

J. S. AND S. S. LORD.
MACHINE FOR TREATING YARN IN HANK FORM.
APPLICATION FILED DEC. 15, 1919.

1,346,833.

Patented July 20, 1920.

Fig. 1.

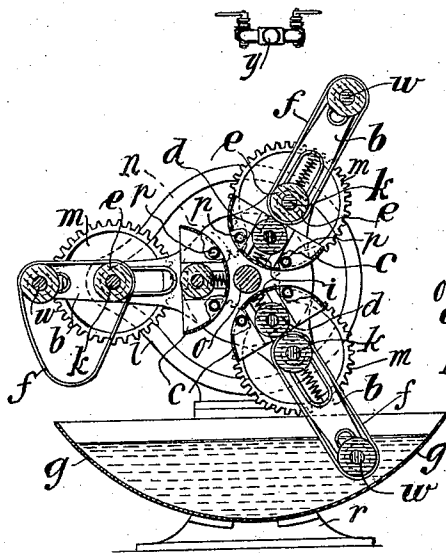


Fig. 2.

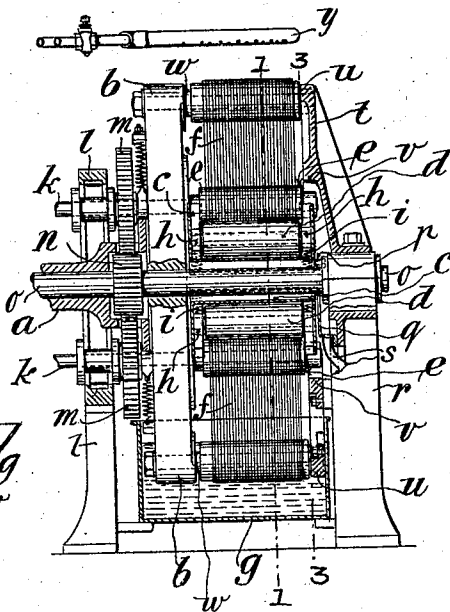
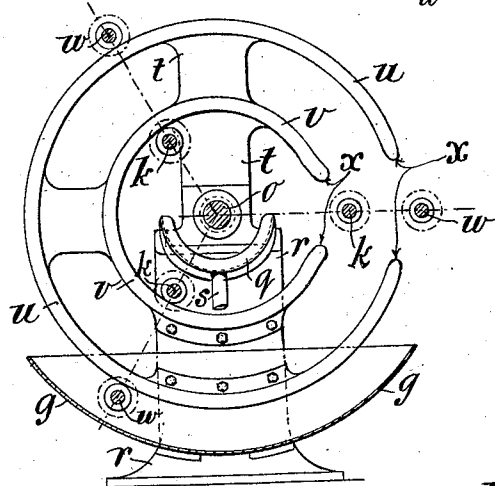


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH SPENCER LORD AND SAM SPENCER LORD, OF MANCHESTER, ENGLAND.

MACHINE FOR TREATING YARN IN HANK FORM.

1,346,833.

Specification of Letters Patent.

Patented July 20, 1920.

Original application filed April 11, 1919, Serial No. 289,459. Divided and this application filed December 15, 1919. Serial No. 345,000.

To all whom it may concern:

Be it known that we, JOSEPH SPENCER LORD and SAM SPENCER LORD, both subjects of the King of Great Britain, residing at Manchester, in the county of Lancaster, England, have invented certain useful Improvements in Machines for Treating Yarn in Hank Form, of which the following is a specification.

The invention relates to an improvement in the type of machine for dyeing, washing, scouring, sizing, bleaching and mercerizing yarn in hank form described in our U. S. application filed April 11th, 1919, Serial No. 289,459.

This invention has for its object to simplify and render said type of machine specially applicable for mercerizing and dyeing with different colors or chemicals.

A machine constructed in accordance with this invention comprises chiefly an auxiliary roller employed to run in frictional contact with each of the inner members on the pairs of hank carrying rollers in lieu of the central roller hitherto secured to the driving shaft of the machine and also means for positively driving said inner members from said driving shaft.

We attain these objects by the means illustrated in the accompanying sheet of drawing in which—

Figures 1 and 3 are vertical cross sections on lines 1—1, 3—3, Fig. 2, respectively, while

Fig. 2 is a sectional side view.

Similar letters refer to similar parts throughout the various views.

