

(No Model.)

2 Sheets—Sheet 1.

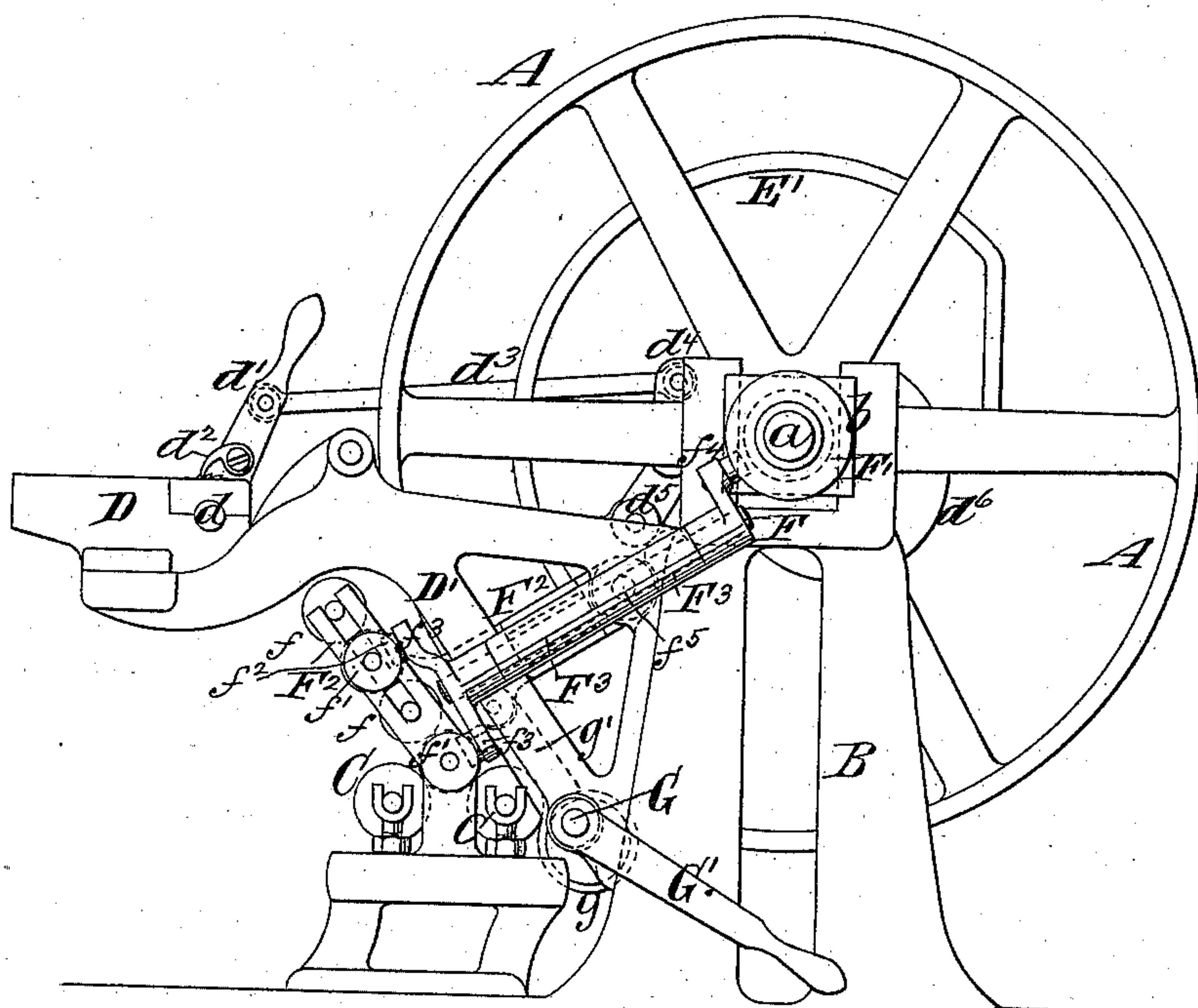
C. B. COTTRELL.

