

(No Model.)

2 Sheets—Sheet 1.

C. B. COTTRELL.

GRIPPER MECHANISM FOR STOP CYLINDER PRINTING MACHINES.

No. 358,962.

Patented Mar. 8, 1887.

Fig. 1.

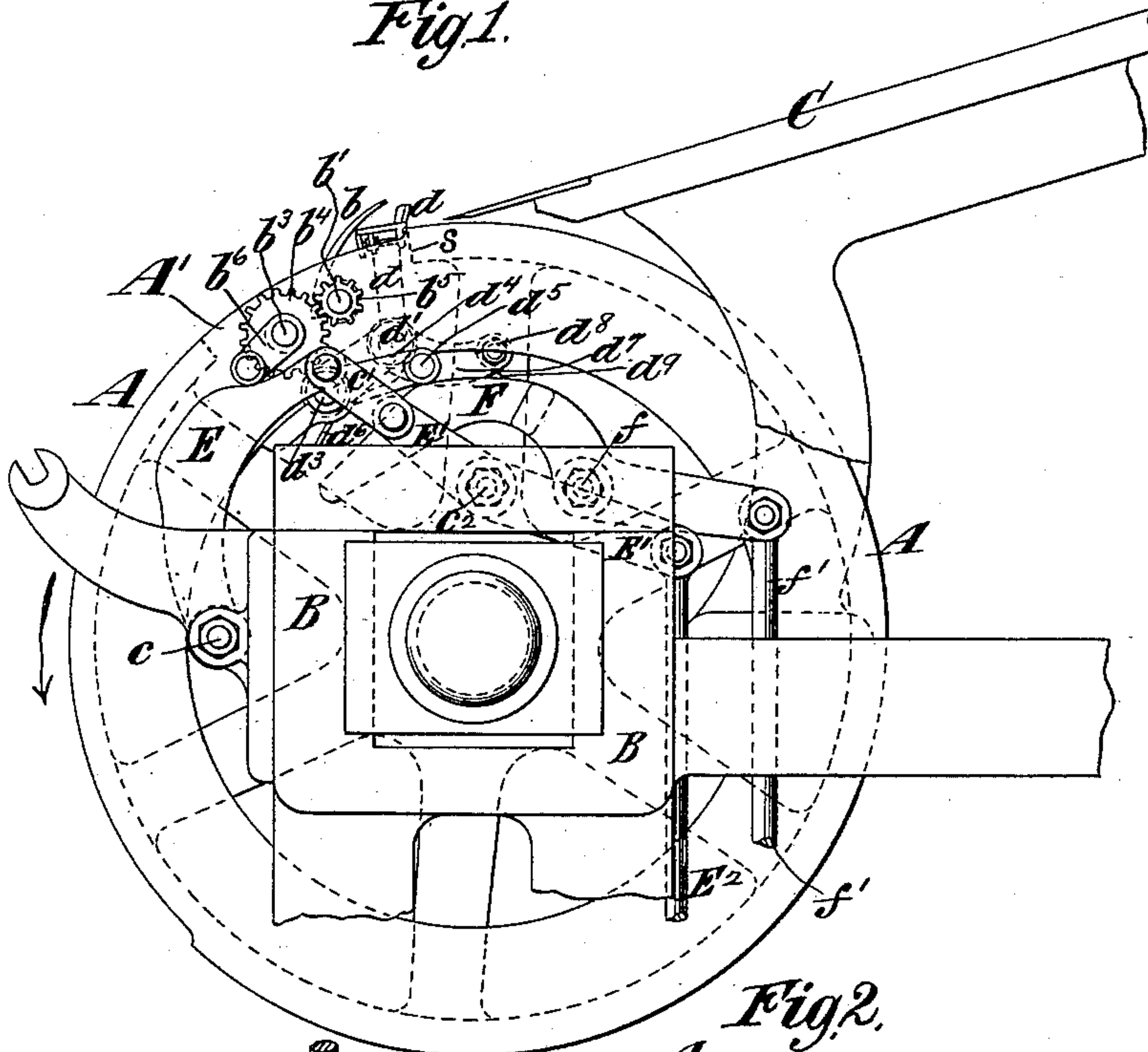
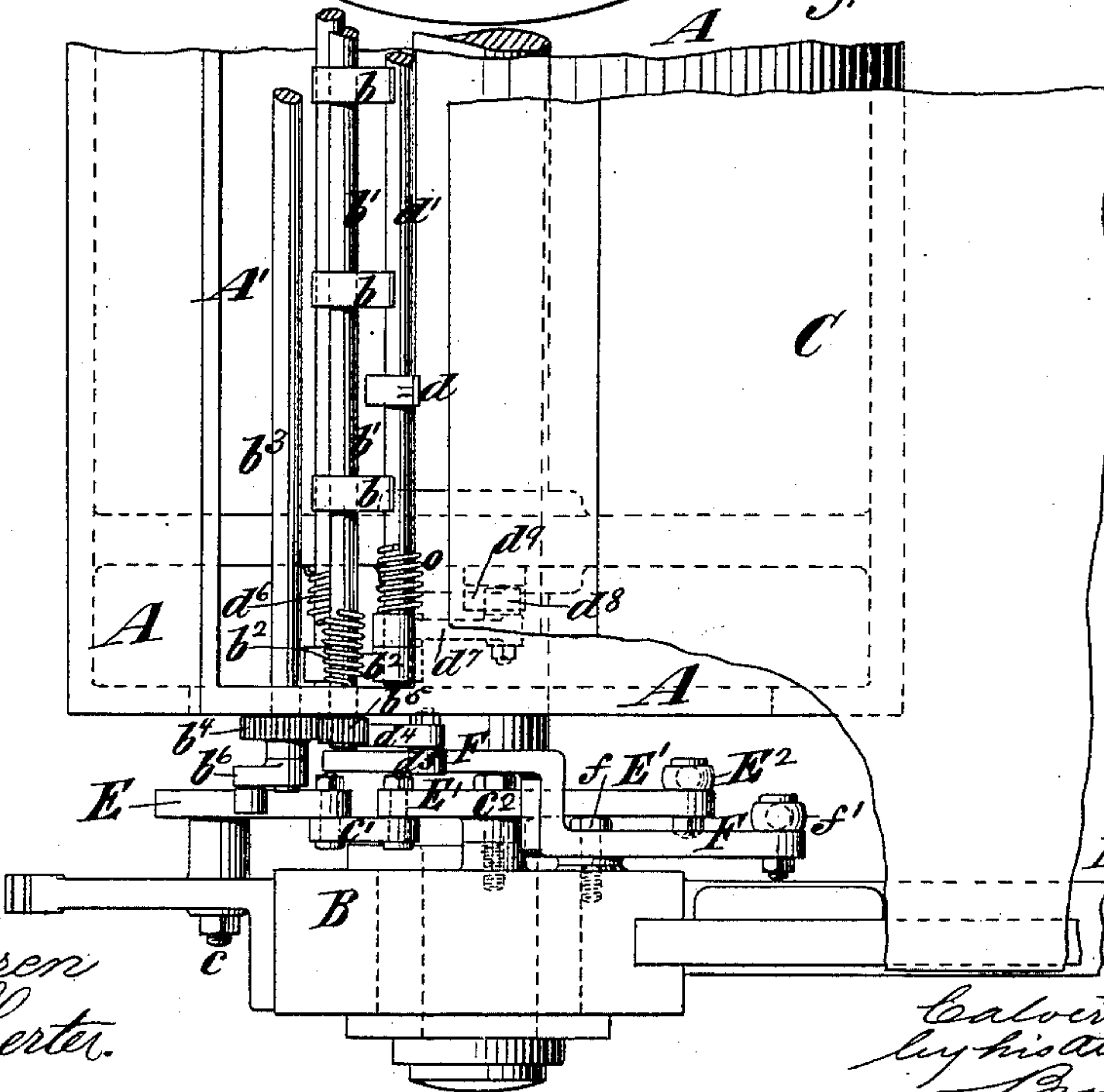


