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PROCESS AND APPARATUS FOR TREATING FABRICS.

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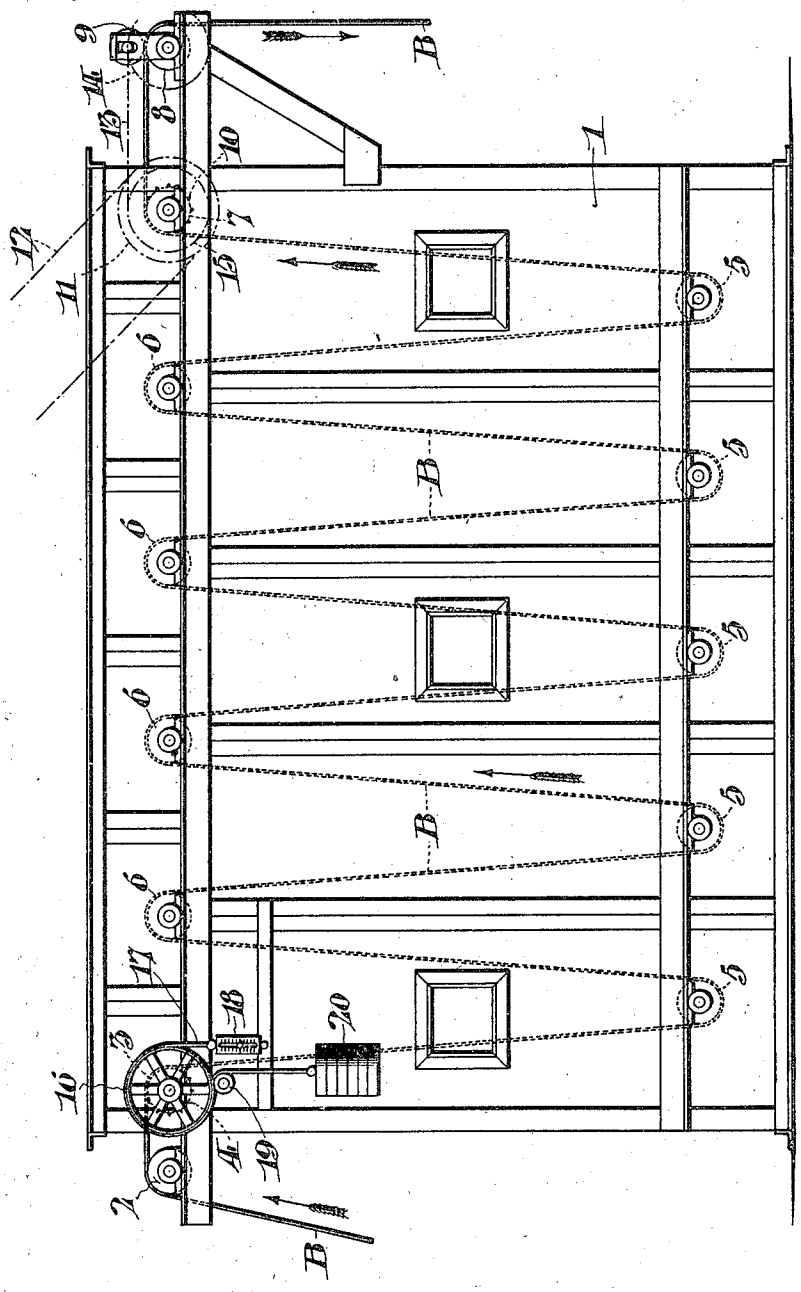

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PROCESS AND APPARATUS FOR TREATING FABRICS.

1,137,719. Specification of Letters Patent. Patented Apr. 27, 1915.

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To all whom it may concern:

Be it known that I, WALTER W. SIBSON, of the city and county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Process and Apparatus for Treating Fabrics, whereof the following is a specification, reference being had to the accompanying drawings.

The invention relates more particularly to a process and apparatus for treating long lengths of fabric, such as fabric belting, or the like.

Fabric belting after being treated and dried when cut into lengths for use often stretches so that it is necessary to remove portions of the belting in order to maintain a proper driving length.

An object of the present invention is to provide a process and apparatus for treating fabric in long lengths, so that when the same is cut in predetermined lengths for use, it will maintain substantially such predetermined length.

In the drawing, the figure shows more or less diagrammatically an apparatus embodying my improvements and by which my improved process may be carried out.

The process consists, generally, in placing sections of long lengths of belting under tension in the direction of its length and continuously traveling said belting and progressing said area of tension along said belting, and at the same time subject said section under tension to a drying atmosphere. My preferred form of apparatus for carrying out said process consists, generally, of a drying chamber or compartment through which the belting is caused to travel continuously. The section of the belting within the drying compartment passes over rollers at the bottom and top of the compartment so as to increase the length or section of belting subjected to the drying atmosphere in the compartment. A positive feeding means engages the belting and draws the same through the compartment while a positive tension is placed on the belting where the same leads into the compartment and thereby the section of the belting exposed to the drying atmosphere of the compartment is constantly under a tension in the direction of the length of the belting.

Referring more in detail to the drawing, my improved apparatus consists of a casing 1, which may be of any desired construction. This casing is provided with a suitable heating device so that the atmosphere within the casing or compartment is properly conditioned and tempered for drying the belting passing through the same.