# INKING APPARATUS FOR PRINTING MACHINES.

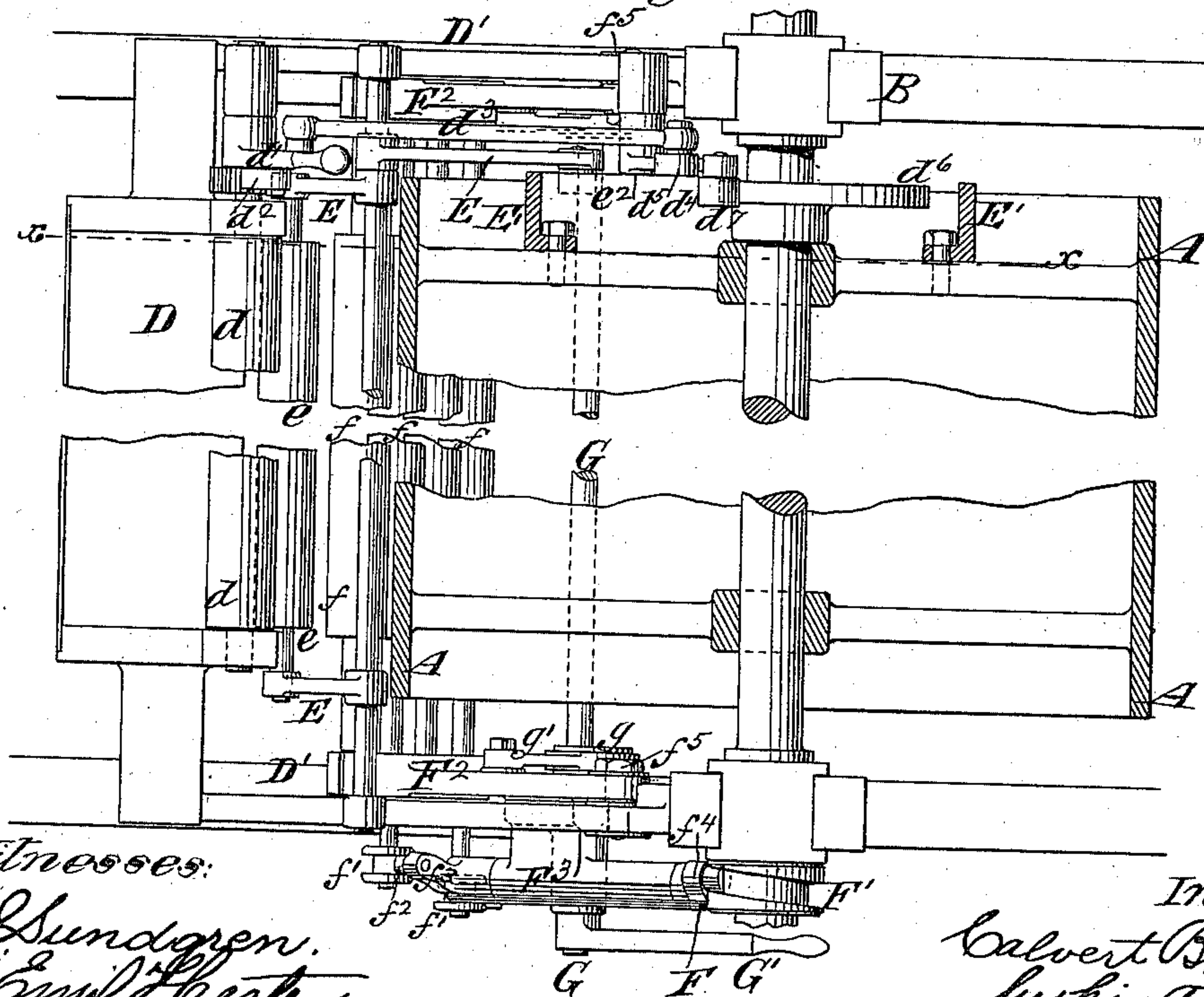
No. 385,098.

