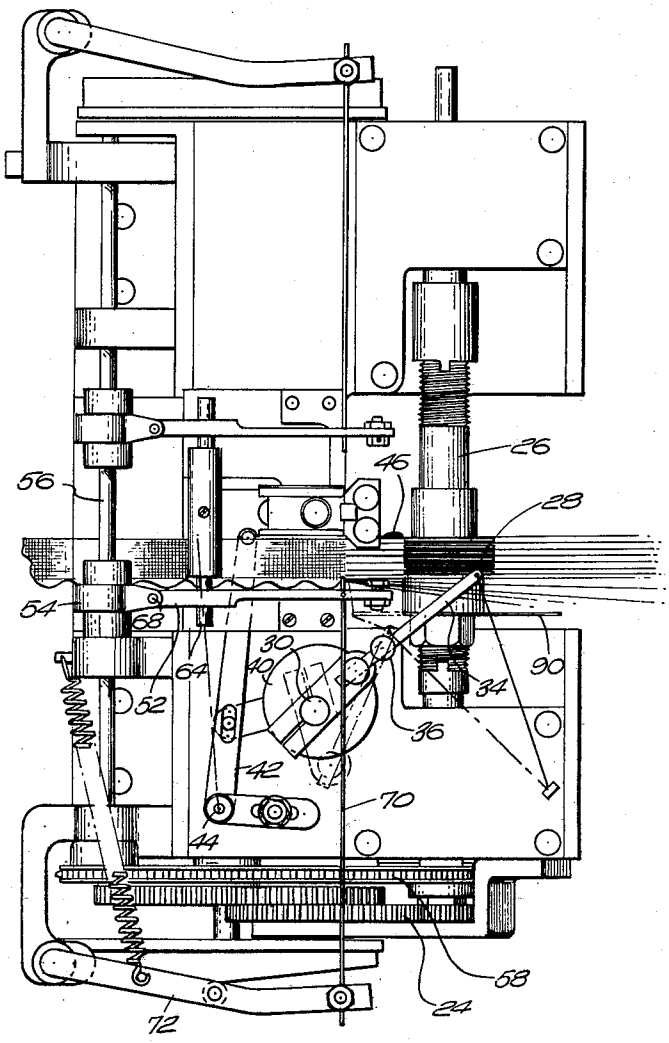
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MECHANISM FOR MAKING A FANCY SELVAGE ON NARROW WEBBING

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FIG. 1



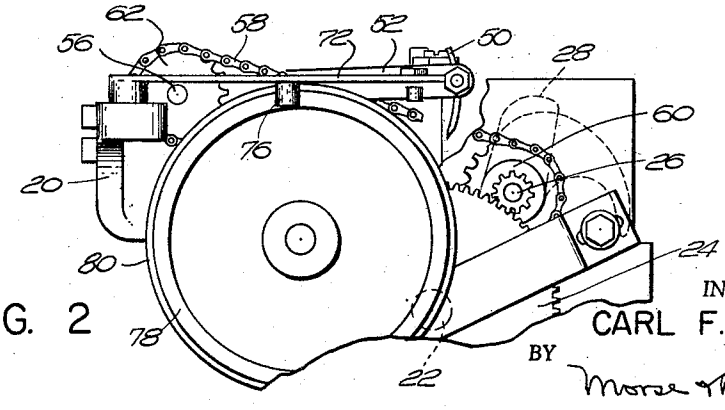


FIG. 2

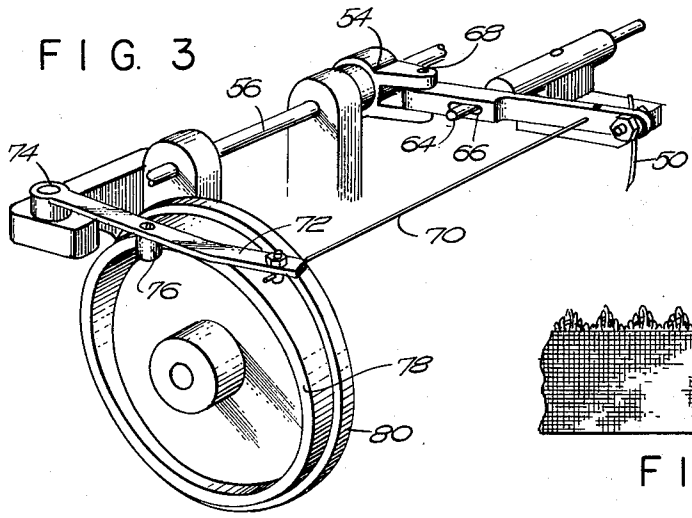
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FIG. 3



