(No Model.) 3 Sheets—Sheet 1.

L. K. BINGHAM.

APPARATUS FOR CASTING PRINTERS' ROLLERS.

No. 419,915. Patented Jan. 21, 1890.

Fig. 1.

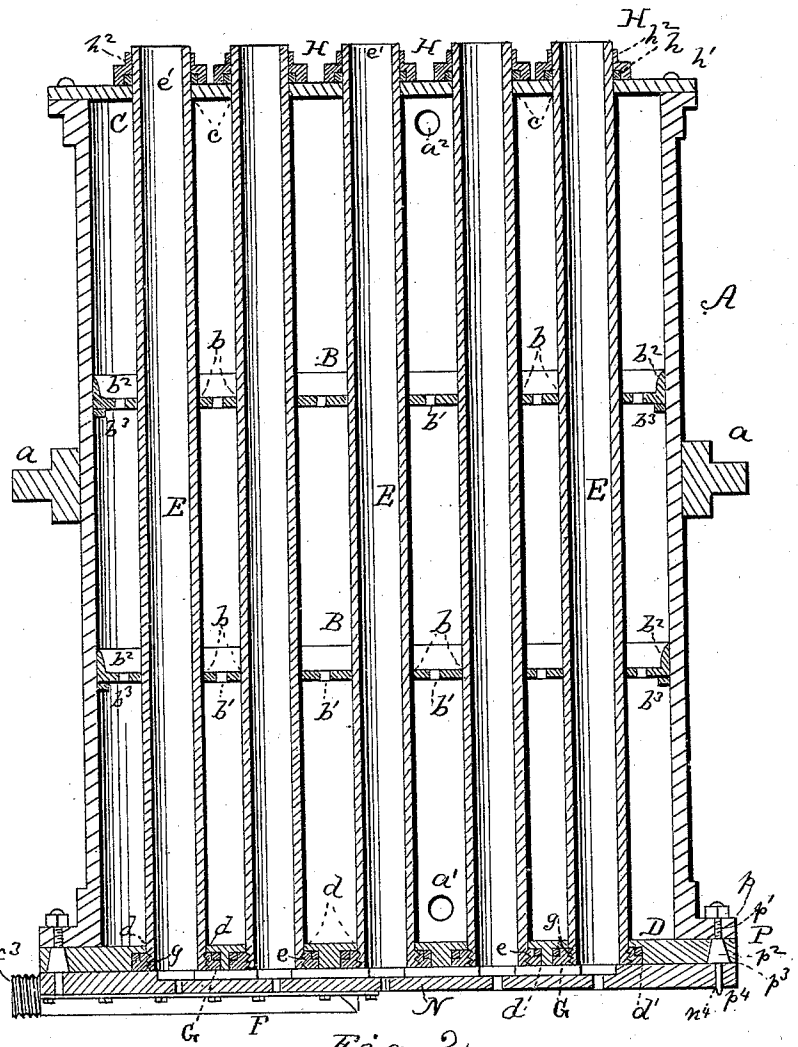
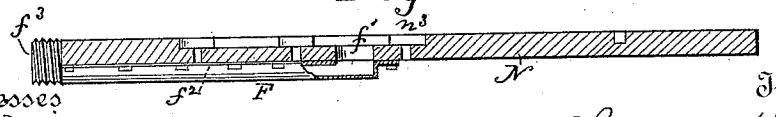


Fig. 2.



