M. F. BINGHAM.

APPARATUS FOR CASTING COMPOSITION ROLLERS.

No. 182,547. Patented Sept. 26, 1876.

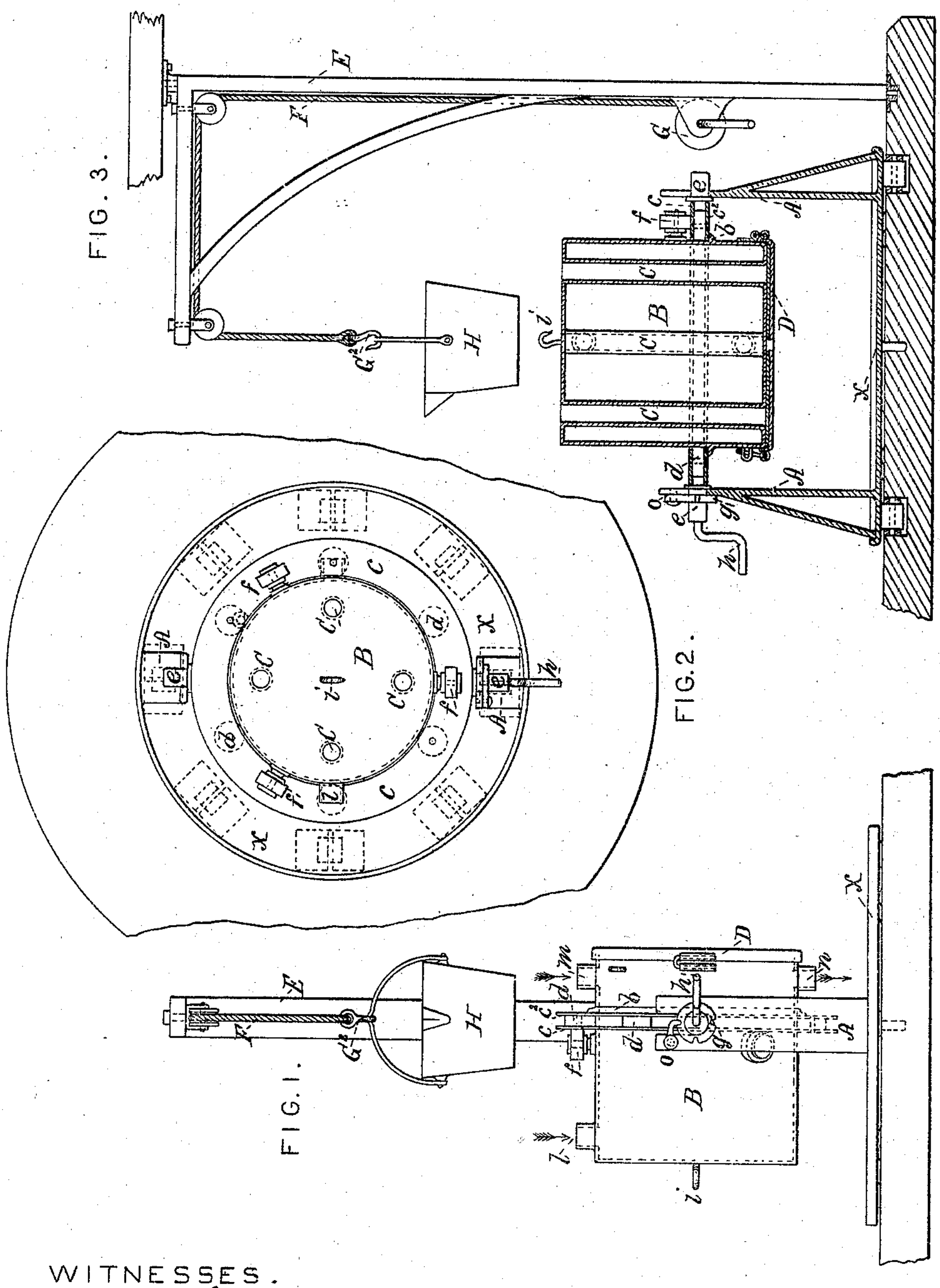

FIG. 3.

FIG. 2.

FIG. 1.

WITNESSES.

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IMPROVEMENT IN APPARATUS FOR CASTING COMPOSITION ROLLERS.

Specification forming part of Letters Patent No. **182,547**, dated September 26, 1876; application filed February 9, 1876.

To all whom it may concern:

Be it known that I, MILLARD F. BINGHAM, of the city, county, and State of New York, have invented, made, and applied to use Improvements in the Construction of Apparatus for Casting Composition Rollers for Printers; and that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of my improved apparatus for casting printers' rollers. Fig. 2 is a top view of the same. Fig. 3 is a cross-section of the same.

In the drawing, like parts of the invention are indicated by the same letters of reference.

The nature of the present invention consists in certain improvements, as more fully hereinafter described, in the construction of apparatus for casting composition rollers for printers; the object of the invention being the construction of apparatus for the purpose set forth, by which printers' composition rollers can be more expeditiously and cheaply made, while at the same time a better article results.

To enable those skilled in the arts to make and use my invention, I will describe the construction and operation of the same.

