(No Model.)

G. JAGENBURG.

APPARATUS FOR DYEING.

No. 386,985. Patented July 31, 1888.

Fig. 1.

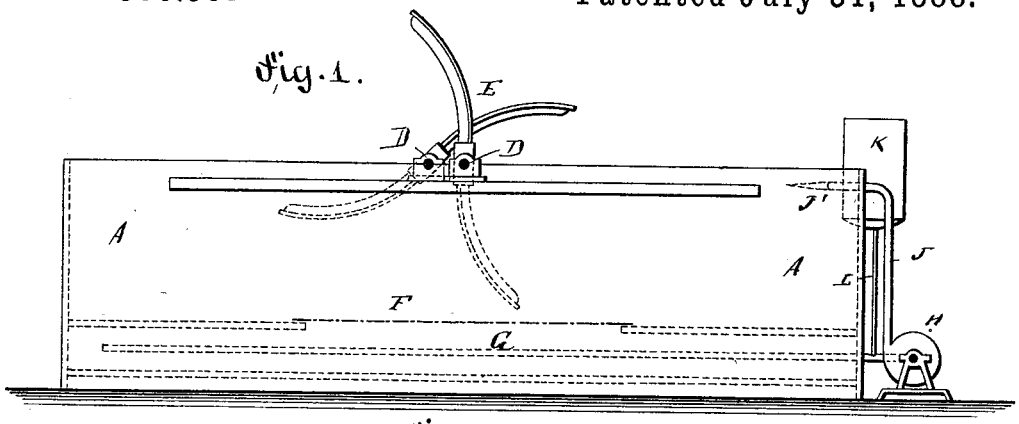


Fig. 2.

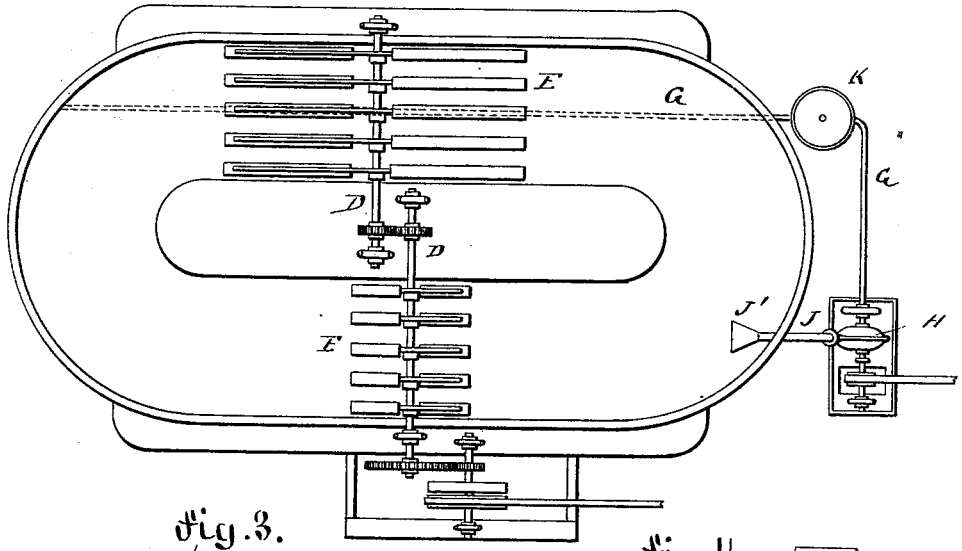


Fig. 3.

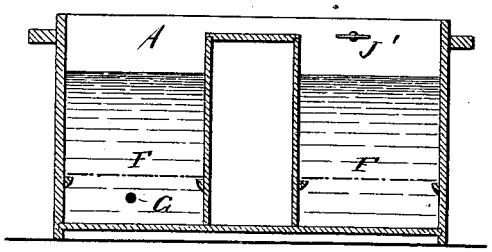
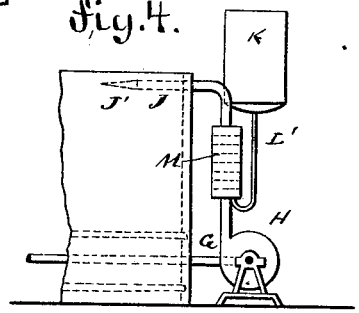


Fig. 4.



WITNESSES:

Fol. N. Rosenbaum.

