

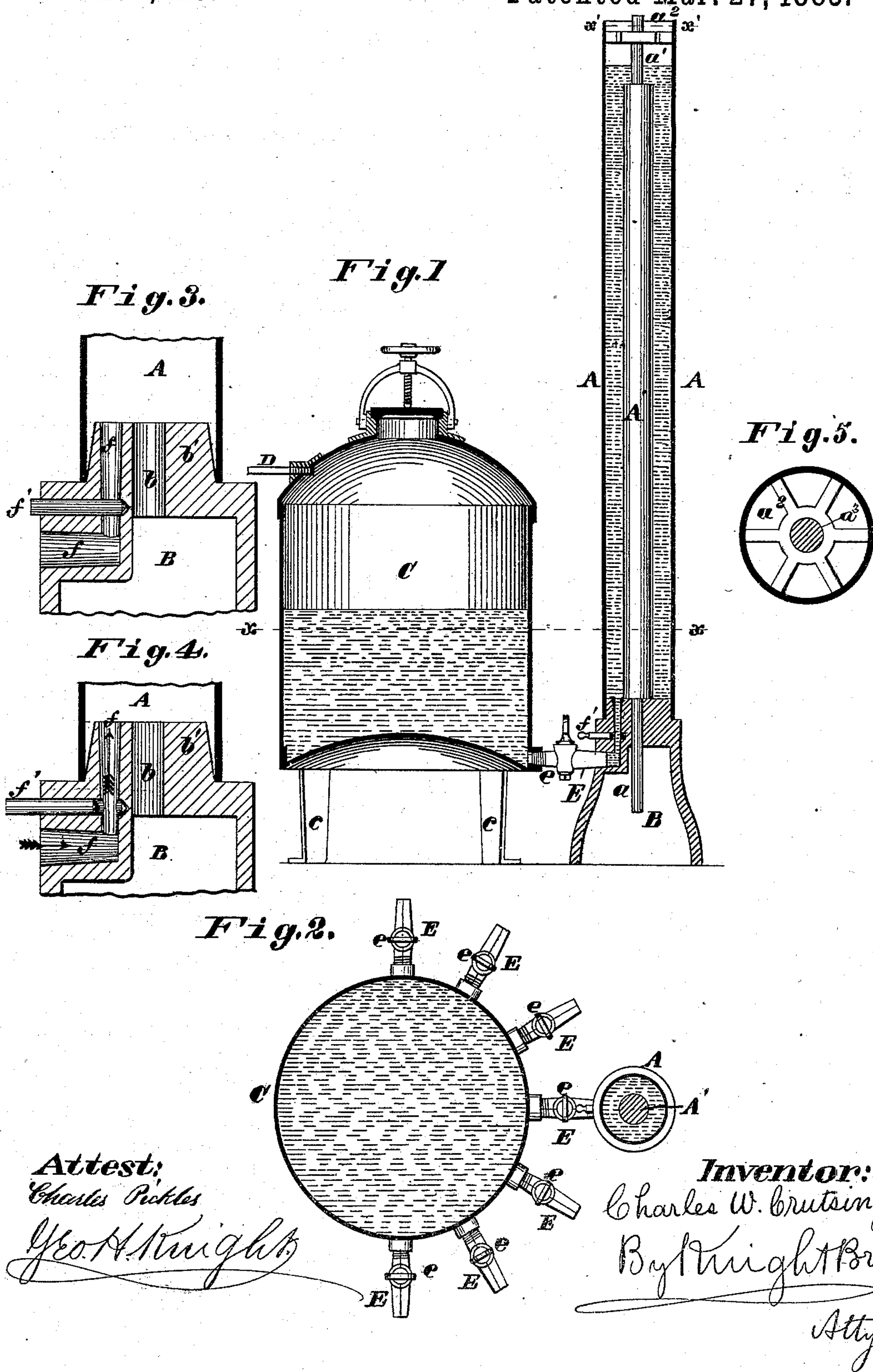
(No Model.)

C. W. CRUTSINGER.

APPARATUS FOR CASTING PRINTERS' ROLLERS.

No. 274,728.

Patented Mar. 27, 1883.



Attest:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR CASTING PRINTERS' ROLLERS.

SPECIFICATION forming part of Letters Patent No. 274,728, dated March 27, 1883.

