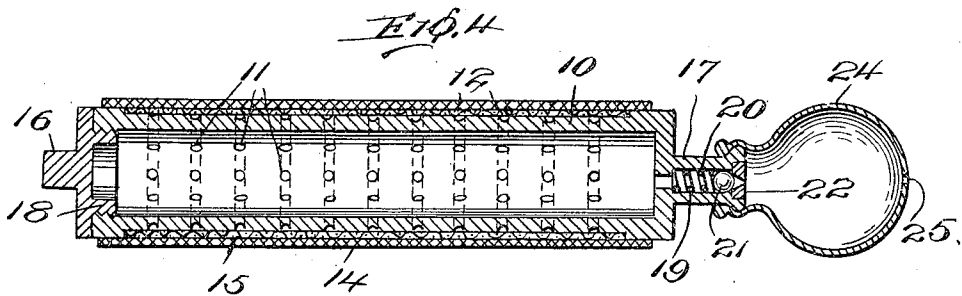
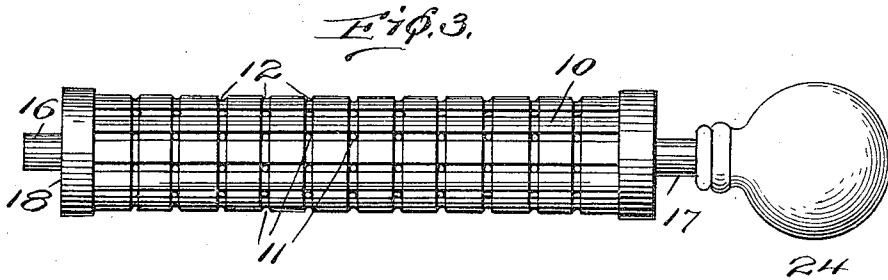
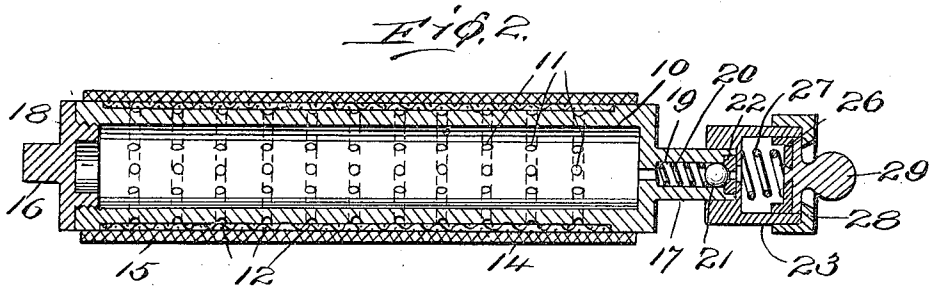
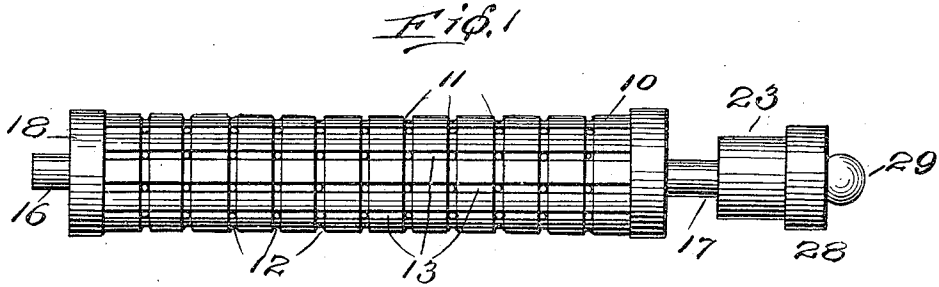


R. W. MUNK.
INKING ROLLER.

APPLICATION FILED APR. 3, 1909.

949,437.

Patented Feb. 15, 1910.



Inventor

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UNITED STATES PATENT OFFICE.

ROBERT W. MUNK, OF ATLANTA, GEORGIA, ASSIGNOR TO THE AMERICAN SPECIALTY MANUFACTURING CO., OF ATLANTA, GEORGIA, A CORPORATION OF GEORGIA.

INKING-ROLLER.

949,437.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed April 3, 1909. Serial No. 487,830.

To all whom it may concern:

Be it known that I, ROBERT W. MUNK, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Inking-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.

This invention relates to inking rolls and has for an object to provide a roll of substantially the class described in co-pending application No. 453,530, filed September 1, 1908, with improvements thereon.

An object of the present invention is to provide an ink-containing cylinder with a foraminous covering and with connected means for forcing air into such cylinder to force the contained ink through the foraminous covering.

A further object of the invention is to provide in association with an ink cylinder and a means for forcing air into the same, a connection between such cylinder and air-forcing means containing a check valve adapted to prevent the flow of ink from the cylinder to the air-forcing means.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a view in side elevation of one embodiment of the present invention with the covering removed. Fig. 2 is a longitudinal, diametrical section of the form shown at Fig. 1 with the cover in place. Fig. 3 is a view in side elevation of a slightly different embodiment of the present invention with the covering removed. Fig. 4 is a view in longitudinal diametrical section of the embodiment of the invention shown at Fig. 3 with the cover in place.

