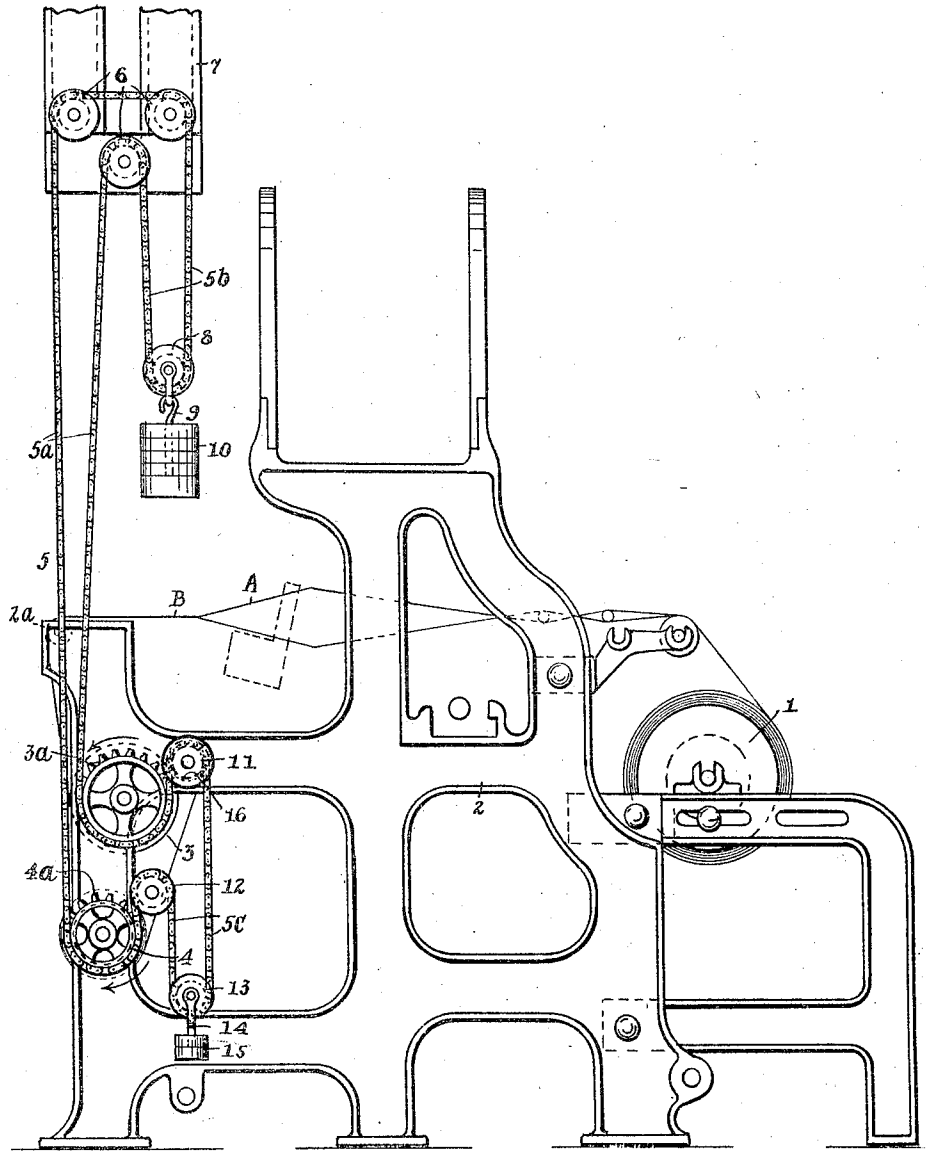
Aug. 11, 1925. 1,548,997

W. HARRIS

LOOM

Filed Sept. 22, 1924



WITNESS

Wm. Bell.

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BY
ATTORNEY

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UNITED STATES PATENT OFFICE.

WILLIAM HARRIS, OF PATERSON, NEW JERSEY.

LOOM.

Application filed September 22, 1924. Serial No. 739,044.

To all whom it may concern:

Be it known that I, WILLIAM HARRIS, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Looms, of which the following is a specification.

This invention contemplates the employment in a loom of a flexible tensioning connection for maintaining the sheet of warp and woven fabric taut, and one object of the invention is to maintain that part of the sheet taut which extends from the sand roller, or equivalent means for advancing the sheet, to the cloth beam, or equivalent means for winding up the fabric end of the sheet, without the tensioning connection interfering with the direct or positive advance of the sheet by the advancing means. Another object is to provide for the control of certain slack which, if the connection is made endless, must be present in the connection because, while the sand roller delivers the sheet at a constant rate, the increase in diameter of the wound mass on the cloth-beam as the same builds up must be taken into account.

