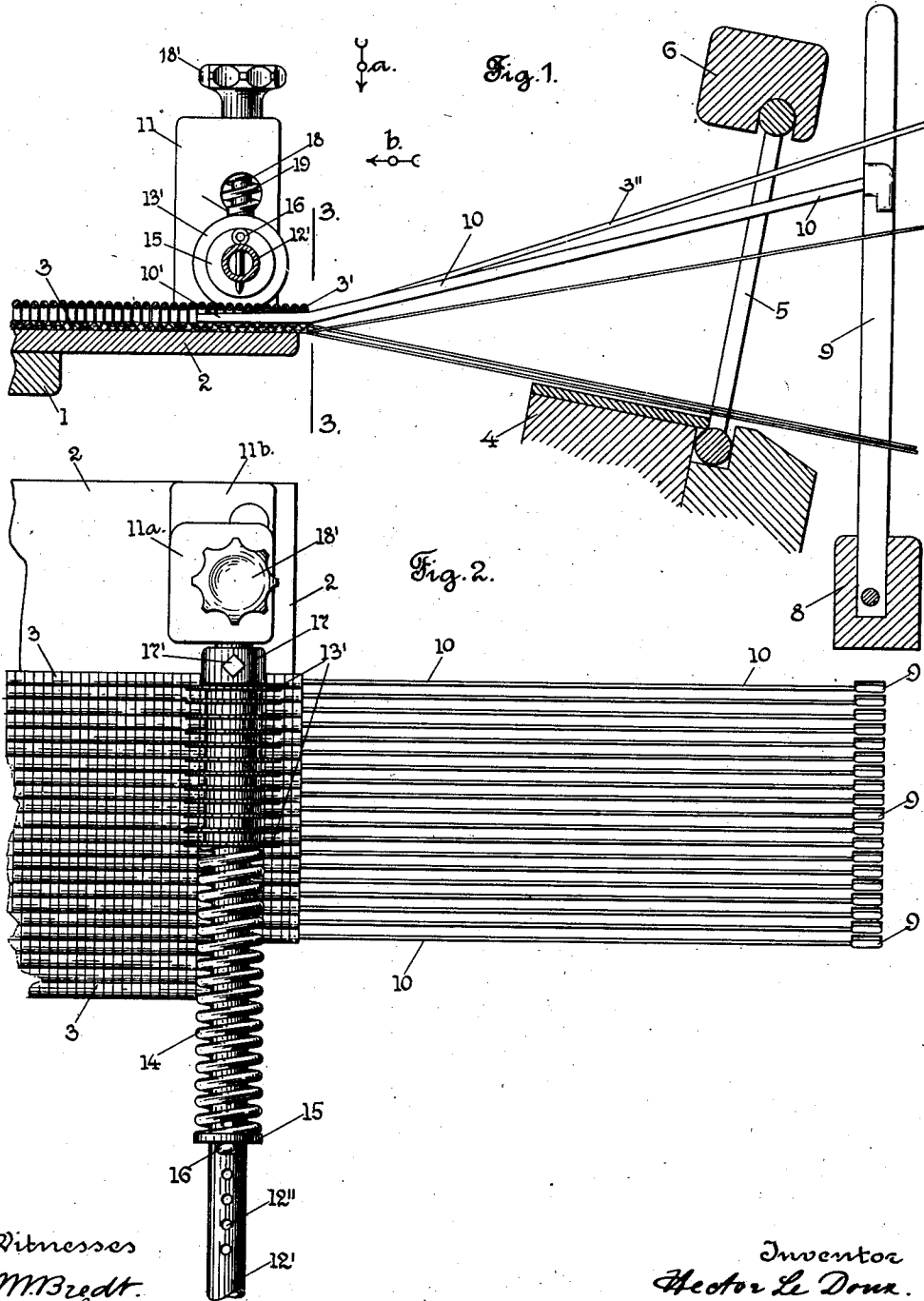


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SPREADER FOR PILE FABRIC LOOMS.
APPLICATION FILED APR. 22, 1910.

1,054,969.

Patented Mar. 4, 1913.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

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SPREADER FOR PILE-FABRIC LOOMS.

1,054,969.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed April 22, 1910. Serial No. 557,070.

To all whom it may concern:

Be it known that I, HECTOR LE DOUX, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Spreaders for Pile-Fabric Looms, of which the following is a specification.

My invention relates to a spreader for pile fabric looms, and more particularly to a spreader to be used on the class of pile fabric looms shown and described in U. S. Letters Patent, No. 747,587, in which needles or wires, over which the loops of the fabric are formed, extend in the direction of the length of the fabric, and the pile loops also extend in the direction of the length of the fabric.