Fig. 2.



Witnesses:

O. Sundgren  
E. H. Carter.

Inventor:

Calvert B. Cottrell  
by his attys  
Brown & Hall

(No Model.)

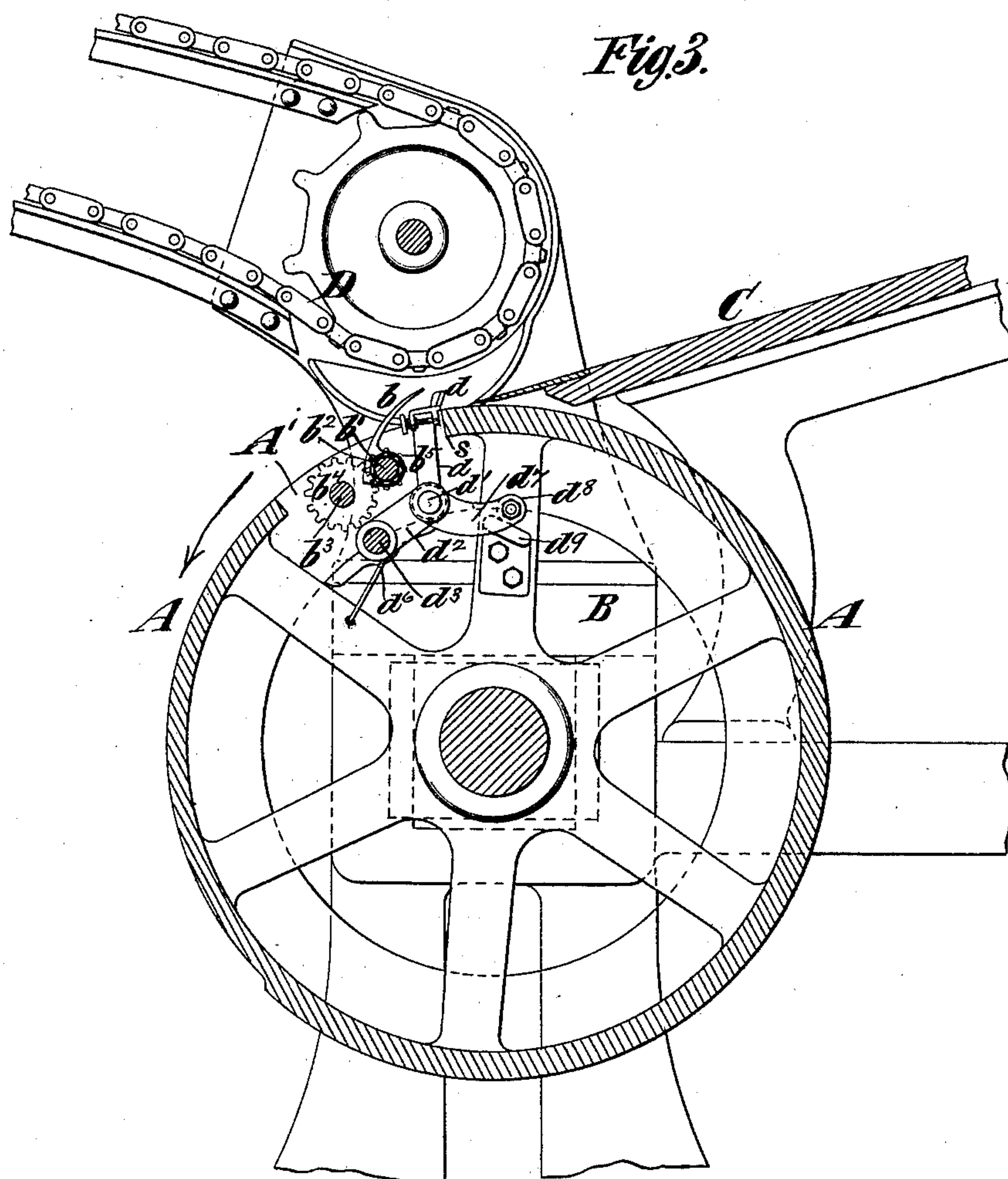
2 Sheets—Sheet 2.

C. B. COTTRELL.

GRIPPER MECHANISM FOR STOP CYLINDER PRINTING MACHINES.

No. 358,962.

Patented Mar. 8, 1887.



Witnesses:

Ol. Sundgren  
Emil Hurter

Inventor:

Calvert B. Cottrell  
by his Attys  
Brown & Hall



# UNITED STATES PATENT OFFICE.

CALVERT B. COTTRELL, OF STONINGTON, CONNECTICUT.

GRIPPER MECHANISM FOR STOP-CYLINDER PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 358,962, dated March 8, 1887.

Application filed May 21, 1886. Serial No. 202,937. (No model.)

*To all whom it may concern:*

Be it known that I, CALVERT B. COTTRELL, of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Gripper Mechanism for Stop-Cylinder Printing-Machines, of which the following is a specification.

My invention relates to the means employed for operating the cylinder-grippers of stop-cylinder printing presses or machines, and is intended for presses in which the cylinder, after making a complete revolution to print, runs ahead a quarter of a revolution, more or less, to facilitate the delivery of the printed sheet, and is then turned back to a receiving position, where it remains until it is started forward with a fresh sheet to come into gear with the bed. Such a method of operation is described in my pending application, Serial No. 202,936, filed of even date herewith, and its purpose is to facilitate the delivery of the printed sheets by means of endless chains carrying delivery-grippers and traveling from the top of the cylinder forward over the inking apparatus to deliver the printed sheet on the receiving-table at the farther end of the press. Such an arrangement of delivery-grippers is shown in my United States Patents Nos. 305,797 and 305,798, dated September 30, 1884.

To prevent the cylinder-grippers from interfering with the proper delivery of the printed sheet, the cylinder-grippers should be swung over backward when raised to release the sheet, and when the cylinder is returned to a sheet-receiving position the grippers should be slightly raised, and when the sheet is fed they should close thereon and then move forward without being raised. To accomplish this purpose, I employ, in connection with the cylinder-grippers and the arm whereby they are opened, a movable cam which is preferably pivoted and capable of swinging, so as to remove it from the path traversed by the gripper-operating arm, all as more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of a portion of the cylinder stands or frames and an end view of a cylinder embodying my invention, also including the feed-board. Fig. 2 is a plan of

the same, and Fig. 3 is a sectional elevation in a plane transverse to the axis of the cylinder and including a part of the delivery mechanism.

