

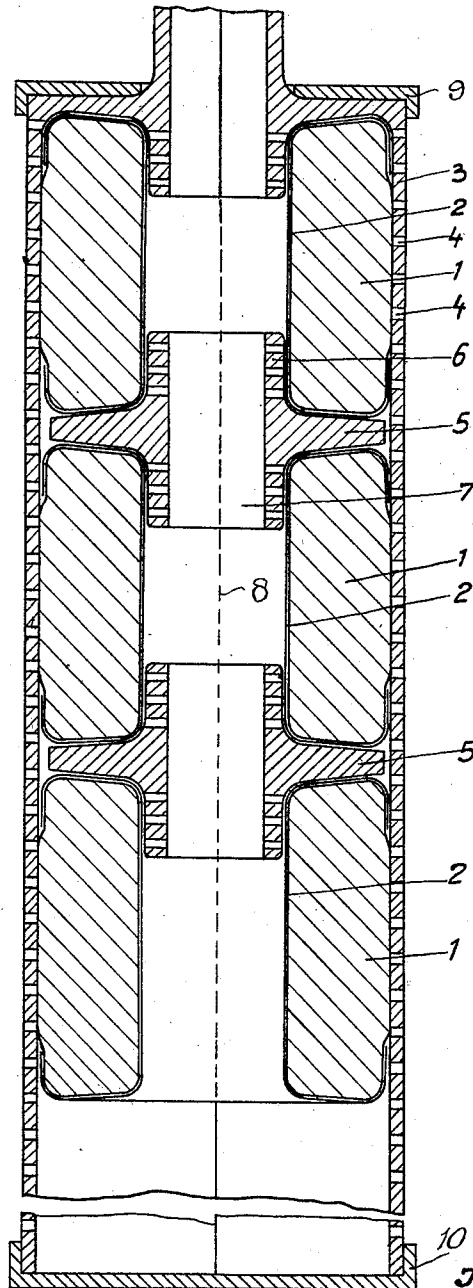
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APPARATUS FOR TREATING CHEESES WITH LIQUIDS

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UNITED STATES PATENT OFFICE

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APPARATUS FOR TREATING CHEESES WITH LIQUIDS

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This invention relates to a process for treating crosswound bobbins or cheeses, more particularly of artificial silk, with liquids. By means of the invention artificial silk may be produced forthwith in a wound form such as is usual in commerce, and in this wound form may be subjected to the various after-treatments.

The purpose of the invention consists in the fact that the artificial silk is washed, bleached, desulphurized, and if necessary dyed without it being necessary previously to re-spool or reel the product. In this way a very considerable saving of work is produced. Furthermore, the danger of damaging the yarn is considerably diminished, if not eliminated altogether.

According to this invention the cheeses are arranged with the aid of intermediate members, in a tube, which may be divided into longitudinal direction, and are there subjected to the various liquid treatments.

According to the invention intermediate members may be used, which may be provided with perforated tubular portions or flanges which project wholly or partially into the central opening of the cheeses.

Further, according to the invention, the liquid may be forced or drawn through the cheeses either from the inside to the outside, or vice versa, or alternately from the inside to the outside and from the outside to the inside.

The process according to the invention may also be carried out in such a way that the cheeses are immersed partially or wholly in the liquid and rotated about their longitudinal axes.

Finally, the invention embraces a modification in which the cheeses are jacketed with a permeable fabric before the treatment with liquid takes place.

For the purpose of elucidating the invention a detailed description of the new process is herewith appended, said description referring to the accompanying drawing in which one of the many modifications of the invention is given as an example.

