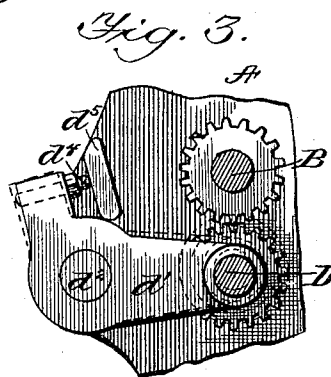
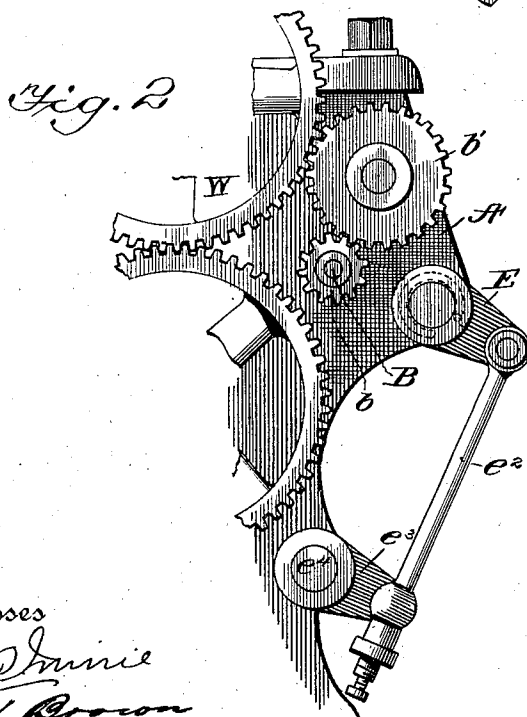
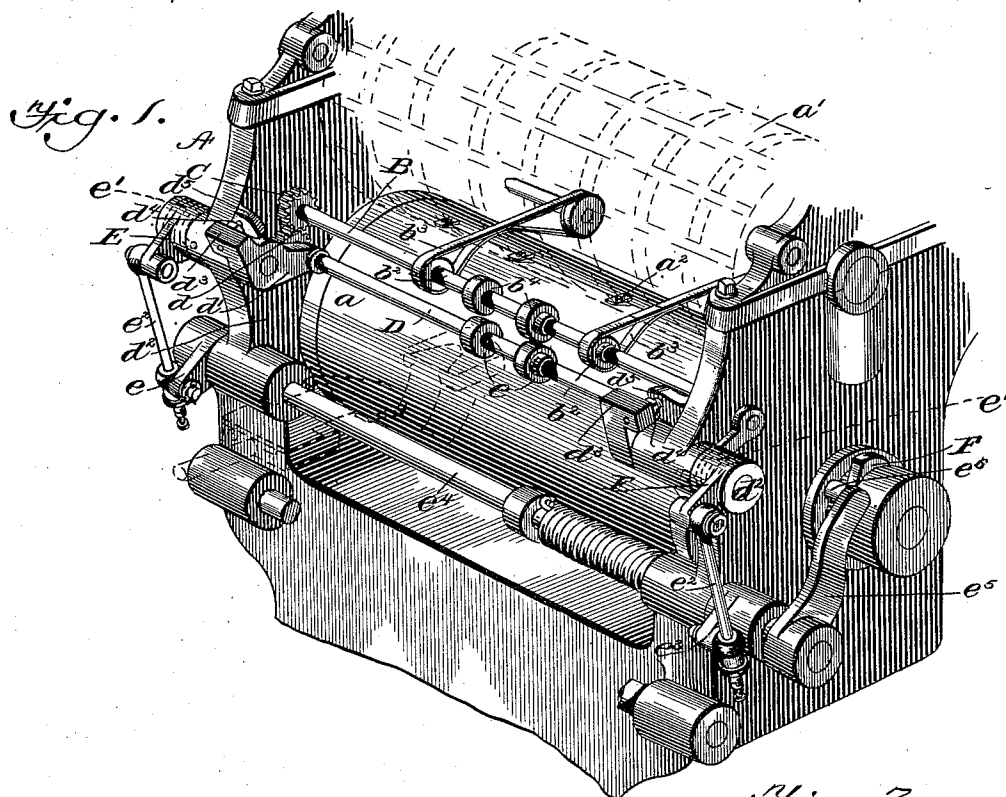


(No Model.)

C. G. HARRIS.
PRINTING PRESS.

No. 577,381.

Patented Feb. 16, 1897.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

CHARLES G. HARRIS, OF NILES, OHIO, ASSIGNOR TO THE HARRIS AUTOMATIC PRESS COMPANY, OF SAME PLACE.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 577,381, dated February 16, 1897.

Application filed August 26, 1896. Serial No. 603,973. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. HARRIS, of Niles, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in printing-presses.

In a pending application for patent, Serial No. 502,738, filed March 7, 1894, I have shown and described certain improvements in printing-presses, embracing means for obtaining an accelerated feed-supply, that is, taking up the paper or article to be printed and feeding the same up to the stops on the impression-cylinder, while the latter is being rotated, at a speed greater than the speed of rotation of such cylinder. In that application I set forth at length the advantages resultant upon this accelerated feed-supply, and since then actual practice has positively demonstrated the merit and superiority of that invention.

The present improvement has reference to the same line of invention, and the object thereof is to simplify and improve the means for obtaining the result stated and to insure the operation of the parts.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a portion of a printing-press, showing my present improvements. Fig. 2 is a side view, parts being broken away. Fig. 3 is an enlarged detail.

