

July 21, 1953

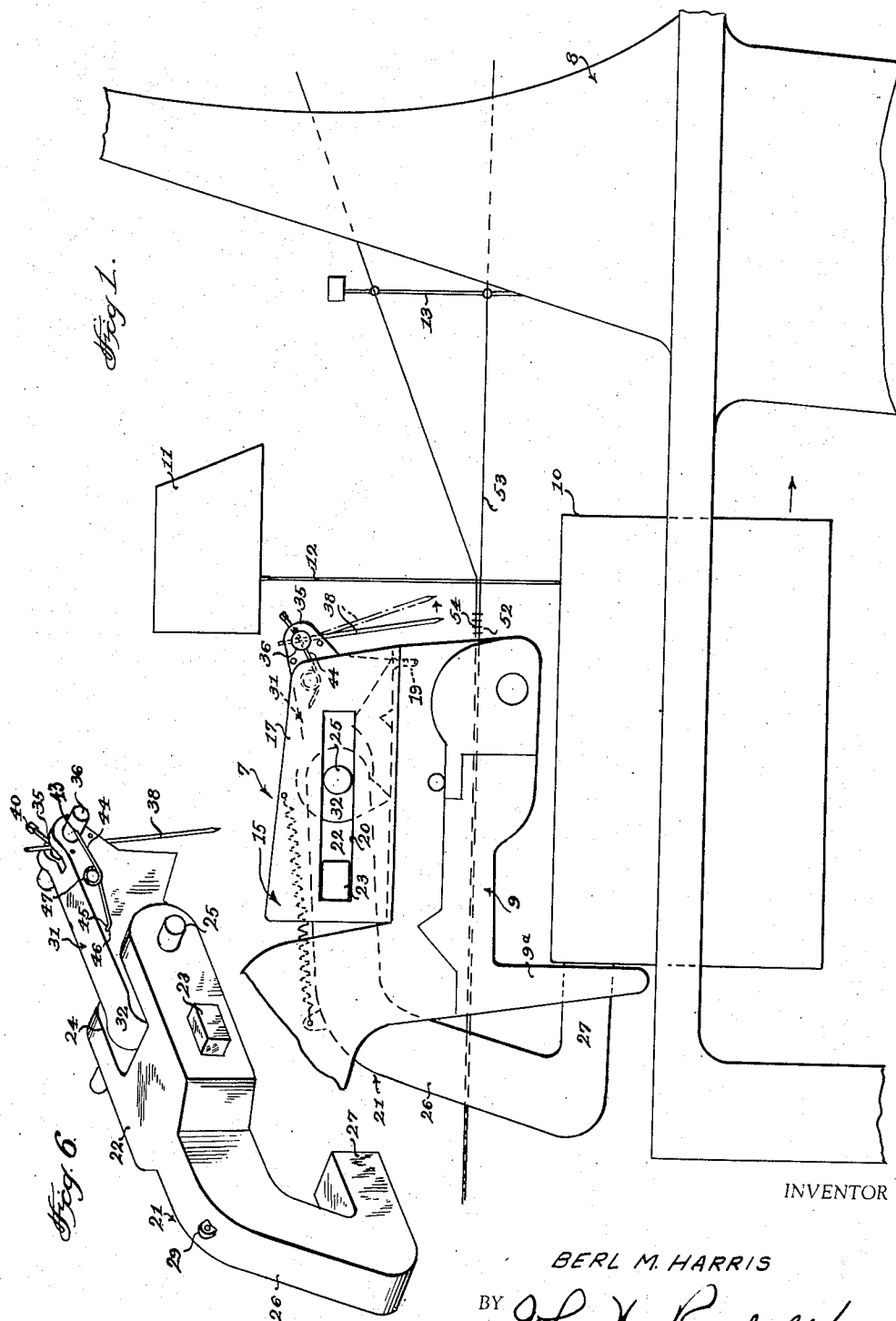
B. M. HARRIS

2,646,084

SELF-SELVAGER FOR LOOMS

Filed April 18, 1952

2 Sheets-Sheet 1



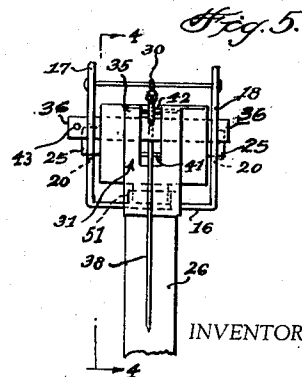
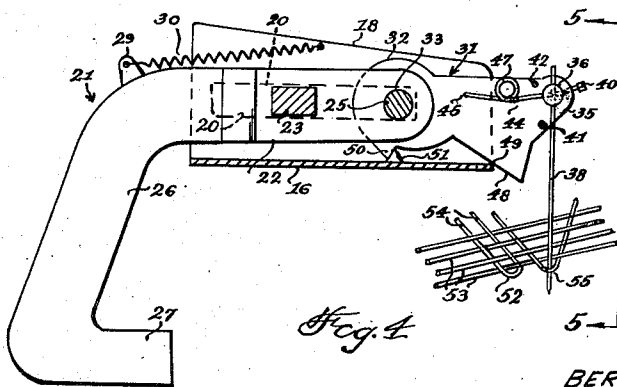
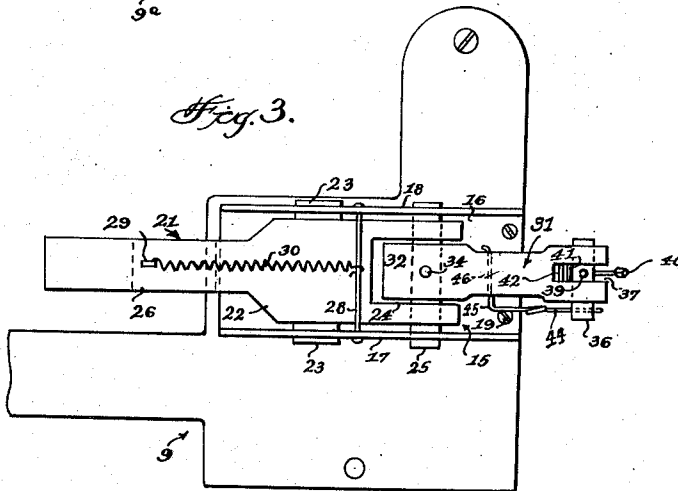
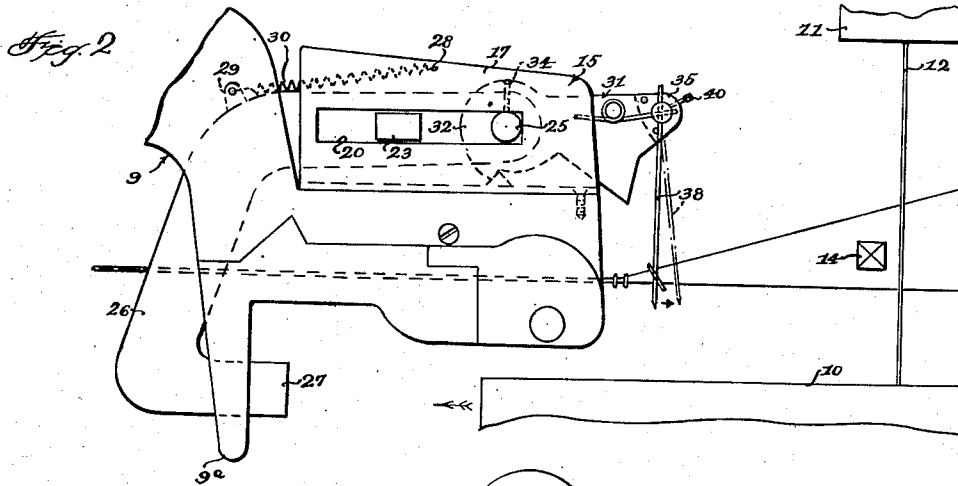
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SELF-SELVAGER FOR LOOMS

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8 Claims. (Cl. 139—195)

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This invention relates to a novel self-selvaging attachment for looms which is detachably mounted on and supported by the temple and which operates effectively to make possible the weaving of cloth having a soft or looped selvage and without the use of a wire run through the harness, reed and temple and which causes considerable loom damage and frequent loom stoppages.

Another object of the invention is to provide a self-selvager attachment which will operate effectively without breaking the filling, which may be quickly and easily installed on a loom, and which is extremely simple and efficient in operation.

Another object of the invention is to provide a self-selvager which may be employed without loss of time in setting the loom and which will produce better cloth with a better looped selvage edge than can be accomplished with the use of wire run through the selvage edge of cloth.

