

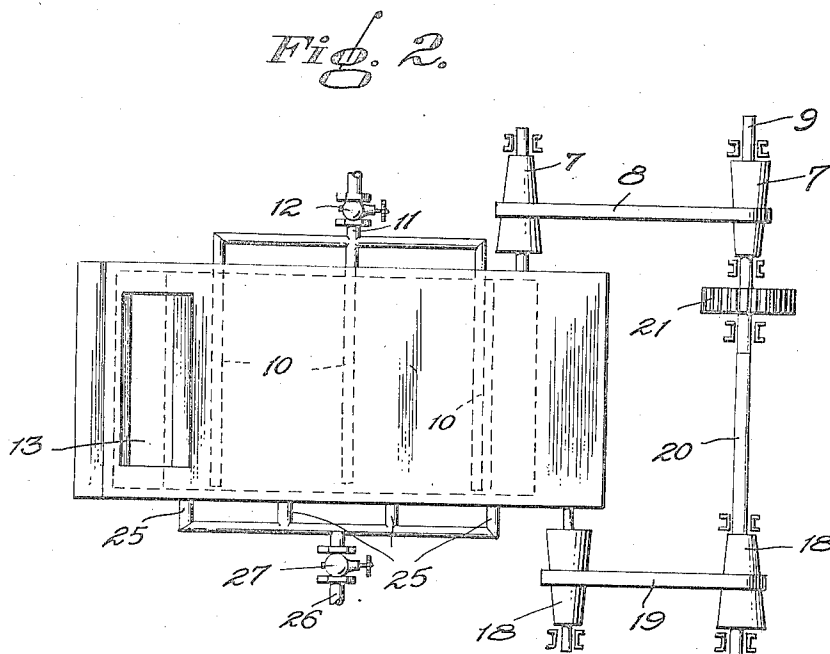
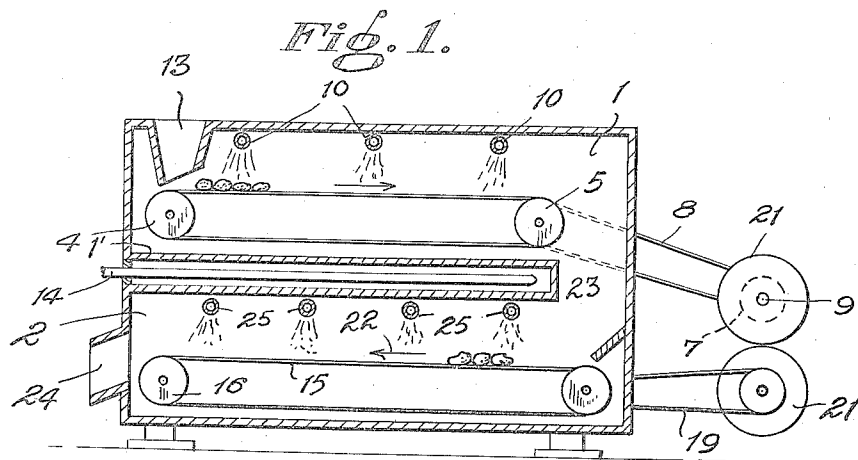
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METHOD FOR THE SUBSEQUENT TREATMENT OF YARNS

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METHOD FOR THE SUBSEQUENT
TREATMENT OF YARNS

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2 Claims. (Cl. 28—58)

This invention has reference generally to the conditioning of yarns and more particularly has reference to an improved method in the subsequent conditioning of yarns. The invention is a continuation in part of my prior application filed Feb. 3, 1932, bearing Serial Number 590,699.

It has already been known to steam yarns for refining them and it has also been proposed to utilize moistening means for the treatment of yarns. Likewise processes have been employed for steaming and moistening yarns simultaneously.

In contradistinction to the known methods it is the primary aim and object of the present invention to provide a method for subsequent conditioning of yarns and the like in which the yarns are first subjected to the action of a dry steam heat to remove kinks therefrom and immediately thereafter subjected while in this dry steamed and heated condition to a chemical moistening action thereby improving the fiber of the yarn in many respects, such as retaining moisture therein, lubricating the yarn, increasing the strength thereof and rendering the yarn moth and mildew proof.

