

(No Model.)

2 Sheets—Sheet 1.

C. B. COTTRELL.

INKING APPARATUS FOR PRINTING MACHINES.

No. 385,098.

Patented June 26, 1888.

Fig. 1.

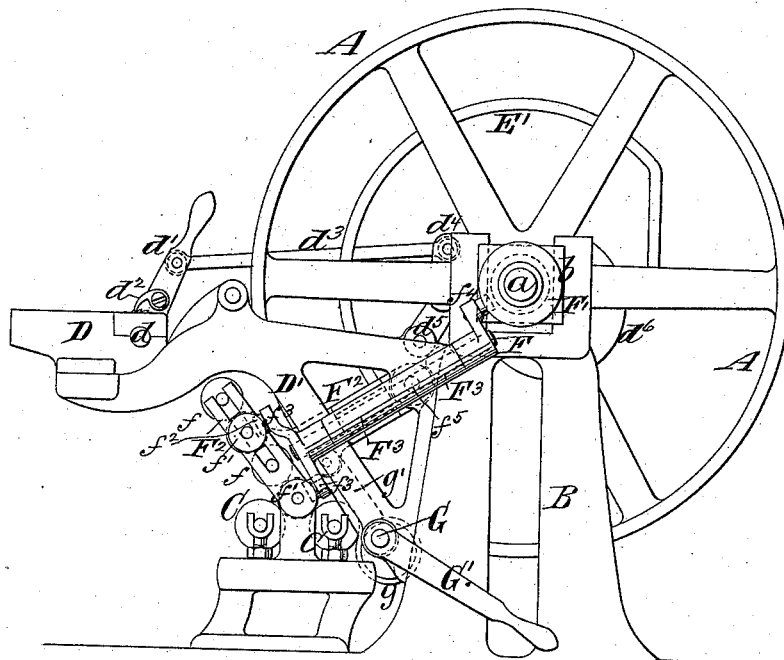
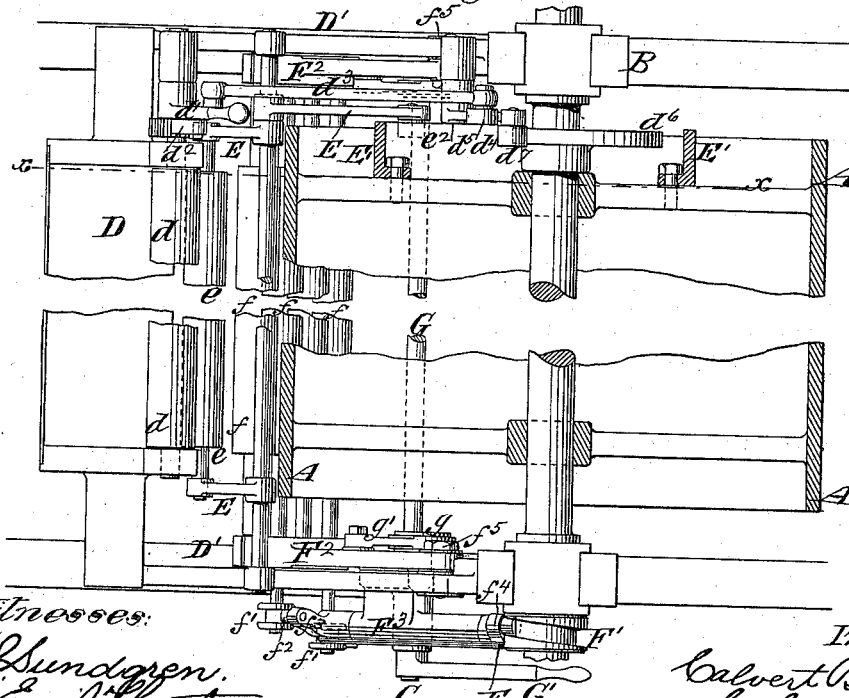


Fig. 2.



Witnesses:

O. Sundgren.
E. H. Carter

Inventor:

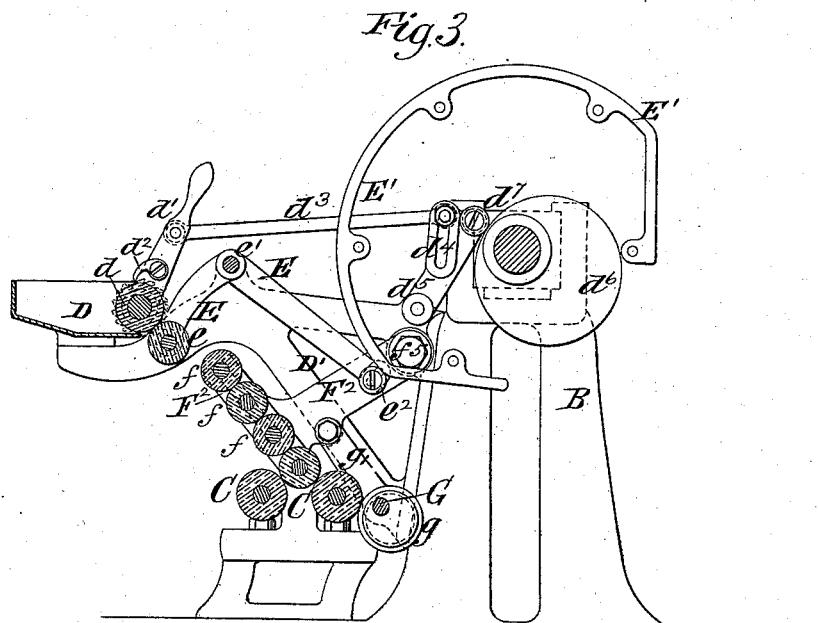
Calvert B. Cottrell
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Emil Korth.

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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 *xx*, 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''*, and which is operated by a rod, *d'''*, from an arm, *d''''*, which is pivoted at *d'''''*, and upon which acts a cam, *d''''''*. The action of the cam *d''''''*, bearing on the truck-roller *d'''''''*, 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''*, 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''* upon the arms *f'''*, which project in opposite directions from a rock-shaft, F, and at its opposite end this rock-shaft F has an arm, *f''''*, 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'''*, 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 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 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, 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 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 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 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 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 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—

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 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.

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 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.