

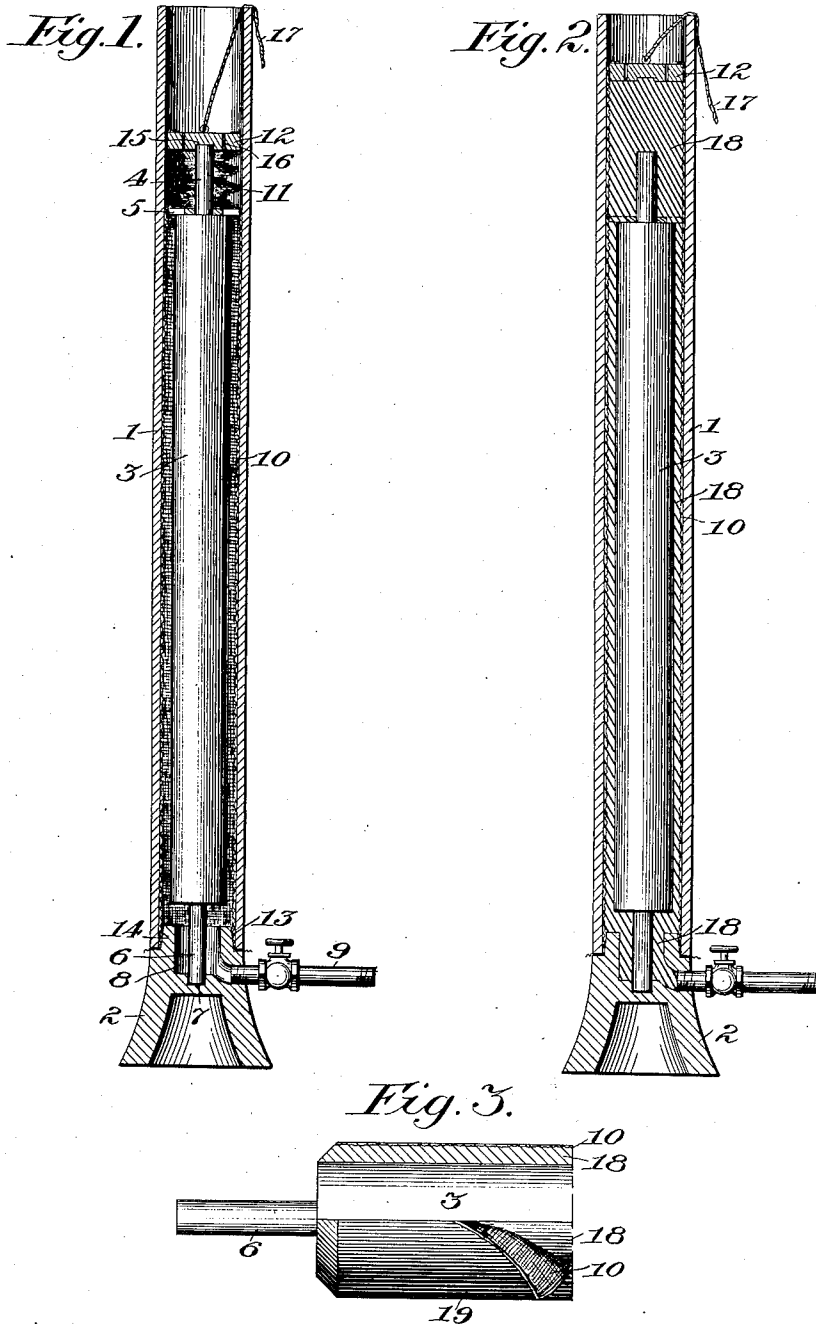
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J. H. HENNESSEY.

INK ROLLER AND PROCESS OF MAKING THE SAME.

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Witnesses:

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UNITED STATES PATENT OFFICE.

JEROME H. HENNESSEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

INK-ROLLER AND PROCESS OF MAKING THE SAME.

No. 830,432.

Specification of Letters Patent.

Patented Sept. 4, 1906.

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To all whom it may concern:

Be it known that I, JEROME H. HENNESSEY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Inking-Rollers and Processes of Making the Same, of which the following is a specification.

The inking-rollers commonly employed in printing-presses consist of a cylindrical metal core or body having journals, upon which is a concentric cast layer of a composition of glue and glycerin. This composition, while elastic and hygroscopic, has little tensile strength and is lacking in durability. To increase the life of these rollers, various expedients have been tried or suggested, such as drawing a tube of thin leather, skin, or rubber tightly over the roller, winding the roller with a helical strip of cloth, wrapping a piece of leather or cloth over the roller and sewing together the adjacent edges, or casting the roller composition into a cloth bag.

The present invention comprises an inking-roller consisting of an elastic body of a cast composition and a tubular fabric cover superficially embedded in the body, the cover being longitudinally stretched and held in position by the solidified composition.

The invention also includes a process of making such a roller by longitudinally stretching a fabric tube arranged within and in proximity to the wall of the mold, casting the composition into the mold, and maintaining the fabric tube under tension until the casting solidifies and holds the fabric in position.

The process may be carried out by various forms of apparatus. One which has been found effective for the purpose is shown in the accompanying drawings, in which—

Figure 1 is an axial section through a mold and a fabric tube supported therein, showing the core in elevation. Fig. 2 is a similar view of the mold with the composition cast therein; and Fig. 3 is a side elevation of one end of the improved roller, the upper portion of the composition being shown in section and the fabric cover being partially detached from the lower portion.