As an additional and equally important object the method consists in slowly and continuously subjecting the large number of cops of yarn to a dry steam heat and then quickly and continuously passing the cops in a separated condition through a chemical moistening medium so that they will be thoroughly moistened while still in a heated condition.

A suitable arrangement for carrying out the new method is illustrated diagrammatically in the accompanying drawing, in which:—

Fig. 1 is a longitudinal section through the device, and

Fig. 2 a plan view.

The device consists substantially of a housing divided into two compartments 1 and 2 by a horizontal double walled partition 1'. The upper compartment 1 represents the steaming device and the lower compartment 2 the moistening device. In the upper compartment is a continuous conveyor consisting of an endless conveyor band 3 which is guided by two rollers 4 and 5. The band travels in the direction of the arrow 6. The band is driven from a change speed arrangement consisting of two conical drums 7 and a belt 8. The driving drum is rotated by a power shaft 9. In the steaming chamber 1 are several perforated tubes 10 which are fed with dry steam from a common dry steam supply pipe 11. In the supply pipe 11 is a regulable valve 12. The top wall of the steaming chamber 1 is provided with

an opening 13. Below the steaming chamber 1 a heating arrangement 14 is provided, preferably actuated in the partition 1' to prevent condensation and dripping in the steaming chamber.

In the moistening compartment there is also a continuous conveyor consisting of an endless band 15 which is guided over two rollers 16 and 17. The roller 17 is also driven by a change speed arrangement consisting of two conical drums 18 and a belt 19. The driving shaft 20 is connected by two toothed wheels 21 having the same number of teeth with the main driving shaft 9. Consequently the conveyor 15 travels in the opposite direction to the conveyor 3, as indicated by the arrow 22.

The two compartments 1 and 2 are arranged in communication with each other on the right-hand side in the drawing by a vertical passage 23, provided by terminating the horizontal partition 1' short of the adjacent end wall. At the delivery side of the conveyor 15 is a discharge opening 24.

In the moistening compartment 2 are several perforated tubes 25 which are fed with a chemical moistening liquid such as Hygrolit, from a common supply pipe 26, in which is a regulable valve 27.

The chemical moistening liquid, Hygrolit, is registered by Trade-Mark 247,396 dated Sept. 25, 1928 for chemical moistening medium which consists generally of the following suitably proportioned ingredients, iso-propyl-ether, parachlorometacresol and other coal tar products, sulfurated castor oils and ethers.

When the apparatus is in operation the yarn bobbins or cops are thrown through the top feed opening 13 on to the upper conveyor 3. The cops are thereupon passed slowly by the conveyor along under the steam spraying tubes 10, thus causing the yarn to be high heated and relieved of kinks. At the delivery end of the conveyor 3 the heated cops immediately fall through the passage 23 on to the receiving end of the second conveyor 15. The latter operates at a much higher rate of speed and carries the heated cops in spaced relation in the opposite direction along under the moistening tubes 25 up to the discharge opening 24. By means of the change speed devices 7, 8 and 18, 19 the speed of each conveyor can be independently regulated.

One of the particular advantages obtained by the present method is the immediate subjecting of the heated yarns to a chemical moistening action because it has been found that yarns that are first subjected to a steam treatment and then

to a moistening treatment the prior steaming has a tendency to render the yarn brittle and the inventor has found after repeated experiments that the invention consists in the immediate and successive treatments of dry steam heat and a chemical moistening treating action.

Having thus fully described the invention what is believed to be new and desired to be secured by Letters Patent is:—

10 1. The method of conditioning yarns consisting in first subjecting the yarn to the action of dry steam heat in order to remove kinks therefrom and immediately subjecting the yarn while

still in the dry steam heated condition to the action of a moistening medium containing a suitable proportion of Hygrolit whereby to improve the fiber of the yarn.

2. The method of conditioning yarns consisting in continuously and slowly subjecting the yarn to a dry steam action to remove kinks therefrom and immediately thereafter and while still in the dry steam heated condition continuously and rapidly subjecting the steamed yarn to a moistening medium containing Hygrolit whereby to improve the textile fiber of the yarn.

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