(No Model.) 3 Sheets—Sheet 1.

# L. K. BINGHAM.

## APPARATUS FOR CASTING COMPOSITION ROLLERS FOR PRINTERS' USE.

No. 342,420. Patented May 25, 1886.

Fig 1.

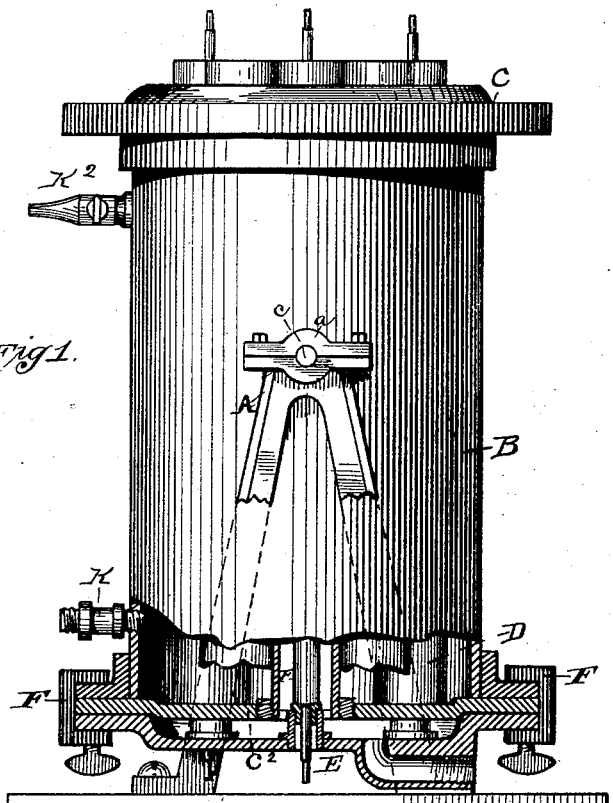
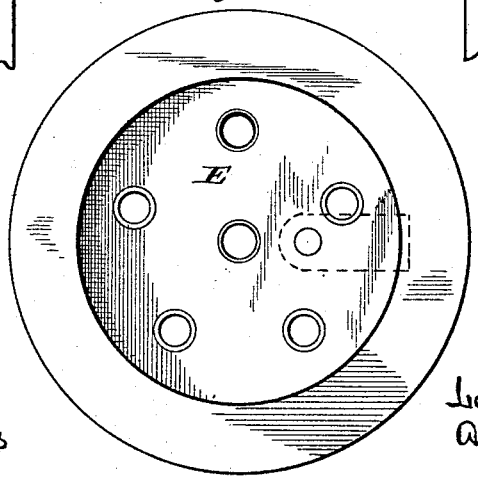



Fig. 2.




ATTEST.

Wm. Hicks

D. A. Morris

INVENTOR:

Leander K. Bingham

A. Livingston Brown Atty

(No Model.) 3 Sheets—Sheet 2.

