

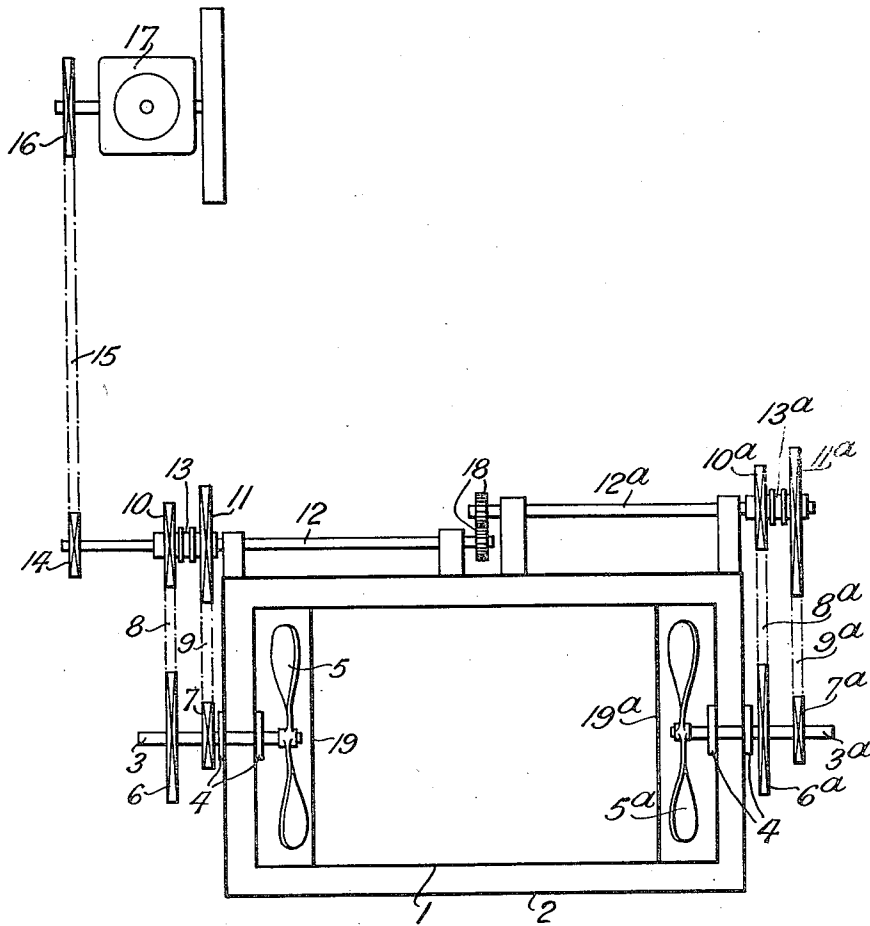
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APPARATUS FOR WASHING AND TREATING FIBERS, YARNS, FABRICS, AND THE LIKE.

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1,409,271.

Patented Mar. 14, 1922.



Inventor

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By his Attorneys

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UNITED STATES PATENT OFFICE.

FRIEDRICH LUDWIG BARTELT, OF CORSTON LODGE, NEAR BRISTOL, ENGLAND.

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Specification of Letters Patent. Patented Mar. 14, 1922.

Application filed December 9, 1921. Serial No. 521,105.

To all whom it may concern:

Be it known that I, FRIEDRICH LUDWIG BARTELT, a subject of the King of Great Britain, residing at Corston Lodge, near Bristol, England, have invented new and useful Improvements in Apparatus for Washing and Treating Fibers, Yarns, Fabrics, and the like, of which the following is a specification.

My invention relates to apparatus for cleansing, bleaching, degreasing, dyeing or otherwise treating vegetable, animal and silk fiber, yarns, textile fabrics and the like.

According to my invention violent agitation is imparted to an appropriate quantity of washing or other liquor to keep the fabrics in a buoyed condition in a washing or like apparatus by means of two or more screw propellers or the like mounted on rotating shafts arranged at an angle to or parallel with one another. The washing or other liquor is forced by the propellers against or through the articles being washed and the fabrics are driven against each other, thus causing friction between them and assisting in the removal of adhesive matter and creating uniform impregnation. Each propeller is located in an openwork cage which prevents contact between the blades and may serve also to divide the apparatus into compartments.

Means may also be provided for altering the speed or direction of rotation of the shafts.

Preferably I employ a horizontal and cylindrical tank.

The accompanying drawing is a plan of a machine constructed according to my invention.

1 is a tank supported in any convenient manner within an outer casing or jacket 2; steam or other heating medium can if desired be circulated through the space between the tank 1 and jacket 2 or heating coils may be employed. 3, 3^a are shafts mounted in bearings 4 on the tank 1 and jacket 2. The shafts 3, 3^a are provided with screw propellers 5, 5^a, located within the tank 1 and with sprocket wheels 6, 6^a, 7, 7^a, outside the jacket 2. The sprocket wheels 6, 7, are connected by chains 8, 9, to sprocket wheels 10, 11, either of which can be coupled to a shaft 12 by a clutch 13 and the sprocket wheels 6^a, 7^a, are connected by chains 8^a, 9^a, to sprocket wheels 10^a, 11^a, either of which

can be coupled to a shaft 12^a by a clutch 13^a. The shaft 12 is provided with a sprocket wheel 14 connected by a chain 15 to a sprocket wheel 16 on a motor 17 and the shafts 12, 12^a are connected together by gear wheels 18 in order that the shaft 12^a may be driven in the opposite direction to that of the shaft 12. The propellers 5, 5^a, are enclosed in cages 19, 19^a which may conveniently consist of wire netting.

In operation the material to be treated is placed within the tank 1, and washing or other liquor is admitted. The clutches 13, 13^a, are moved to put the sprocket wheels 10, 10^a, in gear so as to impart violent agitation to the liquor by means of the propellers 5, 5^a, which drive the liquor in opposite directions. At the end of the treatment the liquor is drained away from the tank 1 or removed therefrom by a pump and the clutches 13, 13^a, are moved so as to put the sprocket wheels 11, 11^a, in gear, thus driving the propellers 5, 5^a, at a higher speed whereby a strong current of air (preferably heated) is driven through the material to dry it.

In cases where two washing machines are employed the washing or other liquor is preferably run from one tank (at the end of the washing process) into the second tank. It is not necessary to have an inner cage, but if preferred it should be perforated to allow for a rapid re-collection of the water or liquor.

What I claim is:—

1. In apparatus for treating fibers, yarns, fabrics and the like with a liquor, the combination of a container, two propellers adapted to drive the liquor in opposite directions against the material treated, and variable velocity ratio mechanism for driving the propellers at different speeds.

2. The process of treating fibers, yarns, fabrics and the like with a liquor in a container which process consists in driving the liquor by means of propellers in opposite directions against the material treated, draining off the liquor and drying the material by means of a current of air produced by the propellers.

In testimony that I claim the foregoing as my invention I have signed my name this 22nd day of November, 1921.

FRIEDRICH LUDWIG BARTELT.