No. 689,266. Patented Dec. 17, 1901.

W. WIGGINS.

DEVICE FOR APPLYING LIQUIDS.

(Application filed Sept. 30, 1901.)

(No Model.)

Fig. 1.

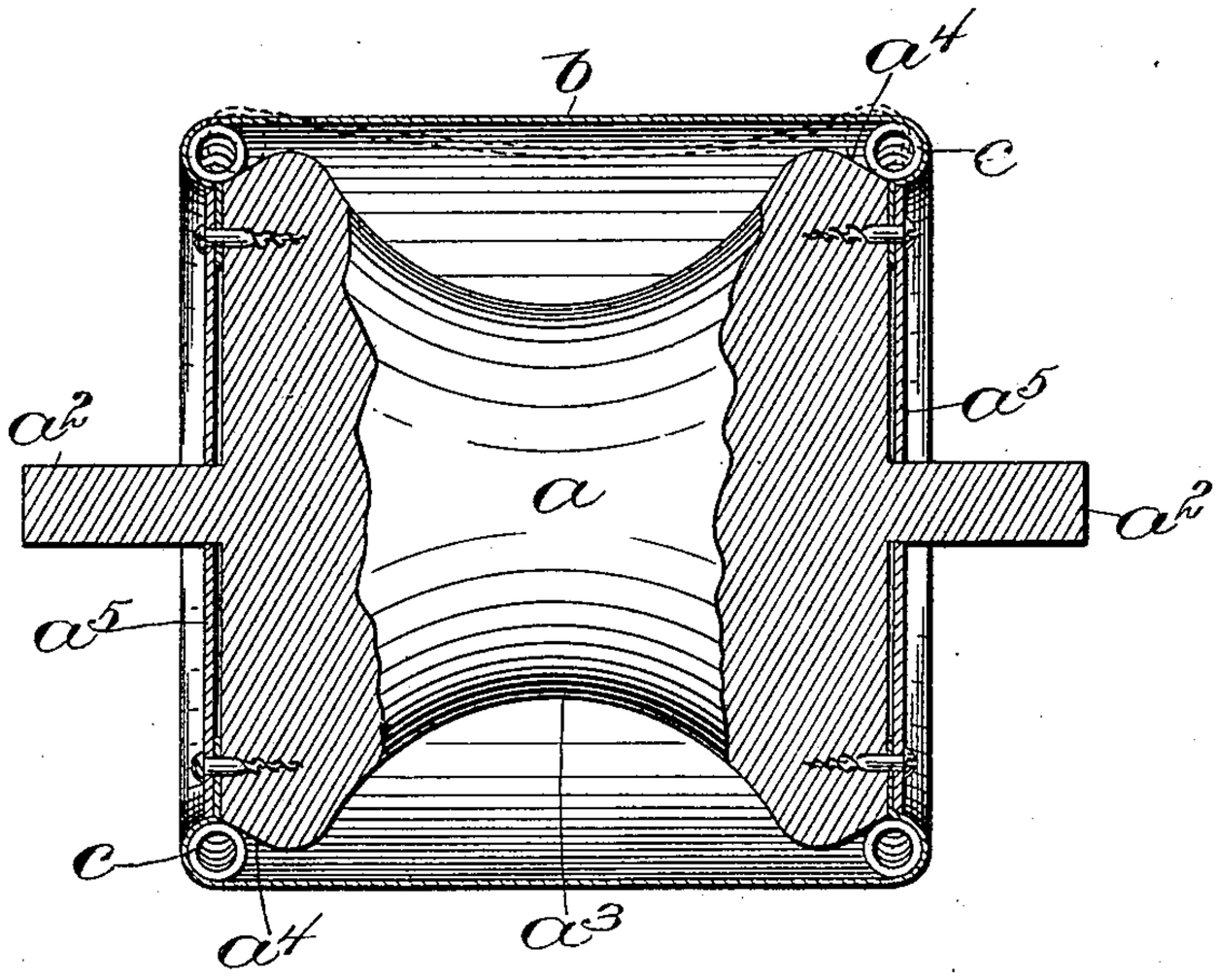
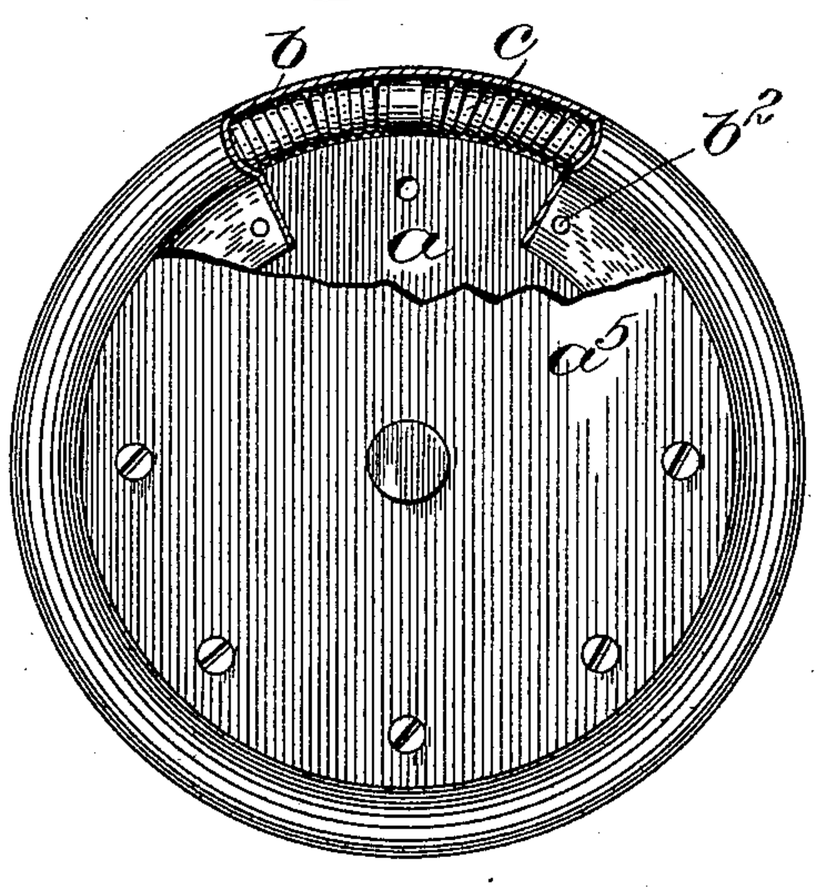


