

Oct. 24, 1939.

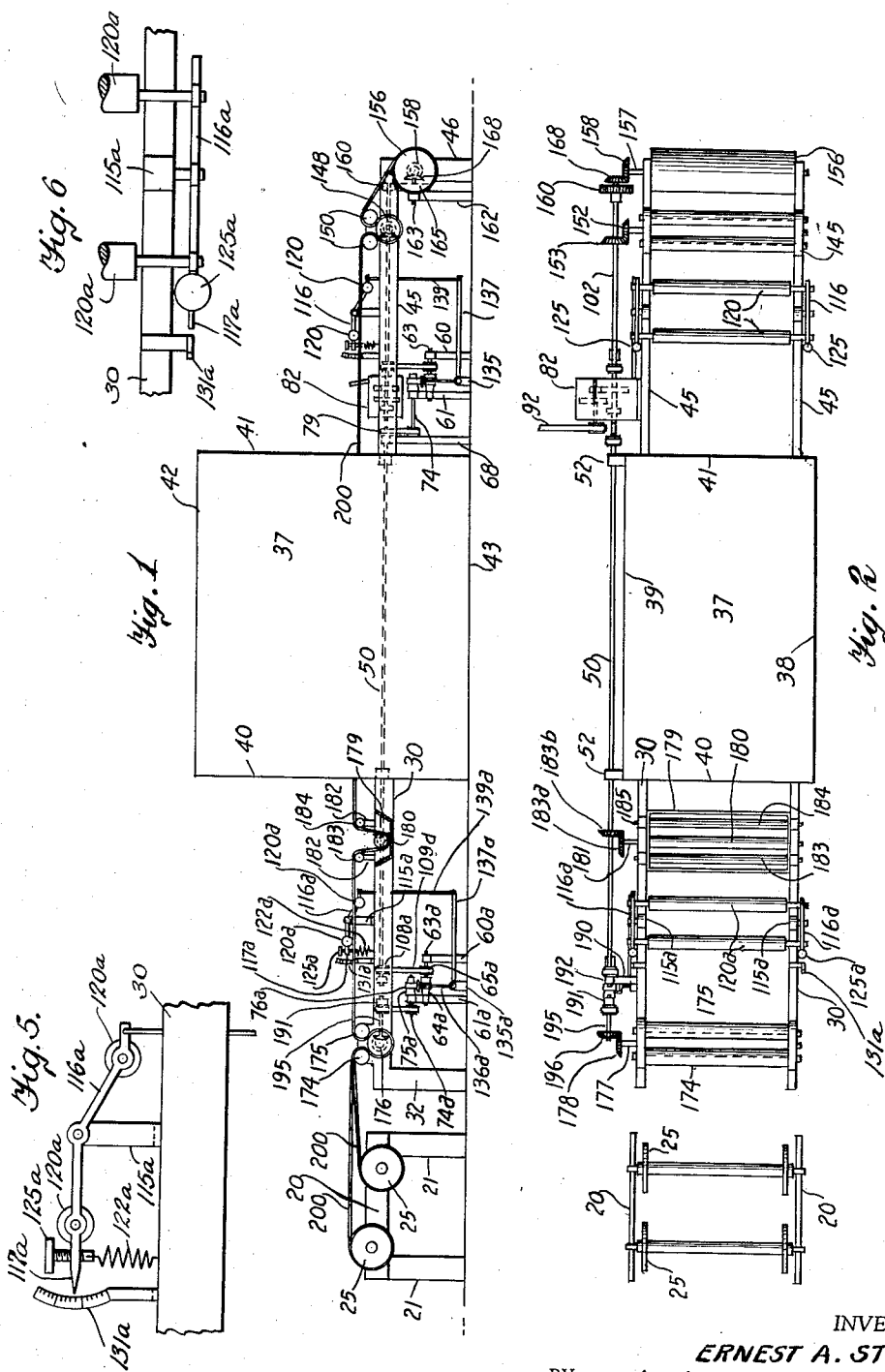
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2,177,541

SLASHER

Filed July 7, 1937

2 Sheets-Sheet 1



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UNITED STATES PATENT OFFICE

2,177,541

SLASHER

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Application July 7, 1937, Serial No. 152,307

2 Claims. (Cl. 28—28)

This invention relates to a slasher for sizing threads of textiles.