It has been found in practice in the class of looms referred to, in which the pile wires or needles loosely extend through the reed toward the breast plate, to have the pile loops formed thereon, that the outer pile wires and the edges of the woven fabric do not extend in a straight line from the reed. The woven pile fabric becomes narrower than it should, and does not extend the full width of the reed, and the edges of the goods, after the pile loops have been cut, show an uneven appearance.

The object of my invention is to provide a spreader, which is adapted to keep the edges of the fabric exactly in line with the dents of the reed and with the pile wires.

My improved spreader preferably consists of a roll or rolls preferably rotatable, and suitably supported and extending in the direction of the width of the fabric. The roll or rolls may have corrugations therein, or separate disks or plates thereon, which are adapted to engage the fabric between the rows of the longitudinally extending pile loops, near the edges of the fabric, said loops having the wires extending therein, and press the fabric down upon the breast beam plate, over which the woven fabric passes, and upon which it is supported, to hold the fabric stretched transversely, and maintain a uniform width thereof.

My invention consists in certain novel features of construction of my improved spreader, as will be hereinafter fully described.

I have only shown in the drawings a de-

tached part of a pile fabric loom of the class referred to, with my improvements attached thereto, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawings:—Figure 1 is a longitudinal sectional view showing the upper part of the lay, the reed, and pile wire with the pile loops formed thereon, and my improved spreader combined therewith. Fig. 2 is a plan view of some of the parts shown in Fig. 1, looking in the direction of arrow *a*, same figure. Fig. 3 is a section, on line 3, 3, Fig. 1, looking in the direction of arrow *b*, same figure, and, Fig. 4 corresponds to Fig. 3, but shows a modified construction of the spreader when the same is used on wide looms.

In the accompanying drawings, 1 is the breast beam which is attached to the loom side, not shown, 2 is the breast beam plate, attached to the breast beam 1, and over which the woven pile fabric 3 passes and is supported upon, 4 is the lay, which has a rocking motion communicated thereto in the ordinary way.

5 is the reed, supported on the lay 4, and 6 the hand rail on the top of the reed.

8 is a cross bar, which has secured thereto the lower end of the upwardly extending blades 9, to which the inner ends of the pile wires or needles 10 are attached. The pile wires or needles 10 in this instance extend through the reed 5, between the dents thereof, toward the breast beam plate 2, to have the pile loops 3' of the pile warp 3 formed over the free end 10' of said needles 10.

All of the above mentioned parts may be of the usual and well known construction in looms of the class referred to, and are particularly shown and described in Patent, No. 747,587, above referred to.

I will now describe my improvements.

The breast beam plate 2 has mounted thereon, in this instance at each end thereof, a stand 11 adapted to receive, in suitable slots, the ends of a transversely extending rod 12, which may be made tubular at its inner portion, as shown at 12' in Fig. 1. On each end of the rod 12 is in this instance loosely mounted a spreader or roll 13. The roll 13 has secured thereon in this instance circular disks or plates 13', preferably the same distances apart as the dents in the

reed, and adapted to enter the woven fabric between the longitudinal rows of pile loops thereon, said loops having the wires extending therein.

5 A helically coiled expansion spring 14 encircles the rod 12 on the inner side of the roll 13, and bears at one end against the inner end of the roll 13, and at its other end against a washer 15, which is secured in
10 position on the rod 12 in this instance by a cotter pin 16, see Figs. 2 and 3. Holes 12" in the rod 12, see Fig. 2, allow the cotter pin 16 to be changed, according to the desired tension on the spring 14. The spring
15 14 is adapted to yieldingly hold the spreader or roll 13 outwardly or toward the edge of the fabric. The outer end of the roll 13 bears against a collar 17, which is adjustably secured on the rod 12, in this instance
20 by a bolt 17'.

The rod 12 has in this instance a vertically extending opening through its end, through which in this instance loosely extends an upright bolt 18. The bolt 18 has a hand
25 wheel 18' thereon, the hub of which extends loosely through an opening in a side extension 11^a on the stand 11. The lower end of the bolt 18 is in this instance threaded and screwed into the base or foot 11^b on
30 the stand 11. A helically coiled expansion spring 19 encircles the bolt 18, and bears at one end against the lower end of the hub on the hand wheel 18', and at its other end against the upper side of the transverse rod
35 12. The compression of the spring 19, by turning the bolt 18, through the hand wheel 18', increases the downward pressure on the rod 12, and on the roll 13, and causes the disks or plates 13' thereon, to enter the fabric,
40 between the longitudinal rows of loops; said fabric being supported upon the breast beam plate 2, and press the fabric down upon the plate 2. The spring 14 in this instance acts to spread or move outwardly,
45 through the engagement of the disks or plates 13' with the fabric, the fabric at its edges, and hold the edges of the fabric in a straight line.