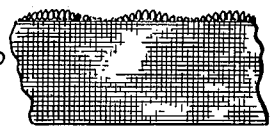


FIG. 6

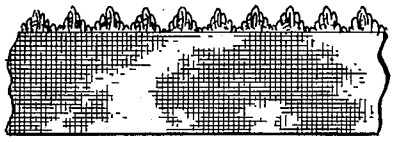


FIG. 5

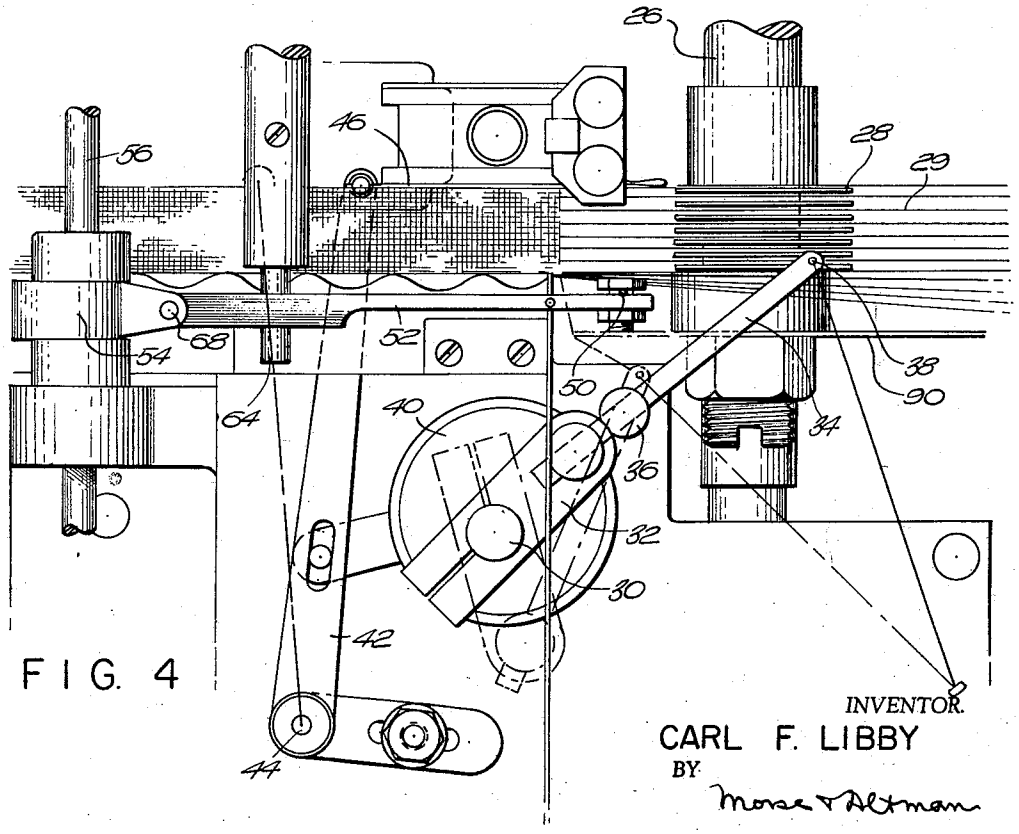


FIG. 4

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3,126,920

MECHANISM FOR MAKING A FANCY SELVAGE ON NARROW WEBBING

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Filed June 26, 1962, Ser. No. 205,298
6 Claims. (Cl. 139—118)

This invention relates to a high-speed loom of the type illustrated and described in U.S. Patent No. 2,180,831, granted November 21, 1939, for weaving narrow webs, the invention consisting of mechanism for producing an ornamental selvage on such webbing. By making simple changes, scalloped selvage contours or other recurrent shapes can readily be had, the mechanism for such purpose being simple and reliable.

For a more complete understanding of the invention, reference may be had to the following description thereof, and to the drawings, of which

FIGURE 1 is a plan view of a duplex loom equipped with mechanism embodying the invention;

FIGURE 2 is a side elevation of the same;

FIGURE 3 is a perspective view of the mechanism for forming a scalloped selvage;

FIGURE 4 is a portion of FIGURE 1 drawn to a larger scale;

FIGURE 5 is a plan view of a piece of narrow webbing having a fancy selvage such as can be formed by mechanism embodying the invention; and

FIGURE 6 is a plan view of a piece of narrow webbing having another fancy selvage.

The loom illustrated in FIGURE 1 is designed to weave two narrow webs simultaneously, the two halves of the machine being identical except for left-and-right arrangement of some of the parts. Some of the parts of one of the units of the duplex machine are omitted on the drawing as that unit is not described in detail herein.

The loom has a main frame 20 in which is journalled a drive shaft 22 (FIGURE 2) connected by suitable means to the various driven parts of the loom. Gears 24 connect the drive shaft to a reed shaft 26 on which are mounted the reed dents 28 to beat up each loop of weft when laid in the warp shed formed by the warp threads 29 through the usual harness (not shown). Other gears (not shown) drive a vertical shaft 30 carrying a crank 32 for the operation of a weft-laying finger 34 which slides longitudinally through a guide 36 which rocks about a vertical axis. The weft yarn passes through an eye 38 in the end of the finger remote from the crank 32. An eccentric 40 on the shaft 30 rocks an arm 42 one end of which is pivoted at 44, the other end being connected to a knitting needle 46 to reciprocate it in timed relation to the movements of the weft-laying finger 34 so as to catch the end of each loop of weft yarn projected through the shed by the finger 34 and knit it to the end of the previous loop so as to form a selvage. The parts thus far mentioned are standard equipment in the loom.

