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Muller

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[54] **DEVICE FOR TRANSFERRING A PORTION OF WEFT THREAD TO A WEFT INSERTING MEANS**

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[52] **U.S. Cl.** ..... **139/12**, 139/122 R

[51] **Int. Cl.** **D03d 47/26**

[58] **Field of Search** .. 139/12, 122 R, 122 H, 127 P; 66/132

[56] **References Cited**

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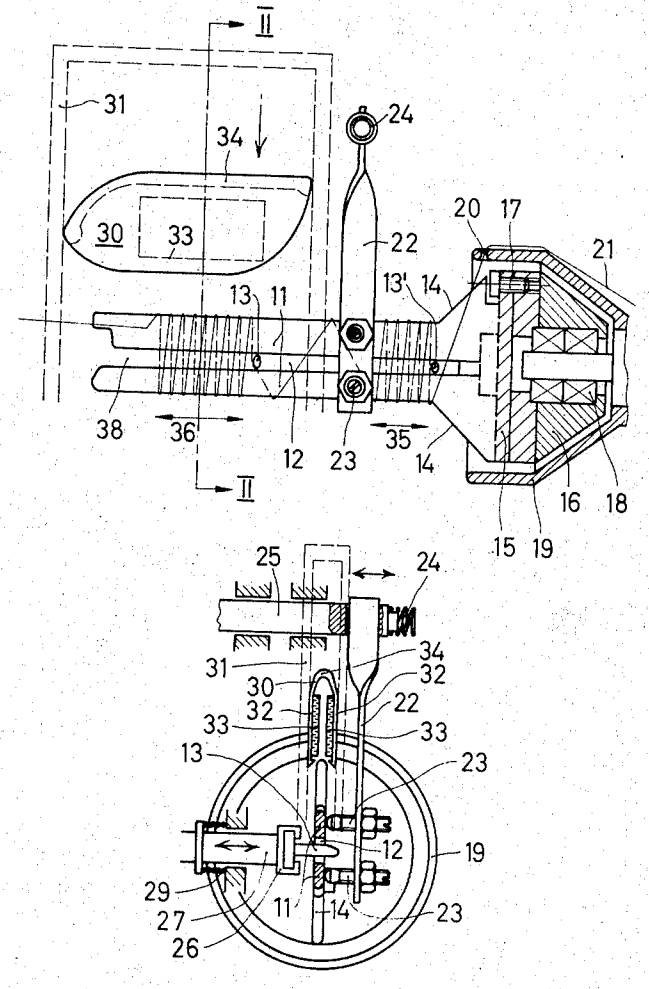
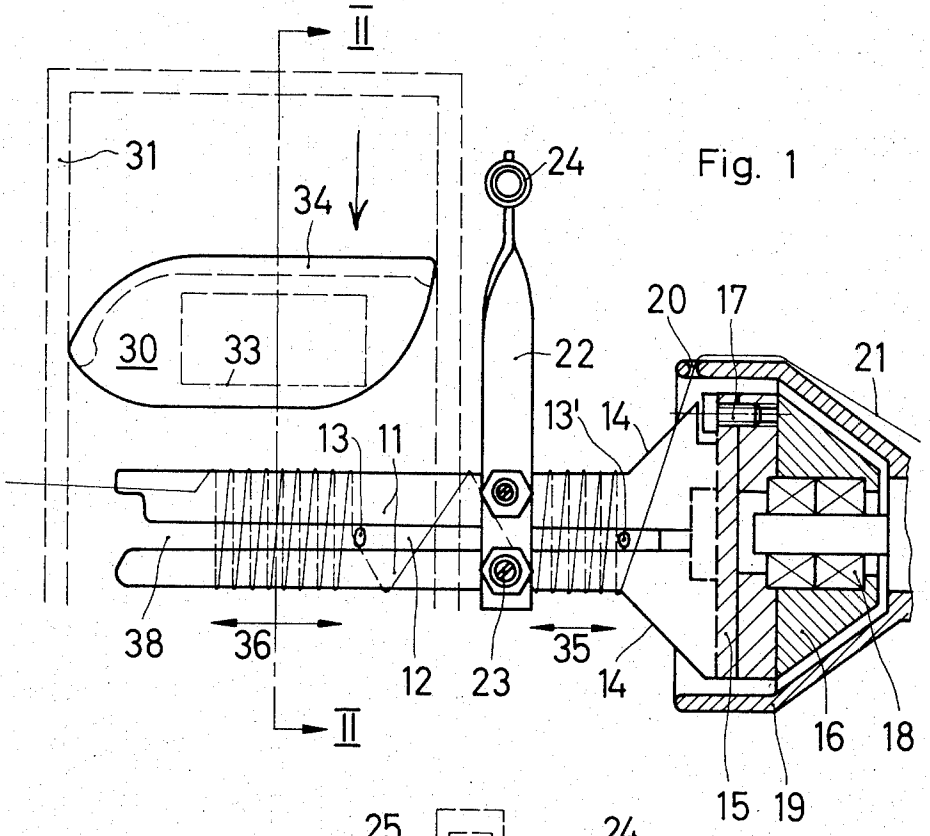
[57] **ABSTRACT**