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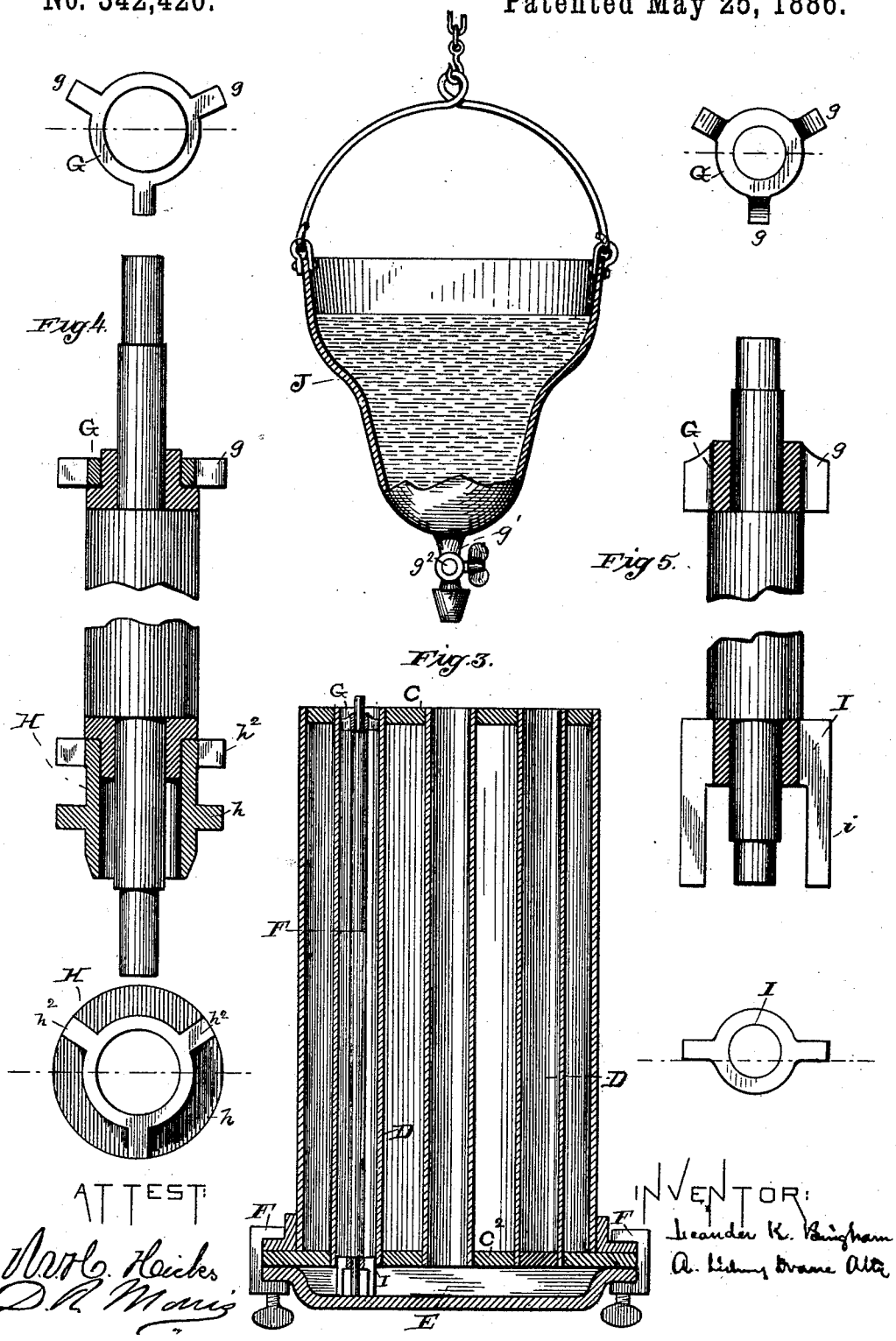



ATTEST:

Wm. G. Hicks

P. R. Morris

INVENTOR:

Leander K. Bingham

A. Sidney Doane Atty

(No Model.) 3 Sheets—Sheet 3.

# L. K. BINGHAM.

## APPARATUS FOR CASTING COMPOSITION ROLLERS FOR PRINTERS' USE.

No. 342,420. Patented May 25, 1886.

Fig 6.

