

(No Model.)

2 Sheets—Sheet 1.

L. WELDON.

MACHINE FOR DYEING COTTON, &c.

No. 415,889.

Patented Nov. 26, 1889.

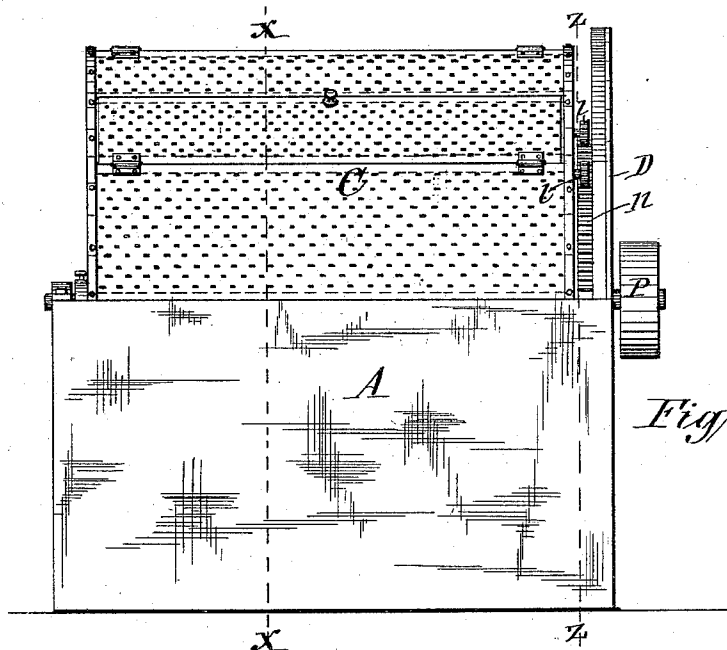


Fig. 1

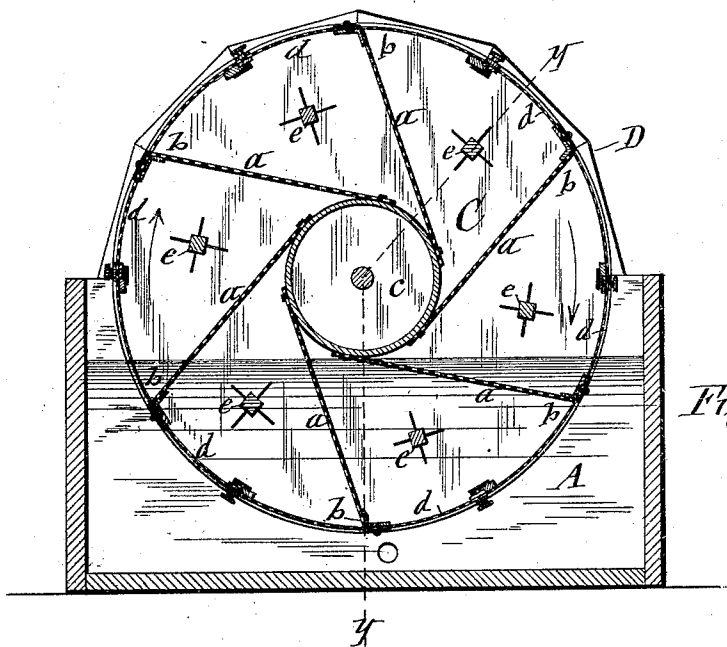


Fig. 2

WITNESSES:

