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(54) **Weft creel.**

(57) A weft creel for a loom, which provides a mounting for a yarn package on the loom, comprises a support (5), mountings (18) on the support each capable of mounting a respective yarn package (19*a* - 19*e*) and a yarn guide (20) located to enable it to guide yarn (24, 24') from a yarn package mounted on any of the package mountings (18) away from the weft creel.

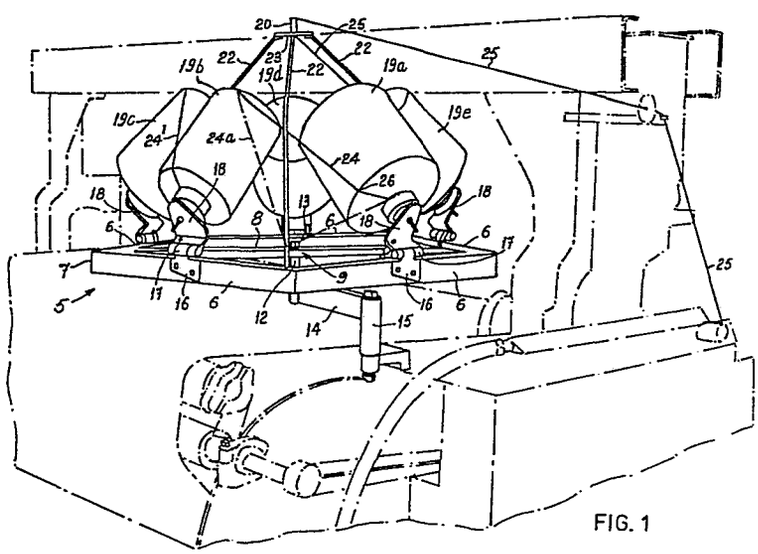

FIG. 1

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Weft creel

This invention relates to a weft creel for a loom.

In jet looms and in some other types of loom, the weft yarn is supplied from packages carrying a comparatively short length of yarn in relation to the speed of the loom and the weft package on the loom thus requires renewing at relatively frequent intervals. The present invention provides a weft creel allowing a number of packages to be mounted on a loom with their yarns joined top-to-tail so that the loom requires less frequent attention to its weft supply and enabling the loom to be run efficiently when weft yarn is only available on packages carrying short lengths of yarn.

According to the invention, a weft creel for a loom comprises a support, a pivotal mounting for the support, mountings on the support each capable of mounting a respective yarn package, and a yarn guide located to enable it to guide yarn from a yarn package mounted on any of said package mountings away from the weft creel.

Advantageously, the support is constituted by a frame pivotally mounted on an arm itself having a pivotal mounting so that the arm can be pivotally mounted on a loom or on a free standing floor mounted column adjacent to the loom and the frame can be pivoted on the arm.

The frame may comprise a number of elongate elements forming a straight-sided two-dimensional geometrical figure and each element may carry a mounting for a yarn package.

The yarn guide may be carried on stanchions upstanding from the frame and located centrally with respect to yarn package mountings disposed about it.

The invention will be further described, by way of example, with reference to the accompanying drawings, in

which:-

Figure 1 is a perspective view of a weft creel according to the invention, and

Figure 2 is a perspective view of a yarn retaining means which may be employed in the weft creel of Figure 1

The weft creel shown in the drawings comprises a support constituted by a frame 5. The frame 5 is made up of five elongate elements each constituted by a steel bar 6 of L-shaped section. The five bars 6 are all of the same length and are welded together at their ends to form a pentagon. From the vertex 7 of the pentagon to the centre of the opposite side extends a box section bar 8 at the centre of which is a pivotal mounting 9 for the frame 5.

The pivotal mounting 9 comprises a sleeve 12 in which is secured a bolt 13 which extends through the bar 8 and which is freely rotatable in the bar 8. The sleeve 12 is welded to an arm 14, constituted by a box section metal bar, which is in turn welded to a sleeve 15 constituting a pivotal mounting for the arm 14 by means of which the arm 14 and frame 5 may be pivotally mounted on a loom (parts of which are shown in chain lines).

To the centre of each bar 6 is bolted a bracket 16 carrying by means of a hinge 17 a yarn package mounting 18. In the drawings, each package mounting 18 is shown supporting a respective cheese 19a - 19e of yarn, in a position such that the axis of the cheese is inclined at an angle of approximately 45° to the horizontal and is directed towards a tubular, ceramic-lined, vertically disposed yarn guide 20 located centrally with respect to the pentagon frame 5 and the ring of cheeses. The guide 20 is supported by three stanchions 22 each comprising a metal rod bolted to the frame 5. At their upper ends, the stanchions 22 are welded to a

metal plate 23 to which is welded the tube of the yarn guide 20.