The object of the invention is the production of a slasher for sizing threads of textiles, by which the tension of the threads while being treated can be automatically controlled.

The second object of the invention is the production of a slasher, by means of which the tension of textile threads can be automatically adjusted and controlled before and after they are heated and dried in a heater housing.

The third object of the invention is the production of a slasher, by means of which the rate of speed of textile threads will be automatically varied while being sized.

The fourth object of the invention is the production of a slasher for sizing threads of textiles to produce uniform products, which can be easily treated in various dyeing operations.

The fifth object of the invention is the production of a slasher by means of which textile threads are tensioned to stretch them the required amounts.

In the accompanying drawings Fig. 1 represents a side elevation of the warp thread slasher; Fig. 2 shows a top view of Fig. 1; Fig. 3 indicates an enlarged fragmentary portion of Fig. 1 with a section as on the line 3, 3 of Fig. 4; Fig. 4 is a top view of Fig. 3; Fig. 5 represents an enlarged fragmentary portion of Fig. 1, and Fig. 6 is a top view of Fig. 5.

The apparatus of the slasher comprises the parallel warp supporting frames each consisting of the horizontal beam 20 supported upon the upright members 21.

To the horizontal beams 20 are journaled the warp supply rollers 25, of which there may be any number required.

Adjacent to the warp supporting frames are indicated the parallel supporting frames comprising the horizontal beams 30 with the uprights 32 at one end. A heater housing 37 is shown having the side walls 38 and 39, the end walls 40 and 41 and the top wall 42. The floor of the apparatus is shown at 43. One of the ends of each of the beams 30 is connected to the end wall 40 of the heater housing 37.

A pair of supporting frames each comprise the horizontal beam 45 with the upright 46 at one end. The other ends of the beams 45 are connected to the wall 41 of the heater housing 37.

A main shaft 50 is journaled in journal bearings 52 extending from the wall 39 of the heater housing 37.

A pair of journal brackets 60 and 61 having

the journal bearings 62 and 62a, extend from the floor 43 at the outlet end of the slasher. A shaft 63 is journaled in the bearings 62 and 62a. A cone pulley 64 and a pulley 65 are fastened to the shaft 63.

A second journal bearing 66 is indicated at the upper end of the journal bracket 61. A third journal bracket 68 extends up from the floor 43 and has integral therewith the journal bearings 70 and 71. The shaft 50 is journaled in the bearing 71. In the bearings 66 and 70 is journaled the shaft 74. A cone pulley 75 is fastened to one end of the shaft 74 and a movable belt 76 connects the pulleys 64 and 75. A pulley 78 is fastened to the shaft 74 and a pulley 79 is fastened to the shaft 50. A belt 80 connects the pulleys 78 and 79.

A differential gear box 82 is indicated having the front wall 83, the rear wall 84, the side walls 85, 86 and the bottom wall 87. A cover 88 is provided for the differential gear box. The wall 83 of said box is fastened to one of the beams 45. In the walls 85 and 86 is journaled the drive shaft 90. A pulley 91 is fastened to the shaft 90 outside of the differential gear box. A driving belt 92 engages the pulley 91. Spur gears 93 and 94 are slidably supported on the shaft 90 in the usual way. An adjusting plug 96 is slidably supported on the shaft 90 and fastened to gear 94. An operating handle 99 extends through the cover 88 and is connected to the plug 96 in the usual way.

A second shaft 102 is journaled in the walls 85 and 86 of the differential gear box 82 and has connected thereto the spur gears 104 and 105, which coact with the gears 93 and 94. A pulley 108 is fastened to the shaft 102 and a belt 109 connects the pulleys 65 and 108.