A device for transferring a portion of weft thread to a weft thread inserting means in a traveling wave loom, the device having a thread coiling member formed with a slot and along which a portion of the thread is adapted to be displaced, as a coil, with the aid of a pusher means extending through the slot, the weft thread inserting means having two flat, juxtaposed lateral walls with the coil of thread being transferred to the inserting means by pushing the inserting means over the coiling member, transfersely of the longitudinal direction thereof, and then pulling-away the inserting means in the longitudinal direction of the coiling member, over one end thereof.

3 Claims, 2 Drawing Figures




II
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13'
14
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38
36
12
23
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18
II
15
19

Fig. 1

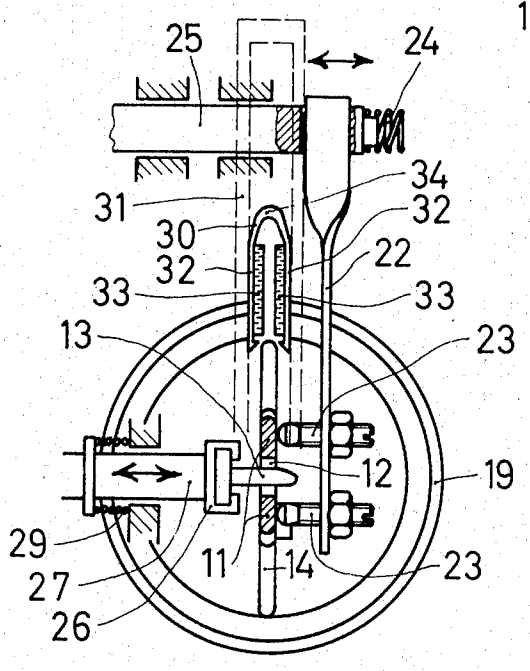
25
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Fig. 2

DEVICE FOR TRANSFERRING A PORTION OF WEFT THREAD TO A WEFT INSERTING MEANS

The present invention relates to a device for transferring a portion of weft thread to a weft thread inserting or picking means, the device comprising a thread coiling or winding member formed with a slot therein and along which the portion of thread is adapted to be displaced, as a coil, with the aid of a pusher means extending through the slot, the inserting means comprising two flat, juxtaposed lateral walls with the coil thus formed being transferred to the inserting means by pushing the inserting means over the coiling member, transversely of the longitudinal direction thereof, and then pulling away the inserting means in the longitudinal direction of the coiling member, over one end thereof.

In these devices, coils of thread of predetermined length are pushed by pusher means from a winding zone to a transfer zone. The pusher means serves not only for displacing the coils of thread but also for accurately determining the number of windings of each coil. When the inserting means is being pushed over the coiling member, there are forces which act on the coiling member in the lateral direction, so that it must be sufficiently stable. For this reason, in the hitherto known device, the slot provided for the pusher means has been made only sufficiently long as was necessary for determining the number of winding turns in the coil and for displacing the coils of thread.

In the practical operation of the traveling wave looms in which the above-discussed device is employed, difficulties are sometimes encountered on starting the loom. Furthermore, in some cases the cloth produced is found to be insufficiently faultless. It has been found that these disadvantages may be obviated by means of the present invention. The latter is characterized in that the slot extends as far as the end of the coiling member over which the inserter means is drawn, so that the coiling member has, at this end, two separate elements or parts.

It must be assumed that, due to the resilient inserts provided in the interior of the inserter means, the threads or yarns of the coils of threads are pressed against each other at the location of the slot and, on pushing-away from the coiling member are effected during their movement over the portion extending, in the case of the known device, transversely to the longitudinal direction of the coiling member of the delimiting faces of the slot, impinging against this portion. Under some circumstances, this may give rise to entangling of yarn windings and to knot-formation. If the loom is out of operation for some time, a sticky deposit may form on the coiling member due to the humid atmosphere and the size dust present in the weaving shed. Therefore, the risk that faulty operation such as has been described hereinabove may take place is further increased.

In addition to the advantages set forth above, the invention has a further advantage in that the device makes it possible to weave thinner weft yarns than had heretofore been possible in the art.