For the formation of fancy selvages an edge wire 50 is mounted on the end of a lever arm 52, the other end of which is joined to an eccentric strap 54. The strap surrounds an eccentric (not shown) mounted on a shaft 56 which is operatively connected to the reed shaft 26 by a chain 58 passing around sprocket wheels 60, 62 of equal size mounted respectively on the shaft 26 and the shaft 56. The lever arm 52 is pivoted between its ends by a fixed pin 64 which extends through a slot 66 in the arm 52. This causes the edge wire 50 to move up and down as well as forward and rearward, describing a closed curve path so as to catch the weft yarn leading from the fell of the fabric just as a loop of it is about to be projected through the warp shed, and to move clear of the weft yarn when

the finger is being retracted from the shed. The engagement of the edge wire 50 with the weft yarn creates a series of loops along the selvage adjacent thereto. To vary the length of these edge loops for the formation of a fancy selvage such, for example, as those illustrated in FIGURES 5 and 6, provision is made for moving the edge wire 50 from or toward the web which is being formed. For this purpose the arm 52 is articulated at 68 near the eccentric strap 54 and is connected by a rod 70 to the end of an arm 72 which is pivoted at 74 and carries a cam follower 76 bearing against a circular edge cam 78. The cam 78 is on a wheel 80 which is slowly rotated by a gear train 82 by which it is operatively connected to the drive shaft 22. As shown, the cam gradually rises from a low point to a high point which is diametrically opposite, then gradually descends to the low point. This results in a scalloped selvage such as is illustrated in FIGURE 6.

Another example of a fancy selvage is illustrated in FIGURE 5. This would be formed by a cam having a plurality of high points alternating with low points. It is evident that a wide variety of selvage designs can be made by suitably shaping the cam on the cam wheel 80.

When the loom is in operation, and the weft-laying finger 34 has moved clear of the warp shed after laying a loop therein, the reed dents 28 beat up the loop to the fell of the fabric and an extra dent 90 which revolves on the reed shaft 26 swings down to deflect forward the portion of the weft yarn then between the fell of the webbing and the eye 38 of the finger 34, as indicated by a broken line in FIGURE 4. The edge wire 50 is timed to move rearward and downward at this moment to catch this portion of the weft yarn so that when the finger 34 projects the next loop through the shed, the edge wire retains a loop at the adjacent selvage, the length of the selvage loop depending on the position of the edge wire 50 as determined by the cam 78.

I claim:

1. In a loom having means for forming a shed, a weft-laying finger for projecting successive loops of weft yarn through said shed from one side thereof to weave a web, a knitting needle mounted at the opposite side of the shed, and means for operating said finger and needle so that the needle catches each loop of weft yarn projected through the shed by said needle and knits it through the previous loop, and an edge wire supported adjacent to said one side of the shed perpendicular to the plane of the web at the fell thereof, means imparting up and down movements to said edge wire in timed relation to the movements of said finger to form loops of weft yarn at said one side, and means imparting gradual lateral movements to said edge wire away from and toward the shed.

2. Mechanism as described in claim 1, said means for imparting reciprocating movements to said edge wire comprising a lever having said edge wire mounted on one end thereof, an eccentric strap at the other end thereof, and a rocking pivot between said ends, an eccentric member within said strap, and means for rotating said eccentric.

3. Mechanism as described in claim 2, said lever having a longitudinally extending slot spaced from both ends thereof, said rocking pivot comprising a fixed pin extending through said slot transversely of the lever.

4. Mechanism as described in claim 2, said means for imparting lateral movements to said edge wire comprising a pivot joint in said lever adjacent to said eccentric strap, a rod secured at one end to said lever near the edge wire and leading horizontally from said lever, and cam means for gradually reciprocating said rod longitudinally.

5. Mechanism as described in claim 4, said cam means for reciprocating said rod comprising an arm pivoted at one end, said rod being attached to the other end of said arm, a cam follower on said arm between the ends there-

of, a revoluble cam engaged by said follower, and means for revolving said cam.

6. In a loom having means for forming a shed, means for projecting into said shed successive loops of weft yarn to weave a web, and a revolving reed comprising a shaft and a series of dents mounted on said shaft; an edge wire supported adjacent to one side of said shed, means for causing said edge wire to move in a closed curve path rearward and downward then forward and upward in timed relation to the rotation of said reed shaft, an extra dent on said shaft arranged to deflect forward the yarn leading from the fell of the web so as to be caught by the

downward movement of said edge wire, and means driven in timed relation to the rotation of said reed shaft to move said edge wire gradually from and toward the web.

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