

Feb. 8, 1949.

E. W. MEDBERY

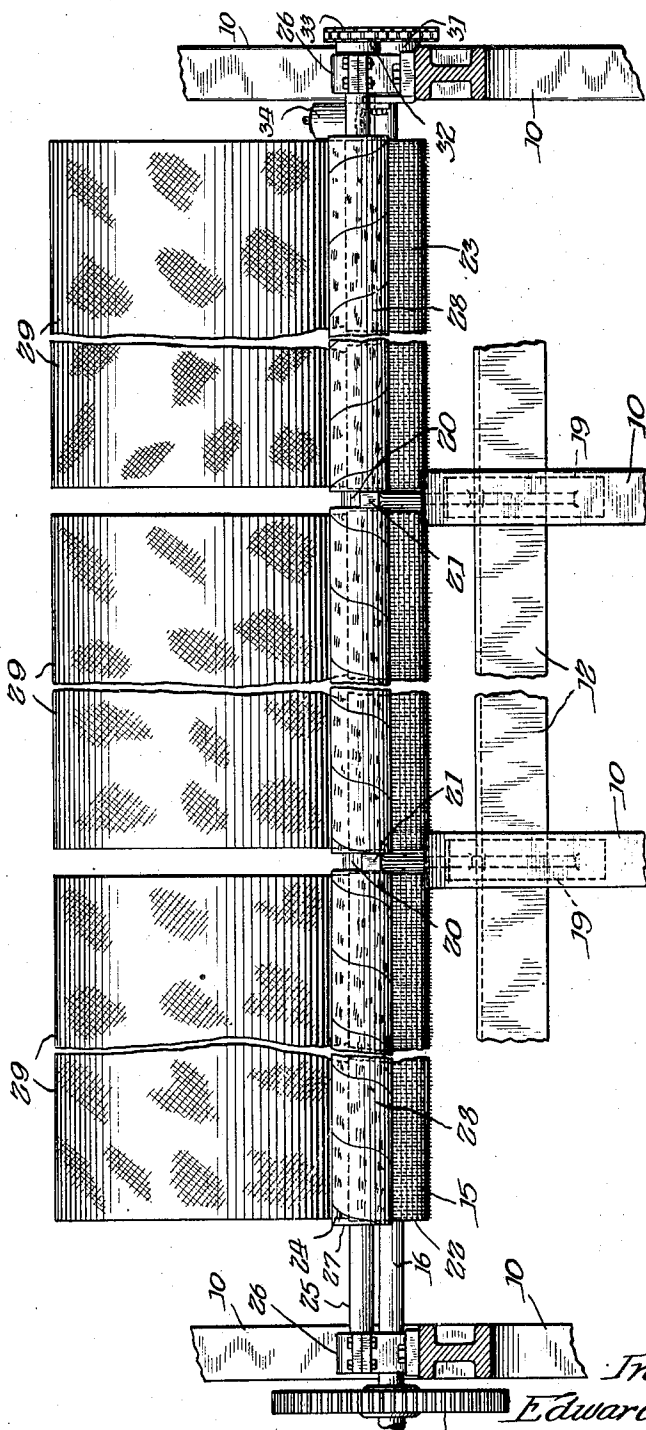
2,461,387

CLOTH ROLL ATTACHMENT FOR LACE LOOMS

Filed June 26, 1947

2 Sheets-Sheet 1

Fig. 1



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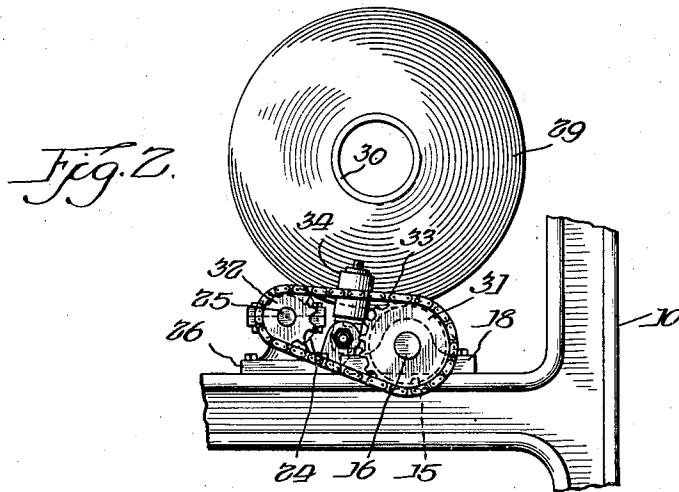
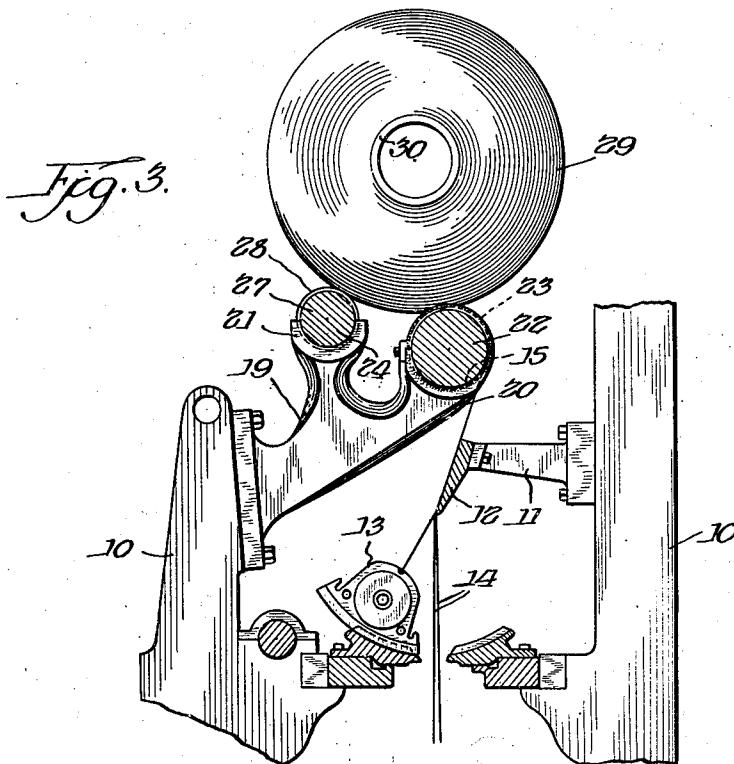
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CLOTH ROLL ATTACHMENT FOR LACE LOOMS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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CLOTH ROLL ATTACHMENT FOR LACE
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15 Claims. (Cl. 87—31)

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My invention relates to a cloth roll attachment for looms and is particularly adapted for lace looms whereby the material as it is woven on the loom is rolled onto cores forming rolls of material of such size as may be conveniently handled for use in other operations, resulting in the complete manufacture of the cloth into curtain lengths.

Another and further object of my invention is the provision of a rolling mechanism which draws the material through the weaving mechanism of the loom and rolls it onto a paper tube or core of a length corresponding to the width of the woven material so that rolls of material in convenient form can be transferred to other parts of the mill for such finishing operations as may be desirable or necessary.

Another and further object of my invention is the provision of a rolling mechanism for the purpose of rolling the woven material into rolls which are tightly and evenly wound on the rolls thereby keeping the material in compact form for easily handling the material for further manufacturing operations in the mill.

Another and further object of my invention is the provision of a mechanism which through the use of paper tubes as cores onto which the woven material is rolled, the handling of the woven material from the looms is facilitated and the time necessary to change the rolls from the looms is very materially shortened thereby securing greater productivity of the looms than what has been possible heretofore.