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM WIGGINS, OF BROCKTON, MASSACHUSETTS.

DEVICE FOR APPLYING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 689,266, dated December 17, 1901.

Application filed September 30, 1901. Serial No. 77,056. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WIGGINS, of Brockton, county of Plymouth, and State of Massachusetts, have invented an Improvement in Devices for Applying Liquids, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a device for applying a fluid or liquid, such as cement, to the surface of an article, such as the bottom of a shoe to which a sole is to be cemented, the surface of which is more or less rounded or convex, the convexity differing in different parts, so that the surface is not regular.

The applying device embodying the invention is in the form of a roll; and the object of the invention is to construct the roll so that the surface thereof will conform to the surface of the article to which the cement is to be applied regardless of the shape thereof. Taking, for example, the bottom of a shoe, the surface thereof is much less convex in the main portion than in the shank and is also irregular in shape, and in order that an even amount of cement may be applied throughout it is necessary that the surface of the roll should be of such nature as to conform to different shapes according to the shape of the surface with which it is in contact. It is further desirable that the roll when in normal condition should be substantially cylindrical, so that the cement will be taken up thereby in a film of substantially uniform thickness, controlled, for example, by a scraper-blade set at any desired distance from the surface of the roll.

To these ends the roll embodying the present invention is provided with a flexible surface or carrying portion for the fluid, which portion is stretched over a suitable core, being supported and secured only along the edges, the core having a concave surface to permit the carrying portion to yield. As herein shown, the carrying portion is secured by supporting members which consist of extensible annular bands, such as endless rings of coiled or spiral springs which rest upon inclined shoulders formed on the core, the flexible carrying portion being stretched over the said springs and secured beyond them, so that when pressure is brought to bear upon said flexible portion the springs will roll up the inclined surface, allowing the flexible portion to yield. As soon, however, as the pressure is released the springs by contracting will return to their normal position, again stretching the flexible carrying portion, so that the surface of the roll in its normal condition is substantially cylindrical.

Figure 1 is a longitudinal section of an applying-roll embodying the invention; and Fig. 2 is an end elevation thereof, partly broken away and shown in section.

The supporting-core *a* or body of the roll is shown as provided with bearing projections a^2, so that the said roll can be rotatably mounted in any suitable way and partially immersed in the fluid or liquid which is to be distributed—such, for example, as liquid cement to be applied to shoe-bottoms, for which purpose the article embodying the invention is mainly adapted. The said core has a concave surface a^3, so as to permit the yielding cover or carrying portion *b* to move or yield inwardly, the said cover being stretched across the core, as shown, so as normally to form a substantially cylindrical outer surface for the roll. The said cover is made of any suitable flexible material—such, for example, as canvas or other fabric which is capable of taking up the cement for distribution and is shown as provided with yielding means for maintaining it stretched when no pressure is applied to the surface. As herein shown, the said yielding means comprise extensible annular members *c*—such, for example, as endless spiral springs which normally rest against inclined shoulders a^4, formed at or near the ends of the core *a*, it being obvious that if the said spiral springs are drawn inward toward the middle of the core they will be stretched and on contracting will tend to move back along the shoulders a^4, where the diameter is less; but in their normal positions the members *c* are shown as projecting beyond the end of the core, and the flexible carrying portion *b* is drawn over the said members *c* and back to the surface of the core *a*, where it is fastened, the said carrying portion thus being held taut wholly by the members *c*, so that it is capable of yielding to whatever extent

is permitted by the extensibility of the said members. While, therefore, the carrying or distributing surface of the roll is normally substantially cylindrical and capable of being supplied with a uniform film of cement, the said surface is capable of yielding and conforming to a surface of any degree of convexity, the manner in which the said surface yields being illustrated in dotted lines, Fig. 1, where the members *c* are shown as pulled up along the inclined shoulders a^4 against the tendency of said members to contract and move toward the point of smallest diameter.

As shown in Fig. 2, the cover portion *b* may be fastened at b^2 to the end of the core *a*, and the said core may be provided with end pieces a^5, adapted to be screwed or otherwise fastened to the said core to cover and protect the fastening devices b^2. It is, however, immaterial how the flexible surface portion *b* is fastened, it being essential only that the said portion should have a certain amount of slack, which is taken up in any suitable way, as by the yielding members *c*. It is not, therefore, intended to limit the invention to the specific construction and arrangement shown and described, since modifications may be made without departing from the invention.

I claim—

1. A fluid-applying roll comprising a supporting-core having a concave surface; and a yielding fluid carrying or distributing portion stretched over said core across said concave surface.

2. A fluid-applying roll comprising a supporting-core; a flexible fluid carrying or distributing portion; and means for yieldingly connecting the said distributing portion with said core whereby the said portion is capable of conforming to convex or irregular surfaces, as set forth.

3. The combination with a supporting-core; of a flexible fluid carrying or distributing portion connected with said core; inclined shoulders formed on the said core; and annular extensible members over which the flexible portion is stretched, said annular members resting against the said shoulders, as set forth.

4. A fluid-applying roll comprising a core; a flexible fluid carrying or distributing portion; annular elastic members circular in cross-section over which said carrying or distributing portion is stretched; and inclined shoulders formed around the core to afford a support for said annular members, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM WIGGINS.

Witnesses:
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