

No. 608,153.

Patented July 26, 1898.

B. HUBER.
PRINTING MACHINE.

(Application filed Sept. 25, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

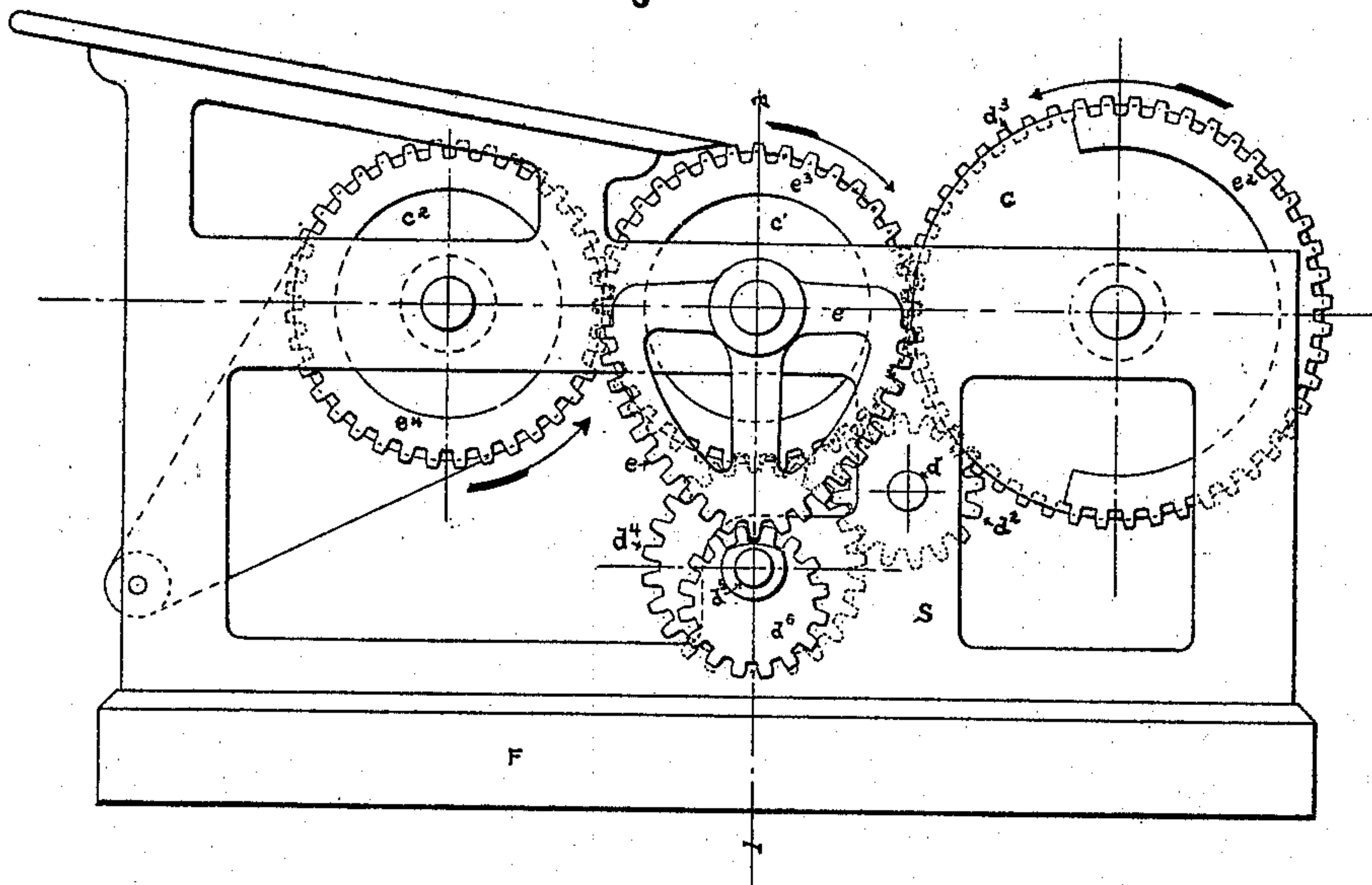
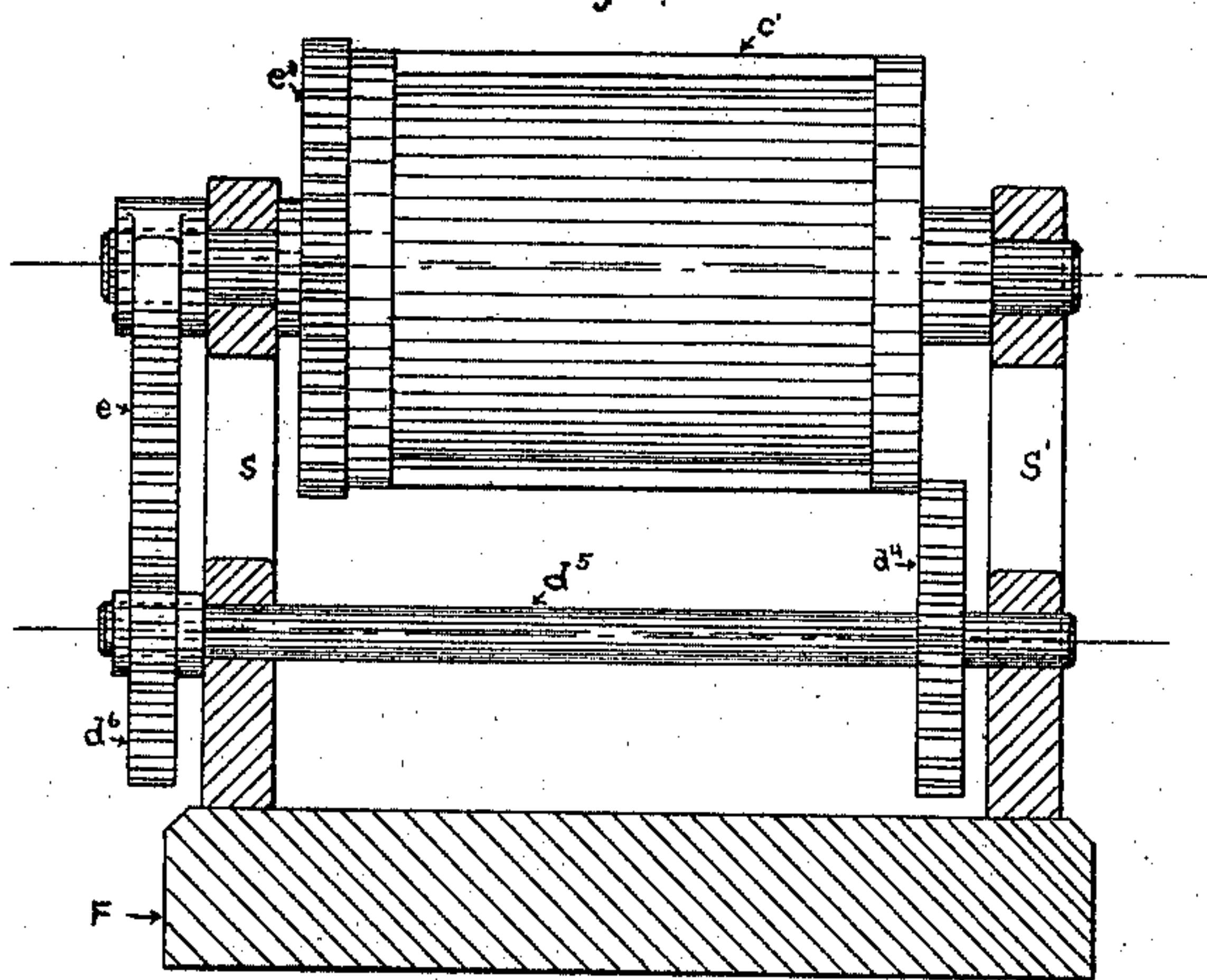