In the operation of the average curtain loom, which is usually some thirty odd feet in width, curtain material of predetermined widths is woven on the looms and heretofore it has been the custom to wind this material on a mandrel, which formed a part of the loom itself. When a sufficient quantity of material had been woven to provide a roll of adequate size, the loom was stopped, the material unrolled from the roll and placed into bags for such further operations as was necessary to convert the woven material into curtains. The curtain material is woven in long lengths, and its removal from the mandrel would take a considerable amount of time resulting in a closing down of the loom and a loss of valuable time in the weaving operations. With my improved cloth roll mechanism the material can be cut at any time and the roll of material on the hollow core removed as a unit, a new core substituted, a length of material wound around it and placed in position on the

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winding mechanism and the operation of weaving continued in a very short period of time.

It requires only a very small amount of time compared with the time lost in the operations of the loom heretofore and results in placing the material in such form and condition immediately after it is woven on the loom so that it can be easily and conveniently handled throughout the mill for such future operations as may be necessary.

Another and further object of my invention is the provision of a cloth roll mechanism which when once put in position requires little or no attention on the part of the operator. The woven roll of material is supported on fixed rollers so that the roll is turned at the proper speed to take up the material being woven on the loom regardless of the size of the roll of material.

These and other objects of my invention will be more fully and better understood by reference to the accompanying sheet of drawings and in which:

Figure 1 is an elevational view of a cloth roll attachment in position on a lace loom;

Figure 2 is an elevational view of the rolling mechanism showing the driving attachment with the two support rollers; and

Figure 3 is a view partially in section and partially in elevation through a loom showing particularly the brackets for the support rolls intermediate their ends the two support rollers and the cloth roll cradled thereon.

Referring now specifically to the drawings and in which like reference characters refer to like parts throughout, a loom frame 10 is shown having a bracket 11 mounted thereon to which is attached the usual nosepiece 12 above the usual bobbin 13 with warp threads 14, 14 being shown, the filling threads being omitted as they form no part of my present invention.

The material is woven into final form at the lower point of the nosepiece 12 as is common with looms of this particular type and character. A porcupine roller 15 is provided, this roller 15 being made up of a shaft 16 having a gear wheel 17 on the outer end thereof at one of its ends supported by pillow blocks 18, 18 secured to the frame 10 of the loom at each of its ends with intermediate supporting brackets 19, 19 being provided which are secured to the loom frame 10 in any approved manner and have divided ends with cradles 20 and 21 at the ends thereof. The porcupine roller 15 has a core 22 mounted on the shaft 16 and over which card

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cloth 23 is placed to form the porcupine roller 15 for taking up the material from the loom with the core 22 being mounted in the cradle 20 formed at the ends of the brackets 19, 19 and being driven through the gear connections with the operating parts of the loom with the gear wheel 17, which is connected to suitable driving mechanism of the loom and normally operates a roller on which the woven material is wound after being woven in the normal operation of the loom.

Also mounted on the frame of the loom is a combined support and friction roller 24, this roller comprising a shaft 25 which extends parallel with the porcupine roller 15 and which is mounted in pillow blocks 26, 26 secured to the frame 10 of the loom at each of its ends. This support roller 24 also has a core 27 through which the shaft 25 extends over which a layer of cork 28 is placed to provide a friction surface to the roller 24 with the core 27 being supported in the cradle 21 formed in one of the divided ends of the supporting brackets 19, 19. The roller 24 is parallel with and spaced a slight distance from the porcupine roller 15 so that in effect these two rollers form a cradle for the roll of material 29 wound about the hollow core 30.

A sprocket wheel 31 is mounted on the shaft 16 on the end opposite the gear wheel 17, this sprocket wheel in the form shown having thirty-one teeth thereon with a second sprocket wheel 32 being mounted on the shaft 25 in alignment with the sprocket 31, this sprocket wheel 32 being smaller than the sprocket wheel 31 and in the form shown having nineteen teeth thereon, the two sprocket wheels being connected together by means of a sprocket chain 33 so the roller 24 is driven from the sprocket 31 and rotates in the same direction as the sprocket 31 and at an increased peripheral speed of rotation greater than that of the porcupine roller 15 which, of course, rotates at the same speed as the sprocket 31 because of its being mounted on the same shaft 16 as the sprocket 31. As the cloth is taken up on the roll 29, the roller 33 being driven at a higher speed than the porcupine roll has a tendency to drive the cloth roller faster thereby keeping the material taut on the cloth roller and also pulling the material clear of the porcupine roller 33.

