C. CHISHOLM.

MOISTENING ROLLER FOR LITHOGRAPHIC PRINTING PLATES.

APPLICATION FILED AUG. 31, 1914. RENEWED SEPT. 20, 1915.

1,180,569. Patented Apr. 25, 1916.

Fig. 1.

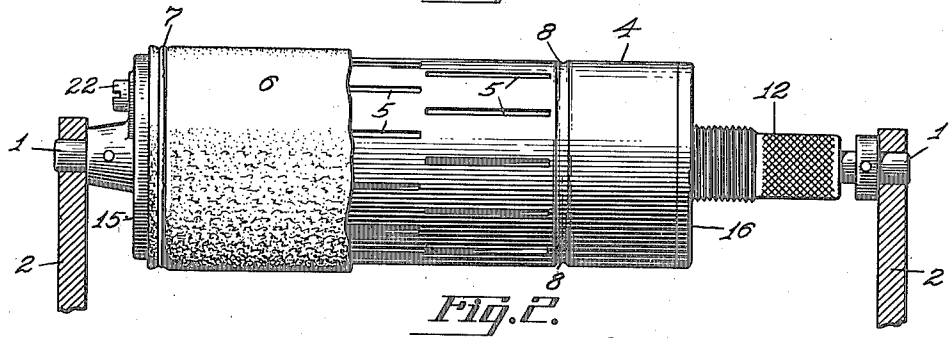


Fig. 2.

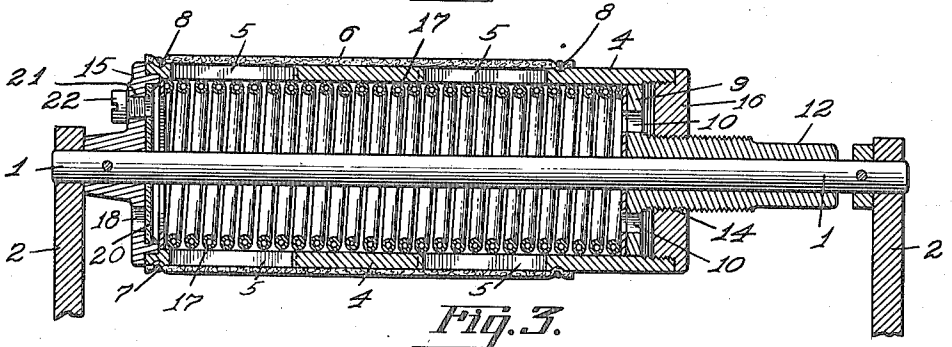


Fig. 3.

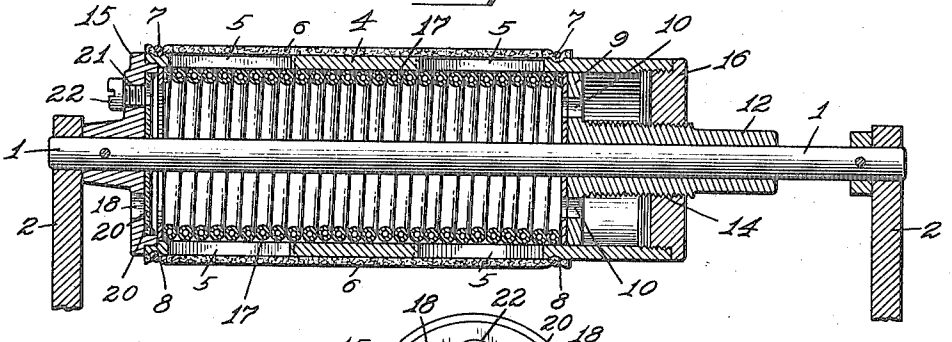
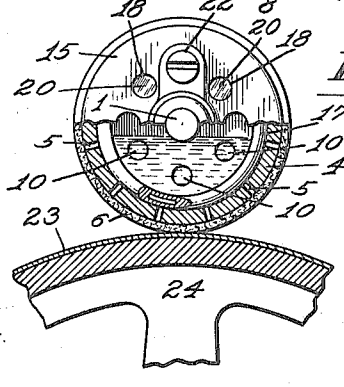


Fig. 4.



