May 20, 1930. L. E. MONROE 1,759,518

DOT FILLING RETAINER

Filed March 20, 1929 2 Sheets-Sheet 1

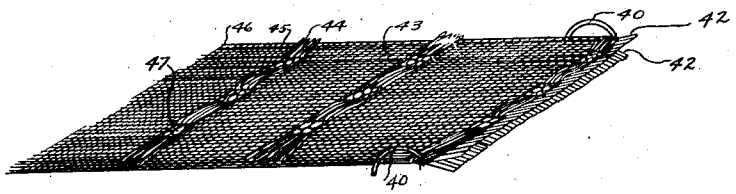


Fig 7

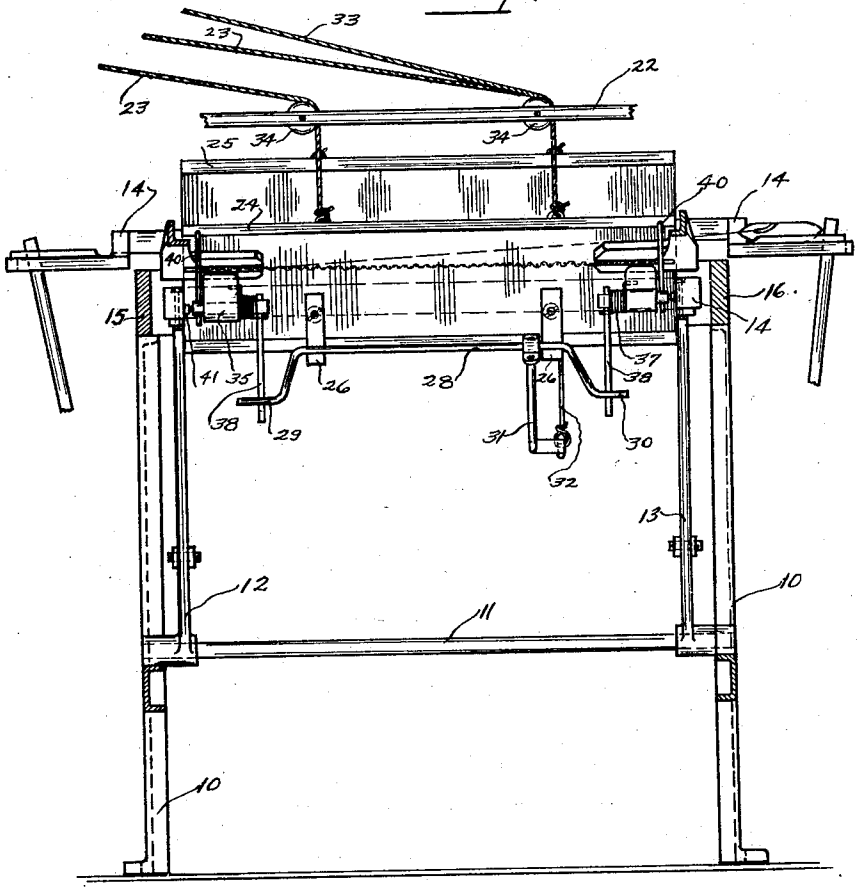


Fig 1

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DOT FILLING RETAINER

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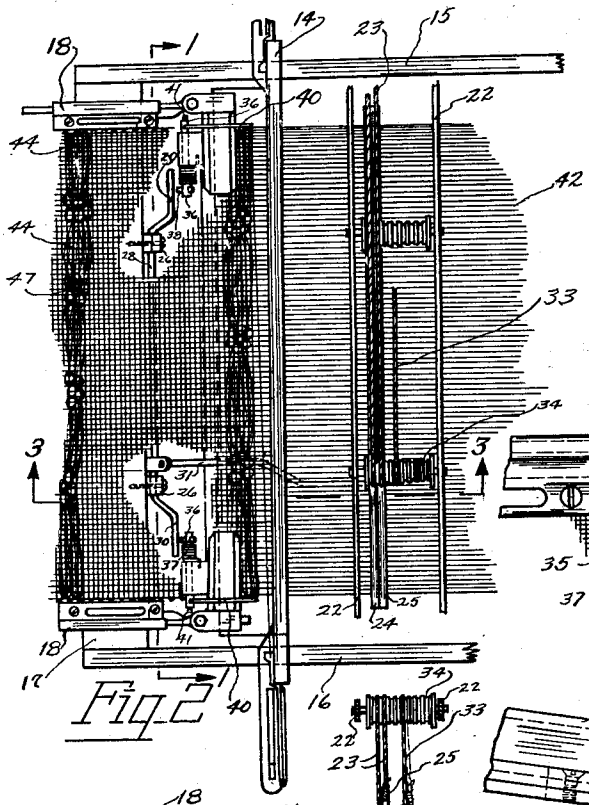