The disposition of the yarn cheeses 19a - 19e in the creel shown in the drawings is such that they can be connected together top-to-tail. That is, the yarn 24 from the bottom of the cheese 19a can be connected to the yarn at the top of the adjacent cheese 19b, the yarn 24' from the bottom of the cheese 19b can be connected to the yarn at the top of the adjacent cheese 19c, and so on, so that when a cheese is exhausted yarn will be drawn automatically from the adjacent cheese. In the situation illustrated in Figure 1, yarn 25 is being guided away from the cheese 19a by the yarn guide 20, and in this case there is no connection between the bottom end of the cheese 19e and the top end of the cheese 19a. However, because the yarn guide 20 is located centrally of the yarn cheeses on the creel, yarn from any of the cheeses can be guided away from the creel by the yarn guide 20 and forwarded to the weft insertion device of the loom.

Because of the pivotal mounting of the frame 5 and the central location of the yarn guide above the pivotal mounting 9 the weft creel can be rotated to allow access to any of the yarn cheeses 19a - 19e even while the loom is running. Since the arm 14 can itself be pivotally mounted on a loom or on a free standing floor mounted column adjacent to the loom, the weft creel can be located so that it can be swung over the warp sheet of the loom so as not to project beyond the normal confines of the loom but so that it can be swung to a position lying outside those confines to allow freedom of access to the warp sheep.

Instead of the frame 5, a carousel may be provided in the form of a central boss constituting a pivotal mounting for the creel and from which radiate arms each of which carries a mounting for a weft yarn package.

Instead of a tubular yarn guide 20 welded into a plate

23, a yarn guide in the form of a steel ring welded to the stanchions 22 may be provided. The ring may be hard chrome plated and may have an internal diameter in the range 0.5 cm to 4 cm, for example 2.5 cm. Use of such a ring instead of a tubular yarn guide has the advantage, at least from the middle to the larger end of the range of diameters mentioned, that the yarn can form a balloon passing from the weft yarn package through the ring.

In the weft creel shown in Figure 1, the yarn which extends between the cheeses 19a to 19e touches the yarn wound on the cheeses. For example, it will be seen that the yarn 24 touches the yarn wound on the cheese 19a at the point 26. This may give rise to the yarn extending between the cheeses catching on a cheese when required to start feeding, or becoming slack as yarn is wound off a cheese. To avoid this, means for retaining the yarn extending between the cheeses may be provided and located so that each length of such yarn follows a path clear of the cheeses.

Thus, a yarn retaining means may be mounted on each of the stanchions 22, and between cheeses where a stanchion 22 is not to be found, such means may be mounted on an arm secured to a yarn package mounting 18. One form of a yarn retaining means for this purpose is shown in Figure 2. In this Figure, the yarn retaining means comprises a stiff monofilament, 0.5 mm or 1 mm in diameter, secured to a stanchion 22 in the form of a loop 30 by means of a rubber sleeve 31 which can be slid up or down the stanchion to adjust the position of the retaining means. The yarn 24 is placed between the loop 30 and the stanchion 22. If the yarn retaining means is carried on an arm (not shown) secured to a yarn package mounting 18, a pillar may be located on the arm to take the place of the stanchion 22. The loop 30 thus constitutes a stiff resilient element secured against a backing member constituted by the stanchion 22 in such a way that the loop 30 can clamp the yarn 24 against the stanchion 22 but the yarn is easily plucked free when one

yarn package is exhausted and the yarn feed moves to the adjacent package.

In Figure 1, the chain line 24a indicates the path of the yarn extending between the cheeses 19a and 19b when a yarn retaining means, such as that shown in Figure 2, is mounted on the stanchion 22 between the cheeses 19a and 19b. In following the path 24a, the yarn does not make contact with yarn wound on the cheeses.

As a modification of the creel construction shown in Figure 1, five stanchions 22 may be provided to support the yarn guide 20, one between each adjacent pair of yarn packages. A yarn retaining means as shown in Figure 2 is then advantageously secured on each stanchion 22.

Claims

1. A weft creel for a loom providing a mounting for a yarn package on the loom, characterised in that the creel comprises a support (5), mountings (18) on the support each capable of mounting a respective yarn package (19a - 19e) and a yarn guide (20) located to enable it to guide yarn (24, 24') from a yarn package mounted on any of said package mountings (18) away from the weft creel.

2. A weft creel as claimed in claim 1, characterised in that said support (5) is constituted by a frame (5) pivotally mounted on an arm (14), the arm (14) having a further pivotal mounting (15) so that the arm (14) can be pivotally mounted.

3. A weft creel as claimed in claim 1 or 2, characterised in that said support (5) is constituted by a frame (5) comprising a number of elongate elements (6) forming a two-dimensional geometrical figure, each of said elongate elements (6) carrying one of said yarn package mountings (18).

4. A weft creel as claimed in claim 2 or 3, characterised in that said yarn guide (20) is carried on stanchions (22) upstanding from said frame (5) and is located centrally with respect to said yarn package mountings (18) which are disposed about it.

5. A weft creel as claimed in claim 3 or 4, characterised in that said yarn retaining means are so located that yarn retained by said yarn retaining means and extending between yarn packages on adjacent yarn package mountings of the weft creel is maintained on a path clear of such yarn packages.