In Fig. 4 is shown a modified construction. Instead of the transverse rod 12 extending the full width of the fabric, I may
50 use in wide looms a short rod 21, see Fig. 4, at each side of the loom, and at each edge of the fabric. The short rod 21, shown in Fig. 4, is in this instance adjustably held in a stand 11 by the set nuts 21' on the threaded end of said rod. The head 21" on the inner end of the rod 21, forms a bearing for the inner end of the expansion
55 spring 14, to hold the spreader or roll 13 in its outward position.

It will be understood that the details of construction of my improvements may be varied if desired.

65 Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:

1. In a pile fabric loom of the class described, the combination with the breast beam plate upon which the woven fabric is supported, and a series of longitudinally extending pile wires or needles extending through a series of loops in the fabric, of a transverse rod, and a spreader or roll mounted thereon, and extending in the direction of the width of the fabric, said spreader or roll having circular disks or plates thereon, which extend between the longitudinal rows of pile loops on the fabric and press the fabric down upon the breast beam plate, and means connected with the rod supporting said spreader or roll for adjusting the pressure on the fabric, between said disks or plates and the breast beam plate.

2. In a pile fabric loom of the class described, the combination with the breast beam plate upon which the woven fabric is supported, and a series of longitudinally extending pile wires or needles extending through a series of loops in the fabric, of a transverse rod, and a spreader or roll mounted thereon, and extending in the direction of the width of the fabric, said spreader or roll having circular disks or plates thereon, which extend between the longitudinal rows of pile loops on the fabric and press the fabric down upon the breast beam plate, and means connected with the rod supporting said spreader or roll for adjusting the pressure on the fabric, between said disks or plates and the breast beam plate, and means connected with said rod for yieldingly holding the spreader or roll in its outward position.

3. In a pile fabric loom of the class described, the combination with the breast beam plate upon which the woven fabric is supported, and a series of longitudinally extending pile wires or needles extending through a series of loops in the fabric, of a transverse rod, and a spreader or roll mounted thereon and extending in the direction of the width of the fabric, said spreader or roll having circular disks or plates thereon, which extend between the longitudinal rows of pile loops on the fabric, and press the fabric down upon the breast beam plate, and yielding means connected with the rod supporting said spreader or roll for adjusting the pressure on the fabric, between said disks or plates and the breast beam plate, and means, adjustably connected with said rod, for yieldingly holding the spreader or roll in its outward position.

4. A spreader for a loom adapted to keep the edges of the fabric in line with the dents of the reed, comprising a rod and a roll suitably supported thereon, and extending in the direction of the width of the fab-

ic, and having disks or plates thereon to press upon the fabric, and yielding means for regulating the pressure of said disks or plates on said fabric, said means comprising a stand having a slot therein to receive the end of the rod carrying the spreader roll, and an upright rotatable bolt extending through an opening in said stand, and a helically coiled expansion spring mounted on said bolt, between the enlarged end on said bolt and said rod.

5. A spreader for a loom adapted to keep the edges of the fabric in line with the dents of the reed, comprising a rod and a roll suitably supported thereon, and extending in the direction of the width of the fabric, and having disks or plates thereon to press upon the fabric, and yielding means for regulating the pressure of said disks or plates on said fabric, said means comprising a stand having a slot therein to receive the end of the rod carrying the spreader roll, and an upright rotatable bolt extending through an opening in said stand, and a helically coiled expansion spring mounted on said bolt, between the enlarged end on said bolt and said rod, and yielding means

for regulating the outward pressure of said disks or plates on said fabric, said means comprising a helically coiled expansion spring confined on said rod and bearing at one end against said roll. 30

6. A spreader for a loom adapted to keep the edges of the fabric in line with the dents of the reed, and comprising a roll suitably supported, and extending in the direction of the width of the fabric, and having circular disks or plates thereon, which are adapted to press upon the fabric, and yielding means for regulating the downward pressure of said disks or plates on said fabric, said means comprising a stand having a slot therein to receive and guide the end of a rod carrying the spreader roll, and said rod, and an upright bolt extending through an opening in said rod and having a screw threaded end extending into a threaded hole in said stand, and a device for turning said bolt, and a helically coiled expansion spring mounted on said bolt. 35 40 45

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