Upon the beams 45 are supported the journal brackets 115 and in the upper ends of which are pivoted the vibrating adjusting levers 116 each having the pointer 117 integral therewith. In the levers 116 are journaled the shafts 118 of the adjusting tension rollers 120. Helical springs 122 have their lower ends fastened to the beams 45. To the upper end of each spring 122 is fastened the screw 124 having the head 125. The screws 124 are in threaded engagement with the adjacent adjusting levers 116. A bracket 130 with the scale 131 extends up from each of the beams 45 and coact with the adjacent pointers 117.

A bracket 135 extends up from the floor 43. A bell crank having the arms 136 and 137 is pivoted to the bracket 135. A loop 138 is in-

tegral with the arm 136 and engages the belt 76. A link 139 connects the outer end of the arm 137 and the end opposite the pointer 117 of one of the levers 116.

5 A shaft 146 is journaled in the beams 45 and supports the roller 148. Shafts 149 are journaled in the journal brackets 145 and support the rollers 150. To the shaft 146 is fastened the bevel gear 152 which meshes with the bevel gear 153 fastened to the shaft 102.

10 Between the uprights 46 is positioned the receiving roller 156, which is fastened to its shaft 157. The latter is journaled in the said uprights 46. To one end of the shaft 157 is fastened the bevel gear 158. A gear 160 is fastened to the shaft 102. A journal bracket 162 extends up from the floor 43 and has journaled therein the shaft 163, to which is fastened the gear 165, which meshes with the gear 160. On the shaft 20 163 is fastened the bevel gear 168 which meshes with the bevel gear 158.

Adjacent to the horizontal beams 30 are journaled the clamping rollers 174, 175 and 176. The shaft 177 of the roller 176 is journaled in the beams 30 and has fastened thereto the bevel gear 178.

A tank 179 for a sizing fluid is positioned between and its end walls are fastened to the beams 30. A roller 180 is positioned in the tank 179 and its shaft 181 is journaled in the end walls of said tank. A pair of journal brackets 182 extend up from each of the beams 30 and rollers 183 and 184 have their shafts 185 journaled in the journal brackets 182. A bevel gear 183a is fastened to the shaft 181 and meshes with the bevel gear 183b on the shaft 50.

A pair of journal brackets 115a similar to 115 extend from the beams 30 and each has pivoted thereto a vibrating adjusting lever 116a with a pointer 117a, similar to 116 and 117.

40 Adjusting roller 120a similar to 120 are journaled to the adjusting levers 116a.

Springs 122a similar to 122 extend between the levers 116a and the beams 30. Each of the springs 122a has connected thereto a screw with a head 125a similar to 125.

A bracket with a scale 131a similar to 131 extends from each of the beams 30.

A journal bracket 190 has integral therewith the journal bearings 191 and 192. The shaft 50 is journaled in the bearing 192. A shaft 195 is journaled in the bearing 191. A bevel gear 196 is fastened to the shaft 195 and meshes with the bevel gear 178. A journal bracket 60a similar to 60 extends up from the floor 43, and a journal bracket 61a similar to 61 extends up from said floor 43. A cone pulley 64a similar to 64 has its shaft 63a journaled in the journal brackets 60a and 61a. A pulley 65a similar to 65 is fastened to the shaft 63a. A pulley 108a similar to 108 is fastened to the shaft 50 and a belt 109a similar to 109 connects the pulleys 65a and 108a. A shaft 74a similar to 74 is journaled in the journal bracket 61a and has fastened thereto a cone pulley 75a similar to 75. A belt 76a similar to 76 connects the pulleys 64a and 75a. A journal bracket 135a similar to 135 extends up from the floor 43. A bell crank having the arms 136a and 137a similar to 136 and 137 is journaled to the journal bracket 135a. A link 139a similar to 139 connects the arm 137a and one of the adjusting levers 116a.

70 To operate the warp thread slasher, the warp threads 200 are first wound on the warp supply rollers 25. From the rollers 25 the threads are

led over the clamping roller 174, under the clamping roller 176 and over the clamping roller 175.