In the accompanying drawing 1, 1, 1 are the cheeses which, for example, are spun on a

suitable permeable layer 2, e. g. of cotton. The various spools are arranged in the tube 3 which is provided with perforations 4. In order to facilitate the introduction of the cheeses into the tube, the latter may consist, for example, of two parts divided along an axial, vertical plane as at 8, forming edges which fit on to one another in a longitudinal direction and may be secured to one another in any suitable manner. The securing means have here been shown as an annular cap 9 fitting over the top, and a cup-shaped base 10 closing the bottom end of the tube 3. The cap and the base may be threaded on the ends of the tube or only pushed on tightly. Suitable intermediate members are arranged between the cheeses 1, 1 which, according to the constructional example shown, are provided with tubular projections 6 which project into the cheeses. The intermediate members 5 are provided with a central opening through which the liquid can flow. If necessary means may be provided to maintain the intermediate members 5 at definite distances from one another.

After the introduction of the cheeses into the perforated tube 3, the halves of the tube are well secured to one another, whereby the cheeses are somewhat pressed together in the longitudinal direction of the tube. The treatment liquid is then passed through the cheeses. This may be effected in various ways. For example, the tube with the cheeses may be placed in a vessel containing the treatment liquid and at the top of the tube a connection with a suction device may be arranged. In this manner the treatment liquid penetrates the perforations 4 into the cheeses and is led away through the central channel 7.

Liquid may also be forced into the tube 3 from below, the tube being closed at the top so that the liquid again penetrates through the material to be treated.

Again, the tube 3 may be placed in a vessel in a horizontal position, preferably in such a way that only a part of the tube projects into the liquid. The tube 3 may then be rotated so that the cheeses only come into

contact with the treatment liquid intermittently.

In order to avoid damaging the cheeses during introduction into the tube or during or after the treatment, they may be jacketed on the exterior with a liquid-permeable fabric, which may be removed, if necessary, after the final treatment.

As compared with the processes hitherto known, the new process offers very substantial advantages since the yarn, which is spun in the form of cheeses at the start, does not any longer have to be unwound, reeled or subjected to similar operations.

The employment of the process according to this invention, therefore, not only implies a considerable protection of the artificial silk during the treatment with liquid but it also involves a substantial saving in costs.

What I claim is:

1. An apparatus for washing cross coils or cheeses, consisting of a perforated tube, the inner diameter of which corresponds roughly to the outer diameter of the coils, and intermediate pieces with a central bore, which are inserted between the end faces of the coils.

2. An apparatus for washing cross coils or cheeses, consisting of a perforated tube, the inner diameter of which roughly corresponds to the outer diameter of the coils, and intermediate pieces having a central bore, which are inserted between the end faces of the coils, and means, which are adapted, to pass the treating fluids through the coils and through the wall of the perforated tube.

3. An apparatus for washing cross coils or cheeses, consisting of a perforated tube divided in the longitudinal direction, intermediate pieces having a central bore and tubular projections on the same, the diameter of which roughly corresponds to the diameter of the interior of the coils.

4. An apparatus as claimed in claim 1, in which the perforated tube is closed at one end and provided at the other end with an aperture.

5. An apparatus for washing cross coils or cheeses, consisting of a perforated tube closed at one end and a non-perforated connection tube located at the other end of the tube, which connection tube is suitable for connecting the interior of the tube with a suction device.

6. An apparatus as claimed in claim 3, in which the tubular projections located on the intermediate pieces are perforated.

7. An apparatus as claimed in claim 3, in which the height of the tubular projections, arranged on the intermediate pieces is less than the half height of the coils placed thereon.

8. An apparatus for washing cross coils

or cheeses, consisting of a tube split into two parts longitudinally, intermediate pieces having a central bore and perforated tubular projections on these intermediate pieces, the height of which is less than half the height of the coils or cheeses.

9. An apparatus for washing cross coils or cheeses, consisting of a perforated tube divided in the longitudinal direction, intermediate pieces having a central bore, which are provided on both sides with perforated tubular projections, a pervious layer inside the coil and a non-perforated connecting tube arranged at the end of the perforated tube.

In testimony whereof I have signed my name to this specification.

HENDRIK NOLET.