

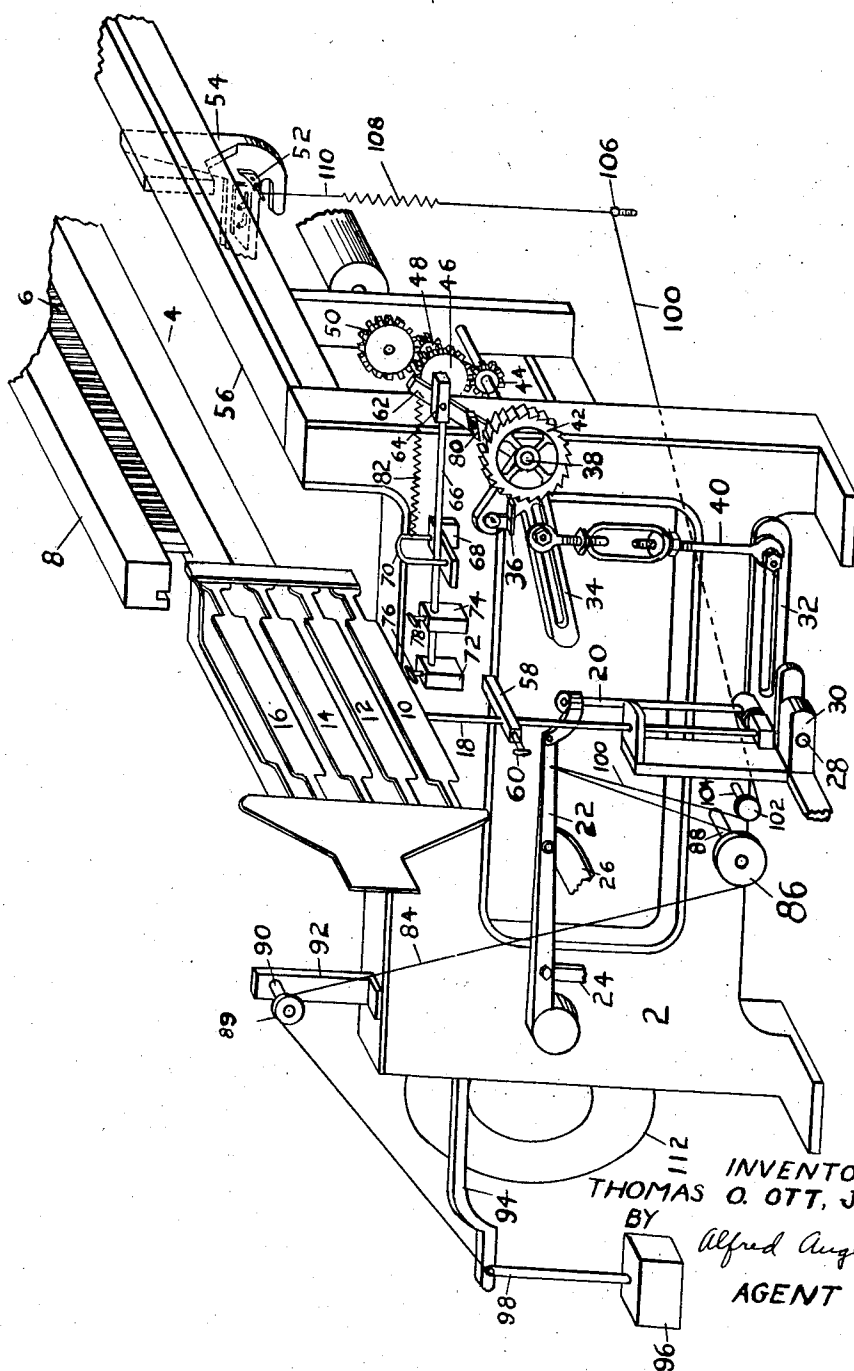
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LOOM

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LOOM

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This invention relates to looms and is illustrated as embodied in the type of loom used in the manufacture of fabrics where fringes are required.

An object of this invention is to form spaces 5 in the fabric where no filling is desired.

Another object of this invention is to provide a mechanism for spacing fringes.

A further object of this invention is to actuate the center filling fork to allow passage of an empty shuttle during the forming of the empty spaces.

