Jan. 13, 1970 O. BERNATH 3,489,184

CLOTH SPLITTING ATTACHMENT

Filed June 11, 1968

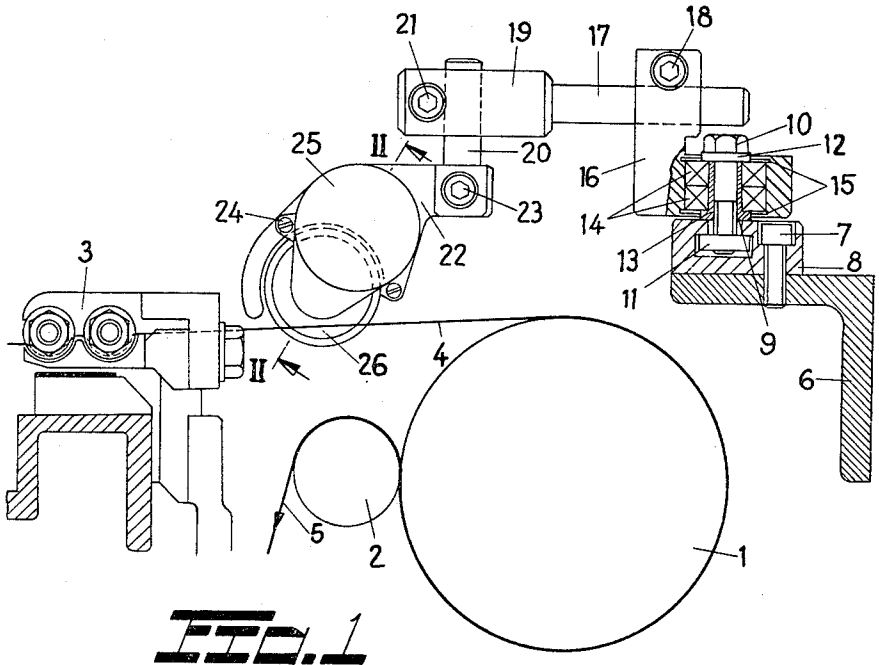

FIG. 1

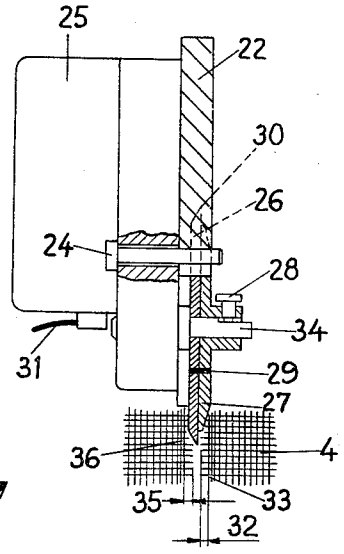

FIG. 2

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United States Patent Office 3,489,184
Patented Jan. 13, 1970

3,489,184

CLOTH SPLITTING ATTACHMENT

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Filed June 11, 1968, Ser. No. 736,122
Claims priority, application Switzerland, June 15, 1967, 8,530/67
Int. Cl. D03d *49/70;* D06c *13/00*
U.S. Cl. 139—291 4 Claims

ABSTRACT OF THE DISCLOSURE

A cloth splitting attachment for looms having a circular blade member continuously rotated by a motor individual thereto, and supported so as to extend between two adjacent warp threads.

BACKGROUND OF THE INVENTION

The invention relates to a cloth splitting attachment for looms of the type which is adapted to divide the fabric longitudinally after it is formed and prior to contacting the take-up roll which advances it for wind-up upon a cloth roll.

A well known form of cloth splitting device utilizes a cutting means such as a razor or knife blade that protrudes through a pair of adjacent warp threads. With this arrangement the fabric is drawn into contact with the cutting elements to sever the weft threads.

The disadvantage of this type of cloth splitting arrangement resides in the fact that the threads to be severed always contact the blade at the same point thus detrimentally affecting the life of the same. When a blade member has lost its ability to sever the weft threads cleanly said threads are broken in place of cutting thus resulting in frayed ends which does not give the fabric the desired uniform appearance.

The cloth splitting attachment according to the instant invention eliminates the undesirable conditions described above by providing a circular cutting blade which is caused to rotate continuously and which utilizes the complete circumferential extent of its outer surface to sever the threads that are drawn into contact therewith.