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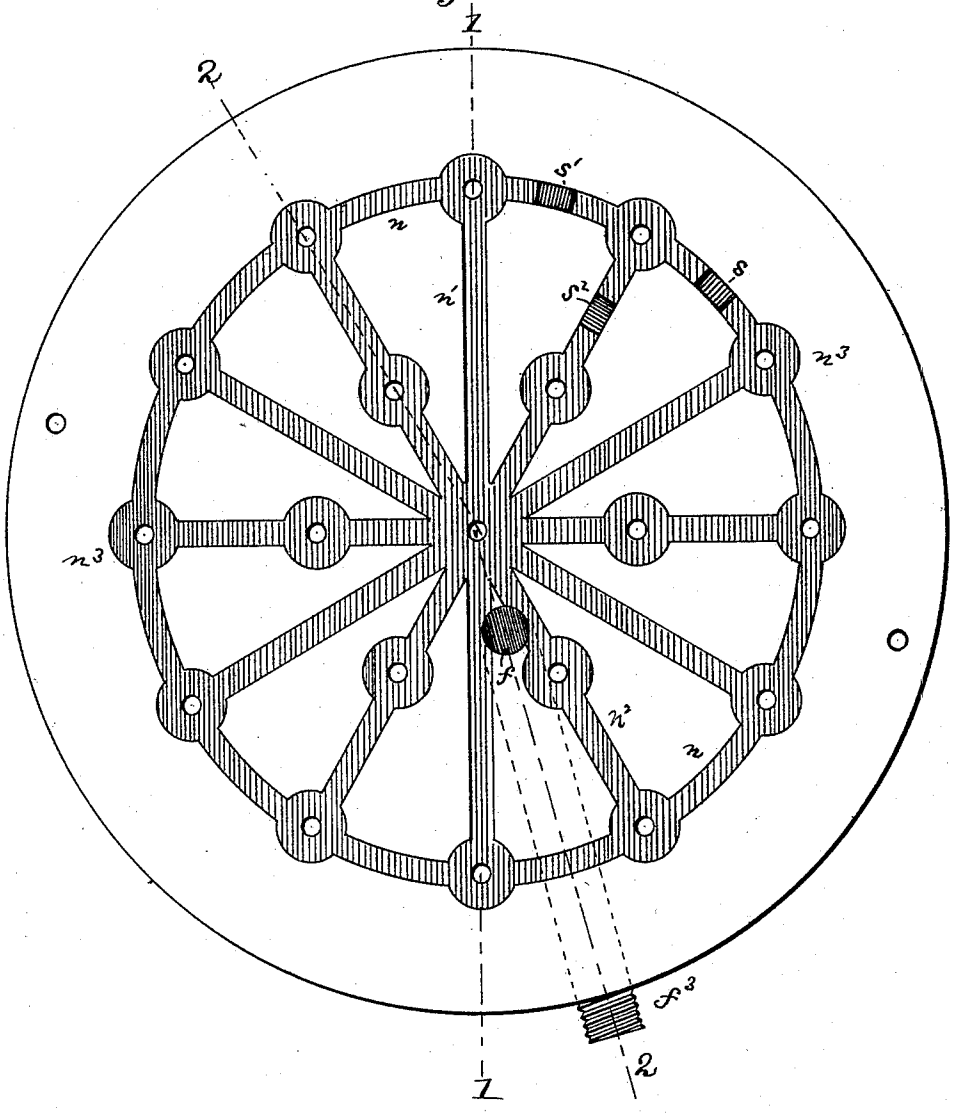
(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

L. K. BINGHAM.

APPARATUS FOR CASTING PRINTERS' ROLLERS.

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Fig. 4.

