May 18, 1943 H. J. LUEHRS 2,319,615

INKING ROLLER FOR PRINTING PRESSES

Filed April 12, 1941 2 Sheets-Sheet 1

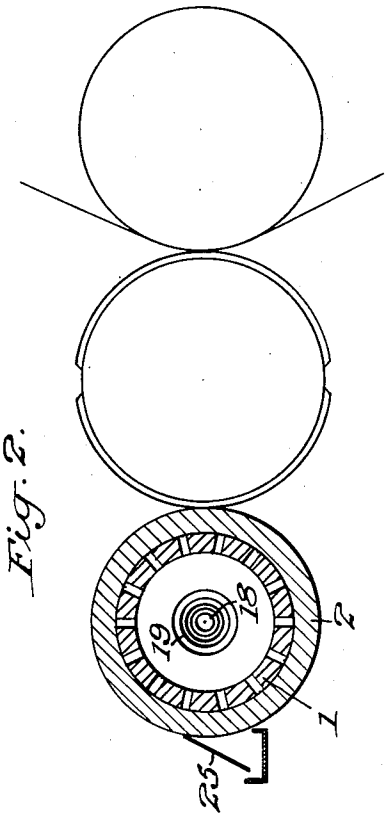


Fig. 2.

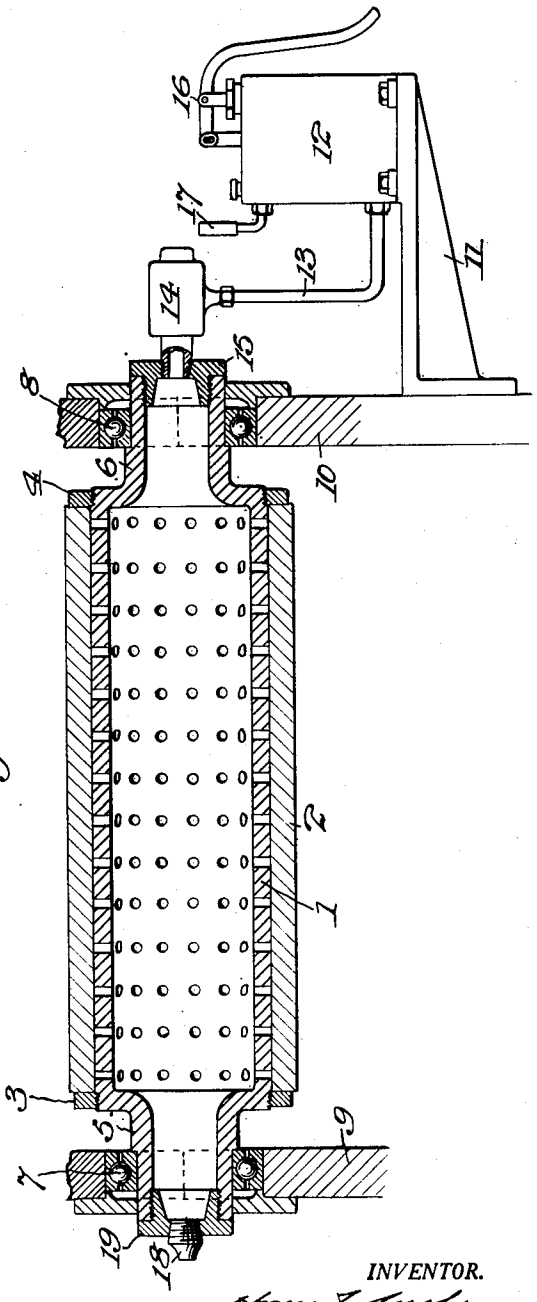


Fig. 1.

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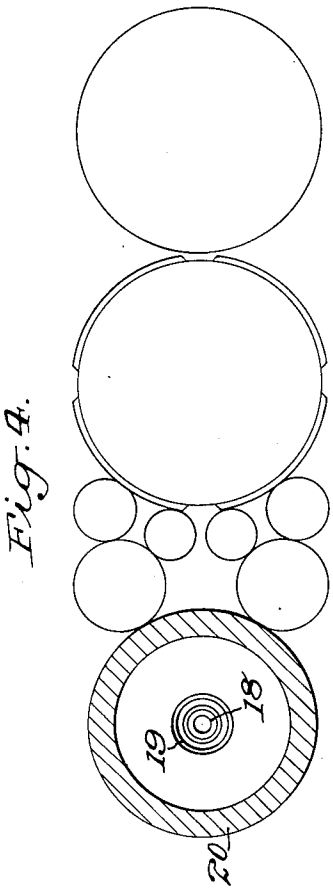


Fig. 4.