Still a further object of the invention is to provide a self-selvager having a yieldably mounted needle for engaging the filling loop at a selvage edge of the cloth, which is displaceable upwardly out of engagement with the loop by operation of the loom and which is normally retained yieldably in substantially an upright position but swingable toward an inclined position to enable the needle to more readily disengage the filling loop.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawings, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of a portion of a loom, looking toward the right-hand side thereof, showing the right-hand self-selvager attachment, constituting the invention, in an applied position;

Figure 2 is a fragmentary side elevational view, similar to Figure 1 but showing the attachment parts in a filling loop engaging position;

Figure 3 is a top plan view of the attachment shown mounted on the right-hand temple;

Figure 4 is a longitudinal sectional view of the attachment taken substantially along a plane as indicated by the line 4—4 of Figure 5;

Figure 5 is an end elevational view of the attachment taken in a direction as indicated by the line 5—5 of Figure 4, and

Figure 6 is an enlarged perspective view of a portion of the attachment.

Referring more specifically to the drawings, for

the purpose of illustrating the application and use of the self-selvager, designated generally 7 and comprising the invention, a portion of the right-hand side of a conventional loom, designated generally 8 has been illustrated in the drawings, including a portion of the right-hand temple 9, the lay beam 10, reed cap 11 and reed 12, illustrated in Figures 1 and 2. The loom harness 13 is also illustrated in Figure 1 and the loom shuttle 14 is shown in Figure 2. The loom parts 9 to 14 are all of conventional construction and have been illustrated and briefly described merely because these parts function with the self-selvager, designated generally 7.

The self-selvager 7 includes an elongated channel shaped housing 15 having a bottom 16 and corresponding upstanding substantially parallel side walls 17 and 18. The housing bottom 16 is secured by fastenings 19 to the top of the temple 9. The side walls 17 and 18 are provided with corresponding aligned longitudinally extending slots or openings 20.

An actuator, designated generally 21 includes a head portion 22 which is loosely disposed in the housing 15 and which is provided adjacent its rear end with laterally projecting noncircular lugs 23 which extend outwardly through and slidably engage the slots 20 and which non-turnably fit therein to support the head 22 above and substantially parallel to the housing bottom 16. The head 22 is provided with a relatively deep and wide notch 24 at its forward end. A pin 25 extends transversely through the forward part of the head 22, transversely through the notch 24 and has its ends slidably engaging the slots 20 to cooperate with the lugs 23 to prevent rocking movement of the head 22 in the housing 15. The pin 25 is rotatably and detachably mounted in the notched forward end of the head 22. The actuator 21 includes a shank 26 of restricted width which extends rearwardly from the head 22 and downwardly behind the housing 15 and temple 9. The shank 26 terminates at its lower end in a forwardly projecting lay beam engaging portion 27 which is normally disposed forwardly of the lay beam stop 9a of the temple 9, as illustrated in Figure 2. A rod 28 extends across the upper portion of the housing 15, intermediate of its ends, and the ends of said rod are anchored in the upper portion of the walls 17 and 18. An apertured ear 29 projects upwardly from the upper portion of the shank 26. A pull spring 30 has one end connected to the ear 29 and its opposite end anchored to the rod 28 for normally urging the actuator 21 forwardly

to position the selvager 7 in its operative position of Figure 2 and with the lay engaging portion 27 disposed forwardly of the lay stop 9a.

A needle carrier, designated generally 31 of elongated construction, has a vertically enlarged rear end 32 which fits loosely in the notch 24 and has a central opening 33 therein through which the pin 25 extends. A setscrew 34 is threaded into the carrier portion 32 and is adapted to be advanced into the bore 33 and into engagement with the pin 25 for securing the rear end 32 of the carrier to said pin 25 and to additionally retain the pin in engagement with the forward end of the actuator head 22 and in engagement with the slots 20. The upper portion of the forward end of the needle carrier 31 is provided with an upwardly and forwardly projecting bifurcated or notched extension 35 which is disposed forwardly of the remainder of said carrier 31 and through which a needle supporting pin 36 extends. The needle supporting pin 36 is journaled in the extension 35 and extends through the notch 37 thereof. A filling loop engaging needle 38 has an upper end extending through the notch 37 and through a diametrical opening 39 of the pin 36, which is likewise disposed in the portion of the pin 36 located in said notch 37. A setscrew 40, which is disposed in the notch 37, is threaded radially into the pin 36 and is advanced into engagement with the needle 38 to clamp the needle in the bore 39. The lower portion of the notched extension 35 is provided with a bottom needle stop 41 and the upper portion of said extension 35 has an upper needle stop 42. The needle stops 41 and 42 extend transversely across the inner portion of the notch 37. One end of the needle supporting pin 36 projects outwardly from one side of the extension 35 and has a diametrical bore 43 extending therethrough, at an angle to the bore 39 in which one straight end of a spring 44 is disposed. The spring 44 has an angularly turned opposite end 45 which is anchored in a transverse opening 46 of the needle carrier 31. The spring 44 is coiled as seen at 47 intermediate of its ends and acts to resist movement of the first mentioned spring end from its position as illustrated in Figure 6, in which position the pin 36 is held against rotation and in a position so that the needle 38 will abut the lower stop 41.