Referring to the drawings, A designates the frame of a press, a portion only of which is shown; *a*, the impression-cylinder, and *a'* the type or plate carrying cylinder, the latter being indicated in dotted lines. On the periphery of cylinder *a* are the usual stops *a*², up to and against which the cards, sheets of paper, or envelopes are fed.

B is a shaft extended transversely across the frame in advance of cylinder *a*. It is supported at its ends by the sides of frame A, and one end is extended through one of said

sides and provided with a gear-wheel *b*, with which engages a wheel *b'* of a train of gearing W, all the members of which are not shown. It is sufficient to say that this train of gearing derives its power from the operating or driving shaft of the press. (Not shown.) On this shaft B are two spools *b*², around which the ordinary tapes *b*³ are passed, said spools being adjustably keyed on said shaft. Fast on this shaft, intermediate of the spools, are two rings or circumferential enlargements *b*⁴, a short intervening space being left between them. Also on this shaft, adjacent the inner side of the frame, is a small gear-wheel C.

D is a rock-shaft parallel with and arranged below the shaft B. At one end it is provided with a small gear-wheel *d*, which intermeshes with wheel C, but in such way that the shaft D can be raised or lowered to a slight extent without interfering with the meshing of said wheels. The shaft D derives its rotary motion from shaft B and at its ends is supported by arms *d'*, which at their upper ends are fast on short shafts *d*², mounted in bearings in the sides of frame A. Each arm *d'* has a side flange *d*³, in which is a short screw-rod *d*⁴, designed by contacting with shoulders *d*⁵ to limit the movements of said arm. Upon shaft D are two rings or circular enlargements *e*, corresponding to the rings of shaft B, beneath which they are located. Between these two sets of rings there is normally a narrow space to allow of the insertion or passage of a card or sheet of paper or an envelop or the like, the latter being fed by any of the forms of feeders shown and described in my pending applications for patents. As soon, however, as the sheet is so fed between the upper and lower rings the shaft D is raised, and the rings thereof engaging the paper and coacting with the rings or enlargements of shaft B the paper is given an accelerated movement, that is, it is, while so held between the rings of the two shafts, caused to travel forward at a speed greater than the speed of rotation of the impression-cylinder. By the time the paper reaches and engages the stops on cylinder *a* the shaft D is lowered and resumes its normal position. This lowering of said shaft does not, however, disengage the wheels C and *d*.

Upon the shafts d^2 are keyed short arms E, the hubs of which inclose coil-springs e' , which tend to hold shaft D in its normal lowered position. These arms are connected at their
 5 outer ends by adjustable rods e^2 to short arms e^3 , whose hubs are fast on a spring-held shaft e^4 , extended transversely through frame A. On one end of this shaft is keyed an arm e^5 , the free end e^6 of which is constantly held in
 10 engagement with a cam-disk F, fast on the journal of the impression-cylinder a . In consequence the rotation of this cylinder, through the cam F and arm e^5 , controls the raising and lowering of the shaft D. As the shoulder
 15 on this cam contacts with arm e^5 the shaft D is raised until its rings or enlargements engage with those of shaft B. As the end of the arm is freed of the shoulder on the cam the shaft D is lowered sufficient to disengage
 20 the rings or enlargements thereof from those of shaft B, but not sufficient to affect the intermeshing of the gear-wheels C and d .

From what has been said it will be seen that the rock-shaft D is being constantly rotated by the revolution of shaft B and that
 25 when the accelerated movement is to be obtained the shaft can be raised without interfering with its driving medium.

I claim as my invention—

30 1. A printing-press having a rotary impression-cylinder and means for positioning or registering paper on said cylinder and causing the paper to travel at a speed greater than that at which the cylinder is rotated, comprising
 35 two rotary shafts, one of said shafts being constantly rotated by the rotation of the other and capable of being moved or rocked toward and away from the latter, both of said shafts being of varying diameters, as and for
 40 the purpose set forth.

2. A printing-press having a rotary impres-

sion-cylinder and means for positioning or registering paper on said cylinder and causing the paper to travel at a speed greater than that at which the cylinder is rotated, comprising
 45 a positively-operated shaft having a gear-wheel and rings or enlargements, a second shaft having corresponding rings or enlargements and a gear-wheel meshing with said former gear-wheel, and means for moving said
 50 latter shaft so as to bring its rings or enlargements into contact with those of the first-mentioned shaft, substantially as set forth.

3. The combination with the cylinder having stops thereon, of a positively-operated
 55 shaft having a gear-wheel and rings or enlargements, a second shaft having corresponding rings or enlargements and a gear-wheel meshing with said former gear-wheel, arms supporting said latter shaft, and means for
 60 moving said arms operated by said cylinder, substantially as set forth.

4. The combination with the cylinder having stops thereon and a cam-disk on its journal, of a positively-operated shaft having a
 65 gear-wheel and rings or enlargements, a second shaft also having rings or enlargements and a gear-wheel meshing with said former gear-wheel, supports for said second shaft, short shafts to which said supports are se-
 70 cured, arms on said shafts, a shaft to which said arms are connected, and an arm on said latter shaft having its free end in contact with said cam-disk, substantially as set forth.

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

CHARLES G. HARRIS.

Witnesses:

J. NOTA MCGILL,

JOS. H. BLACKWOOD.