Fig 2

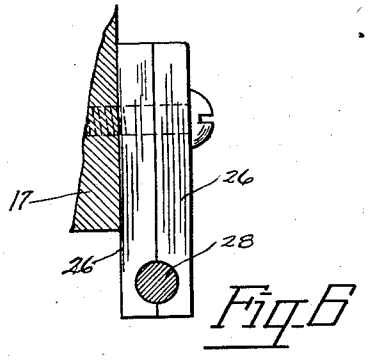


Fig 6

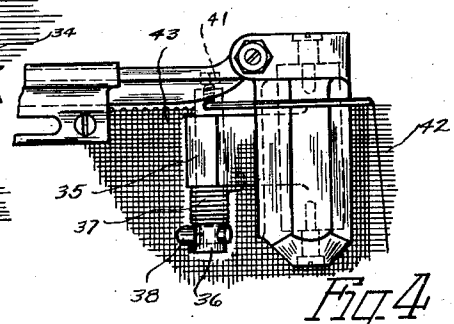


Fig 4

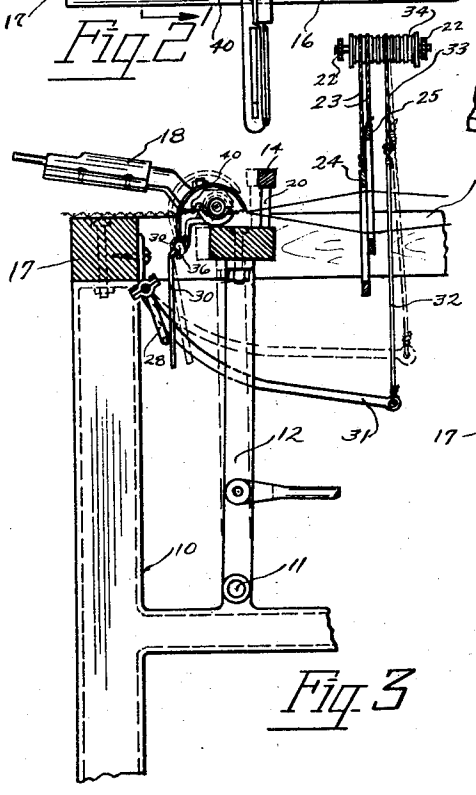


Fig 3

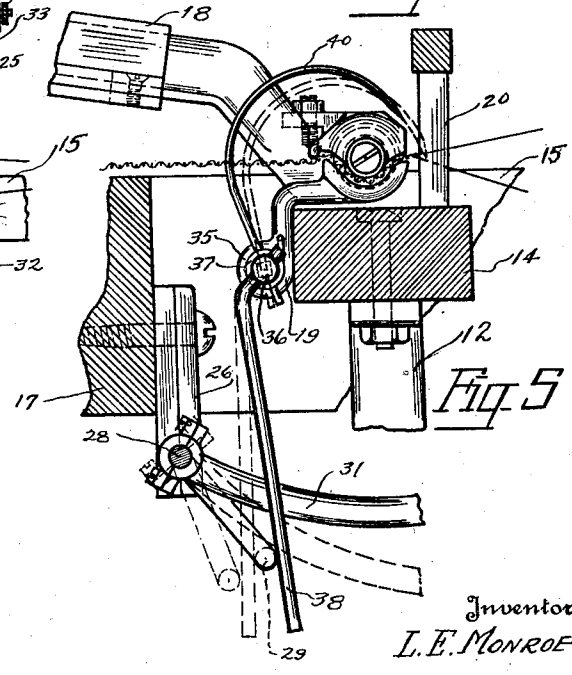


Fig 5

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Patented May 20, 1930 1,759,518