A side roller 34 is provided which merely guides the material at one edge thereof onto the roll at the end of the rollers and keeps the end roll material in alignment.

In operation of the apparatus the hollow tube or core 30 is provided around which a few turns of the free end of the material is wound, is placed in cradled position on the tops of the porcupine roller 15 and the friction roller 33. These two rollers are spaced apart a sufficient distance to form cradles for the cores, it being common to weave a plurality of widths of curtain material on these looms sometimes six in number depending on the width of the material desired, so that each width of material is supplied with a core 30 which is placed in cradled position on the porcupine roller 15 and the friction roller 24. If six widths of material are being used, then six of the hollow cores must be placed in position on the rollers 15 and 24 with the woven material being placed around the porcupine roller 15 which normally rotates in a counterclockwise direction as viewed in Figures 2 and 3 with the material being initially wound on the core 30 in a clockwise direction with the necessary number of turns of material thereof placed in position so the mate-

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rial will not unwind. The weaving operation of the loom is thereupon commenced, and as the material is woven, the porcupine roller 15 is rotated through the gear 17 pulling the material from the loom. The roller 24 is also rotated through the sprocket wheel 31, chain 33 and sprocket 32, with the porcupine roller 15 and friction roller 24 rotating in counterclockwise directions as seen in Figures 2 and 3, and because of friction the core 30 with the few turns of material on it (a small cloth roll) also is rotated in a clockwise direction taking up the material as fast as it is woven. The friction roller 24 turns at a faster peripheral speed, as heretofore explained, than does the porcupine roller 15. There is a tendency for the cloth roll 29 to rotate at the same speed as the friction roller 24 but this is prevented by the material, although this pulling force on the material lifts the material clear of the porcupine roller 15 and causes the material to be tightly wound onto a cloth roll 29. There is a slippage between the cloth roll and the friction roller 24, of course, but this is immaterial. The operation of the loom may continue until the cloth roll 29 reaches a desirable size when the material is cut and the cloth roll removed from the loom. The peripheral speed of the cloth roll 29 is the same, of course, whether the roll is small or large and is constant, being timed by the loom operations through the gear 17. When the material is cut, a sufficiently free end is left to be initially wound on a new core, and the weaving operations are proceeded with until a new cloth roll 29 is produced, so far as the winding of the woven material is concerned.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

What is claimed is:

1. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of a loom, operating connections with the loom whereby the said porcupine roller is operated, a friction roller extending parallel with the said porcupine roller and in spaced relation therewith whereby a cradle is formed by the said rollers for a cloth roll and operating means for the said friction roller whereby the friction roller is driven at a faster rate of travel than the porcupine roller.

2. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of a loom, operating connections with the loom whereby the said porcupine roller is operated, a friction roller extending parallel with the said porcupine roller and in spaced relation therewith whereby a cradle is formed by the said rollers for a cloth roll and operating means for the said friction roller whereby the friction roller is driven at a substantially faster rate of travel than the porcupine roller.

3. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of a loom, operating connections with the loom whereby the said porcupine roller is operated, a friction roller extending parallel with the said porcupine roller and in spaced relation therewith whereby a cradle is formed by the said rollers for a cloth roll and operating means for the said friction roller whereby the friction

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roller is driven at a rate of speed substantially one-third faster than the porcupine roller.

4. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of a loom, operating connections with the loom whereby the said porcupine roller is operated, a friction roller extending parallel with the said porcupine roller and in spaced relation therewith whereby a cradle is formed by the said rollers for a cloth roll and means whereby the said friction roller is actuated.

5. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of a loom, operating connections with the loom whereby the said porcupine roller is operated, a friction roller extending parallel with the said porcupine roller and in spaced relation therewith whereby a cradle is formed by the said rollers for a cloth roll and means whereby the said friction roller is actuated at a faster peripheral rate of speed than the porcupine roller.

6. A cloth rolling attachment for looms comprising in combination, a pair of rollers mounted on the outlet end of a loom in parallel spaced relation with each other whereby a cloth roll is cradled on the said rollers and means whereby the said rollers are actuated in timed relation with the rate of weaving performed by the loom.

7. A cloth rolling attachment for looms comprising in combination, a pair of rollers mounted on the outlet end of a loom in parallel spaced relation with each other whereby a cloth roll is cradled on the said rollers and means whereby the said rollers are actuated in timed relation with the rate of weaving performed by the loom, one of said rollers travelling at a faster peripheral speed than the other.

8. A cloth rolling attachment for looms comprising in combination, a pair of rollers mounted on the outlet end of a loom in parallel spaced relation with each other whereby a cloth roll is cradled on the said rollers and means whereby the said rollers are actuated in timed relation with the rate of weaving performed by the loom, one of said rollers being a porcupine roller and the other a friction roller, the friction roller travelling at a greater peripheral speed than the porcupine roller.

9. A cloth roll attachment for a loom comprising in combination a pair of spaced rollers at the outlet end of the loom, actuating means for one of said rollers connected with the operating parts of the loom and in timed relation with the rate of weaving of the loom, and actuating connections between the said rollers whereby the said rollers are actuated in variable peripheral speeds with relation to the other roller.

10. A cloth roll attachment for a loom comprising in combination a pair of spaced rollers at the outlet end of the loom, actuating means for one of said rollers connected with the operating parts of the loom and in timed relation with the rate of weaving of the loom, and actuating connections between the said rollers whereby the said rollers are actuated in variable pe-

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ripheral speeds with relation to the other roller, one of said rollers being a porcupine roller and the other of said rollers being a friction roller.

11. A cloth roll attachment for a loom comprising in combination a porcupine roller extending longitudinally of the loom, connecting means with the operating means for the loom whereby the said porcupine roller is actuated, a friction roller extending parallel with and spaced from the said porcupine roller, and operating connections between the said rollers whereby the friction roller is actuated by the movement of the porcupine roller.

12. A cloth roll attachment for a loom comprising in combination, a porcupine roller extending longitudinally of the loom, connecting means with the operating means for the loom whereby the said porcupine roller is actuated, a friction roller extending parallel with and spaced from the said porcupine roller and gear connections between the said rollers whereby the friction roller is actuated by movement of the porcupine roller.

13. A cloth roll attachment for a loom comprising in combination, a porcupine roller extending longitudinally of the loom, connecting means with the operating means for the loom whereby the said porcupine roller is actuated, a friction roller extending parallel with and spaced from the said porcupine roller, sprocket and chain connections between the porcupine roller and the friction roller whereby the friction roller is driven at a greater peripheral speed than the porcupine roller.

14. A cloth roll attachment for a loom comprising in combination, a porcupine roller extending longitudinally of the loom, connecting means with the operating means for the loom whereby the said porcupine roller is actuated, a friction roller extending parallel with and spaced from the said porcupine roller, a sprocket wheel on the said porcupine roller, a co-operating sprocket on the said friction roller, a chain connection for the two sprocket wheels, the sprocket wheels being of different sizes whereby the friction roller is driven at a greater speed than the porcupine roller.

15. A cloth roll attachment for a loom comprising in combination, a porcupine roller extending longitudinally of the loom, connecting means with the operating means for the loom whereby the said porcupine roller is actuated, a friction roller extending parallel with and spaced from the said porcupine roller, a sprocket wheel on the said porcupine roller a co-operating sprocket on the said friction roller, a chain connection for the two sprocket wheels, the sprocket wheel on the porcupine roller being larger than the sprocket on the friction roller whereby the friction roller is driven at a faster peripheral rate of speed than the travel of the porcupine roller.

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No references cited.