6. A weft creel as claimed in claim 5, characterised in that said yarn retaining means, or each of them, is constituted by a stiff resilient element (30) secured against a backing member (22) so that yarn (24, 24') can be clamped by the resilient element (30) against the backing member (22).

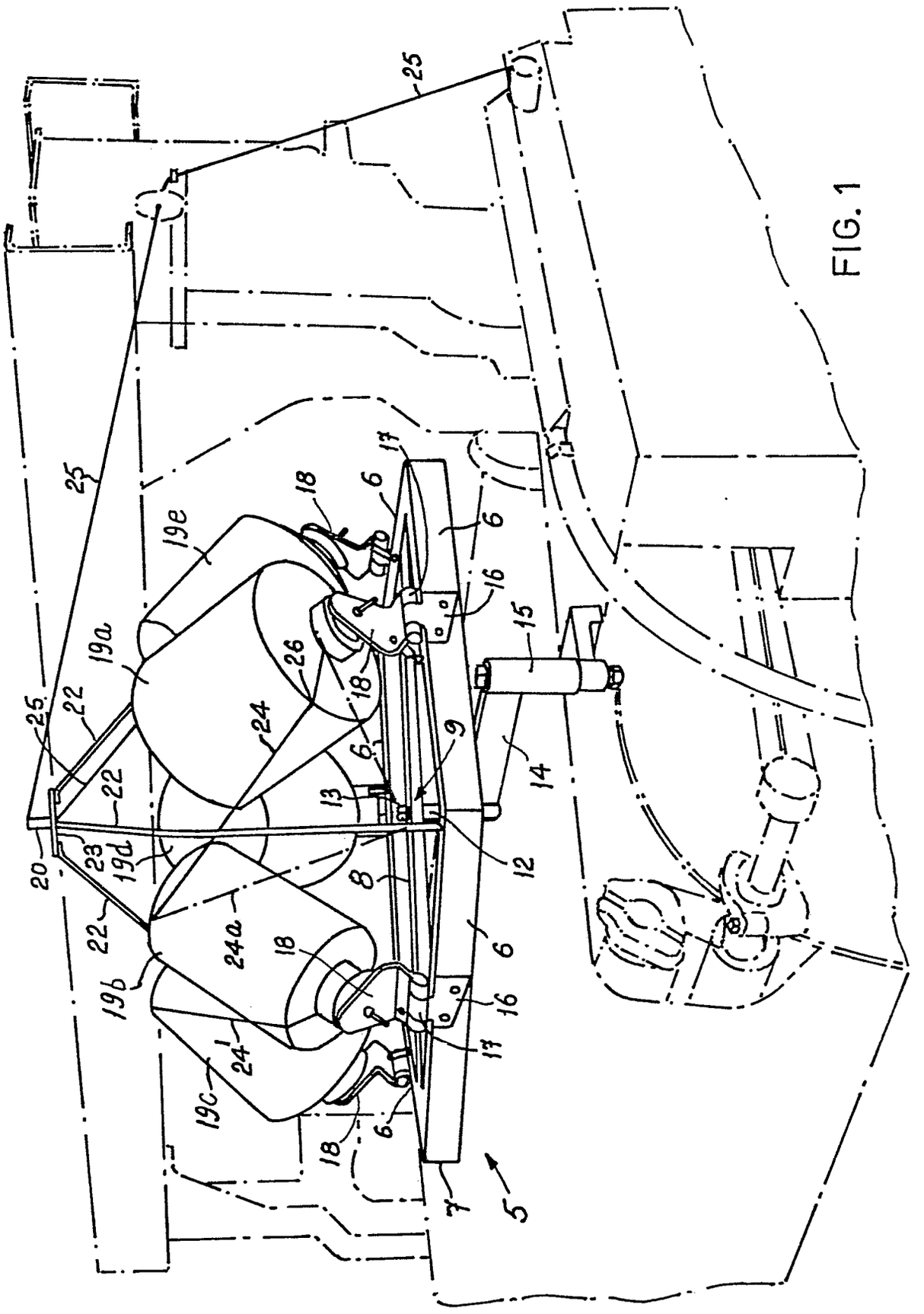

FIG. 1

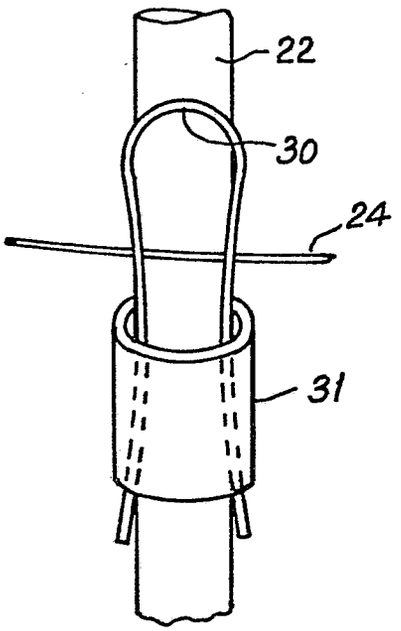

FIG. 2