Fig. 2



Witnesses
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2 Sheets—Sheet 2.

Fig. 3

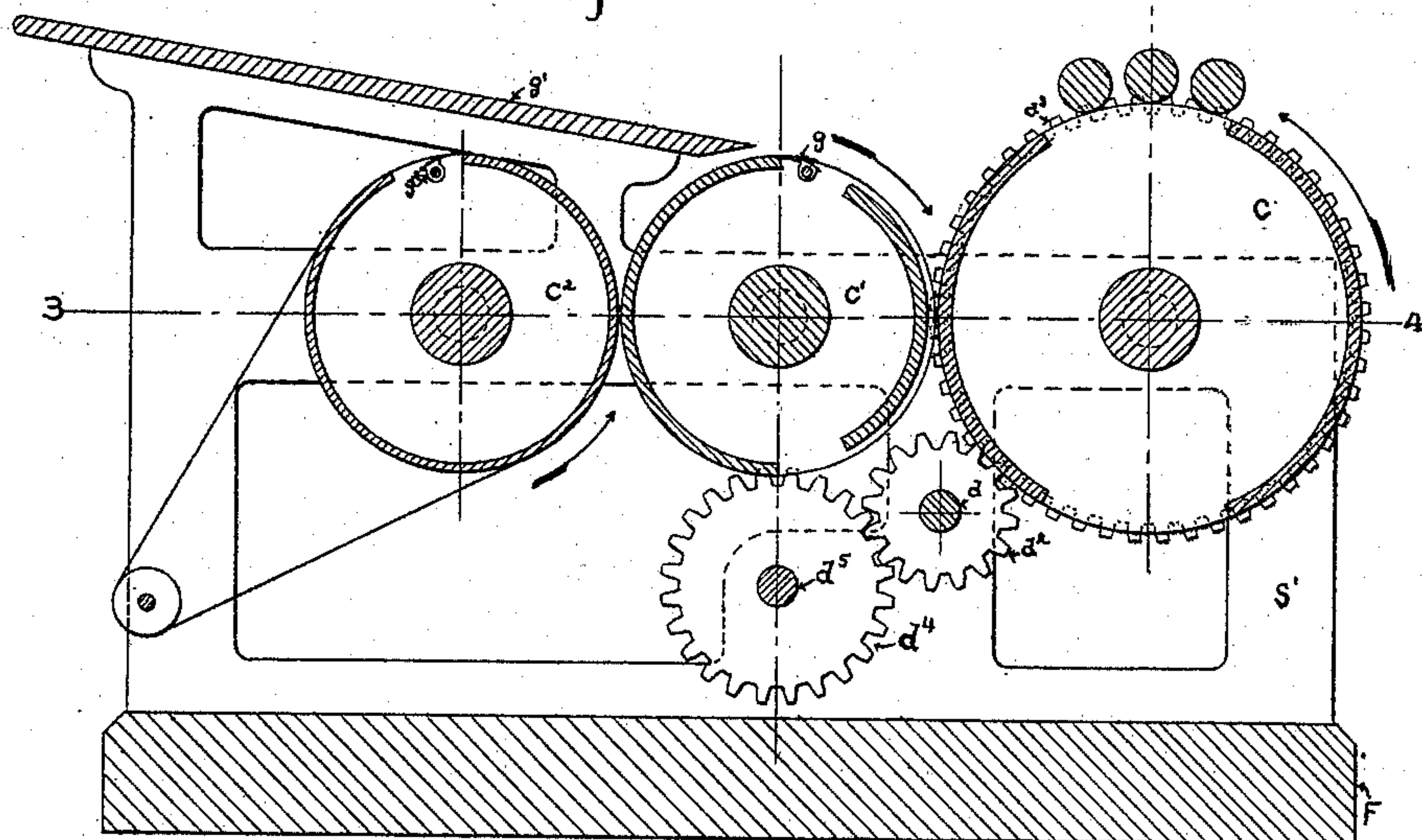
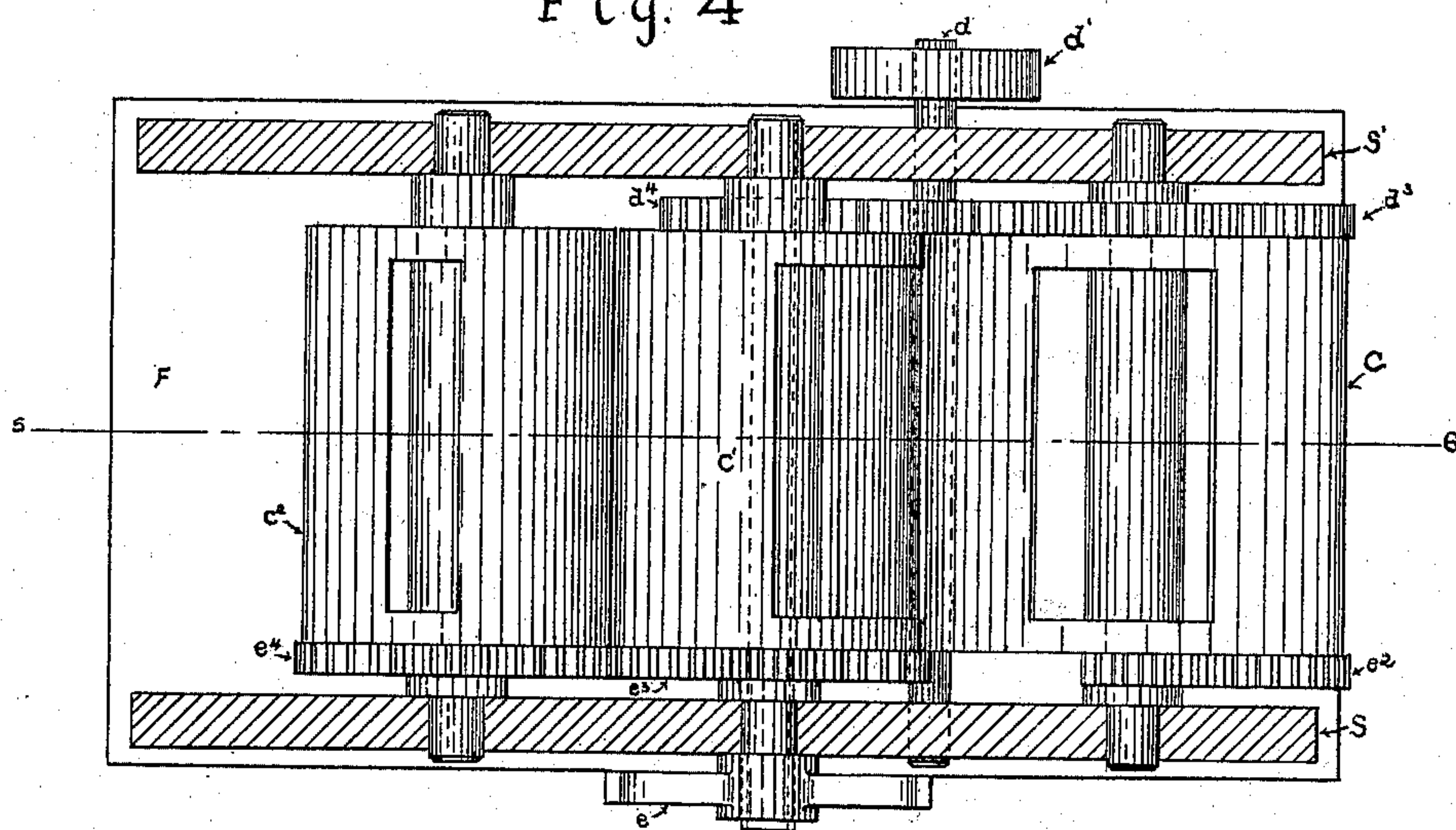