Patented June 26, 1888.

Fig. 1.



*Fig. 2.*



*Witnesses:*

@ Sundgren.  
 Emil F. Berter

*Inventor:*

Calvert B. Cottrell  
by his attys  
Brown & Hall

(No Model.)

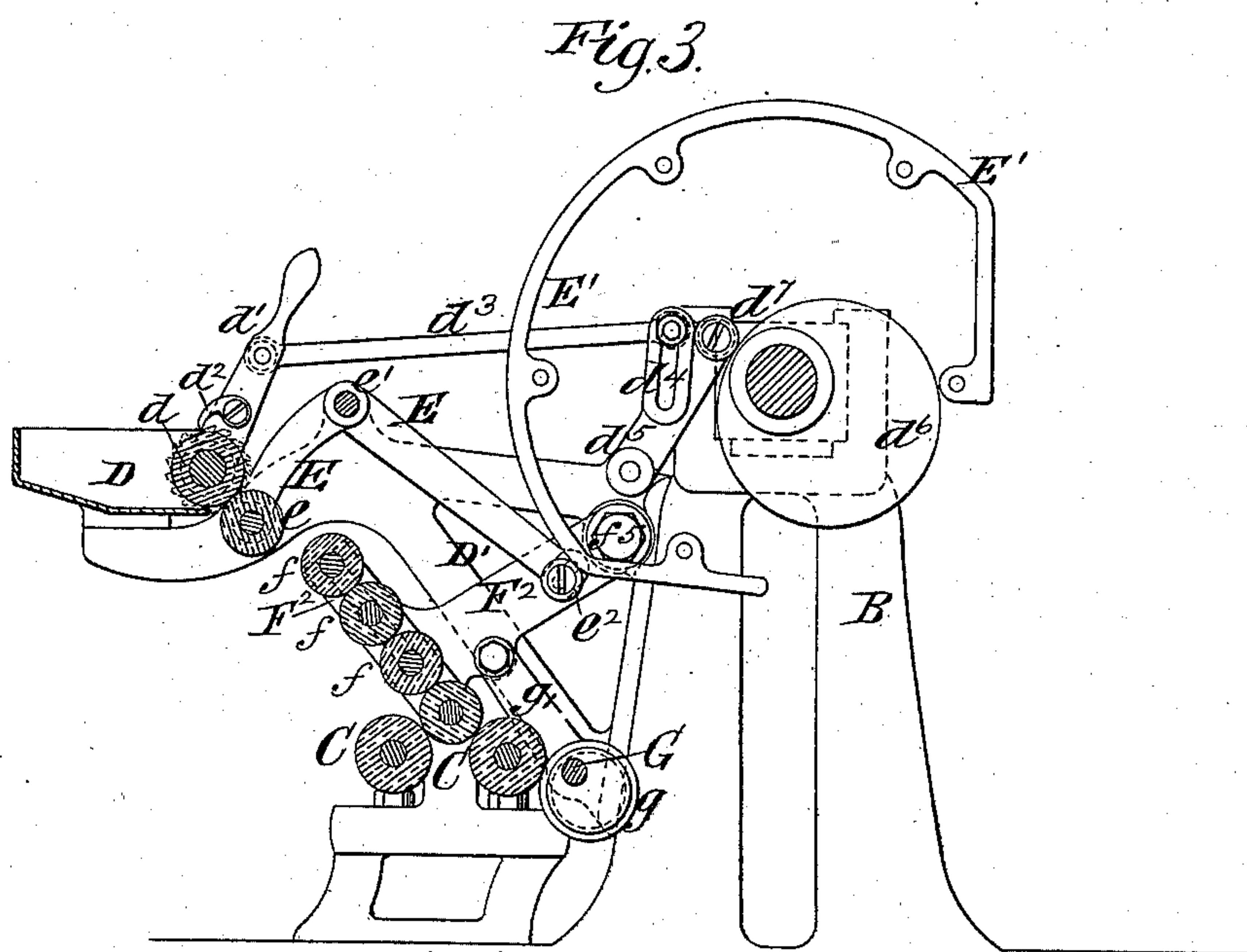
2 Sheets—Sheet 2.