UNITED STATES PATENT OFFICE

LAWLESS E. MONROE, OF LAKEDALE, NORTH CAROLINA

DOT-FILLING RETAINER

Application filed March 20, 1929. Serial No. 348,485.

My invention relates to a device for holding the ends of a dot filling in looms, and more especially for means adapted to automatically move out of the path of the lay of the loom when the filling is pressed by the lay of the loom and which will automatically fall into position to engage the ends of a dot filling at the proper time.

An object of my invention is to provide a dot filling retainer which is adapted to be lifted out of operation by the dobby lever of the harness mechanism of the loom when the dot filling is being woven, and which is adapted to assume an operative position when the dot filling is being woven, and which is adapted to automatically hold the ends of the dot filling and to automatically move out of the said dot filling when the lay of the loom pushes the thread into proper position.

Heretofore it has been the practice to provide a cord around which the shuttle of the loom would pass the dot filling when said dot filling is being woven into a fabric. The result of this has been that after the fabric is woven the cord must be removed by hand which is a tedious and slow operation, and by the use of my invention this cord is eliminated thus saving a great amount of labor in removing the heavy cord which has heretofore been used. This heavy cord which has heretofore been used has been operated by the harness mechanism to cause the dot filling to pass around said cord.

Some of the objects of my invention having been stated other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is a cross-sectional view taken along the line 1—1 in Figure 2;

Figure 2 is a plan view of a portion of one end of a loom showing my invention applied thereto;

Figure 3 is a cross-sectional view taken along the line 3—3 in Figure 2;

Figure 4 is an enlarged plan view of the upper left hand corner of Figure 2;

Figure 5 is an enlarged detail view of the upper left hand corner of Figure 3;

Figure 6 is a side elevation of one of the bearing members for holding the U-shaped rod in place with the U-shaped rod being shown in cross-section;

Figure 7 is a perspective view of a fabric into which the dot filling has been woven, and showing the dot filling retainer in operation.

Referring more specifically to the drawings the numeral 10 indicates the side portion of the frame of a loom which has the transversely disposed rod 11 thereon on which the lay of the loom is mounted by means of the upwardly projecting oscillating rods 12 and 13, the lay 14 of the loom being mounted on the upper end of the rods 12 and 13.

The side members of the loom are indicated by the reference characters 15 and 16, and breast beam of the loom is indicated by the reference character 17. My invention is adapted to be applied to a conventional type of loom which has the temples 18 thereon, these temples being provided with the temple lip 19.

The lay of the loom has the conventional reeds 20 therein and this lay of the loom is adapted to strike the temple lip 19 and force the temple backwardly as is conventional in all types of looms.

The reference character 22 indicates the support for the harness mechanism of the loom which comprises the cords 23 which are adapted to operate the harness mechanisms 24 and 25 of the loom and also to operate my device.

The parts thus far described are the conventional parts of the loom and I shall now proceed to describe my invention as applied thereto.

Secured on the breast beam of the loom are the bearing members 26 which support for oscillation the U-shaped rod 28 which has the downwardly and outwardly projecting portions 29 and 30. Secured on this rod 28 is the crank arm 31 which is adapted to pass under the lay of the loom and beneath the fabric which is being woven, and has the wire 32 secured thereto which wire projects upwardly through the warp and is secured to the cord 33 which passes over the roller

34 and the end of this cord is secured to the harness lever of the dobby head, which is not shown in the drawings but which is the conventional type of dobby head in a loom.