C. L. Bendixon  
Mark W. Dewey

INVENTOR

Leonard Weldon

BY

Shull, Lissos & Shull  
his ATTORNEYS

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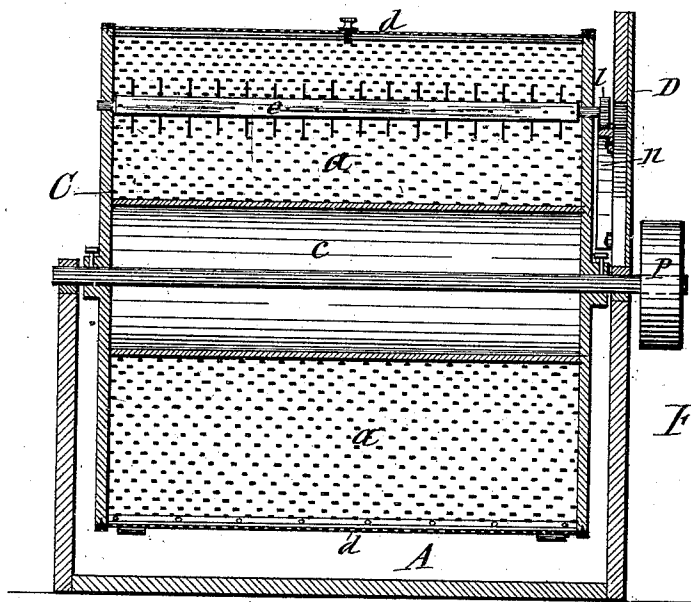


Fig. 3

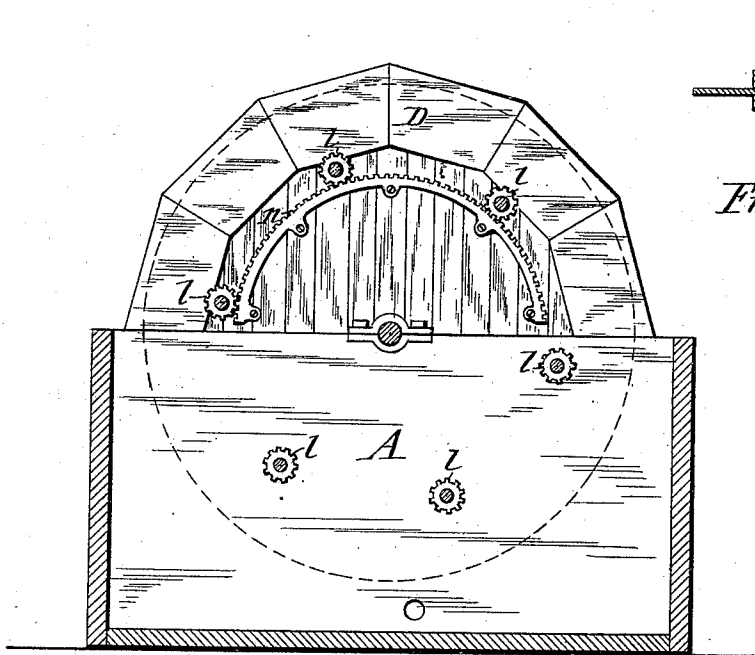


Fig. 4

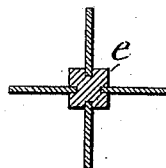


Fig. 5

WITNESSES:

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INVENTOR:

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# UNITED STATES PATENT OFFICE.

LEONARD WELDON, OF AMSTERDAM, NEW YORK.

## MACHINE FOR DYEING COTTON, &c.

SPECIFICATION forming part of Letters Patent No. 415,889, dated November 26, 1889.

Application filed July 1, 1889. Serial No. 316,142. (No model.)

*To all whom it may concern:*

Be it known that I, LEONARD WELDON, of Amsterdam, in the county of Montgomery, in the State of New York, have invented new and useful Improvements in Machines for Dyeing Cotton and Analogous Materials, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The purpose of this invention is to thoroughly and evenly dye raw cotton stock in an economical and expeditious manner; and it consists in the combination, with the rotary dipping cylinder or cage, of bars extended through the interior of the said cylinder or cage in such positions as to cause the cotton to fall upon said bars, and thereby break up and distribute the partially-wetted clods during the rotation of the dipping cylinder or cage, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a front elevation of a dyeing-machine embodying my invention. Fig. 2 is a vertical transverse section on line *x x*, Fig. 1. Fig. 3 is a vertical longitudinal section on line *y y*, Fig. 2. Fig. 4 is a vertical transverse section on line *z z*, Fig. 1; and Fig. 5 is a detached transverse section of a modification of the breaker-bar.