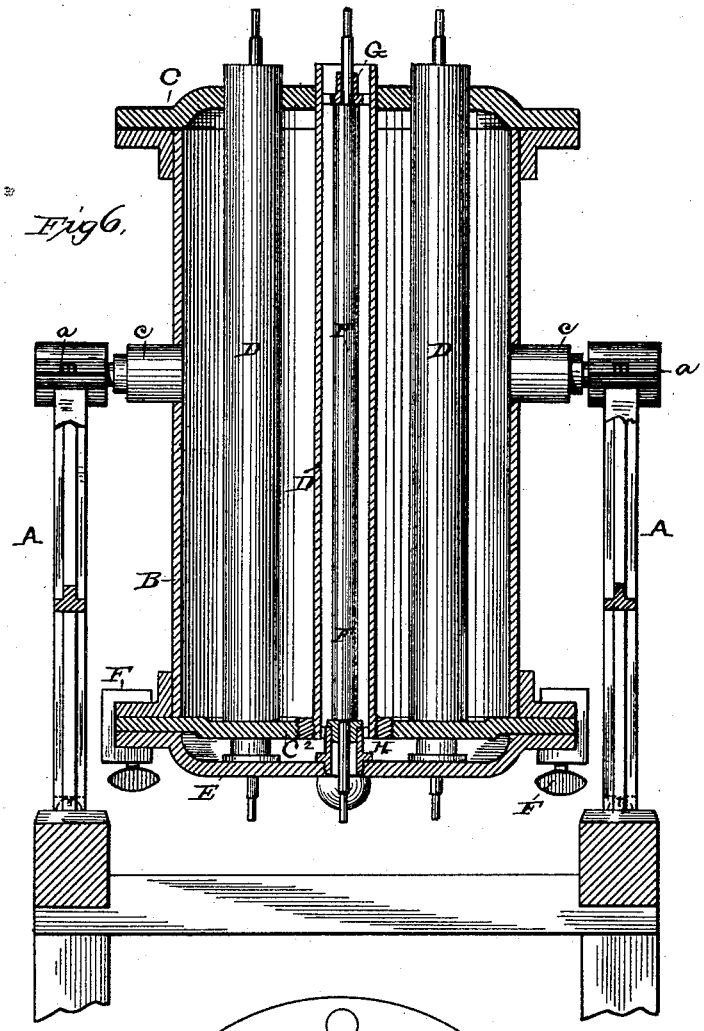
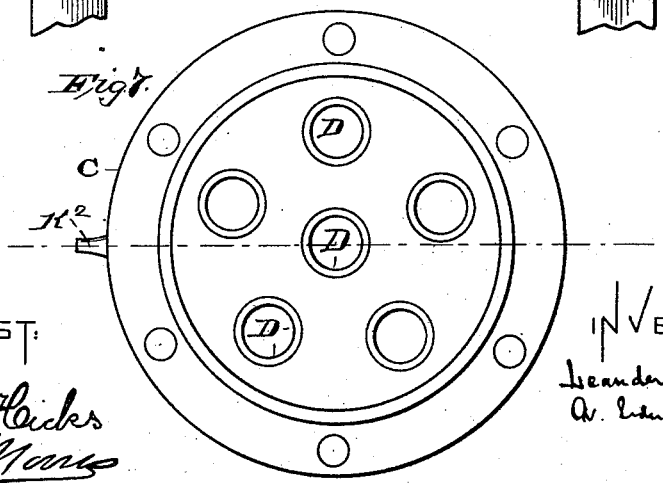



Fig 7.




ATTEST:
Wm. C. Hicks
D. A. Morris

INVENTOR:
Leander K. Bingham
A. Sidney Doane Atty

# UNITED STATES PATENT OFFICE.

LEANDER K. BINGHAM, OF NEW YORK, N. Y.

## APPARATUS FOR CASTING COMPOSITION ROLLERS FOR PRINTERS' USE.

SPECIFICATION forming part of Letters Patent No. 342,420, dated May 25, 1886.

Application filed January 4, 1886. Serial No. 187,609. (No model.)

*To all whom it may concern:*

Be it known that I, LEANDER K. BINGHAM, of the city, county, and State of New York, have invented Improvements in the Construction of Apparatus for Casting Composition Rollers for Printers' Use; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a view of the supplemental bottom. Fig. 3 is a sectional view of the invention, showing the kettle employed. Fig. 4 is a view in section of a roller-stock and the means for retaining the same in position. Fig. 5 is a view in section of one of the roller-stocks with a second form of means for retaining it in position. Fig. 6 is a sectional view of the apparatus. Fig. 7 is a top view of the same.

In the drawings, like parts of the invention are designated by the same letters of reference.

The nature of the present invention relates to improvements, as hereinafter set forth, in apparatus for casting composition rollers for printers' use, and will be found to relate to improvements in the apparatus for which Letters Patent were granted M. F. Bingham, September 26, 1876, the object of the invention being the production of an apparatus for the purpose intended by which the casting of composition rollers for printers' use can be economically and rapidly performed and a superior article of composition will result.

To enable those skilled in the art to make and use my invention, I will describe the same.

A suitable frame-work composed of the standards A, for supporting the roller-receptacle B, is employed, the upper ends of the standards being hollowed and cupped, as at *a*, to allow the trunnions *c* of the receptacle B to rest in the same. The receptacle is composed of a section of a cylinder, to which is attached a top, C, and bottom plate, $C^2$, through openings in which the molds D have their bearings. A removable bottom, E, is also employed in connection with the receptacle B. This bottom is made concave or dish-shaped on its interior, and is held in position upon the receptacle B by means of the clamps F, passed over the circular base of the receptacle B and the removable bottom E.