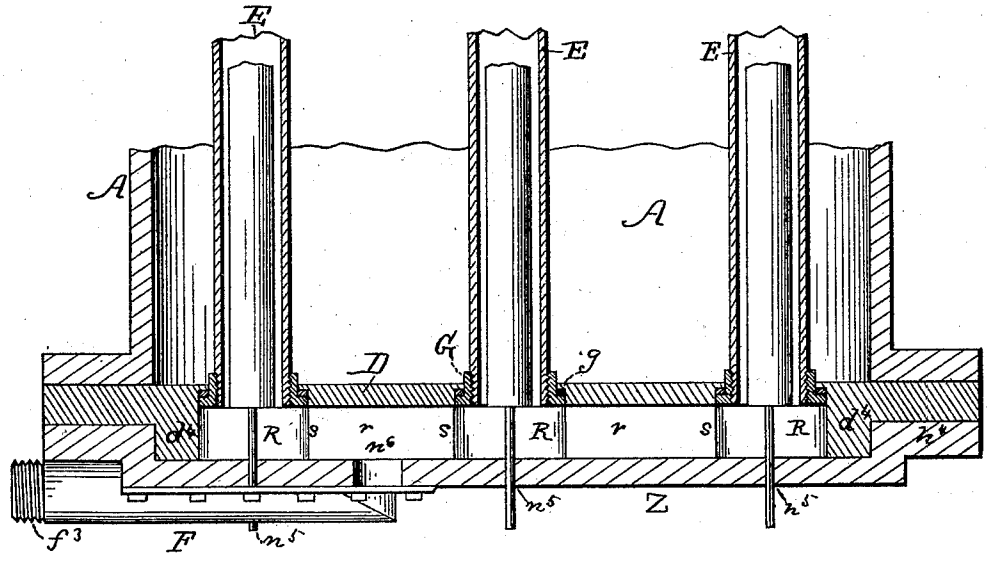
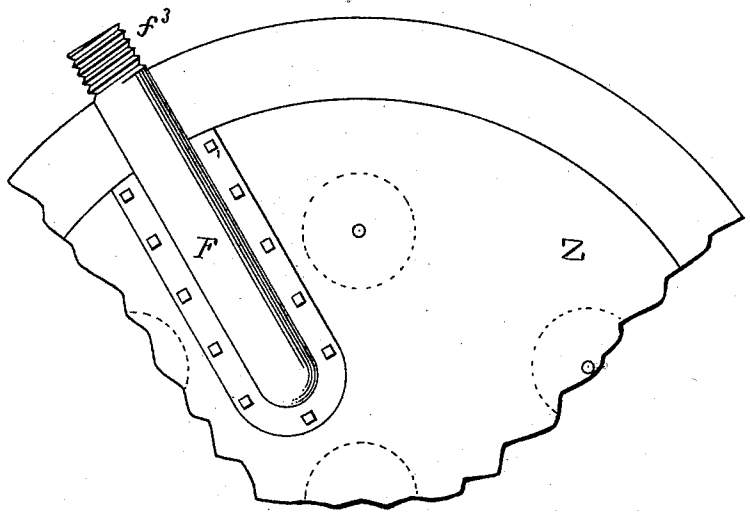


Fig. 5.



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UNITED STATES PATENT OFFICE.

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

APPARATUS FOR CASTING PRINTERS' ROLLERS.

SPECIFICATION forming part of Letters Patent No. 419,915, dated January 21, 1890.

Application filed July 19, 1889. Serial No. 318,024. (No model.)

To all whom it may concern:

Be it known that I, LEANDER K. BINGHAM, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Apparatus for Casting Printers' Rollers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical diametric section through the apparatus, the supplemental bottom being cut on the line 1 1, Fig. 3. Fig. 2 is a section of the supplemental bottom on the line 2 2, Fig. 3. Fig. 3 is an enlarged top view of the supplemental bottom. Fig. 4 is an enlarged detail of part of the lower end of the apparatus, showing a modification of said lower end. Fig. 5 is a bottom view of part of Fig. 4.

This invention relates to improvements in apparatus for making printers' rollers; and it consists, broadly, in an apparatus provided at its lower ends with channels connecting the bottoms of the mold-tubes, so that composition poured down one tube will flow into all of them, or composition admitted at the bottom will rise into all of the tubes without any manipulation of parts of the apparatus.

In the annexed drawings, the letter A indicates a cylinder or receptacle, having the trunnions a a, whereby it is to be supported in suitable bearings. This cylinder or receptacle also has the steam and water inlet a' and the overflow a^2. Within the cylinder are placed several diaphragms or cross-heads B, provided with the large holes b, and among these the small apertures b', forming thus foraminous diaphragms. The holes b are the same in number, and are aligned with the holes c and d in the cylinder-heads C and D. These diaphragms may have the upturned edges b^2, by which they may be secured in place, or they may rest on the ledges b^3.

Passing through the holes c b d are the mold-tubes E, fitting said holes snugly and steam-tight.