Witnesses

Karl F. Schmitt.

Frank A. Simmers.

Inventor

Clifton Chisholm

By Arthur L. Shee.

His Atty

UNITED STATES PATENT OFFICE.

CLIFTON CHISHOLM, OF SAN FRANCISCO, CALIFORNIA.

MOISTENING-ROLLER FOR LITHOGRAPHIC-PRINTING PLATES.

1,180,569. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed August 31, 1914, Serial No. 860,110. Renewed September 20, 1915. Serial No. 51,734.

To all whom it may concern:

Be it known that I, CLIFTON CHISHOLM, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Improvement in Moistening-Rollers for Lithographic-Printing Plates, of which the following is a specification.

My invention relates to moistening rollers for lithographic printing plates, wherein a rubber coated coil spring operates in conjunction with a rotatable piston within an apertured or slotted cylinder, or roller, having a suitable moisture absorbing outer covering; and the objects of my invention are first, to provide improved means for equally distributing a liquid, repulsive to ink, evenly over the surface of a lithographic printing plate; second, to provide improved means for regulating the supply of the liquid from the interior of the moistening roller to the absorbent outer covering; and third, to provide improved means for indicating the amount of liquid within the roller. I accomplish these several features by means of the device disclosed in the drawings forming a part of the present specification, wherein like characters of reference are used to designate similar parts, throughout the said specification and drawings.

Figure 1 is a side elevation of the moistening roller with the absorbent covering partly broken away in order to disclose the longitudinally disposed slots in the periphery of the said cylinder and the regulating sleeve extended beyond one end of the cylinder thereof. Fig. 2 is a longitudinal sectional view of Fig. 1, disclosing the manner in which the rubber coated spring is interposed between the regulating piston and one end of the cylinder, disclosing the spring partially expanded. Fig. 3 is a view similar to Fig. 2, but disclosing the spring compressed. Fig. 4 is a broken end view of the cylinder, disclosing the manner in which it is rotatably mounted in peripheral contact with a lithographic printing plate.

The numeral 1 is used to designate a shaft rotatably mounted in suitable standards 2. Secured to the shaft is a cylinder 4, having a series of longitudinal slots 5 disposed around the periphery thereof. Around the said cylinder 4 an outer covering 6, composed of a suitable absorbent material, is secured so as to cover the longitudinal slots 5 in the cylinder. The absorbent covering 6 may be secured by means of wire hoops 7, which engage the ends of the covering 6 and depress the same into peripheral grooves 8 of the cylinder 4. Slidably mounted within one end of the cylinder 4 is a piston 9, having apertures 10 therein and provided with a threaded sleeve 12, which engages an internally threaded aperture 14 within the end 16 of the said cylinder 4. The sleeve 12 is rotatably and slidably mounted upon the shaft 1 so that as the said sleeve 12 is rotated and travels upon the internally threaded portion 14, it is free to rotate and slide upon the said shaft 1. Interposed between the opposite end 15 of the cylinder 4 and the piston 9 is a rubber coated spring 17. The opposite end 15 of the cylinder 4 is provided with suitable apertures 18 and an inner glass 20, which covers the said apertures for the purpose of acting in the double capacity of retaining the moistening liquid within the cylinder 4 and also rendering the interior of said cylinder 4 visible.