From the roller 175 the warp threads 200 bear up against one of the adjusting rollers 120a 5 and on top of the other adjusting roller 120a, to tension the said warp threads 200. The tension of the threads 200 may be varied by adjusting the positions of the adjusting levers 116a by means of the screws having the heads 125a. 10 The position of the adjusting levers 116a can be easily positioned in proper positions by means of the pointers 117a and the scales 131a. The warp threads 200 now lead over the roller 183, next under the roller 180 in the sizing tank 179 15 and then over the roller 184. The warp threads 200 when contacting with the roller 180 are impregnated with the sizing fluid in the tank 179. From the roller 184 the warp threads 200 are led through the heater housing 37 where they are dried as required. The warp threads 200 next are led under one of the adjusting tension rollers 120 and then above the second adjusting tension roller 120, by means of which they are tensioned after having been dried. This is accomplished by locating the adjusting levers 116 in proper position by turning the heads 125 of the screws 124, by means of which the pointers 117 of the levers 116 are swung in different positions and which are indicated on the scales 131. The threads 200 are then led over the adjacent roller 150, next under the roller 148 and then over the second roller 150, after which they are wound around the receiving roller 156.

To move the warp threads 200 and wind them on the receiving roller 156, the belt 92 is moved which turns the drive shaft 90. The rotations of the shaft 90 are transmitted to the shaft 102 through the gears in the differential gear box 82. It is to be understood that the speed of the shaft 102 can be varied by the gears in the box 82. From the shaft 102 rotation is transmitted to the shaft 63 which turns the cone pulley 64. From the latter by means of the belt 76 rotation is transmitted to the cone pulley 75 which turns the shaft 74 of the latter. Rotation is transmitted from the shaft 74 to the shaft 50 by means of the pulleys 78 and 79 and the belt 80. The speed of rotation transmitted to the cone pulley 75 is controlled by the position of the adjusting levers 116 by means of the bell crank having the arms 136 and 137, and the loop 138. The latter locates the belt 76 in different positions relative to the cone pulleys 64 and 75 to vary the speed of rotation of the said cone pulley 75, and thereby the speed of rotation of the shaft 50 is varied.

With the rotations of the shaft 102 the receiving roller 156 is turned through the bevel gear 158, and the gear 160 and the interposed gears. 60 The speed of the roller 156 is controlled by the gears in the differential gear box 82.

The tension of the warp threads 200 between the heater housing 37 and the receiving roller 156 is controlled by the adjusting levers 116. 65

It will be noted that the wall 40 of the housing 37 functions as an inlet wall and has an inlet opening not shown therein and the wall 41 functions as an outlet wall with an outlet opening therein. 70

It will be noted that the warp threads 200 are always maintained in tension by the appurtenances of the slasher, and therefore the said warp threads can be easily tensioned and streached without any additional appurtenances. 75

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

Having described my invention I claim:

- 5 1. In a slasher for threads of textiles the combination of a heater housing having an entrance end and an outlet end, a main shaft journaled to the housing, means to rotate the main shaft, means to lead the threads of textiles through the heater housing, a pair of vibrating levers positioned adjacent to the entrance end of the heater housing, rollers journaled in the ends of the levers, means to lead the threads of textiles to the lower face, of one of said rollers and to the top face of the other roller to tension and stretch the same, means to adjust the inclination of said levers and means to impregnate said threads with a sizing fluid before entering said housing and after having been tensioned.
- 20 2. In a slasher, for threads of textiles the com-

bination of supply rollers for said threads, a pair of beams adjacent to said supply rollers, a journal bracket supported on each beam, a vibrating lever having a pointer pivoted to each journal bracket, a tension roller journaled between and in the ends of said levers, a screw in threaded engagement with the end portion of each lever adjacent to its pointer, a spring having one end extending from each screw and its other end connected to its adjacent beam, a bracket extending up from each beam adjacent to the spring thereof, said brackets each having a scale integral therewith adapted to coact with one of the pointers and means to draw said threads from the supply rollers to contact them with said tension rollers, said threads bearing upon the upper face of one tension roller and against the lower face of the adjacent tension roller.

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