A still further object of this invention is to relieve friction of the loom beam during the speeding-up of the take-up mechanism.

With these and other objects in view which will appear as the description proceeds the invention resides in the combination and arrangement of parts hereinafter described and set forth.

The drawing is a perspective view of a portion of a loom showing the invention.

In the drawing is shown a loom equipped with a box motion. The loom is illustrated as having the usual frame 2, lay 4, reed 6, reed cap 8 and a plurality of shuttle boxes 10, 12, 14, and 16. The boxes are supported by a box lifter rod 18 which is vertically movable by means of the pivotally associated rod 20, the upper part of which is pivotally connected to arm 22. Arm 22 is the usual type arm used on the loom of this type and is vertically actuated by mechanism (not shown) attached to arm 22 by the members 24 and 26.

A rocker shaft 28 has support 30 and arm 32 rigidly connected to it. Arm 34, having pawl 36 associated with it, is pivotally mounted on shaft 38 and is adjustably connected by rod 40 to arm 32. Also on shaft 38 is ratchet gear 42 and spur gear 44. Gear 44 is in mesh with gear 46, which has a pinion 48 in mesh with the take-up gear 50.

A pawl 52 is shown pivotally attached to the center filling stop motion 54, which is partially shown and is rigidly attached to the cross beam 56.

Coming more particularly to the present invention, arm 58 is adjustably attached to rod 18 by means of a set screw such as 60. Lever 62 is pivotally connected on shaft 38 and has pivotally attached to it cross-piece 64 which carries rod 66. Rod 66 is held up by support 68 and extends through guide 70. Blocks 72 and 74 are adjustably fixed on rod 66 by means of set screws 76 and 78. Pawl 80, pivotally attached to arm 62 actuates the ratchet gear 42, which is fixed on

shaft 38. A spring 82 has one of its ends attached to the guide 70 and the other end connected to the upper portion of arm 62.

A cord or cable 84 is connected to arm 22, the said cord or cable extending partially around the grooved roller 86, which is rotatably mounted on the fixed shaft 88 extending from the loom side 2. From the grooved roller 86 the cord or cable 84 extends to and partially around the grooved roller 89, rotatably mounted on shaft 90. The shaft 90 is rigidly fixed to the support 92 which is attached to the top of loom side 2. From the grooved roller 88 the cord or cable 84 extends and is fastened to the loom-beam brake-lever 94. The weight 96 is attached to the brake lever 94 by means of the rod 98. Also connected to the lever 22 is another cord or cable 100, this cord or cable extends partially around the rotatably mounted roller 102 on fixed shaft 104 extending from the loom side 2. From the grooved roller 102 the cord or cable 100 extends under the loom to the eye 106, which is screwed into the floor. Through the eye 106 the cord or cable extends and is attached to the lower end of spring 108. The upper end of spring 108 is fastened to a cord or cable 110, which extends and is attached to the pawl 52.

In operation, arm 22 is moved vertically by the usual box motion actuating mechanism (not shown) extending from arms 24 and 26 at any desired intervals. This movement causes rod 20, which is pivotally associated with arm 22, to also have the same vertical movements and to impart the movements to rod 18 at the desired intervals. Rod 18 actuates the shuttle boxes 10, 12, 14 and 16, and causes the boxes to be placed in the desired position at the proper time. Only when rod 18 is lifted vertically to raise the box containing the empty shuttle (not shown) in shuttle box 10 into position to be thrown across the lay 4, arm 58 is also raised and comes into contact with rod 66 between blocks 72 and 74. At this time the usual center filling fork is rendered inoperative. As the lay oscillates backward and forward, arm 58, by means of blocks 72 and 74 causes rod 66 to be moved backward and forward, this in turn oscillating lever 62. As lever 62 is oscillated pawl 80 comes into contact with and rotates ratchet gear 42. Gear 44 on shaft 38 is driven by ratchet gear 42 and is the driver of gear 46, which has a pinion 48 in mesh with and drives the take-up gear 50.

Also when the arm 22 is raised the end of the cord or cable 84 attached to arm 22 is raised; this action raises the brake lever 94, thus releasing

the friction on the loom beam 112 during the intervals that the take-up mechanism is speeded-up.