The belting B which has been properly treated is led into the compartment over a roller 2, and a drum 3. This drum 3, is provided with spuds 4, which engage the belting and prevent the same from slipping on the drum. The belting passes over a series of rollers 5, 5, adjacent the lower part of the compartment and a series of rollers 6, 6, adjacent the upper part of the compartment. These rollers are smooth and allow the belting to run freely over the same. The path of travel of the belting is indicated in broken lines in the drawings. The belting B passes over a drum 7, and thence from the compartment over a roller 8. A weighted roller 9, bears on the belting on the roller 8. The drum 7, is provided with spuds 10, which engage the belting and prevent the same from slipping on the drum. This drum 7, is positively driven by a sprocket pulley 11, from a sprocket chain 12, leading from the source of power. The roller 8, is also positively driven by a sprocket chain 13, which runs over a sprocket wheel 14, connected to the roller 8, and a sprocket wheel 15, connected to the shaft carrying the driving wheel 11.

The drum 3, at the opposite end of the casing 1, carries a belt wheel 16. A brake strap 17, is connected at one end to an indicator spring 18, and passes around said belt wheel and over a guide roller 19, and is connected to a series of weights 20. These weights may be varied as to number, thereby increasing or decreasing the braking power of the brake strap on the belt wheel 16.

The operation of my apparatus is as follows: The belting B which has been suitably treated and is ready for drying is passed into the drying compartment over the drum 3, and is then led over the pulleys 5, and 6, and finally over the drum 7, and thence over the roller 8. The positive rotation of the drum 7, will stretch the belting in the direction of its length, as the only means for rotating the drum 3, is the pull on the belting. The belting is preferably

fed through the compartment continuously and the section between the drums 3, and 7, will be, therefore, continuously under tension during the drying of this section. The continuous travel of the belting causes the section being dried to be progressed along the length of the belting and thereby long lengths of fabric belting may be uniformly treated so that any section or given length cut from said long length of fabric belting will substantially maintain its length under use.

While I have described the fabric belting as traveling continuously through the drying machine, it will be understood from certain aspects of the invention, that the fabric may be caused to travel intermittently. If the fabric stops in its travel, the tension will still be on the same, and the drying could continue. This operation of the apparatus may be desirable in connection with very heavy fabrics containing a large amount of water or other liquid. It will also be apparent from the above description that the tension on the section of the fabric being dried may be regulated or adjusted to suit the condition of the fabric. That is to say, a light weight fabric can best be handled under certain tension while being dried, and a different tension is found desirable when handling heavier weight fabrics. The operator can set the tension by changing the number of weights, so as to impart practically any desired tension on the goods. In other words, by the variable brake mechanism, together with the indicator, the tension may be adjusted according to the particular requirements of different classes of goods.

The above apparatus not only provides means for imparting the desired tension to the goods while under treatment, but the same conditions of tension may be quickly established for like kinds of fabric. My process consists, therefore, in this progressive treatment of sections of the belting whereby said belting may be caused to travel through the drying apparatus and the section being dried maintained under a tension in the direction of its length.

It is obvious that minor changes in the details of construction in the apparatus and the arrangement of parts may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described my invention, I claim:

1. The process of producing long lengths of fabric belting sections, which will maintain substantially a predetermined length, consisting in placing sections of said belting under tension in the direction of its length, continuously traveling said belting, progressing said area of tension along said belting, drying the entire section under tension, and varying the tension of the section being dried to suit the condition of the fabric being treated.

2. An apparatus for treating long lengths of fabric belting comprising a drying compartment, means at the delivery end of the drying compartment for positively drawing the fabric belting through the compartment, and means adjacent the entrance for retarding the movement of the belting into the compartment, whereby the section of belting in the compartment being dried is placed under tension.

3. An apparatus for treating long lengths of fabric belting comprising a drying compartment, a drum at each end of the compartment, means carried by the drums and engaging said belting for preventing the same from slipping on the drums, guide rollers disposed between the drums over which the belting is guided, means for positively driving the drum at the delivering end of the compartment, and means for retarding the movement of the drum at the receiving end of the compartment.

4. An apparatus for treating long lengths of fabric belting comprising a drying compartment, a drum at each end of the compartment, means carried by the drums and engaging said belting for preventing the same from slipping on the drums, guide rollers disposed between the drums over which the belting is guided, means for positively driving the drum at the delivering end of the compartment, said drum at the receiving end of the compartment having a friction member attached thereto, a brake engaging said friction member and means for varying the tension of said brake on said friction member.

5. An apparatus for treating long lengths of fabric belting comprising a drying compartment, a drum at each end of said compartment, spuds carried by the drum at the delivery end of the compartment for engaging the belting to prevent the same from slipping thereon, means for positively driving the drum at said delivering end, rollers disposed between the drums over which the belting is guided, a wheel connected to the drum at the receiving end of the drying compartment, a brake engaging said wheel, and means for varying the tension of said brake on said wheel.

6. An apparatus for treating long lengths of fabric belting comprising a drying compartment, a drum at each end of the compartment, means carried by the drums and engaging said belting for preventing the same from slipping on the drums, guide rollers disposed between the drums over which the belting is guided, means for positively driving the drum at the delivering end of the compartment, said drum at the receiving end of the compartment having a belt wheel attached thereto, a brake strap

engaging said belt wheel, and means for varying the tension on said brake strap.

7. An apparatus for treating long lengths of fabric belting comprising a drying compartment, a drum at each end of said compartment, spuds carried by said drums for engaging the belting to prevent the same from slipping thereon, means for positively driving the drum at the delivering end of the compartment, rollers disposed between the drums over which the belting is guided, spuds carried by the drum at the receiving end of the compartment for preventing the fabric from slipping thereon, a belt wheel attached to said last named drum, a brake strap engaging said belt wheel, and means for placing said brake strap under tension.

In testimony whereof I have hereunto signed my name at Philadelphia, Pennsylvania, this eleventh day of December, 1913.

WALTER W. SIBSON.

Witnesses:

JAMES H. BELL,

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