A shows slotted standards for supporting the roller-receptacle of my apparatus. These standards are secured or fastened to the floor of the apartment in which the rollers are to be cast, or upon a platform resting upon the same. B shows the receptacle in which the molds C, to receive the roller-stocks to be covered with composition, are placed. This receptacle B is formed of a section of a cylinder having attached to it the top plate or head and bottom plate, through openings in which top and bottom plates the roller-molds C have their bearings. The receptacle B is also provided with a removable bottom, D, hinged to the same, so as to be easily removed therefrom, the object of which will be more fully hereinafter described. This bottom D is so constructed that when placed in position upon the under side of the receptacle B the lower ends of the molds C will be closed, and for this purpose I propose to use a rubber packing secured upon the interior of the removable bottom D. The receptacle B has a projecting rim or flange, *b*, attached upon its exterior surface, upon which rest two circular plates or collars of metal, *c* c^2, between which are pinned a series of rollers, *d*, having their bearing upon the exterior of the receptacle B, and to which are fastened the spindles *e* for supporting the receptacle B in the slotted standards or uprights A. From the exterior of the receptacle B also project studs, upon which are the rollers *f*, free to revolve thereon, and having their bearing upon the upper side of the upper collar *c*. Upon one of the spindles *e* is secured a ratchet-wheel, *g*, and to the end of this spindle is attached the crank or handle *h*. An eye, *i*, is secured about centrally in the top plate of the receptacle B. *l* is an inlet-pipe in the receptacle B, for the introduction of steam into the same; *m*, an inlet-pipe, for the introduction of water into the same; and *n*, an exit-pipe, for the water from the receptacle B.

In connection with my apparatus I propose the use of a crane, E, provided with a rope or chain, F, and windlass G, for winding the same, and the rope or chain F has attached at its forward end a hook, G^2, upon which is suspended the kettle H containing the composition to be poured into the molds C to form the rollers, and which hook G^2 engages with the eye *i* when the receptacle B is to be raised or lowered.

Such being the construction, the operation may be thus described: The receptacle B having had inserted in it the molds C, in which the rollers are to be cast, is inserted in the slotted portions of the standards or uprights A, the spindles *e* resting in the same, the receptacle B occupying a vertical position, as shown in Fig. 3 of the drawing, and being retained in such position by a ratchet, *o*, pivoted to the upper portion of one of the standards A, and engaging with the ratchet-wheel *g*. In this position the receptacle B is turned by the crank *h* from the vertical into a horizontal position by disengaging the ratchet *o* from the ratchet-wheel *g*, and after the receptacle B has been placed in this horizontal position, depressing the ratchet *o* until it engages with the ratchet-wheel *g*, and serves to hold the receptacle in this horizontal position.

In this position the molds C are oiled or greased, so that after being cast the rollers may be easily delivered from the molds C. The stocks to be covered are placed in position within the molds C, and the removable bottom D is hinged to the receptacle B.

The ratchet *o* is then released from contact with the ratchet-wheel *g*, and the receptacle B is brought back into the vertical position it originally occupied by turning the handle *h*, and secured therein by the ratchet *o* engaging with the ratchet-wheel *g*.

It will be found advantageous before the pouring operation to introduce a current of steam into the receptacle B through the inlet-pipe *l*, so that the chill may be taken off the molds, and the same to a certain extent be warmed or heated. The kettle H, containing the melted composition, of which the rollers are to be formed, is now attached to the hook G^2 upon the end of the rope or chain F, and by means of the windlass is raised until it is brought over the receptacle B. With the kettle H in this position the receptacle B, provided as it is with the rollers *f*, and encircled by the collars $c\ c^2$ supporting the roller *d*, may be readily revolved by the hand of the operator until each one of the molds C has been brought into the proper position relatively to the kettle H to be filled with composition from it.

After all the molds C have been filled a current of cold water may be introduced into the receptacle B through the pipe *m*, and passed through the same, and allowed to flow off through the pipe *n*. This will have the effect of hastening the hardening or solidifying of the composition introduced into the molds C.

At the proper season the receptacle B may be turned from the vertical position into the horizontal position, as herein already set forth, and secured in this position, the bottom D being unhinged and disconnected from the receptacle, and the rollers drawn from or forced out of the molds C held in the receptable B.

While I have shown the receptacle B so constructed that it can be revolved within the standards A, I would state that I am well aware that the standards A may be mounted upon a platform, X, and the platform, standards, and receptacle be revolved (as in the case of a railway turn-table) upon a series of rollers placed below the surface of the floor. This was my first plan in connection with my present invention, but I deem the arrangement now described preferable.

By the use of an apparatus constructed as described, the process of casting printers' rollers is not only expedited, but the cost of so doing is lessened, and a better roller results.

Having now set forth my invention, what I claim as new is—

1. In an apparatus for casting printers' composition rollers, an oscillating receptacle, B, provided with a removable bottom, D, in combination with the slotted standards A, constructed and operating substantially as described, for the purposes set forth.

2. In an apparatus for casting printers' composition rollers, a revolving receptacle, B, provided with a removable bottom, D, in combination with the slotted standards A, constructed and operating substantially as and for the purposes set forth.

3. In an apparatus for casting printers' composition rollers, the combination, with the receptacle B, provided with a removable bottom, D, of the inlet-pipes *l* and *m* for the introduction of steam and water, and the exit-pipe *n* for the water, for the purposes fully set forth.

4. In an apparatus for casting printers' composition rollers, the combination, with the slotted standards A, of the receptacle B, having upon it the flange *b*, and provided with a removable bottom, D, the collars $c\ c^2$, to which are attached the spindles *e*, the ratchet-wheel *g*, and ratchet *o*, substantially as and for the purposes indicated.

5. In an apparatus for casting printers' composition rollers, the combination, with the slotted standards A, of the receptacle B, having upon it the flange *b*, and provided with a removable bottom, D, the collars $c\ c^2$, rollers *d*, and rollers *f*, substantially as and for the purposes set forth.

MILLARD F. BINGHAM.

In presence of—
A. SIDNEY DOANE,
JOS. E. HENLEY.