

J. MACADAM.
JIG ROLL.
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1,053,517.

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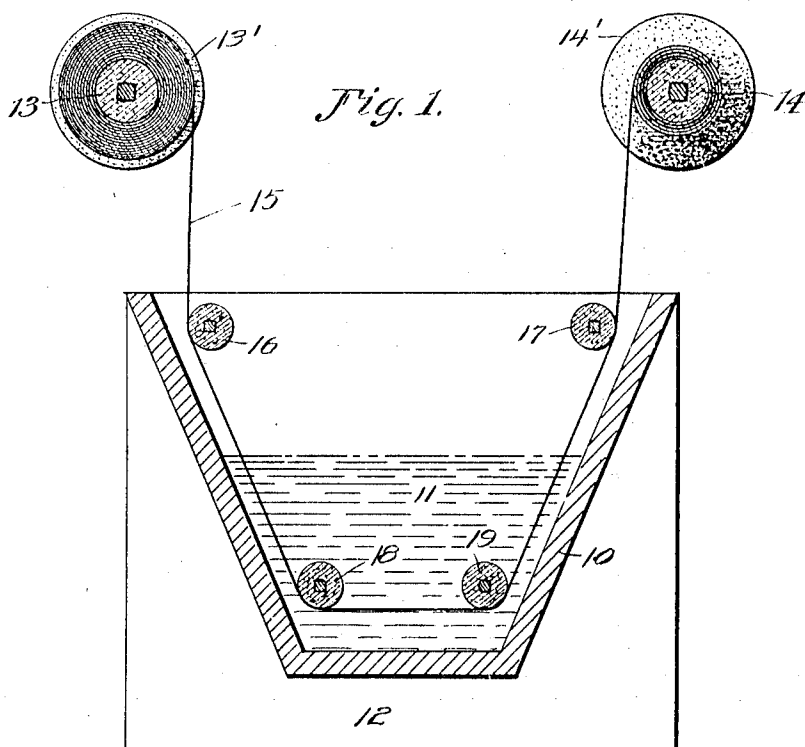
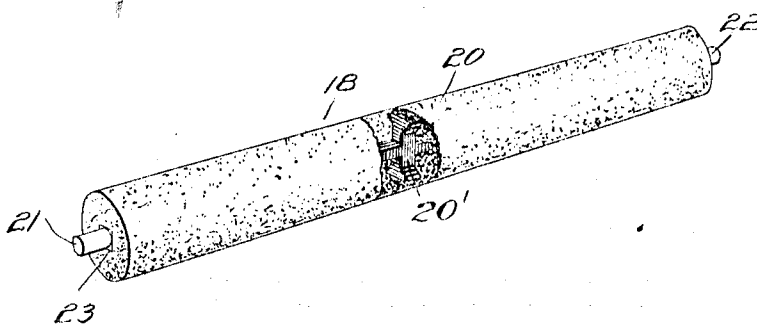


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN MACADAM, OF EDDYSTONE, PENNSYLVANIA, ASSIGNOR TO THE EDDYSTONE MANUFACTURING COMPANY, OF EDDYSTONE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

JIG-ROLL.

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To all whom it may concern:

Be it known that I, JOHN MACADAM, a citizen of the United States, and resident of Eddystone, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Jig-Rolls, of which the following is a specification.

This invention relates to jig rolls; in other words, to rolls for guiding and receiving fabric passed through a jig tub or vat containing dyeing liquor.

The process of jig dyeing consists in passing the fabric to be dyed back and forth through the dye liquor contained in a wood or metal vat or tank called a jig tub. It is wound and rewound back and forth on cylinders located above or adjacent the tub and guided through the liquor by rollers or cylinders submerged in the liquor.

Up to the present time jig rolls have only been made of wood, rubber, metal, rubber-covered metal and glazed earthenware. The wooden rollers are short lived, split up with the dyestuff, and are extremely hard to clean. Metal rollers are also extremely hard to clean but are more particularly objectionable because of the stains caused by the metal in dyeing, so that metal rollers are little used, the principal rollers being wood and rubber.