The invention will now be discussed in greater detail with reference to a preferred embodiment and to the drawings thereof, in which:

FIG. 1 is a lateral elevational view of a device according to the invention; and

FIG. 2 shows a section taken along the line II—II of FIG. 1.

In both figures, like elements have been given the same reference numerals.

A coiling member **11** is formed with a slot **12** having an open or free end along which a pusher or slide means **13** may be displaced. The coiling member **11** is of blade-like shape. It has two oblique edges **14** and is inserted at **15** into a slot formed in a rotatably mounted member **16**, being secured by means of the screw **17** to the latter. The member **16** is mounted in the rotor **19** by means of the pivot or rotary bearing **18**. The said rotor has an eyelet **20** through which extends a weft thread **21**. The weft thread **21** travels from a supply bobbin (not shown). On rotation of the rotor **19**, the thread **21** is wound onto the coiling member **11**, since the latter remains at a standstill during this procedure. It is prevented from rotating with the rotor **19** due to the two pins **23** carried by the holder **22** (see FIGS. **1** and **2**).

The holder **22** is operatively connected and carried by a holder rod **25** displaceable in its longitudinal direction against the pressure of a holder rod spring **24**. The pusher or slide means **13** is adapted to be reciprocated along the rail **26**, i.e., perpendicular to the plane of FIG. **2**. The rail **26** is, on the other hand, carried by one or two slide means pusher rods **27** which are displaceable in their longitudinal direction and correspondingly biased (in FIG. **2** towards the left) by one or two slide means pusher rod springs **29**.

Weft inserting or picking means or shuttles **30** are, in the feed box **31**, pushed in continuous sequence from above downwardly and over the coiling member **11**. Each one thereof has two lateral walls **32** each of which carries an insert **33**. The lateral walls **32** are connected along the zone **34**; along the remaining portion of their periphery they are free from each other (see FIGS. **1** and **2**).

In operation of the device shown in FIGS. **1** and **2**, in combination with a traveling wave loom, due to rotation of the rotor **19** the yarn or thread **21** is continuously wound about the coiling member **11**. Thereby, it slides down along the oblique edges **14** and one winding after the other is deposited in the winding or coiling zone **35**. As soon as a coil having a predetermined number of turns has been formed, the pusher or slide means **13** passes through the slot **12** at location **13'**. At this instant in time, the inserting means **30** has already been pushed over the coiling member **11** and the coil located at the transfer zone **36**. During this working phase, the blade-like coiling member **11** is prevented from rotating by the inserting means **30**. The holder **22** is displaced, due to movement of the rod **25** against the pressure of spring **24**, so that the pins **23** are lifted off from the coiling member **11**. Thereupon, the pusher or slide means **13** is displaced from position **13'** into the position shown, displacing a thread or yarn coil from zone **35** to zone **36** (see FIG. **1**). Simultaneously, with this movement, the inserting means **30** pushed over the coiling member **11**, is displaced towards the left, where it enters a shed (not shown).

One of the essential features of the present invention consists in that the slot **12** extends as far as the end of the coiling member **11** over which the inserting means **30** is drawn, away from the coiling member. In this manner, unhindered sliding of the weft thread coils is guaranteed. Thereby, the mutual position of the indi-

vidual turns or windings between the inserts **33** is in no way varied during the pushing-away from the coiling member, so that renewed withdrawal of the weft thread out of the inserter means **30** during the weaving operation is effected in a neat, clean manner.

In order to obtain maximum stability of the blade-like coiling member, the portion arranged above the slot **12** in FIG. **1**, i.e., the portion located on that side from which the inserting means **30** is pushed-over, is designed to be wider than the other portion remote from the side at which the inserter means **30** is pushed-over.

It will be appreciated that various changes and modifications may be made within the skill of the art without departing from the spirit and scope of the invention illustrated herein.

What is claimed is:

1. A device on a loom for winding and transferring predetermined portions of coiled weft thread to a weft thread inserting means comprising, a coiling member formed with a blade portion including a longitudinal slot having an open end, a rotor means for coiling said

thread on said coiling member in condition to to be displaced as a coil; pusher means extending through said slot for displacing said coil; inserting means comprising two flat juxtaposed lateral walls, said coil adapted to be transferred to said inserting means by pushing the inserting means over said coiling member transversely of the longitudinal direction thereof and by pulling-away of the inserting means in the longitudinal direction of the coiling member over said open end of the slot; characterized in that the open end of said longitudinal slot is located at that end of the said coiling member over which the inserting means is pulled-away.

2. A device according to claim **1** in which the blade-like position is subdivided into two separate portions, one portion being wider and located at that side from which the inserter means is pushed over the blade-like portion.

3. A device according to claim **1** in which said pusher means operates to transfer the desired number of windings forming said coil during said transfer to said inserting means.

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