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2,604,772

APPARATUS FOR TREATING FABRICS

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FIG. 1.

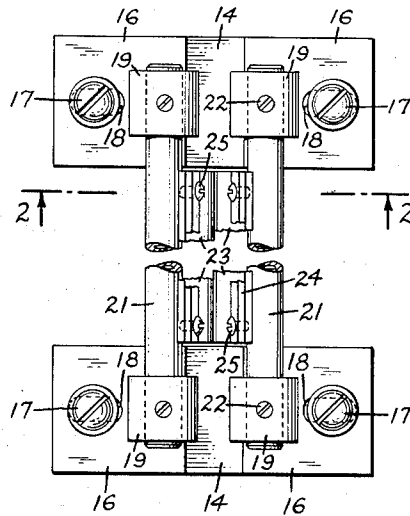
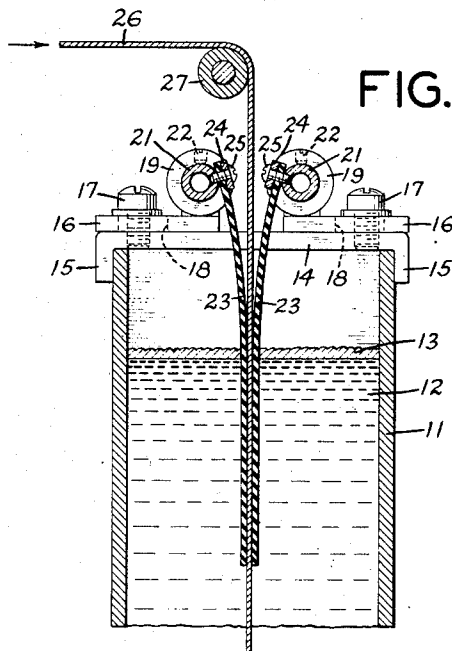


FIG. 2.



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APPARATUS FOR TREATING FABRICS

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1 Claim. (Cl. 68—175)

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This invention relates to textile materials and relates more particularly to a process and apparatus for treating fabrics and the like by immersing the same in a liquid medium such as a dyebath.

During the treatment of fabrics and the like by immersing the same in a liquid medium such as a dyebath, it frequently happens that the surface of the bath becomes covered with a foreign material. The foreign material may consist of individual particles floating on the surface of the bath, or may be in the form of a film or foam covering all or a portion of the surface of the bath. When the fabric enters the bath, the foreign material adheres to the surfaces of the fabric and is carried by the fabric through at least a portion of the bath. The presence of foreign material on the surfaces of the fabric impedes the free access of the bath to all portions of the fabric and results in the production of spotted fabrics that are not commercially satisfactory.

It is an important object of this invention to provide a process and apparatus for treating fabrics and the like by immersing the same in a liquid medium such as a dyebath which will be free from the foregoing and other disadvantages of the processes and apparatus hitherto employed for this purpose.

A further object of this invention is the provision of a process and apparatus for treating fabrics and the like by immersing the same in a liquid medium such as a dyebath in which the fabrics will initially contact the bath at a point below the surface thereof.

Other objects of this invention will be apparent from the following detailed description and claims.

According to the present invention, fabrics and the like are immersed in a liquid medium such as a dyebath between a pair of curtains extending the full width of the fabric from a point above the surface of the bath to a point below the surface of the bath, which curtains are urged toward each other and into contact with the surfaces of the fabrics. Advantageously, the curtains contact the surfaces of the fabrics from a point above the surface of the bath to a point below the surface of the bath. The fabrics entering the bath between said curtains initially contact the bath at a point below the surface thereof so that any foreign material on the surface of the bath does not come into contact with the fabrics and cannot adhere thereto. As a result, the production of spotted fabrics owing to the adherence of foreign material to the surfaces

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of the fabrics as they enter the bath is prevented.

The curtains between which the fabrics enter the bath may be formed from a resilient material such as rubber or a sheet of flexible metal and are arranged so that the curtains are urged toward each other by their own resilience. Alternatively, the curtains may be formed from a flexible material and be urged toward each other through the expediency of springs or other suitable mechanical means. If desired, one of the curtains may be formed from a rigid material against which the other and flexible curtain is urged by its own resilience or by suitable mechanical means.

A preferred embodiment of my invention will now be described with particular reference to the accompanying drawing, wherein

Fig. 1 is a top plan view of the apparatus for treating fabrics and the like, with certain parts, including the vat, omitted in the interest of clarity, and

Fig. 2 is a cross-sectional view of the apparatus shown in Fig. 1, taken on the line 2—2 in the direction of the arrows.

Referring now to the drawing, the reference numeral 11 designates a vat having therein a liquid medium such as a dyebath 12 whose surface is covered with a layer of foam 13. Mounted on the vat 11 are a pair of brackets 14 that are held securely in place by means of downturned lips 15 integral therewith that engage the sides of the vat 11. Each of the brackets 14 carries a pair of plates 16 adjustably fastened thereto by means of screws 17 that extend through slotted openings 18 in the plates 16. Secured to the plates 16 are trunnion bearings 19 in which are mounted a pair of parallel tubular rods 21 that extend across the vat 11 and are held against rotation by means of set screws 22 passing through the bearings 19.

A pair of flexible rubber curtains 23 extending the full width of the fabric to be dyed are clamped to the tubular rods 21 by means of bars 24 having screws 25 extending therethrough into threaded engagement with the tubular rods 21. The point at which the flexible rubber curtains 23 contact the fabric, the spacing between the top of the curtains and the force with which the curtains contact the fabric may be adjusted to take care of fabrics of all types or varying dyebath conditions by moving the plates 16 toward or away from each other, by rotating the tubular rods 21, or by a combination of both of these

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expedients. During dyeing, a fabric 26 is taken from any suitable source of supply (not shown), passed over a guide roll 27 and entered in the dyebath 12 between the flexible rubber curtains 23 so that it initially contacts the liquid of the dyebath at a point below the surface thereof and does not come into contact with the foam 13. As a result, the production of foam spots on the fabric 26 is prevented.

It is to be understood that the foregoing detailed description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I desire to secure by Letters Patent is:

In an apparatus for treating fabrics and the like by immersing the same in a liquid medium, the combination with a vat for holding the liquid medium, of a pair of parallel tubular rods extending across the vat and adjustably spaced from each other bearing means carried by the vat in which the ends of said rods are rotatably supported, set screw means in said bearings for holding said tubular rods in fixed position, and

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a pair of flexible rubber curtains clamped to said rods and extending from a point above the surface of the liquid medium to a point below the surface of the liquid medium, the construction and arrangement being such that the flexible rubber curtains are urged toward each other and into contact with the surfaces of the fabrics from a point above the surface of the liquid medium to a point below the surface of the liquid medium whereby the fabrics may be entered into the liquid medium between said curtains and will initially contact the liquid medium at a point below the surface of the liquid medium.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
324,137	Mather	Aug. 11, 1885
1,889,009	Woodhead	Nov. 29, 1932
1,950,010	Riggs	Mar. 6, 1934
2,372,248	Bouton	Mar. 27, 1945