Fig. 4



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UNITED STATES PATENT OFFICE.

BERTHOLD HUBER, OF TAUNTON, MASSACHUSETTS.

PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 608,153, dated July 26, 1898.

Application filed September 25, 1897. Serial No. 652,971. (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 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 relates to the class of printing-presses in which the impression-cylinder is continually rotated in one direction and the paper to be printed is in separate sheets, which are fed to grippers mounted in the impression-cylinder. In such presses it would in many cases be possible to do more work or print a greater number of sheets in a given time were it not for the fact that at a high rate of speed the gripper mechanism is liable to become inaccurate on account of operating quickly and starting the sheet suddenly from the feed-board, so as to cause a slight non-register, which of course is objectionable for fine work.

The object of this invention is to obviate this objectionable feature by providing means for slowing down the speed of the impression-cylinder at about the time the grippers take the sheet, so that the gripper mechanism when taking the sheet will be operated slowly and well within bounds and the sheet will be started gently from the feed-board.

I have shown this invention as applied to a printing-press such as is described in my United States Patent No. 350,056, it being particularly adapted to such a press on account of the same being built on the rotary principle and therefore capable of great speed.

Figure 1 is a side elevation of the press. Fig. 2 is a vertical section through side frames and foundation on the line 1 2, Fig. 1, showing the impression-cylinder C' and shaft d^5 with their attached parts in elevation. Fig. 3 is a vertical section on the line 5 6, Fig. 4; and Fig. 4 is a horizontal section on line 3 4, Fig. 3, showing a top view of the cylinders.

The foundation F and side frames S and S' furnish a suitable frame with bearings for the three cylinders and two shafts.

C is a plate or form carrying cylinder, and C' is an impression-cylinder fitted with grippers g , which are operated in any well-known

manner to take the sheets to be printed from the feed-board g' .

C^2 is a delivery-cylinder fitted with grippers g^2 to receive the printed sheets from the impression-cylinder C' and deliver them to the fly (not shown) in the usual manner. The driving-shaft d has the pulley d' and pinion d^2 mounted on it near one end, and the pinion d^2 meshes with the gear d^3 , which is mounted on one end of the cylinder C and through it drives said cylinder at a uniform speed at all times. The pinion d^2 also meshes with and drives the gear d^4 , which is mounted on one end of the shaft d^5 , and on the opposite end of said shaft is eccentrically mounted the pinion d^6 .

The pinion d^6 at certain times meshes with the cam-shaped segment e , which is mounted on one end of the cylinder C' and through it at such times drives the said cylinder at a varying speed. The segment e^2 , mounted on the cylinder C , meshes at certain times with the gear e^3 , which is mounted on the cylinder C' and operates to drive the cylinder C' at such times in unison with the cylinder C . The gear e^3 meshes with the gear e^4 , which is mounted on the cylinder C^2 and operates to drive said cylinder in unison with the cylinder C' .

The three cylinders are rotated at all times in the directions indicated by arrows, and each makes one revolution to one complete operation of the press.

In the drawings I have shown the press in position when the grippers g have just taken the sheet from the feed-board g' and the cylinder C' is controlled by the eccentrically-mounted pinion d^6 and is being moved at the slowest point of the varying speed communicated to it by said pinion, and it will be understood, as the operation of the press continues and during the first quarter-revolution of the cylinder C that the speed of the cylinder C' is increased to a point when it is in unison with the fixed speed of the cylinder C , and at about the time the first quarter-revolution is completed the segment e^2 comes into mesh with the gear e^3 and the pinion d^6 goes out of mesh with the cam-shaped segment e . During the second and third quarter-revolutions the cylinder C' is driven by means of the segment e^2 at a uniform speed with the cylinder

C, and at about the time the third quarter-revolution is completed the pinion d^6 comes into mesh again with the cam-shaped segment e and the segment e^2 goes out of mesh
 5 with the gear e^3 . During the fourth quarter-revolution the speed of the cylinder C' is decreased, so that at its completion it is at its slowest point, as has already been noted.

In the accompanying drawings I have shown
 10 my invention as applied to a printing-press wherein the relative sizes of the impression and form cylinders are as three to four, but this proportion could be varied without departing from the scope of my invention.

15 That portion of the form-cylinder opposite to its form-surface and adjacent the impression-cylinder is used for an ink-table.

It will thus be readily understood that I have attained the object of my invention and
 20 have shown a printing-press wherein the speed of the impression-cylinder can be greatly reduced at the time the sheet is taken by the grippers, and have therefore obviated any non-register which might be caused by
 25 suddenly starting the sheet from the feed-board or by operating the gripper mechanism at a high rate of speed.

Having fully described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In a rotary printing-press, a form-carrying cylinder rotated at a uniform speed during each complete revolution of the press; an impression-cylinder rotated in unison with the said form-carrying cylinder during the
 35 period of printing and at a varying speed during the balance of each revolution of the press, to enable the sheet to be taken by the grippers, carried by the impression-cylinder,
 40 when said cylinder is moving at a slower speed than the uniform speed of the form-carrying cylinder, for the purpose specified.

2. In a rotary printing-press, the following instrumentalities, viz: the form-carrying cylinder C with the gear d^3 and segment e^2
 45 mounted thereon, the impression-cylinder C' with the gear e^3 and cam-shaped segment e mounted thereon, the pinion d^2 , the gear d^4 and the eccentrically-mounted pinion d^6 , arranged substantially as shown for the purpose specified.
 50

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Witnesses:

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