The end of cord or cable 100 attached to arm 22 is also raised when arm 22 is raised thus making ineffective the center filling stop motion to allow passage of the empty shuttle during the intervals that the spaces are being formed. There is sufficient slack in cables 84 and 100 so as to release the warp friction and make the stop motion ineffective only when box 10 is in position.

While only one illustrative embodiment has been shown and described it is not intended that the scope of the invention be limited to the form shown, nor otherwise than by the terms of the appended claims.

What is claimed is:

1. In a loom having a plurality of shuttle boxes, a generally vertically movable rod engaging and adapted to move said shuttle boxes, means for vertically reciprocating said arm, friction let-off mechanism, a ratchet gear, means including a pawl adapted to drive said ratchet gear, means driven by said ratchet gear and adapted to take up cloth woven by said loom, a fringe forming attachment comprising means adapted to release said friction let-off mechanism, a member carried by said vertically movable rod, a horizontally movable rod adapted to be engaged and shifted by said member when said member is in its uppermost position, a pivoted lever adapted to be shifted by said horizontally movable rod, a pawl carried by said lever and adapted to engage said ratchet gear, said member, generally vertically movable rod, horizontal rod, lever and pawl being so constructed and arranged that the take-up of the loom is more rapid than normal.
2. In a loom having a plurality of shuttle boxes, a generally vertically movable rod engaging and adapted to move said shuttle boxes, means for vertically reciprocating said arm, friction let-off mechanism, a ratchet gear, means including a pawl adapted to drive said ratchet gear, means driven by said ratchet gear and adapted to take up cloth woven by said loom, a fringe forming attachment comprising a cord or cable adapted to release said friction let-off mechanism, a member carried by said vertically movable rod, a horizontally movable rod adapted to be engaged and shifted by said member when said member is in its uppermost position, a pivoted lever adapted to be shifted by said horizontally movable rod, a pawl carried by said lever and adapted to engage said ratchet gear, said member, generally vertically movable rod, horizontal rod, lever and pawl being so constructed and arranged that the take-up of the loom is more rapid than normal.
3. In a loom having a plurality of shuttle boxes, a generally vertically movable rod engaging and

adapted to move said shuttle boxes, means for vertically reciprocating said arm, friction let-off mechanism, a ratchet gear, means including a pawl adapted to drive said ratchet gear, means driven by said ratchet gear and adapted to take up cloth woven by said loom, a fringe forming attachment comprising means adapted to release said friction let-off mechanism, a member carried by said vertically movable rod, a horizontally movable rod adapted to be engaged and shifted by said member when said member is in its filling inoperative position, a pivoted lever adapted to be shifted by said horizontally movable rod, a pawl carried by said lever and adapted to engage said ratchet gear, said member, generally vertically movable rod, horizontal rod, lever and pawl being so constructed and arranged that the take-up of the loom is more rapid than normal.

4. In a loom having a plurality of shuttle boxes, a generally vertically movable rod engaging and adapted to move said shuttle boxes, means for vertically reciprocating said arm, friction let-off mechanism, a ratchet gear, means including a pawl adapted to drive said ratchet gear, means driven by said ratchet gear and adapted to take up cloth woven by said loom, a fringe forming attachment comprising a cord or cable adapted to release said friction let-off mechanism, a member carried by said vertically movable rod, a horizontally movable rod adapted to be engaged and shifted by said member when said member is in its filling inoperative position, a pivoted lever adapted to be shifted by said horizontally movable rod, a pawl carried by said lever and adapted to engage said ratchet gear, said member, generally vertically movable rod, horizontal rod, lever and pawl being so constructed and arranged that the take-up of the loom is more rapid than normal.

5. In a loom having a plurality of shuttle boxes, a generally vertically movable rod engaging and adapted to move said shuttle boxes, means for vertically reciprocating said arm, friction let-off mechanism, ratchet gear, means driven by said ratchet gear and adapted to take up cloth woven by said loom, a fringe forming attachment comprising means adapted to release said friction let-off mechanism, a member carried by said vertically movable rod, a horizontally movable rod adapted to be engaged and shifted by said member when said member is in its uppermost position, a pivoted lever adapted to be shifted by said horizontally movable rod, a pawl carried by said lever and adapted to engage said ratchet gear, said member, generally vertically movable rod, horizontal rod, lever and pawl being so constructed that the take-up of the loom is more rapid than normal.

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