Abney Mann

INVENTOR,

Gustav Jagenburg,

BY Goepel & Raegener,

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GUSTAV JAGENBURG, OF RYDBOHOLM, SWEDEN.

APPARATUS FOR DYEING.

SPECIFICATION forming part of Letters Patent No. 386,985, dated July 31, 1888.

Application filed October 20, 1887. Serial No. 252,879. (No model.) Patented in Germany January 5, 1887, No. 40,602; in Sweden February 4, 1887, No. 916, and in Italy April 16, 1887, No. 21,381.

To all whom it may concern:

Be it known that I, GUSTAV JAGENBURG, a subject of the King of Sweden, residing at the city of Rydboholm, in the Kingdom of Sweden, have invented certain new and useful Improvements in the Process of and Apparatus for Dyeing Loose Cotton, (for which I have obtained a patent in Germany, No. 40,602, dated January 5, 1887; in Italy, No. 21,381, dated April 16, 1887, and in Sweden, No. 916, dated February 4, 1887,) of which the following is a specification.

Heretofore it has been customary to boil loose cotton after the same has been dyed, and this caused the cotton to lose all its pliability and to become stiff and brittle, so that it could not be spun on machines usually used for spinning cotton, but only on machines used for spinning wool, and then only after saponified oil had been added.

The object of my invention is to provide a new and improved apparatus for dyeing loose cotton, whereby the boiling of the cotton after the dyeing operation can be dispensed with.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter, and then pointed out in the claim.

In the accompanying drawings, Figure 1 is a side view of my improved apparatus for dyeing loose cotton. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional view of the same. Fig. 4 is a detail view of part of one end of the apparatus, showing a modified construction.

Similar letters of reference indicate corresponding parts.

The vat A has the usual shape of dyeing-vats—namely, that of a parallelogram having rounded ends—and on the top of said vat the transverse shafts D are mounted, that carry the agitating-arms E. A belt and pulleys and gearing are provided for the purpose of rotating the shafts and operating the arms or agitators E. A short distance above the floor of the vat the perforated false bottom F is provided, and under the same the suction-pipe G extends, which is connected with the rotary or other pump H or with an injecting or like apparatus. The delivery-pipe J of the pump extends upward and is passed through the walls of the tank a short distance below the top edge, and on the end of said pipe a nozzle, J', or like jetting device is secured.

A receptacle, K, containing the color-solution or concentrated dye-liquid is connected by the pipe L with the suction-pipe G of the pump, or said tank can be connected by the pipe L' with the delivery-pipe J of the pump; but in this case said pipe J must be provided with an enlargement, M, in which a number of horizontal screens are provided for the purpose of causing the concentrated color-solution or dye-liquid and the liquid passing through the delivery-pipe to mix very intimately.

The receptacle K is located above the level of the dye-liquor in the vat A for the purpose of preventing the liquor in the vat from rising into the dye-receptacle K.

The material to be dyed is placed into the vat A, which is filled with water or any suitable liquid or solution required for the dyeing process.

The liquid in the vat is drawn through the pipe G into the pump H and forced by the said pump through the pipe J back into the vat, whereby a continuous circulation is kept up in the liquid in the vat.

The arms or agitators E agitate the material in the vat. The concentrated color-solution or dye-liquid passes from the tank K through the pipe L into the suction-pipe G, whereby the said color-solution is diluted, and in this diluted state ejected into the vat.

As the circulation of the liquid in the vat is continuous, the diluted color-solution is continuously ejected into the vat until such color-solution is exhausted.

As shown in Fig. 4, the color-solution may be conducted into the delivery-pipe of the pump, and is thus also diluted and ejected into the vat.

According to the nature of the color-solution or dye-liquid the loose cotton or other fibrous material can be dyed in a greater or less time.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In an apparatus for dyeing loose cotton or

like material, the combination, with a vat, of a suction-pipe for drawing the liquid from the vat, a pump connected with said suction-pipe, a discharge-pipe connected with the pump and terminating in the vat, and a receptacle for receiving the concentrated dye solution, located above the level of the dye-liquor in the vat and connected outside of the vat with the suction or discharge pipe, so that said solution is intimately mixed with the dye-liquor, substantially as herein shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAV JAGENBURG.

Witnesses:

NERE A. ELFWING,

AXEL LJOÖ.