Similar letters of reference indicate corresponding parts.

A represents the vat in which to deposit the dye-liquor, and C is the rotary dipping drum or cage, which is journaled in suitable bearings secured to the top portions of the end walls of the vat, and has attached to its shaft, at the outside of the vat, a pulley P, by which to transmit rotary motion to said drum. The peripheral wall of the drum is perforated, and the interior of the drum is divided into separate and distinct longitudinal compartments by perforated longitudinal partitions *a a a*, which are extended tangentially from a cylinder *c*, arranged in the drum concentric with the axis thereof, and rigidly secured thereto, said partitions forming acute-angled pockets *b b* in the portions of the compartments adjacent to the periphery of the drum, for the purpose hereinafter explained. Each of the compartments of the drum is provided with a door *d* in the periphery of the drum for introducing and removing the cotton.

Longitudinally through each compartment is extended a bar *e*, which is arranged at or near the center of the compartment or in other suitable position to effect the purpose herein-  
after explained. Said bars, which I designate "breaker-bars," may be of any suitable shape in cross-section, and may also be armed with laterally-projecting pins or wings, as represented in Fig. 5 of the drawings, and I prefer to pivot them to the heads of the drum C and extend one of the journals of each through one of the heads of the drum, and at the outside of the latter I rigidly attach to said journals either friction rollers or pinions *l l*, which traverse a segmental track or rack *n*, which is arranged above the vat concentric with the axis of the drum and firmly secured to a breast D, which rises from the top of the vat.

The operation of my improved dyeing-machine is as follows: The dye-liquor being deposited in the vat A and the cotton introduced into the compartments of the drum D and the doors *d d d* thereof closed, the drum is set in motion, which is in the direction indicated by arrows in Fig. 2 of the drawings. During the motion of the drum the cotton in the compartment which rises from the vat falls into the acute-angled pocket of said compartment adjacent to the periphery of the drum, owing to the tangential disposition of the partition *a*, and hence the cotton is carried the maximum distance through the dye-liquor. In passing over the top of the rollers or pinions *l l* of the bars *e e* in the elevated compartments traverse the track *n*, and thereby cause the said bars to revolve. The cotton falling out of the acute-angled corners or pockets *b b* of the compartments strikes the rotating bars *e e*, which break up the lump of cotton and distribute the cotton in its descent, and thus allow the dye-liquor to thoroughly permeate the cotton and uniformly dye the same.

I do not limit myself to the use of a single bar *e* in each compartment of the drum C, as it is obvious that two or more such bars may be arranged in each compartment.

What I claim as my invention is—

1. In combination with the vat A, the rotary drum C, divided into separate and distinct compartments and perforated to admit the dye-liquor, and breaker-bars *e e*, extend-

ing through the central portions of the compartments, as and for the purpose set forth.

2. In combination with the vat A, the rotary drum C, formed with the central cylinder *c* and tangential partitions *a a a*, extending from said cylinder to the periphery of the drum, dividing the latter into a series of separate and distinct compartments, and the breaker-bars *e e*, extending through the central portions of the compartments, substantially as described and shown.

3. In combination with the vat A, the rotary drum C, divided into separate and distinct longitudinal compartments, the rotary breaker-bars *e e*, extended longitudinally

through the central portions of said compartments and pivoted to the heads of the drum, and having their journals extending through one of said heads, pinions on the protruding ends of said journals, the breast D, rising from the vat, and the segmental rack *n*, attached to said breast, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 27th day of June, 1889.

LEONARD WELDON. [L. S.]

Witnesses:

E. P. WHITE,  
HENRY C. McELWAIN.