C. B. COTTRELL.

INKING APPARATUS FOR PRINTING MACHINES.

No. 385,098.

Patented June 26, 1888.



Witnesses:

O. Sundgren.  
Emil Hertz.

Inventor:

Calvert C. Cottrell.  
By his Attys  
Brown & Hall.



# UNITED STATES PATENT OFFICE.

CALVERT B. COTTRELL, OF STONINGTON, CONNECTICUT.

## INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 385,098, dated June 26, 1888.

Application filed August 12, 1887. Serial No. 246,761. (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 Inking Apparatus for Printing-Machines, of which the following is a specification.

My invention is applicable for drum or two-revolution printing machines or presses; and an important object of the invention is to locate the ink-fountain and the inking apparatus generally so as to provide for ready access to the form or for the removal of the form-inking rollers.

In carrying out my invention I support the ink-fountain and roller upon brackets which project from and are secured to the cylinder-frames, so as to afford free access to the form and other parts beneath the fountain. The ink is delivered from the fountain-roller by a vibrating or movable ductor-roller to a series of distributing-rollers, some of which vibrate longitudinally, and these distributing-rollers deliver the ink to the form-rollers. The several distributing-rollers are mounted in stand-tops or side frames having hand-connections—such as eccentrics—and a hand-lever, whereby the side frames with the distributing-rollers may be lifted clear of the form-rollers, so as to permit access to them or to permit of the removal of the form-rollers. Upon a shaft—as, for example, one of the journals of the main drum or cylinder—is a cam which through a rock-shaft transmits motion to those of the distributing-rollers which vibrate lengthwise, and in order to maintain the arm of the rock-shaft in constant engagement with said cam, notwithstanding the rising and falling movements which may be given the roller-frame, I support the rock-shaft in a pipe-bearing which is fitted to said roller-frame, all as more fully hereinafter described.

The invention consists in novel combinations of parts particularly hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of such parts of a machine as are necessary to illustrate my invention. Fig. 2 is a plan thereof, the cylinder or drum being in horizontal section. Fig. 3 is a sectional elevation in a plane transverse to the axis of the

cylinder and indicated by the dotted line  $x x$ , Fig. 2.

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

A designates the cylinder or drum, which is provided with journals  $a$ , mounted in bearings  $b$  in suitable cylinder or side frames, B; and C designates the form-rollers, which rotate by contact with the form upon the bed, which passes beneath them, and is not here shown.

D designates an ink-fountain, which, as usual, is provided with a fountain-roller,  $d$ , and this ink-fountain is mounted upon brackets  $D'$ , which are secured to and project from the cylinder-frame B at a considerable elevation above the main frame of the press, so that free access is afforded beneath the ink-fountain and beneath the brackets  $D'$  to the form, and also to the form-rollers C. The fountain-roller  $d$ , as is usual, has upon its shaft a hand-lever,  $d'$ , carrying a pawl,  $d^2$ , and which is operated by a rod,  $d^3$ , from an arm,  $d^4$ , which is pivoted at  $d^5$ , and upon which acts a cam,  $d^6$ . The action of the cam  $d^6$ , bearing on the truck-roller  $d^7$ , serves to vibrate the lever or arm  $d'$  backward and forward, and, through the pawl and ratchet, turns the fountain-roller  $d$ .