The needle carrier 31 has a downwardly and forwardly inclined bottom edge 48 forming a cam surface for engagement with the forward edge 49 of the housing bottom 16. The forward end of the cam surface 48 extends to the forward end of the lower portion of the carrier 31 and which is disposed substantially behind or rearwardly of the extension 35. The rear portion 32 of the carrier 31 is provided with a depending projection or detent 50 which is adapted to engage an upstanding projection of the housing bottom 16 forming a stop 51, when the actuator 21 and needle carrier 31 are in forwardmost, operative positions.

It is to be understood that a corresponding selvager attachment 7 is mounted on the left-hand loom temple, not shown, the selvager attachment 7 as illustrated being disposed over the right-hand selvage edge 52 of a piece of cloth being woven on the loom 8, partially illustrated by the warp 53 and by the weft or filler 54. The other, left-hand selvager, not shown, associated with the left-hand temple 9, not shown, would be mounted over the other, left-hand selvage edge,

not shown, of the cloth. Assuming the loom parts and the selvager attachment parts to be in the positions as illustrated in Figure 1, as the lay beam 10, reed cap 11 and reed 12 move rearwardly of the loom or from left to right of their positions of Figure 1, the lay beam 10 will move away from the stop 9a and toward its position of Figure 2. When this occurs, the lay beam 10 moves out of engagement with the lay beam engaging portion 27 of the actuator 21 allowing the spring 30 to displace the actuator 21 and carrier 31 forwardly of the housing 15 from their positions of Figure 1. In the forward movement of these parts, the lugs 23 and pin 25 slide forwardly of the housing 15 in the slots 20. The cam surface 48 moves forwardly relatively to the forward edge 49 of the bottom 16 and if the carrier 31 does not swing downwardly by rotation of the pin 25 in the slots 20 due to its weight, the detent 50 will strike the stop 51 and cause the carrier 31 to swing downwardly or clockwise, as seen in Figures 2 and 4 to its operative position and with the needle 38 disposed in substantially a vertical position against the lower stop 41. The needle 38 will assume a position outwardly of the right-hand selvage edge 52, as illustrated in Figures 2 and 4. This occurs while the lay beam 10, reed cap 11 and reed 12 are moving toward the back of the loom or from the forward position of these parts as illustrated in Figure 1 in a direction to the right to the rearmost position of these parts as illustrated in Figure 2. With the parts thus disposed, the shuttle 14 carrying the filling 54 moves from the right side of the loom, as illustrated in Figures 1 and 2, to the left or far side thereof, between the reed and temple 9. The shuttle 14 forms a selvage loop 55 in a conventional manner at the right-hand selvage edge 52 around the lower portion of the needle 38. Thereafter, the lay beam 10, reed cap 11 and reed 12 move toward the front of the loom or to the left from their positions of Figure 2 to their positions of Figure 1 so that the filling will be packed by the reed in a conventional manner. During this movement, the newly formed selvage loop 55 is held by the needle 38 until the reed 12 approaches the filling 54, at which time the forward end of the lay beam 10 strikes the actuator portion 27 and moves it from its position of Figure 2 to its position of Figure 1. The actuator 21 being thus moved exerts a pull on the carrier 31 as the actuator is moved in the housing 15 from its advanced position of Figure 2 to its retracted position of Figure 1. As the carrier 31 moves toward a retracted position, as illustrated in Figure 1, its cam surface 48 by engagement with the housing edge 49 causes the carrier 31 to swing with the pin 25 in a counterclockwise direction in the housing 15 for rocking the carrier upwardly as it is moved to the left from its position of Figure 2 to its position of Figure 1. This upward swinging movement of the carrier 31 causes the needle 38 to be withdrawn upwardly out of the loop 55. In order that the needle 38 will not bind in the loop 55, since it is moving to the left as it is drawn upwardly, the needle 38 is swingably supported by the pin 36 which permits the needle to swing counterclockwise by a counterclockwise turning movement of the pin 36 against the action of the spring 44 as the needle is displaced upwardly and to the left. When the needle 38 has cleared the selvage loop 55 the spring 44 will return it to its vertical position as illustrated in full lines in Figure 1 from its inclined dotted line position against the upper stop

