(No Model.)

L. A. UPSON.

Machine for Scouring and Cleaning Woolen Yarn.

No. 241,571. **Patented May 17, 1881.**

Fig. 1

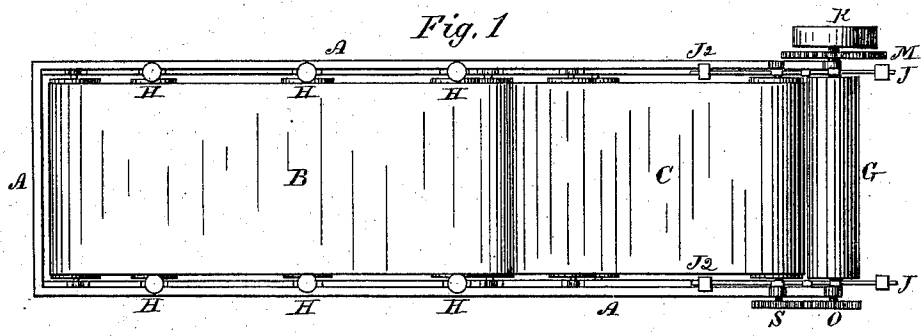


Fig. 2

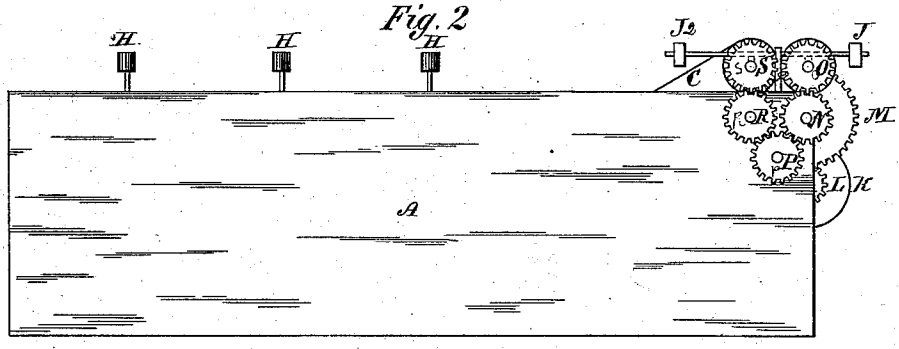
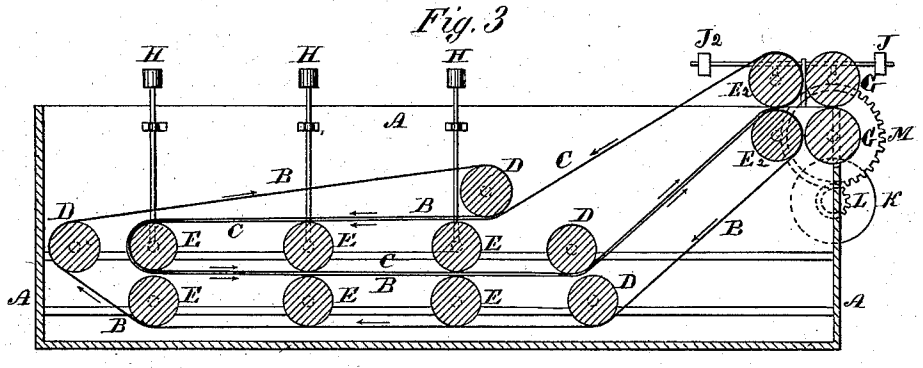


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

LYMAN A. UPSON, OF THOMPSONVILLE, CONNECTICUT.

MACHINE FOR SCOURING AND CLEANING WOOLEN YARN.

SPECIFICATION forming part of Letters Patent No. 241,571, dated May 17, 1881.

Application filed July 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, LYMAN A. UPSON, of Thompsonville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Scouring and Cleaning Woolen Yarn; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to machines for scouring and cleaning, and more especially to those adapted for cleaning woolen yarn.

The object of my invention is to perform this operation in a more perfect and thorough manner than has heretofore been done, and without injuring the yarn, as is now the case with the machines in common use.

In the accompanying drawings, which illustrate my invention, Figure 1 is a top view of my improved machine. Fig. 2 is a side view of the same. Fig. 3 is a longitudinal vertical section through the middle of the machine, showing the parts beyond.

A is a vat or tank for containing the scouring apparatus and the liquid in which the yarn or other material is to be washed.

B and C are two continuous aprons for carrying the material to be cleaned through the machine. They run in the direction indicated by the arrows in Fig. 3.

D D, &c., are guide-rollers for giving the proper direction to the aprons.

E E are pressure-rollers, serving, also, to guide the aprons; but their chief object is to press and squeeze the material as it passes between them. The rollers E^2 E^2, around which the aprons pass, are those from which they receive their motion, and are driven in the direction of the arrows.

G G are two other pressure-rolls, through which the material passes, but which are outside of the line of aprons.

The rollers D and E are all pivoted upon suitable bearings at their ends upon the inside of the vat A. The upper roll of each pair is pressed downward by a weight, H, as shown in the drawings, or the vertical rods may be pressed down by suitable springs in the place of weights. The upper one of each of the pairs of rolls E^2 and G is pressed down by a lever and weight, J J^2.

K is the pulley over which the belt passes to drive the machine. Upon it is the pinion L, which gears into the wheel M, attached to the shaft of the lower pressure-roll G. Upon the opposite end of this shaft is the gear-wheel N, which drives the wheel O upon the shaft of the upper roll G. The gear-wheel N also drives the wheels R and S, through the intermediate wheel P, so as to give them the proper direction. These wheels are fixed to the shafts of the rolls E^2, and thus drive the aprons, as before described.

The operation of my improved machine is as follows: The tank is filled with the washing-liquid to any desired height above the pressure-rolls E, and the machine is set in motion by means of a belt upon the pulley K, so as to move the aprons in the direction of the arrows. The skeins of yarn or other material to be cleaned are laid upon the top of the apron B in succession, and are carried by this apron around the upper roller D and thence between the two aprons B and C, along the top of the upper rolls E, and then between the pairs of pressure-rolls E. As the skeins successively pass between the rolls E they are pressed with sufficient force to squeeze or wring out the liquid that they absorb in passing through the intervening spaces, and this alternate filling and wringing in the washing-liquid cleans the yarn. The skeins are finally carried up to the rolls E^2, where they are delivered by these rolls to the finishing-rolls G, which wring out the remaining liquid and deliver the yarn into a suitable receptacle.

It is evident that my improved machine is applicable to the cleaning and washing of a great many articles requiring such a process; but in the form described it is especially adapted to the cleaning of woolen yarn.

It will also be observed that the particular arrangement of guiding and pressure rolls is immaterial, the successive filling and squeezing process and the final wringing being the essential features of my improved machine.

What I claim as my invention is—

The combination of the wringing-rolls G with the aprons B and C, the guiding-rolls D, and pressure-rolls E, substantially as described.

Witnesses: LYMAN A. UPSON.

WILMOT HORTON,

THEO. G. ELLIS.