Within the molds D are placed the roller-stocks F, to be covered with the composition. The lower ends of the stocks project below the bottom plate, $C^2$, and are passed through, or in some cases may rest upon, the concave removable bottom E. The stocks are retained in proper position in the molds D by means of the spiders, designated as G, H, and I, the form designated as G, being employed with either H or I, as preferred. The upper spider, G, consists of a ring provided with the points *g* projecting at intervals from it, the points being intended to bear upon the interior of the roller-mold, and the spider to be passed over the upper end of the stock.

The spider designated as H consists of a section of a cylinder having a ring, *h*, cast upon it about centrally, and points $h^2$ projecting at intervals from its top may be employed.

The form of spider shown at I consists of a section of a cylinder provided with the limbs or extensions *i* extending below the same on each side of it.

J shows a kettle in which the roller-composition to be poured and form the rollers is placed. This kettle is (so to speak) cone-shaped, being narrowest or smallest at its lower end, and is provided with a narrow tapering neck, *g'*, extending downward from the center, and also with a gate or faucet, $g^2$, by which the contents of the kettle J can be drawn from the same by opening the gate or faucet.

K shows a bottom connection or pipe entering the receptacle B.

$K^2$ shows a top connection or pipe entering the receptacle B. Through these pipes a current of steam or of cold water may be introduced into the receptacle B, entering through the pipe K and leaving through the pipe $K^2$.

Such being the construction, the operation may be thus described: The receptacle B is positioned in the frame-work to support it as clearly shown in Figs. 1, 3, and 6 of the drawings, the molds D being secured in the same and having their bearings in the top, C, and bottom, $C^2$, plates. The molds may have "the chill" taken off by allowing a current of steam to enter through the pipe K and have its exit

through the pipe $K^2$. The roller stocks to be covered are then placed in the molds, the spiders G and H or G and I being employed to retain them centrally in the same, and the concaved removable bottom E is attached to the receptacle B by means of the clamps F. The kettle J, containing the fluid composition, and suspended from a hook secured in the ceiling of the apartment and directly above the receptacle B, is brought into line with and its narrow tapering neck $g'$ introduced into the central mold secured in the receptacle B, and the gate $g^2$ upon the neck $g'$ having been opened the fluid composition leaves the kettle J, passes down through the central mold to the supplemental bottom E, and thence, from the pressure exerted by the mass of composition contained in the kettle, is forced up through the surrounding molds and around the stocks placed in the same.

The advantage of this mode of casting a roller is that the air being driven out of the mold as the composition rises in the same, the roller is free from air-holes or imperfections, which are of frequent occurrence in cases where the composition is poured into the mold. In cases of this character it is often necessary to cast the roller a second time before using it.

The advantage resulting from the use of the spiders H and I is that economy of time and labor results. The spiders G and H or G and I are so positioned upon the upper and lower ends of the stock that only the portion of the stock between them is covered, and in "dressing" the roller it is only necessary to remove the surplus composition that may accumulate between the points of the spiders in the process of casting.

After the casting of the rollers has been accomplished the pipes K and $K^2$ may be availed of to pass a stream of cold water through the receptacle B, to cool the molds and hasten the hardening of the rollers.

The removal of the rollers from the molds may be by hand, first having removed the supplemental bottom, or the rollers will in most instances leave the molds by their own weight.

Having now described my invention, I claim as new—

1. The combination of the following elements: a proper frame-work composed of the standards A, a receptable, B, provided with the top, C, and bottom, $C^2$, plates, the molds D, and the dish-shaped supplemental bottom E, constructed and operating substantially as and for the purpose set forth.

2. The combination, with a mold, D, secured in a receptacle, B, provided with the top, C, and bottom, $C^2$, plates, and a supplemental dish-shaped bottom, E, of a roller stock, F, provided with the spiders G and H, constructed and operating substantially as and for the purpose fully described.

3. The combination, with a receptacle, B, supported in a suitable frame-work, A, and provided with the top, C, and bottom, $C^2$, plates, and a supplemental dish-shaped bottom, E, of a series of roller-molds, D, and a kettle, J, provided with a narrow tapering neck, $g'$, and gate $g^2$, substantially as and for the purposes set forth.

LEANDER K. BINGHAM.

In presence of—
WILLIAM V. H. HICKS,
A. SIDNEY DOANE.