Secured on the rear portion of the temple lip 19 is the bearing 35 which has rotatably secured therein the rod 36 which rod projects on either side of this bearing 35 and the coiled spring 37 is secured therearound, one end of the coiled spring being rigidly secured to the temple lip and the other end of the coiled spring passing behind a rod 38 which pierces the rod 36 and is rigidly secured therein. This rod 38 projects downwardly and is adapted to press against the portions 29 or 30 as the case may be of the flattened U-shaped rod 28. On the other end of the rod 36 there is secured dot filling retainer 40 by means of the set screw 41 and by means of which set screw said dot filling retainer 40 can be adjusted. This dot filling retainer projects upwardly over the temple part of the loom and projects into the selvage portion of the fabric which is being woven.

The operation of my device is as follows: With the loom set so as to allow the lever 31 to assume the lower position as shown in full lines in Figure 3 this will push backwardly the portions 29 and 30 of the U-shaped rod 28 and will allow the dot filling retainer 40 to assume the position as shown in full lines in Figure 3. When the ordinary procedure of weaving changes to that of putting in a dot filling of a different color, the dot filling will be thrown by the shuttle and the ends thereof projects above the warp as shown in Figure 7, and when the dot filling is pressed home by the lay of the loom the lay of the loom will strike the temple lip 19 and due to the rod 38 pressing against the portions 29 and 30 of the rod 28 this will cause the dot filling retainer to be raised to the dotted line position as shown in Figure 3.

After the dot filling has been pressed home the lay of the loom retraces its steps and this allows the dot filling retainer 40 to immediately come down to cause its points to enter into the warp or selvage, and this will pass the dot filling retainer 40 around the end of the dot filling and when the shuttle is thrown back, this dot filling retainer 40 will engage the dot filling and cause a loop to be formed as shown in Figure 7, and this method is repeated as long as the dot filling retainer is being used and as long as the dot filling is being placed in the fabric. When the dot filling thread is discontinued for a portion of time, the dobby lever of the loom will raise the lever 31 upwardly to the dotted line position shown in Figure 3, and this will raise the dot filling retainer 40 entirely out of the path of the lay of the loom, and will cause the same to remain inoperative, and will cause the loom to operate as if the dot filling retainer was not attached thereto.

While I have described my device as being adapted to hold the filling when dots are being formed in the fabric it is evident that it can also be used for holding any desired amount of filling even though the filling should extend all the way to the edge of the warp. It is evident that when the filling adapted to be held by my device is extended between the warp all the way to the edge thereof, that the filling retainer will operate in the same manner and will check the ends of this filling even though they are woven into warp at the point at which they are crossed by the filling retainer. This arrangement allows dot or other pattern effects to be produced even to the edge of the fabric, and it is evident that this filling retainer described and claimed in the application can be used for instance where a solid strip is woven all the way across the fabric as the filling retainer would then operate and cause the filling to be retained even though the filling is woven into the warp even to the edge of the fabric. It is also evident that this filling retainer could be used continuously for holding the ends of the filling as it would only be necessary to cause the lever 31 to be held in lowered position at all times.

The warp threads of the loom are designated by the reference character 42 and filler threads are indicated by the reference character 43. My invention is especially adapted to be used for placing grounded or flowered or design effects in the fabric, and this is done by passing the colored threads 44 through certain strips of the material at the same time that the ordinary filler threads 43 are being placed therein, and these threads 44 are woven into the points 45, 46 and 47 of the fabric, and the portion of said colored threads therebetween project above the ground of the fabric, and after the fabric is woven this fabric is passed through a shearing machine which clips off the loose portions of the thread including the looped ends and leaves the design in the fabric.

In the drawings and specification I have set forth a preferred embodiment of my invention and although specific terms are employed they are used in a generic and descriptive sense only, and not for purposes of limitation the scope of the invention being set forth in the appended claims.

I claim—

1. In a loom, a temple, a lay adapted to move to and from said temple, selvage retaining hooks adapted to be raised when the lay strikes the temple and to automatically lower when the lay leaves the temple and connections between said selvage retaining hooks and the harness mechanism of the loom whereby the selvage retaining hooks may be rendered inoperative at a predetermined time.