Rubber covered rollers are very expensive and on account of the large amount of friction wear out very quickly, speedily becoming uneven and disturbing the fabric. Rubber rolls are also extremely hard to clean. Earthenware rolls are more expensive than wooden, metal or rubber rollers, but better than the latter rolls in that they are readily cleaned as long as the glaze is intact, and they do not stain or discolor the goods. They are easily cracked, more or less seriously, and the cracks retain dyestuff and cause stains. The most decided practical objection to them, however, lies in the fact that it is not practicable to get an earthenware roller perfectly true in circumference.

The present invention has for its purpose to overcome the objectionable features of the rolls in common use, and to construct a roll not only durable but inexpensive and one which can be made to any size desired.

The above and other objects of the invention will be clear from the following de-

scription taken with the accompanying drawing, in which:

Figure 1 is an end view, parts being in section, showing a jig tub and the relative arrangement of the fabric and rollers; and Fig. 2 is a perspective view of one of the rollers shown in section in Fig. 1, the construction of the same being similar in most respects to all of the rolls shown.

Referring to the drawings, the numeral 10 designates the jig tub or vat adapted to contain the dyestuff 11, and which may be of any ordinary or preferred construction, in the present instance having supporting flanges 12 at its end. Cylinders 13 and 14, supported above or at any convenient position near the vat 10, are arranged to support and reel and unreel the fabric 15 as it is guided through the liquor 11 in the vat. The rollers 13 and 14, upon or against which the cloth saturated by the dyestuff is wound, are most liable to cause damage and trouble when defective in any way, as by cracking or splitting or being of uneven surface. Hence these rollers are constructed according to my invention to eliminate the troubles common to ordinary rolls.

The guiding means in the vat 10 comprises rollers 16 and 17, journaled near the upper edge and on opposite sides of the vat, but not being submerged in the liquor. Other rollers 18 and 19 are journaled on opposite sides of the bottom of the tub 10 and are at all times submerged in the liquor 11.

The rollers 13, 14; 16, 17 and 18, 19 are made of cement concrete and are of the general construction shown in Fig. 2. A cylinder of concrete 20 is formed around a through steel shaft, with suitable anchors 21 attached, having bearing portions 21 and 22 at its opposite ends and a square or angular section 23, intermediate the ends 21 and 22, and embedded in the concrete cylinder 20. The angular section forms a better bond against strains in the lathe. The rolls 13 and 14 may have concrete flanges 13' and 14' formed at the ends thereof and integral with the rolls.

I have found a satisfactory mixture for forming the cylinder to be a mixture of one-half cement and one-half well crushed granite. When the concrete has set, the roll is mounted in a lathe and ground or turned to a perfectly smooth and true cylindrical

surface, thereby obviating any frictional damages upon the goods handled, through uneven surfaces. Of course the mixture above given is subject to variations, care only being necessary that the materials employed will permit of cutting the cylinder to a smooth surface.

In the handling of jig dyes the colors are changed radically from one dye to the next in many cases and the time taken to clean up the jig tubs and rolls is a very serious item of expense.

Concrete rolls are very easy to clean and keep clean, and will not stain the goods in any way nor cause scrims in the cloth by wearing uneven.

The concrete rollers may be made of any desired size, will not crack, can readily be made and maintained cylindrical, which is not the case with earthenware rollers, and they are very inexpensive compared with the earthenware rolls.

Having thus described the invention, what is claimed is:

1. As a new article of manufacture, a con-

crete jig roll having a smoothly cut cylindrical surface.

2. As a new article of manufacture, a jig roll comprising a metallic shaft having anchoring means, and a concrete cylinder formed and anchored thereon, said cylinder having a smoothly cut cylindrical surface.

3. As a new article of manufacture, a jig roll comprising a metallic shaft having an angular section intermediate its ends, and a concrete cylinder formed on the angular section and having a smoothly cut cylindrical surface.

4. In a dyeing apparatus, a guiding or receiving roll for the fabric passing through the apparatus comprising a suitable shaft and a concrete body thereon having a smooth cylindrical surface.

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

JOHN MACADAM.

Witnesses:

MARTIN C. WHITLOCK,
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