In the drawing, the view is a side elevation of a loom constructed to carry out the two stated objects of the invention.

1 is the usual warp beam, journaled in the loom frame 2, which has any suitable breast-beam 2^a. 3 is the sand-roller journaled in the frame and assumed to be rotated by any well known means in the direction of the arrow. 4 is the cloth-beam, also journaled in the frame. The sand-roller and cloth-beam have affixed to their shafts outwardly of the frame the sprocket-wheels 3^a and 4^a.

The sheet of warp A and fabric B extends in the usual way from the warp-beam, on which it is wound, forward over the breast-beam, and then around under the sand roller.

The flexible connection is a chain 5 here having an upwardly reaching loop 5^a which is slung over idlers 6 journaled in a suitable overhead structure so as to form a depending main bight or bend 5^b. In this bight or bend is a pulley 8 from which is suspended a carrier 9 for the main weight 10. The chain is in peripheral tractive engagement with the sprocket-wheels 3^a and 4^a, the arrangement being such that regarding wheel 3^a as affording a purchase for the chain the chain tends in response to the force represented by the weight to turn the cloth-beam 4 in the direction to wind up the fabric. By this arrangement the sand roller directly and positively advances (pulls) the part of the sheet relatively back of it forward in the usual way, and as fast as it delivers the sheet the same as woven fabric is taken up by and wound up compactly on the fabric beam, this latter taking place without recourse to the usual troublesome means employed in looms for driving the cloth-beam from the sand-roller and compensating for the gradual increase in diameter of the wound-up mass whereas the sand-roller delivers at a constant rate.

The chain is shown as endless and also includes a secondary bight or bend, 5^c, affording the mentioned slack, which is suspended from two idlers 11 and 12 respectively journaled in the loom frame close to and preferably more or less higher than the axes of the sand-roller and cloth-beam and between which and the major bight or bend are the sand-roller and cloth-beam, and in this bight or bend is a pulley 13 from which is suspended a carrier 14 for the secondary weight 15, lighter than weight 10; the idler 11 may be on the shaft of a roller 16 over which the fabric extends on its way from the sand-roller to the cloth-beam. Thus, while that portion of the connection which connects 3^a and 4^a and extends from 4^a in the same direction as the fabric is wound on 4 is acted upon by the tensioning force represented by weight 10, which as indicated tends to turn 3 in the direction to wind up the fabric, the other portion of said connection connecting 3^a and 4^a, which is necessarily present since the sand-roller rotates at constant speed whereas the cloth-beam rotates at decreasing speed as the wound fabric mass grows in diameter, is acted upon by a lesser tensioning force represented by weight 15, which keeps the slack at all times under control, especially when the connection is made to extend over idlers, as 11 and 12, which are arranged close to the sprocket-wheels 3^a and 4^a and so preserve the connection in good tractive engagement with said sprocket-wheels. This arrangement, together with the upright arrangement of the loops 5^a and 5^c one approximately over the other, further produces compactness and disposes the parts involved where they will be least in the way of the weaver and other parts of the loom.

When the weight 10 approaches the limit

of its activity the attendant simply removes the chain and rehabilitates it on the sprocket-wheels 3^a and 4^a.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination, with that moving system in a loom which includes rotary means to advance the sheet of warp and woven fabric and rotary means to supply the warp, rotary means to wind up the fabric end of the sheet, and a flexible tensioning connection in tractive engagement with a rotary part of the winding-up means and a rotary part of the advancing means and having means relatively between said parts tensioning said connection and exerting force to rotate the former in the direction to wind up the fabric and to maintain the fabric end of the sheet at a constant predetermined tension.

2. In combination, with that moving system in a loom which includes rotary means to advance the sheet of warp and woven fabric and rotary means to supply the warp, rotary means to wind up the fabric end of the sheet, and an endless flexible tensioning connection in tractive engagement with a rotary part of the winding-up means and a rotary part of the advancing means and having means relatively between said parts tensioning said connection and exerting force to rotate the former in the direction to wind up the fabric and to maintain the fabric end of the sheet at a constant predetermined tension.

3. In a loom, the combination, with a support, means to supply the warp, rotary means to wind up the fabric end of the sheet of warp and woven fabric, and means to advance the sheet engaged therewith between the first two means, one of the first and third-named means being rotary, an endless flexible connection in tractive engagement with a rotary part of the winding-up means and a rotary part of the other rotary means, means to exert a tensioning force on that portion of the connection which connects said parts and extends from the first-named part in relatively the same direction as the fabric is wound up by the winding-up means, and means to exert a lesser tensioning force on the other portion of said connection which connects said parts.

In testimony whereof I affix my signature.

WILLIAM HARRIS.