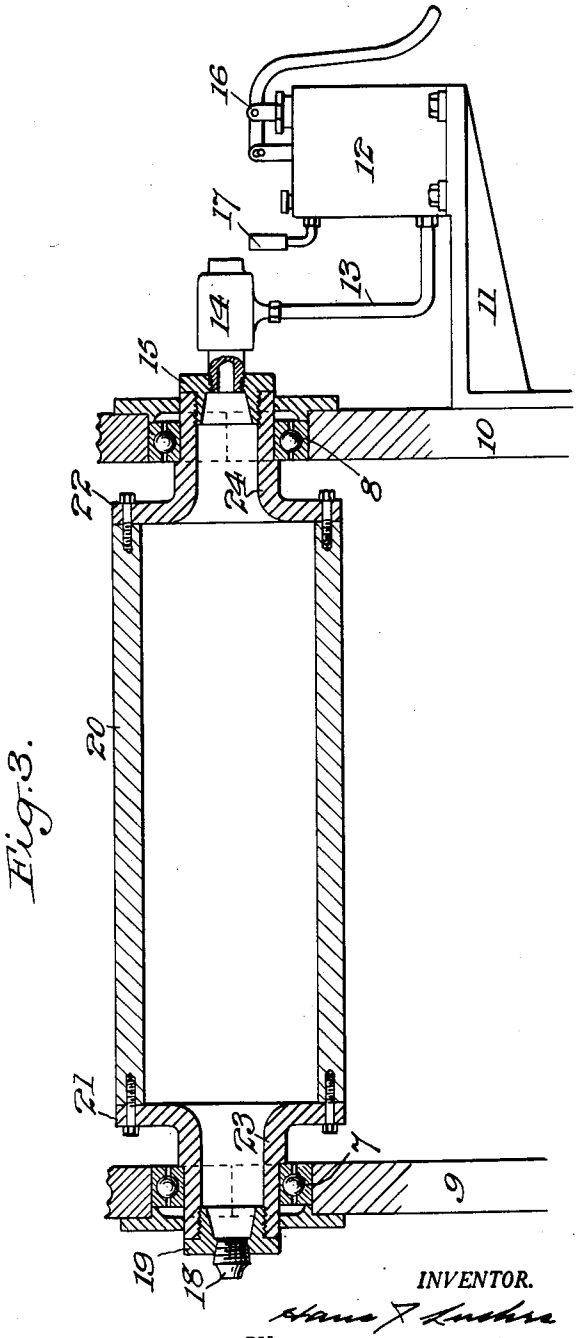


Fig. 3.

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UNITED STATES PATENT OFFICE

2,319,615

INKING ROLLER FOR PRINTING PRESSES

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Application April 12, 1941, Serial No. 388,219

4 Claims. (Cl. 101—367)

My invention consists in a novel inking roller which may be used in connection with various types of inking mechanisms for printing presses, said inking roller being hollow and adapted to contain a supply of liquid ink and having a pervious side wall of hard material such as pervious bronze through which the liquid ink may pass outwardly to the exterior surface of the inking roller to be transferred either directly or indirectly, as may be desired, to the form cylinder of a printing press. Pervious bronze suitable for the purpose hereinafter set forth is in extensive commercial production by different manufacturers and it is marketed under various trade names such for instance as Ollite, Durex, and Ledaloyl.

My invention also comprises means for feeding the liquid ink, preferably under pressure, to the interior of the inking roller.

My invention also comprises a pressure regulator for the interior of the inking roller to obtain the best results in the passage of the liquid ink to the exterior of the roller and the transfer thereby in regulable quantities.

Practical embodiments of my invention are represented in the accompanying drawings, in which

Fig. 1 represents one form of inking roller in longitudinal central section, the means for feeding the liquid ink under pressure being shown in side elevation;

Fig. 2 represents the inking roller in cross section, in a position to transfer the liquid ink directly to a form cylinder;

Fig. 3 represents another form of inking roller in longitudinal central section; and

Fig. 4 represents the inking roller in cross section in a position to transfer the liquid ink indirectly through intermediate rollers to a form cylinder.