2. In a filling retainer for a loom, temples on said loom, a pivoted member associated

with each of the temples of the loom and being adapted to be operated by the lay of the loom striking said temples to engage the filling in a fabric, and means associated with said pivoted means and the harness mechanism of the loom adapted to move the filling retainer to a raised position where it will not engage the filling at predetermined times.

3. In a dot filling retainer for a loom, temples on said loom, rotatable members mounted on each of the temple lips of the loom, a crank arm mounted on each of said rotatable members, and projecting downwardly, a flattened U-shaped member mounted transversely on the framework of the loom and having its ends projecting into the path of the crank arms, a lever fixedly secured to said flattened U-shaped member, the free end of the lever being connected to the harness mechanism of the loom, a filling retainer associated with each of said rotatable members, said filling retainers being adapted to be moved upwardly by the striking of the temple lips by the lay of the loom and the pressing of the crank arms against the flattened U-shaped member, and being adapted to be moved downwardly when the lay leaves the temple lip.

4. In a filling retainer for a loom, temples on said loom, pivoted hooks mounted on each temple of the loom, a flattened U-shaped member associated with the framework of the loom, each of said pivoted hooks having associated therewith a downwardly projecting crank arm bearing against said U-shaped member, a lever mounted on said U-shaped member and being connected to the harness mechanism of the loom, said pivoted hooks being adapted to be raised out of the fabric when the lay of the loom strikes the temple lips and the downwardly projecting arms strike the U-shaped member, and being adapted to move downwardly to retain the filling when the lay of the loom moves away from the temple lips.

5. In a filling retainer for a loom, temples on said loom, a bearing secured to each of the temple lips, shafts rotatably mounted in each of said bearings, a hook mounted in one end of each of said shafts, a crank arm mounted in the other end of each of said shafts, said crank arms projecting downwardly, a coiled spring secured around each of the said shafts and having one end thereof secured to the temple lip and the other end thereof secured to the downwardly projecting crank arm, each hook being adapted to engage the filling thread after the same is thrown by the shuttle, a flattened U-shaped member pivotally mounted transversely in the framework of the loom, and having its ends adapted to press against the downwardly projecting crank arms, a lever mounted on said U-shaped member, connections between said lever and the harness mechanism of the loom, said lever and harness mechanism being adapted to raise the filling retaining hooks out of engagement with the filling at predetermined intervals, said filling hooks being adapted to be thrown into operative engagement with said filling by the lowering of said lever, and being adapted to be raised upwardly to allow the filling thread to go therebeneath by the striking of the lay of the loom against the temple lip.

6. In a filling retainer for looms, pivoted hooks mounted at each side of the loom, said hooks being adapted to be raised by the action of the lay of the loom in one direction, and being adapted to be lowered by action of the lay of the loom in an opposite direction, and means associated with said hooks and being connected to the harness mechanism of the loom to raise the said hooks out of operative engagement with the filling at predetermined times.

7. A loom comprising temples, a lay movable toward and from the temples, filling retaining hooks pivotally mounted on the temple lips, a movable member in the loom, downwardly projecting members associated with said hooks and being adapted to press against said movable member, said hooks being adapted to be raised when the lay strikes the temple lip and the downwardly projecting members press against said movable member, and being adapted to automatically lower themselves when the lay moves away from the temple lip.

8. A loom comprising a temple, a lay movable toward and from the temple, a selvage loop retaining finger pivotally mounted on the temple lip, and being movable upwardly with relation to the selvage by the striking of the lay against the temple lip, a downwardly projecting arm associated with said hook, a flattened U-shaped member mounted in the loom and being adapted to normally press against the downwardly projecting arm, a lever fixedly mounted on said rock shaft, connections between said lever and the harness mechanism of the loom whereby the rock shaft may be moved to cause the selvage retaining fingers to be raised out of operative position at predetermined times.

In testimony whereof I affix my signature.

LAWLESS E. MONROE.