Referring to the figures generally, each end of the sleeve *a* is provided with a head having three radial arms *b* to each of which is secured a horizontally extending trough *c* in which is mounted an auxiliary roller *d* adapted to run in contact with the inner rollers *e*. These auxiliary rollers *d* serve to press out the dye liquor into the tank *g* or water or chemical fluids, which may be sprinkled thereon on arriving at the top.

The troughs *c* serve to catch the dye liquor, water or chemical fluid pressed out by inner rollers *e*.

The ends of the shafts of the auxiliary rollers *d* are each mounted in a block *h* rendered radially slidable between guides secured to each end of said trough *c* and placed under the influence of a spring *i*

adapted to press the auxiliary roller against the inner hank rollers *e*. The rear ends of the roller shafts *k* have each secured thereto between the frame *l* and arms *b* a spur wheel *m* arranged in gear with a spur pinion *n* secured on the driving shaft *o* whereby the rollers *e* are rotated.

The troughs *c* are secured at the inner end to the arms *b* and at the outer end provided with two outlet pipes *p* leading to a small cistern *q* secured to the pedestal *r* provided with an outlet pipe *s*.

To the inner side of the pedestal *r* is secured an arm *t* formed with two annular rims *u, v* which are concentric with the driving shaft *o* and adapted to support the outer ends of the roller shafts *w* and *k* respectively during the top half or bottom half of the rotation of said radial arms.

Each of the rims *u, v* has a gap *x* at one side, to permit of withdrawing the inner hank roller when the arm carrying it arrives in a horizontal position.

The driving shaft *o* is coupled up with a suitable form of driving gear (not shown) adapted to intermittently rotate the arms *b* a sixth of a revolution and said gear may also be rendered reversible in any suitable manner.

Above the machine a perforated pipe *y* (or pipes) is arranged as usual in similar machines, whereby the hanks *f* can be sprinkled with water or liquor, while the arms *b* remain in their upper inclined position, the water or liquor pressed out of the hanks being caught by the trough *c* and permitted to flow through the outlets *p* in the ends thereof into the cistern *q* and by the pipe *s* out of the machine.

We claim:—

1. A machine for dyeing, washing, scouring, sizing, bleaching and mercerizing yarn in hank form, comprising a driving shaft, a set of radial arms intermittently rotatable on said shaft, a pair of horizontally projecting rotary yarn carrying members on each of said arms, a trough secured to each of said radial arms and an auxiliary roller mounted therein running in frictional contact with said inner rotating member, for the purpose specified.

2. A machine for dyeing, washing, scouring, sizing, bleaching and mercerizing yarn in hank form, comprising a driving shaft, a set of radial arms intermittently rotatable on

said shaft, a pair of horizontally projecting rotary yarn carrying members on each of said arms, a trough secured to each of said radial arms, an auxiliary roller mounted
5 therein running in frictional contact with said inner rotating member, a bearing at each end of said trough for the shaft ends of said auxiliary roller to rotate in and springs pressing said auxiliary roller into
10 contact with said inner of said members, for the purpose specified.

3. In a machine for dyeing, washing, scouring, sizing, bleaching and mercerizing yarn in hank form, comprising a driving
15 shaft, a set of radial arms intermittently rotatable on said shaft, a pair of horizontally projecting rotary yarn carrying members on each of said arms, a trough secured to each of said radial arms, an auxiliary roller
20 mounted therein running in frictional contact with said inner rotating member, two stationary annular rims having each a gap in one side located concentrically at the end of said driving shaft adapted to support the
25 outer ends of the shafts of each of said pairs

of hank carrying rollers, for the purpose specified.

4. In a machine for dyeing, washing, scouring, sizing, bleaching and mercerizing yarn in hank form, comprising a driving
30 shaft, a set of radial arms intermittently rotatable on said shaft, a pair of horizontally projecting rotary yarn carrying members on each of said arms, a trough secured to each of said radial arms, an auxiliary roller
35 mounted therein running in frictional contact with said inner rotating member, a spur wheel secured to the rear end of each of the inner of said tank carrying members and a spur pinion secured to the driving shaft in
40 gear with said wheels, for the purpose specified.

Signed at Manchester this 27th day of November, 1919.

JOSEPH SPENCER LORD.
SAM SPENCER LORD.

Witnesses:

ALFRED BOSSHARDT,
MARY I. BOSSHARDT.