In the form shown in Figs. 1 and 2 the hollow inking roller is shown as having an inner perforated cylindrical side wall 1 and an outer concentric side wall 2 in the form of a pervious sleeve of hard material, as, for instance, pervious bronze, removably positioned on the inner side wall between removable collars 3 and 4. This perforated inner side wall 1 of the inking roller is provided with hollow trunnions 5 and 6 which are removably and rotatably mounted, as by anti-friction bearings 7 and 8, in the side frames 9 and 10 respectively of the inking mechanism.

The means which I have shown for feeding liquid ink under pressure into the interior of the inking roller comprises the following elements: A bracket 11 carried by the side frame 10 supports a liquid ink supply tank 12. A liquid supply pipe 13 leads through a rotary joint 14 to a cap 15 which removably closes the open end of the trunnion 6. For feeding the liquid ink under pressure to the interior of the inking roller the tank 12 may be provided with a hand pump 16. A pressure gage 17 may also be provided for the tank 12. A pressure regulating valve 18 may be provided in the cap 19 which removably closes the open end of the trunnion 5.

In the form shown in Figs. 3 and 4 the inking roller comprises a pervious side wall in the form of a cylindrical sleeve 20 of hard material as for instance pervious bronze which is removably secured to ends 21 and 22, which ends are provided with hollow trunnions 23 and 24 which are removably and rotatably mounted, as by the anti-friction bearings 7 and 8 in the side frames 9 and 10 respectively of the inking mechanism. The means for feeding the liquid ink under pressure into the interior of the inking roller may be the same as that shown with respect to the form shown in Fig. 1 and the pressure regulating valve 18 and its cap 19 may be the same as that shown in Fig. 1. In the form shown in Fig. 3 it will be noted that the perforated inner wall and the sleeve retaining collars shown in Fig. 1 are omitted.

In cases where the inking roller directly transfers the ink to the form cylinder, as shown in Fig. 2, it may be advisable to provide a doctor blade 25 engaging the exterior surface of the pervious side wall of the roller to control the amount of ink transferred to the said form cylinder.

It will be understood that the ink supplied to the surface of the inking roller may be varied, for instance, by a variation in the perviousness of the side wall of the roller or by a variation in the pressure. Also, it will be observed that the centrifugal force exerted on the liquid ink within the inking roller will increase as the rotative speed of the roller is increased, thereby allowing more ink to pass through the pervious side wall of the roller as the press speed increases.

The inking roller illustrated in Figs. 3 and 4 and described but not claimed herein, forms the subject matter of my divisional application filed October 31, 1942, Serial No. 464,015.

It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention, and hence I do not intend to be limited to the particular

embodiments herein shown and described, but what I claim is:

1. A hollow inking roller adapted to contain a supply of liquid ink and having rotary inner and outer side walls, the inner side wall being perforated and provided with hollow trunnions and the outer side wall being of pervious hard material, means for removably positioning the porous outer side wall on the inner side wall, and means for feeding liquid ink under pressure to the interior of the roller.

2. A hollow inking roller adapted to contain a supply of liquid ink and having rotary inner and outer side walls, the inner side wall being perforated and provided with hollow trunnions and the outer side wall being of pervious hard material, means for removably positioning the porous outer side wall on the inner side wall, means for feeding liquid ink under pressure to the interior of the roller through one hollow trunnion, and a pressure regulating valve in the other hollow trunnion.

3. A hollow inking roller adapted to contain a supply of liquid ink and having rotary inner and outer side walls, the inner side wall being perforated and provided with hollow trunnions and the outer side wall being of pervious bronze, means for removably positioning the porous bronze outer side wall on the inner side wall, and means for feeding liquid ink under pressure to the interior of the roller.

4. A hollow inking roller adapted to contain a supply of liquid ink and having rotary inner and outer side walls, the inner side wall being perforated and provided with hollow trunnions and the outer side wall being of pervious bronze, means for removably positioning the porous bronze outer side wall on the inner side wall, means for feeding liquid ink under pressure to the interior of the roller through one hollow trunnion, and a pressure regulating valve in the other hollow trunnion.

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