Application filed July 19, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. CRUTSINGER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Apparatus for the Manufacture of Printers' Rollers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Heretofore it has been the practice in casting printers' rollers to pour the composition into the top of the mold, and a great disadvantage arising from this method is, that the air in the mold becomes mixed with the composition, and is apt to leave bubbles on the face of the roller. To overcome this as much as possible, it has been the practice to heat the mold to a high temperature, which, as a matter of course, will aid the escape of the air to a certain extent; but even then rolls are often imperfect, and the time and expense of casting lost; and, moreover, the excessive heating of the mold makes it inconvenient to handle and move about. By the use of my improved apparatus these difficulties are avoided. In the first place, because when the composition is forced into one end of the mold the other end of the mold, which is on a higher elevation, is left open, and thus the composition entering displaces the air upward as the mold is filled. Thus imperfections in the roller arising from the mixing of the air as described do not occur. And, in the second place, by the use of my improved apparatus it is not necessary to heat the mold so hot before casting.

My improvement consists in the apparatus hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical section of a mold and roller therein, and vessel containing the composition, showing the connection between them, and also the end of a pipe, through which steam or compressed air is admitted to the top of the vessel to force the composition into the mold. Fig. 2 is a horizontal section on line  $x x$ , Fig. 1. Fig. 3 is a detail enlarged section of the bottom of a mold and its supporting-stand with the plug-valve (which prevents the composition from running out when the mold is filled and removed from the vessel) closed. Fig. 4

is a similar view with the said valve in its open position. Fig. 5 is a top view of the star for supporting the upper end of the core concentrically within the mold.

A is the mold, supported on a stand, B, which has a central bore,  $b$ , for receiving one of the gudgeons,  $a$ , of the core  $A'$  of the roller. The other gudgeon,  $a'$ , of the core has bearing in orifice  $a^3$  in the usual star,  $a^2$ , the two bearings keeping the core concentric within the mold.

C is the vessel containing the composition for forming the roller. This vessel may be of any desired size and shape.

D is a steam or other pressure pipe connecting with the vessel C above the composition. The vessel has at its bottom a short connecting-pipe, E, preferably split, as shown, for ease in cleaning, to form a communication between the vessel and the mold through means of the channel  $f$  in the stand; or the pipe E may connect directly with the mold above the stand. The connecting-pipe E is provided with a cock,  $e$ , to close it when the mold is full, and disconnected therefrom. When the mold is filled, the channel  $f$  is also closed by a plug-valve,  $f'$ , to prevent the composition from running out. The vertical portion of the channel  $f$  is made tapering, larger at top than bottom, so that when the roller has been removed from the mold, or the roller and mold from the stand, the channel may be easily cleaned of the hardened composition therein by introducing a wire or pin through the horizontal part of the channel.

The neck  $b'$  of the stand is made larger at bottom than top, so that it will receive and make a tight connection with molds of slightly-varying diameters, classified under the same size.

The vessel C is supported on legs  $c$  of sufficient length to give the proper height to the pipe E to connect with the stand B. I prefer to have a number of the connecting-pipes E, (see Fig. 2,) so that a number of molds may be filled at once.

The operation is as follows: The core and mold are fixed upon the stand, as described. The whole is then moved up and connected with the pipe E. The valves  $e$  and  $f'$  are



opened, and pressure is admitted to the top of the vessel C, as described, (either steam or atmospheric pressure may be used,) which forces the composition into the mold. When the mold  
5 is full the valve *e* is closed, the pressure shut off, the valve *f'* closed, and the mold removed and replaced by an empty one. The course of the composition is shown by arrows, Fig. 4.

As a modification of the mechanical device  
10 shown to force the composition into the mold—namely, the steam or other pressure pipe—a vacuum may be formed in the mold by an air-pump connecting with the top thereof.

Having thus described my invention, the  
15 following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of stand B, having orifice *b*, vertical mold A, open at top, having suitable inlet at bottom, and fitting on the said

stand, star *a*<sup>2</sup>, having orifice *a*<sup>3</sup> and secured at  
20 the top of the mold, central core, A', having gudgeons occupying the said orifices in the stand and star, a vessel, C, for containing composition under pressure, and a pipe, E, connecting said vessel with the mold at bottom,  
25 and provided with a cock, *e*, to cut off the supply, as set forth.

2. The combination of stand B, formed with neck *b'*, orifice *b*, and channel *f*, and provided with plug *f'*, the mold A, having open top,  
30 star *a*<sup>2</sup>, core A', having gudgeons *a a'*, vessel for containing composition under pressure, and pipe E, connecting the vessel with the channel *f* in the stand, as set forth.

CHARLES W. CRUTSINGER.

In presence of—

AUGUST WEBER,  
GEO. H. KNIGHT.