The operation is as follows: The liquid is introduced to the interior of the cylinder 4 through a suitable opening 21 in the end 15, said opening being closed by a suitable plug or screw 22. Normally the spring 17 is expanded. As the cylinder 4 rotates on the shaft 1 in peripheral contact with the lithographic printing plate 23 upon the cylinder 24 (see Fig. 4 of the drawings) the moisture within the cylinder 4 flows between the coils of the spring 17 and through the apertures 5 of the said cylinder 4 and into the absorbent covering 6 thereof, from whence it is transferred to the lithographic printing plate 23 by peripheral contact therewith. The amount of liquid dispensed through the apertures 5 of the cylinder 4 may be regulated by rotating the sleeve 12, which will move the piston 9 inwardly or outwardly and compress or allow, respectively, the spring 17 to expand. As the flow of liquid through the apertures is in direct proportion to the space of the coils of the spring 17, it is obvious that the amount of liquid passing between the said coils and through the apertures 5 of the cylinder 4 may be easily regulated by rotating the sleeve 12 and thereby allowing the coils of the spring 17 to expand or to be compressed. The piston 9 is provided with the apertures 10 so that when the said piston is moved toward the end 15 the liquid displaced by such movement may pass through the apertures 10 and into that portion of the cylin-

der between the said piston 9 and the end 16. By referring to Fig. 3, it will be observed that there are no slots in that portion of the cylinder.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. A moisture roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a fluid; a coil spring within the cylinder; and means arranged to compress the coils of the spring and thereby regulate the flow of liquid through the slots within the said cylinder.

2. A moisture roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated spring within the cylinder, arranged to cover the said slots; and means arranged to compress the coils of the spring within the cylinder and thereby regulate the flow of liquid through the said slots.

3. A moisture roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated spring within the cylinder arranged to cover the said slots; means arranged to compress the coils of the spring within the cylinder and thereby regulate the flow of liquid through the said slots; and means for retaining the moisture on the periphery of the cylinder.

4. A moisture roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated spring within the cylinder arranged to cover the said slots; means arranged to compress the coils of the spring within the cylinder and thereby regulate the flow of liquid through the said slots; and an outer covering of absorbent material arranged around the periphery of the cylinder and adapted to retain moisture thereon.

5. A moisture roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated coil spring within the cylinder and arranged to cover the slots therein; an apertured piston rotatably and slidably mounted within the cylinder and arranged to engage and compress the spring therein and thereby regulate the flow of liquid through the slots; and an outer absorbent covering on the cylinder arranged to receive moisture through the slots and retain the said moisture on the periphery of the said cylinder.

6. A moistening roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated coil spring within the cylinder and arranged to cover the slots therein; an apertured piston rotatably and slidably mounted within the cylinder and arranged to engage and compress the spring therein and thereby regulate the flow of liquid through the slots; an outer absorbent covering on the cylinder arranged to receive moisture through the slots and retain the said moisture on the periphery of the said cylinder; and means operatively connected to the piston and extending beyond one end of the cylinder.

7. A moistening roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated coil spring within the cylinder and arranged to cover the slots therein; an apertured piston rotatably and slidably mounted within the cylinder and arranged to engage and compress the spring therein and thereby regulate the flow of liquid through the slots; an outer absorbent covering on the cylinder arranged to receive moisture through the slots and retain the said moisture on the periphery of the said cylinder; and a sleeve integral with the piston and extending beyond the end of the cylinder.

8. A moistening roller for lithographic printing plates comprising a cylinder having longitudinally disposed slots in the periphery thereof and arranged to contain a liquid; a rubber coated coil spring within the cylinder and arranged to cover the slots therein; an apertured piston rotatably and slidably mounted within the cylinder and arranged to engage and compress the spring therein and thereby regulate the flow of liquid through the slots; an outer absorbent covering on the cylinder arranged to receive moisture through the slots and retain the said moisture on the periphery of the said cylinder; and a sleeve integral with the piston and extending beyond the end of the cylinder and adapted to move the said piston and thereby compress the spring and regulate the flow of liquid through the slots of the cylinder.

In witness whereof I hereunto set my signature in the presence of two subscribing witnesses.

CLIFTON CHISHOLM.

Witnesses:
IRENE DOWNEY,
CHAS. F. DUISENBERG.