjusting-screw, h' , the head of which supports the bearing f^2 , the surface f^6 of the bearing resting on the said head being concaved. The threaded part of the screw h' enters a hole in the holder h^2 , one end, 2, of 65 which (see Fig. 5) is placed loosely in a hole in the side frame, the bearing so supported being free to be moved about the said stud as

its fulcrum, and the opening f^4 at the lower part of each bearing f^2 is of such shape as to permit the bearing to be moved about the 70 holder h^2 as a center. Each holder h^2 has a soft-metal block, h^3 , which is pressed against the threaded shank of the adjusting-screw h' by a set-screw, h^4 , the latter acting upon the soft-metal block, retaining the adjusting-screw 75 in its adjusted positions.

By rotating the adjusting-screw h' in one or the other direction the surface of the form-rolls may be placed in just the proper working position with relation to the form C' , and then, 80 while the clamp-screws h are unfastened, the bearings f^2 may be moved sidewise about the pivoted holder h^2 until the peripheries of the form-rolls are brought in proper contact with the distributor-roll co-operating with them, 85 when the clamp-screws may be tightened to secure the form-rolls in their adjusted position.

Between the two central form-rolls, f , and resting upon them, is a rider-roll, m , the journals m' of which are guided in the slots of up- 90 rights rising from each side frame.

Between the ends of the form-rolls and the bearings f^2 , I have arranged the form-roll-lifting lever n , it being a curved lever having its fulcrum at n' . The said lever is herein shown 95 as resting at one end above a shaft, n^2 , provided with a cam, n^3 , the shaft at one end having attached to it a hand-lever, n^4 .

Whenever, for any reason, it is desired to lift the form-rolls from contact with the form 100 on the form-carrier, it is only necessary to turn the shaft n^2 from the position Fig. 1 into the position Fig. 2, such change of position causing the cam n^3 to act upon and turn the form-roll-lifting lever upon its fulcrum, the 105 said lever in its rising movement acting upon the journals of the form-rolls and lifting them in the diagonally-slotted guides at the upper ends thereof.

The slots or guides in the upper ends of the bearings f^2 , as stated, are so inclined with relation to the center of motion or axis of the distributor-roll with which the form-rolls co-operate that the surface of said form-rolls, as 110 the said rolls are lifted in their bearings, move in lines tangential to the periphery of the distributor-roll, and during such motion the peripheries of the form-rolls remain in contact with the periphery of the distributor-roll, and 115 the latter continues to rotate the form-rolls after they are lifted from the form, the gearing driving the distributor-roll being kept in mesh, in order to keep its distributor-roll in motion. 120

I claim—

1. In a printing-press, a form-carrier, its 125 attached form and form-rolls and distributor-rolls co-operating with them, combined with bearings for the journals of the form-rolls, the said bearings for each pair of form-rolls hav- 130 ing their faces arranged diagonally with relation to each other, as described, to guide the journals of the said form-rolls and cause them to be moved in a direction substantially tan-

gential to the surface of the distributor-roll co-operating with them, substantially as described.

2. In a printing-press, a form-carrier and 5 attached form and form-rolls and distributor-rolls co-operating with them, and levers to lift the form-rolls, combined with bearings for the journals of the form-rolls, the said bearings having their faces arranged diagonally 10 with relation to each other, as described, to guide the journals of the said form-rolls and cause them to be moved in a direction substantially tangential to the surface of the distributor-rolls co-operating with them, substantially as described. 15

3. A form-carrier and form and distributor rolls and form-rolls and bearings therefor, combined with adjusting-screws for the said bearings, and pivoted holders for the said adjusting-screws, the pivoted holders being independent of the form-roll bearings, whereby 20 the bearings for the form-rolls may be adjusted to place a form-roll at the proper distance from the form, and the said bearings be thereafter moved laterally to place the periphery 25 of the form-roll in contact with the distribu-

ter-roll, and at the same time maintain the form-roll at the same distance from the form, substantially as described.

4. The frame-work, the bearings f^2 , and the 30 clamping bolt or screw h and the adjusting-screw h' , combined with the holder h^2 , forming a pivotal center for the said adjusting-screw and the bearings, substantially as described.

5. The frame-work, the bearings f^2 , and the 35 clamping screw or bolt h and the adjusting-screw h' , combined with the holder h^2 , the soft-metal block h^3 , and the set-screw h^4 , to operate all substantially as described.

6. In a printing-press, the form-rolls, their 40 bearings f^2 , provided with the openings f^5 , and having each a concaved surface, f^6 , combined with the holder h^3 and screw h^4 , to operate substantially as described.

In testimony whereof I have signed my name 45 to this specification in the presence of two subscribing witnesses.

BERTHOLD HUBER.

Witnesses:

E. D. GODFREY,
W. K. HODGMAN.