Like characters of reference designate corresponding parts throughout the several views.

The present invention comprises an ink cylinder 10 having a plurality of openings as 11 formed through the material of such cylinder. Externally the material of the cylinder is provided with circumferential grooves 12 and longitudinal grooves 13, such

longitudinal and circumferential grooves crossing at each of the openings 11. About the cylinder 10 a material as the wire screen or gauze 14 is wound adapted to spread ink forced through the openings 11 and into the grooves 12 and 13. About the spreading material 14 a fabric 15 of any approved cloth or similar material is secured adapted to further spread and retain the ink in position to be taken therefrom by the printing type employed in association therewith.

The roller is provided at its opposite ends with trunnions 16 and 17, the former of which is preferably formed integral with the screw-threaded cap 18, by means of which access to the interior of the cylinder is secured for the purpose of charging and discharging the same. The trunnion 17 is provided with an axial bore 19 in which a spring 20 is placed and a ball or other valve 21 actuated by said spring in engagement with the valve seat 22.

Secured to the hollow trunnion 17 is an air-forcing means comprising, as in Figs. 1 and 2, a cylinder 23 or as in Figs. 3 and 4, an elastic bulb 24. In the latter case the bulb is preferably provided with an opening 25 adapted to relieve the pressure upon the valve and to permit air to enter the bulb after it has been forced through the trunnion 17 into the cylinder 10.

In the device as shown in Figs. 1 and 2 the cylinder 22 is provided with a piston 26, acting against the tension of the spring 27 and with a limiting cap or other member 28 and knob or handle 29 by which the piston may be forced against the tension of the spring 27.

In operation the cylinder 10 is filled by removing the cap 18 and the ink is forced outwardly through the openings 11 by air pressure exerted within the cylinder either by the piston 26 or the bulb 24. As the ink passes outwardly through the openings 11 it is carried by the grooves 12 and 13 both circumferentially and longitudinally and is brought into engagement with the spreading material shown as the wire screen 14 whereby the ink is spread over the entire surface. The ink is still forced outwardly through the fabric covering 15 whereby the entire surface of the fabric covering is evenly saturated with the ink.

In ordinary use it will not be found necessary to employ the air-forcing means as

sufficient ink will pass outwardly of its own accord to keep the covering fabric properly saturated. When, however, the roller has been idle for a considerable length of time

- 5 the ink saturation has had time to dry and it will then be necessary to force the ink outwardly to re-saturate the fabric and to thin the thickened or dried ink upon the surface thereof.
- 10 The employment of the check valve 21 prevents the passage of ink through the trunnion 17 and into the air-forcing means.

What I claim is:—

1. An inking roller comprising a cylindrical portion formed with a foraminous surface, means covering said foraminous surface for distributing ink from the interior of said cylinder, means for causing said ink to saturate said distributing means, and a spring for returning said last mentioned means.

2. An inking roller comprising a cylinder portion formed with a foraminous surface, a spreading medium for spreading ink forced to the surface of said foraminous portion, a distributing medium surrounding said spreading medium, a reciprocating member for forcing air into said cylinder for displacing ink therein and forcing said ink to said distributing medium, and a spring for returning said reciprocating member.

3. An inking roller comprising a cylindrical member formed with a restricted central portion, said restricted central portion being formed with a plurality of longitudinal and transverse grooves, and an aperture in said cylindrical member at the juncture of each of said grooves, a spreading member positioned in said restricted portion and covering said apertures and said grooves, a distributing member covering said spreading member, a housing adapted to communicate with the interior of said cylindrical member, a reciprocating piston positioned in said

housing and adapted to force air into said cylinder upon the movement thereof in one direction, a valve for preventing the return of air from said cylindrical member, and a spring for forcing said reciprocating member in one direction, the forcing of air in said cylinder by said reciprocating member being adapted to displace ink in said cylindrical member for forcing the ink to said distributing member.

4. An inking roller comprising a cylindrical body formed with a plurality of apertures passing therethrough, a reduced portion centrally, and a plurality of grooves extending at right angles over said reduced portion, means positioned in said reduced portion and covering said groove for spreading ink forced through said apertures, a distributing fabric positioned over said distributing means, and means for displacing ink in said cylinder by air whereby said ink is forced through said apertures and said spreading member and into said distributing member.

5. An inking roller comprising a cylindrical portion formed with apertures therein, a cap removably secured to one end for permitting the insertion of ink into said cylinder, a spreading screen encircling said cylinder for spreading ink forced therefrom, means for distributing evenly the ink spread by said spreading screen, a housing in communication with said cylinder, and means arranged in said housing and movable therein for reducing the cubic contents of said housing for forcing air into said cylinder whereby ink is forced therefrom.

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

ROBERT W. MUNK.

Witnesses:

EDWARD T. FENWICK.
GEO. M. BOND.