$e$  designates a ductor-roller, which is mounted on a lever, E, fulcrumed at  $e'$ , and carrying at its opposite end a truck-roll,  $e^2$ , upon which acts a cam,  $E'$ , secured to the end of the cylinder. This cam  $E'$  acts to move the ductor  $e$  alternately into contact with the fountain-roller  $d$  and with one of a series of distributing-rollers,  $f$ , which bear one on another, and the lowermost one of which bears upon the form-rollers C. Certain of the distributing-rollers  $f$  vibrate lengthwise in a well-understood manner, and are provided upon their journals with grooved heads  $f'$ , with which engage pins or projections  $f^2$  upon the arms  $f^3$ , which project in opposite directions from a rock-shaft, F, and at its opposite end this rock-shaft F has an arm,  $f^4$ , which engages a grooved cam,  $F'$ , upon one of the cylinder-journals  $a$ . It will therefore be seen that, as the cylinder and its journal rotate, the grooved cam  $F'$  imparts a rocking or vibrating motion to the rock-shaft F, and through the arms  $f^3$ , engaged with the grooved heads  $f'$  of the rollers



$f$ , a longitudinally-vibrating motion is imparted to such rolls and the ink is distributed.

I have shown the rollers  $f$  as journaled in a frame or stand-top,  $F^2$ , which is fulcrumed at 5  $f^5$ , and by suitable hand-connections the said frame  $F^2$  may be raised and lowered and held in either of its two extreme positions. As here shown, the hand-connections consist of a shaft,  $G$ , extending across the machine and 10 having upon it two eccentrics,  $g$ , the rods  $g'$  of which are connected with the frames  $F^2$ , and upon the shaft  $G$  is also applied a handle or arm,  $G'$ , by which the shaft may be turned and the eccentrics shifted a half-revolution, 15 so as to stand at either of their dead-points, in which positions they hold the frame  $F^2$  either elevated, so that its rollers  $f$  are entirely out of contact with the form-rollers, or depressed, so that its rollers are in contact 20 with said form-rollers.

It is obvious that when the frames  $F^2$  are raised by the hand-connections described the rollers  $f$  would, unless means were employed to prevent, be moved out of proper working relation to the rock-shaft  $F$ ; and to prevent this 25 I mount the rock-shaft in a long pipe bearing or box,  $F^3$ , which is bolted to the frame  $F^2$ , and the arm  $f^4$  has enough play in the cam so as to permit the frame  $F^2$  to be moved without disengaging the crank pin or arm  $f^4$  from 30 the cam  $F'$ . Consequently, when the frame  $F^2$  is raised or lowered, the rock-shaft  $F$  is simultaneously moved, and the arms  $f^3$  are always held in engagement with the grooved heads

$f'$  of the rollers  $f$ , while the arm  $f^4$  is also 35 maintained in engagement with the grooved cam  $F'$ . Whenever the frame  $F^2$  and its rollers  $f$  are raised by the action of the eccentrics and shaft  $g$ , the rollers  $f$  are freed from contact with the rollers  $C$ , and the rollers  $C$  can 40 be manipulated and removed or replaced, or access can be had to them for any other purpose.

What I claim as my invention, and desire to secure by Letters Patent, is— 45

1. The combination, with the cylinder and form-rollers for acting upon the form, of a movable frame or stand-top wherein are journaled the vibrating and other distributing 50 rollers, a cam and rock-shaft for vibrating said rollers, and a bearing for the rock-shaft secured to the movable frame and serving to maintain the rock-shaft in engagement with its operating cam, substantially as herein described. 55

2. The combination, with the cylinder  $A$  and the form-rollers  $C$ , of the swinging frame  $F^2$ , carrying the distributing-rollers  $f$ , the eccentrics  $g$ , for moving said frame, the cam  $F'$ , and the rock-shaft  $F$ , for vibrating certain of the 60 rollers  $f$ , and the box  $F^3$  for said rock-shaft, secured to the swinging frame, substantially as herein described.

CALVERT B. COTTRELL.

Witnesses:

FREDK. HAYNES,  
EMIL HERTER.