

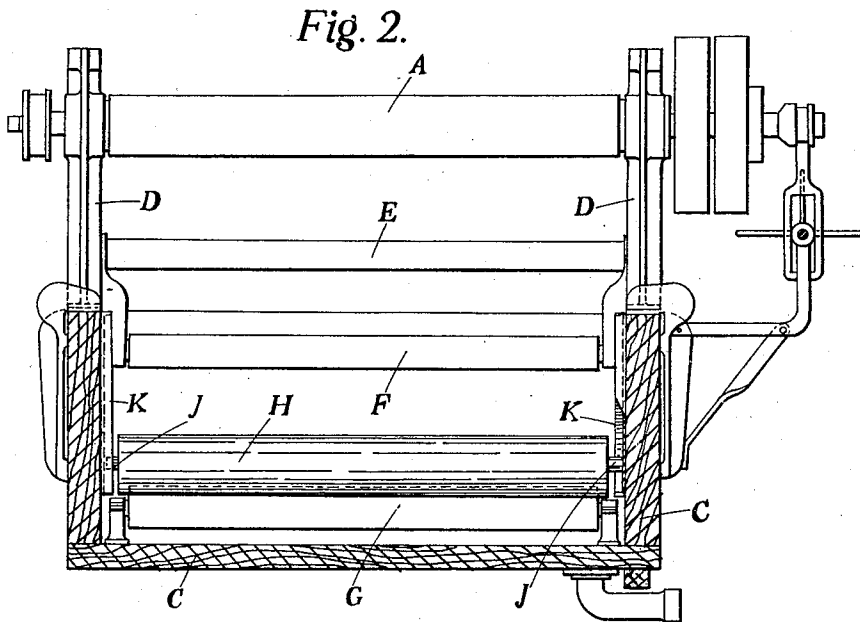
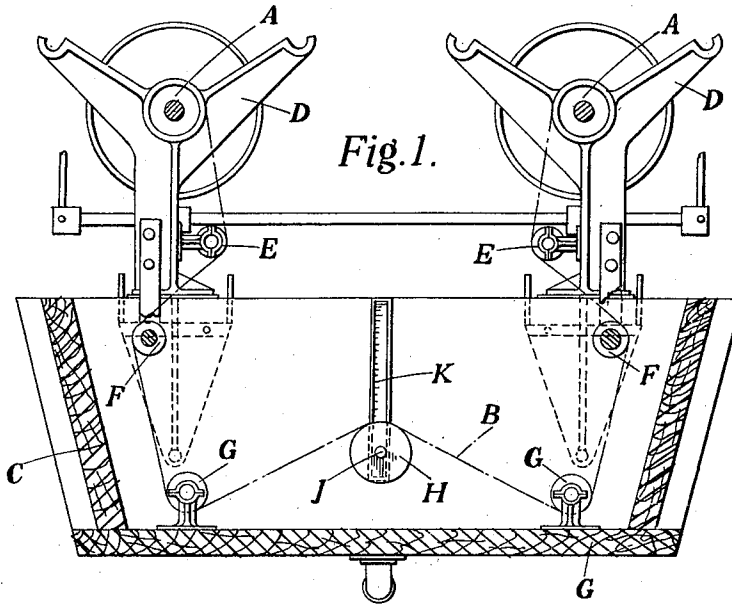
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DYE JIGGER MACHINE

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DYE JIGGER MACHINE

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This invention relates to that type of dyeing machine, which contains rollers immersed in the dye vat and is known either as an open-width material machine, or (as usually called in the trade) a jigger. In such machines, the direction of travel of the material under treatment is reversed intermittently by automatic mechanism. The material is, in this manner unwound from one roller and re-wound upon the opposite roller in rapid alterations. At the commencement of each change of direction the material is pulled with some force around the winding roller, and the pull being naturally greater at the beginning, the material is liable to be unduly strained. Especially is this the case with some of the fragile artificial silk or rayon fabrics which are so much in vogue at the present time. The present invention provides simple and inexpensive means for removing the above objection and ensuring that the material under treatment shall not be over-strained while being dyed.

Broadly the invention consists in the provision of a floating cylinder over which the material is lightly stretched, the tension being therefore governed by the buoyancy of the cylinder.

A practical form of the invention is illustrated by the accompanying drawing showing the relevant portions of a dyeing machine, of which Figure 1 is a longitudinal section and Figure 2 an end elevation.

Referring to the said drawing, A A represent the two transverse rollers around which the end cloths B carrying the material to be dyed are wrapped. These rollers are mounted across the width of the dye vat C at a convenient height above the latter. They are journaled in bearers D in the usual manner and are connected with driving gear which will cause each of the rollers A to rotate in turn, one of them pulling the material B and winding it thereon whilst the other roller is free to rotate idly and pay out the portion of the material which was wound thereon. It is customary for the end cloth B to be made of calico, about ten yards in length, or more or less as found expedient. The cloth B passes partially around idle transverse guide

rollers E, F and G, the last mentioned rollers G being mounted near the bottom. The above arrangements are already well known. Instead, however, of passing the end cloth B or the material thereon straight across from one roller G to the other, it is proposed by the present invention to interpose a cylindrical float H which will ordinarily lie on the top of the dye liquor. This float or cylinder H may be made of any material, and if of metal, it is made hollow and airtight. Its axle or axle pins J protrude a short distance from its ends so as to guide the floating cylinder H and, by means of vertical grooves K prevent it from travelling excepting in a vertical direction. The grooves K may be formed by attaching strips to the sides of the vat C or in any other manner.

The end cloth B or the material on it is passed over the floating cylinder H, the latter being able to rotate freely, and it will sink into the liquid to a greater or less depth according to the degree of tension imparted to the material by the pulling motion of the rollers A A. The roller H provides therefore a yieldable take up, which counteracts the damaging effects of the sudden increases in tension above alluded to. It acts as a sort of compensator, bobbing up and down in the liquid with each change of direction of the winding cylinders A A, or as the tension varies during the running of the material.

I claim:—

1. In a dye jigger machine or open-width material machine, the combination of a dye vat, means to move material to be dyed alternately in opposite directions through the vat and a dye buoyant member in the vat movable in the dye over which member the material passes to and fro through the vat and which constitutes a movable support for the latter.

2. A machine as in claim 1 in which the material support is a rotatable cylinder.

3. A machine as in claim 1 having means that restrict bodily movement of the material support to a vertical direction.

4. In a dye jigger machine or open-width material machine, the combination of a dye vat, means to move material to be dyed alter-

nately in opposite directions, spaced apart
rollers in the vat in contact with which such
material passes and a dye buoyant material-
engaging member having a convex material-
engaging surface, free to move vertically in
the dye under tension pull upon the material.

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