Similar letters of reference designate corresponding parts in the several figures.

A designates the cylinder, which is journaled in the cylinder-stands or side frames, B.

C designates the feed-board, and D parts of the delivery apparatus, to which I here make no claim.

A' is the cylinder-recess, and at s is the receiving-edge thereof.

The cylinder-grippers *b* are on a shaft, *b'*, and are closed on the cylinder by the usual spring, *b<sup>2</sup>*. Parallel with the gripper-shaft *b'* is a second shaft, *b<sup>3</sup>*, geared therewith by a wheel and pinion, *b<sup>4</sup>b<sup>5</sup>*, and on the end of the shaft *b<sup>3</sup>* is an arm, *b<sup>6</sup>*, carrying a truck-roll and by the movement of which the grippers may be opened and swung over backward out of the way of the sheet which is being drawn forward by the delivery apparatus D.

E designates a movable cam, which, as here shown, is pivoted at *c*, so as to be capable of swinging, in order to remove it from or obtrude it into the path of the arm *b<sup>6</sup>*.

To deliver a printed sheet, the cylinder A moves in the direction of the arrows, Figs. 1 and 3, about a quarter of a turn, more or less, beyond the position shown in said figures and then returns to the position there shown. The cam E, by its action on the arm *b<sup>6</sup>*, swings the grippers *b* over backward as the cylinder moves beyond a full revolution, and as the cylinder returns it allows the grippers to nearly close, still holding them slightly raised, as shown in the drawings, to take a fresh sheet. At the proper time the cam E is moved inward toward the axis of the cylinder or retracted, so that the arm *b<sup>6</sup>* does not touch it as the cylinder moves forward to print.

I have here shown the cam E as connected by a rod or link, *c'*, with a lever, *E'*, which is fulcrumed at *c<sup>2</sup>*, and is shifted to move the cam E by a rod, *E<sup>2</sup>*, which may be operated by a cam on the cross-shaft of the press (not here shown) or in any other suitable way.

The cylinder is represented as provided with a feed guide or gage, *d*, on a shaft, *d'*, which is journaled in arms *d<sup>2</sup>* on a rock-shaft,



$d^3$ , and which is operated substantially as shown in my Patent No. 314,166, dated March 17, 1885. On the end of the shaft  $d^3$  is an arm,  $d^4$ , carrying a truck-roll,  $d^5$ , and which is operated on by a cam, F, to project the feed-guide  $d$  outward at the time of taking a sheet, and during the principal part of each revolution the feed-guide is withdrawn within the gripper-recess of the cylinder by a spring,  $d^6$ , applied to the shaft  $d^3$ , as in my said patent No. 314,166. On the shaft  $d'$  is an arm,  $d^7$ , connected with the shaft by a spring,  $o$ , and carrying a truck-roll,  $d^8$ , which is caused to bear on a cam,  $d^9$ , on the cylinder by the pressure of the spring  $o$ , and when the feed-guide is withdrawn into the gripper-recess it is also swung back slightly, so that when again projected outward it will clear the receiving edge of the cylinder, all as described in my said Patent No. 314,166. The cam F is pivoted at  $f$ , and is operated through a cam-actuated rod,  $f'$ , as in my said Patent No. 314,166.

What I claim as my invention, and desire to secure by Letters Patent, is—

25 1. The combination, with a stop impression-cylinder provided with cylinder-grippers and carrying an arm by the movement of which the grippers are opened, of a cam which acts to open the grippers when in the path of said  
30 arm and which is movable to carry it out of reach of said arm as the cylinder turns after

taking a sheet, whereby provision is afforded for turning the cylinder beyond the point at which it takes the sheet and then returning it to the sheet-taking position, substantially as  
35 herein described.

2. The combination, with a stop impression-cylinder which is turned at each printing-movement beyond the point of taking a sheet, in order to deliver the printed sheet, and is  
40 then returned to the sheet-taking position, and which is provided with cylinder-grippers and an arm whereby they are operated to open and release the printed sheet, of a cam on which the arm acts to open the grippers as the cyl-  
45 nder turns past the sheet-taking position and which is pivoted and movable out of the path of the arm to permit the grippers to close on the sheet after the cylinder is returned to the sheet-taking position, substantially as  
50 herein described.

3. The combination, with the stop impression-cylinder A and its grippers  $b$  and gripper-shaft  $b'$ , of the arm  $b^6$ , geared with the gripper shaft, and the pivoted and movable  
55 cam E, whereby said arm is actuated to open the grippers, substantially as herein described.

CALVERT B. COTTRELL.

Witnesses:

C. HALL,  
FREDK. HAYNES.