The apparatus illustrated comprises a mold having a tubular body 1 and a base 2, on which the body is removably seated. Centrally supported within the body is the core 3, having an upper journal 4, which is centered by a spider 5, and the lower journal

6, which is supported in a central seat 7 in the base. In the base 2 and around the journal is a chamber 8 for the introduction of the molten composition which is supplied under pressure through the valved pipe 9. Supported within the mold-body is a fabric tube 10—for example, one of cotton cloth. The major portion of the fabric tube is supported within the mold and in proximity to its inner wall by the spider 5, between which and the mold-body the cloth is slightly pinched, so as to carry the weight of the cloth, but permit it to move when tension is applied to its upper end. The portion 11 of the fabric tube above the spider 5 is loosely supported in a collapsed condition by a wooden disk 12, to which the upper end of the fabric is secured and which fits loosely within the mold-body. The disk rests upon and has a seat 15, which receives the upper core-journal 4. The lower end 13 of the fabric tube is tightly pinched between the conical upper end 14 of the mold-base and the lower end of the mold-body. The wooden disk 12 is pierced with one or more small air-escape passages 16 and a cord 17 extends upward from its center.

To cast the roller with the parts in the position shown in Fig. 1, the valve in pipe 9 is open, permitting the molten composition to flow into the mold. As the composition fills the mold and rises into contact with the wooden disk 12 this disk floats upward until its further movement is prevented by the tension of the fabric tube, as shown in Fig. 2. The full pressure of the composition is then exerted upon this disk, thereby tightly stretching the fabric tube throughout its length. The pressure exerted laterally against the fabric tube forces the composition into close contact with the cloth and a small amount generally passes through the interstices of the cloth, thereby superficially embedding it in the surface of the casting. As the mold fills the operator holds the cord 17, and when the disk 12 ceases to rise he closes the inlet-valve and draws the cord 17 tight to maintain the tension of the fabric tube until the composition has solidified. The mold-body is then removed, the roller and core ejected therefrom, and the portions of the composition 18 beyond the ends of the core-body trimmed off.

One end of the completed roller is shown in Fig. 3, the fabric 10 and the composition 18 upon the upper part of the core 3 being shown in section and the fabric cover being shown

partially detached from the lower portion of the composition. A smooth superficial coating 19 of the composition is also shown outside the fabric, having been forced there-
5 through by the pressure applied to the composition during the casting.

It will be understood that the distinctive feature of the invention is the maintenance of the fabric under longitudinal tension during
10 the act of casting and until the composition has solidified, thereby producing a roller having a smooth fabric cover which accurately conforms to the mold-wall. While the wooden float and its attached cord serve as a
15 convenient means for stretching the fabric tube by transmitting thereto the pressure of the molten composition and enabling the operator to maintain the fabric under tension until the casting has solidified, it will be understood that the same result may be effected
20 by other specific means. For example, the holes in the disk 15 may be of such size that the molten composition exerts no pressure thereon, the fabric tube being initially
25 stretched and maintained in such condition by the operator pulling on the cord 17 or by a tension-spring attached thereto or by other means secured to the upper end of the fabric tube and holding it under tension. The
30 molten composition may also be introduced through the upper instead of the lower end of the mold, the upper end of the fabric tube having an opening of sufficient size to readily admit it.

35 I claim—

1. The process of making an inking-roller, which consists in arranging in a roller-mold and in proximity to its inner wall, a tube of thin flexible material having a circumference
40 substantially equal to that of the mold-cavity, longitudinally stretching said tube, and casting the roller composition into said tube and allowing it to solidify while the tube is under tension, as set forth.

45 2. The process of making an inking-roller, which consists in arranging in a roller-mold and in proximity to its inner wall, a fabric tube having a circumference substantially equal to that of the mold-cavity, longitudi-
50 nally stretching said tube, and casting the roller composition into said tube and allow-

ing it to solidify while the tube is under tension, as set forth.

3. The process of making an inking-roller, which consists in arranging in a roller-mold 55 and in proximity to its inner wall, a fabric tube having a circumference substantially equal to that of the mold-cavity, introducing the roller composition into said mold under pressure, employing the pressure of said com- 60 position to longitudinally stretch said tube as the mold fills, and allowing the composition to solidify while the tube is under tension, as set forth.

4. The process of making an inking-roller, 65 which consists in arranging in a roller-mold and in proximity to its inner wall, a fabric tube having a circumference substantially equal to that of the mold-cavity, securing the lower end of said tube to the mold, applying 70 tension to the upper end of said tube, and casting the roller composition into said tube and allowing it to solidify while the tube is under tension, as set forth.

5. The process of making an inking-roller, 75 which consists in arranging in a roller-mold and in proximity to its inner wall, a fabric tube having a circumference substantially equal to that of the mold-cavity, clamping the lower end of said tube between the base 80 and body of the mold, applying tension to the upper end of said tube, and casting the roller composition into said tube and allowing it to solidify while the tube is under tension, as set forth. 85

6. An inking-roller, comprising an elastic body of a cast composition and a tubular fabric cover, said cover being longitudinally stretched and held in position by the solidified composition, as set forth. 90

7. An inking-roller, comprising an elastic body of a cast composition and a tubular fabric cover superficially embedded in said body, said cover being longitudinally stretched and held in position by the solidified composition, 95 as set forth.

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

JEROME H. HENNESSEY.

Witnesses:

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