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42. The needle bears against the lower stop 41 in its normal vertical position. The movement of the carrier 21 to the left will also load the spring 30 so that when the lay beam 10 again moves to the right from its position of Figure 1, as previously described, the spring 30 will return the actuator 21 and carrier 31 to the operative positions of these parts as illustrated in Figures 2 and 4, and as previously described.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. In combination with a loom having a side provided with a lay beam and temple, a self-selvager attachment supported by said temple, said self-selvager attachment including an elongated channel shaped housing having a bottom detachably mounted on and secured to the temple and extending longitudinally of the loom, an actuator having a head at one end slidably connected to the housing for sliding movement longitudinally therein, said actuator having a lay beam engaging portion disposed beneath the temple in the path of forward movement of the lay beam, an elongated needle carrier having one end pivotally connected to an end of the actuator head for vertical swinging movement in the housing and projecting therefrom outwardly of an end of said housing, a selvage loop engaging needle, means supporting the selvage loop engaging needle on the other end of the carrier and beyond said end of the housing, cam means associated with the carrier and housing for rocking the carrier upwardly to elevate the needle as the carrier is moved inwardly of the housing, said lay beam engaging portion of the actuator being struck by the lay beam as the lay beam travels in one direction for displacing the carrier inwardly of the housing for elevating the needle, and spring means connected to the housing and actuator for moving the actuator and carrier in the opposite direction to displace the carrier outwardly of said housing end and to return the needle to an operative position adjacent a selvage edge of the fabric being woven by the loom whereby the needle will be engaged by a selvage loop formed by the loom shuttle.

2. A self-selvager attachment as in claim 1, said actuator including a shank portion extending outwardly and downwardly of the other end of the housing and having an intumed lower end portion forming said lay beam engaging portion.

3. A self-selvager attachment for looms as in claim 1, said housing having upstanding side walls provided with longitudinally extending slots, and said actuator head having laterally projecting lugs slidably engaging said slots for limiting the sliding movement of the actuator in the housing.

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4. A self-selvager attachment for looms as in claim 3, said actuator head end being provided with a notch in which the first mentioned end of the carrier is loosely disposed for vertical swinging movement, and a pin extending transversely through the notched first mentioned end of the actuator head and through the inner end of the carrier for pivotally connecting the carrier to the head, the end portions of said pin slidably engaging in the housing wall slots.

5. A self-selvager attachment as in claim 1, said last mentioned end of the carrier being bifurcated, a pin extending through and journaled in the furcations of said bifurcated outer end, said needle having an upper portion extending through the bifurcated end of the carrier between the furcations thereof and through said last mentioned needle supporting pin, and means adjustably securing the needle in the needle supporting pin for varying the elevation of the needle.

6. A self-selvager attachment for looms as in claim 5, said needle supporting pin being turnable in the furcations for swingably moving the pin relatively to the carrier, and a spring supported by the carrier and connected to the needle supporting pin, said spring urging said pin to turn in one direction for swinging the needle toward an upright position.

7. A self-selvager attachment for looms as in claim 6, and upper and lower needle stops extending transversely across the bifurcated portion of the carrier, the lower needle stop being disposed to be engaged by the needle when in an upright position for limiting swinging movement of the needle in one direction, and said upper needle stop being disposed to be engaged by the needle when the needle is swung in one direction toward an inclined position and against the action of said needle spring.

8. A self-selvager attachment for looms as in claim 1, said housing bottom having an upstanding projection forming a stop, the bottom portion of the inner end of the needle carrier having a depending projection forming a detent, said detent engaging the stop as the needle carrier is moved outwardly of said housing end for causing the needle carrier to swing downwardly relatively to the actuator head and housing.

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