The holes d of the head D have on the outside the cylindrical countersinks d'. Fitting these countersinks d' are the glands G, which are internally threaded at g to fit threads e upon the lower ends of the tubes E, a packing g being interposed between the glands and the bottoms of the countersinks. By means of these glands and packings the tubes are held to the head D by a steam-tight joint, the outer surface of the glands being flush with the face of the head D, the whole making a close, compact, and smooth finish to the connection between the mold-tubes and the bottom head.

Surrounding the top projecting ends e' of the mold-tubes E are the rings H, having a recess h, wherein are the packing h' and the necks h^2, which closely fit the ends e of the mold-tubes H. This forms a close-fitting joint at the top of these mold-tubes, and yet allows proper movement thereof, as will be explained.

Secured to the bottom head D is the supplemental bottom N. This bottom has in upper face the channels n n' n^2, arranged as shown, and the recesses n^3, the channels connecting the recesses, as indicated. These recesses are so located that when the supplemental bottom is in place a recess will come under each lower end e of a mold-tube E, as fully shown in Fig. 1. Made in this supplemental bottom is a hole f off to one side from the center recess.

Secured to the under side of the supplemental bottom is the inlet F, having the opening f' at the hole f, the flange f^2 for securing it to the supplemental bottom, and the projecting threaded tubular extension f^3.

The head D is held to the flange p at the bottom of the shell of the cylinder by the pins P. These pins have the cylindrical parts p', which pass through the flange p, the conical parts p^2, which engage similar conical holes p^3 in the head D, and the projecting parts p^4. The conical parts of the pins secure the bottom head D to the cylinder-shell. The supplemental bottom N has holes n^4 to engage the pins P. Two such holes are sufficient to engage two of the pins, which are at the ends of a diameter. Thus the supplemental bottom is assuredly centered and its recesses are aligned with the bottoms of the mold-tubes.

In the form shown in Fig. 4 the channels r are made in the bottom of the head D, the countersinks R are made deeper than in the other form, and the glands and packings are

seated at the bottoms of these countersinks, having openings *s* from the channels into said countersinks. When these channels are made in the head D, the latter will be somewhat thicker than when the channels are in the supplemental bottom, the center of the head being dropped, as shown at d^4. In this case the supplemental bottom is made cup-shaped, so as to fit snugly the head D, the upper surface of the supplemental bottom being flat, as shown, and the bottom being provided with the circumferential flange n^4, by which it is clamped in place. The supplemental bottom has the holes n^5 for the ends of the roller-stocks, and the aperture n^6, to which the inner end of the composition-inlet is secured. By the construction at the bottom the composition can be let into the cylinder or receptacle at the bottom or the top under any desired pressure, and rises in the mold-tubes free from any air-bubbles or foaming and in a condition to set firm and solid.

If it be desired not to use all the mold-tubes, one or more may be closed by using stop-gates, such as indicated at s s' s^2 in Fig. 3; or a plug may be placed in the bottom of any one or more mold-tubes.

In the present case the channels at the lower end of the apparatus are the only subject claimed. The other parts are shown and described so as to delineate a complete apparatus, and they are the subject of another application made by me February 15, 1889, Serial No. 299,949.

Having thus described my invention, what I claim is—

1. An apparatus for making printers' rollers, provided at its bottom with a composition-inlet, an opening in the bottom into which this inlet leads, and channels leading from this opening to the bottoms of the mold-tubes, as set forth.

2. The combination of the cylinder, the mold-tubes, the bottom head having the holes within which the lower ends of the mold-tubes are held, the bottom provided in its top with the channels leading to the bottoms of the mold-tubes, a composition-inlet underneath the bottom, and a hole into which the inlet leads, as set forth.

3. An apparatus for making printers' rollers, consisting of a cylinder or receptacle provided with an upper and lower head, each head having holes, the mold-tubes held in such holes, and the supplemental bottom, the said apparatus being provided at its bottom with channels communicating with one another and communicating with the holes in the lower head, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEANDER K. BINGHAM.

Witnesses:
C. MACARTHUR,
CHARLES BINGHAM.