SUMMARY OF THE INVENTION

The thread severing mechanism of the present invention includes a circular blade member that is continuously rotated by a low voltage motor individual thereto. This blade member is supported so that a portion thereof extends downwardly between two adjacent warp threads and as the newly formed cloth is drawn forwardly by the take-up roll, each of the weft threads are cut consecutively as they make contact with said blade.

The present invention has for its object to provide a cloth splitting attachment which ensures a drawing cutting action, simple low-wear design principles and universal application with optimum adjustment relative to the direction of movement of said cloth.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a view in side elevation and partially in section showing a portion of a loom and the relative position of the mechanism according to the invention applied thereto.

FIG. 2 is a sectional view of the cloth splitting mechanism taken along line II—II in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing wherein only as much of conventional loom structure is depicted as is necessary to a complete understanding of the invention, there is shown in FIG. 1 a fabric take-up roll at **1**, a pressure roll **2** over which fabric **4** is advanced in the direction of the arrow **5** while being guided by a temple **3**.

The loom's breast beam is identified by numeral **6** and attached thereto by means of screws **7** is a grooved rail **8** on which is located a sleeve **9** which can be selectively fixed, by means of a screw **10** and a grooved member **11**, in a position parallel with the fabric take-up roll.

Clamped between a washer **12** and a shoulder **13** on the sleeve **9** are anti-friction bearings **14** which in turn carry a holder **16** by means of retaining rings **15**, the said holder being accordingly capable of being swung horizontally. A horizontally disposed bar **17** is clamped in the holder **16** by means of a set screw **18**.

A bolt **20** assembled in the clamping head **19** of the bar **17** is vertically adjustable and can be fixedly positioned by means of a screw **21**.

Bolt **20** supports, by means of a screw **23**, a plate **22** on which a gear motor **25** is mounted by means of attaching members **24**. The gear motor **25** imparts a rotary motion to a circular cutter blade **26** and the various possibilities of adjustment enable said circular cutter to be set to penetrate into the fabric **4** between the temple **3** and take-up roll **1** to the desirable depth.

FIG. 2 shows a section of the circular cutter blade **26** along line II—II in FIG. 1 and the plate **22** to which the gear motor **25** is attached by means of attaching members **24**. The gear motor **25** is provided with a shaft **34** on which a driving disc **27** is assembled by means of a set screw **28** that in turn drives the circular cutter blade **26** having a circumferential cutting edge **30** by means of a follower pin **29**.

A two-pole supply line **31** for a low voltage of 12 volts enables the necessary electrical energy to be supplied to the gear motor **25** so that the hazard of accidents is eliminated on the one hand while, on the other, installation is simplified because the low-voltage control power is available on most looms.

Because of the rotary arrangement of the holder **16** the circular cutter blade **26** is adapted to follow any change in position of the fabric **4** which may occur particularly following extended stoppage of the weaving process.

It is possible to arrange the cloth splitting attachment at a location other than between the temple and the take-up roll; in all events however, it should be positioned forwardly of the temple. It may be readily employed for severing the weft threads in looms weaving single as well as multiple width fabrics.

The proper selection of the thickness of the driving disc **27** enables the length **32** (FIG. 2) of the weft yarn ends projecting from the warp thread **33** of a web of fabric to be determined and the suitable choice of the thickness of the circular cutter blade **26**, determines the length **35** of the weft thread ends projecting from the warp thread **36** of the other web of fabric.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive concept may be carried out in a number of ways. This invention is, therefore, not to be limited to the precise details described but is intended to embrace all variations and modifications thereof falling within the spirit of the invention and the scope of the claims.

I claim:

1. A cloth splitting attachment for looms having temple members for supporting and guiding the cloth adjacent its edges and a take-up roll for advancing said cloth as it is formed, said splitting attachment including

(a) a circular cutter blade

(b) a geared and synchronous type motor individual to and for continuously rotating said cutter blade,

(c) a clamping head for adjustably supporting said motor and blade to obtain desired penetration of the latter into the cloth, and

(d) a pivotable holder adapted to carry said attachment whereby said cutter blade will automatically align itself between a selected pair of adjacent warp threads in the event of possible lateral change in position of said cloth.

2. The cloth splitting attachment according to claim 1 wherein said circular cutter blade is driven by a follower pin arranged on a driving disc attached to said motor.

3. The cloth splitting attachment according to claim 2 wherein the thickness of said driving disc determines the length of the weft thread ends projecting from one edge of severed cloth.

4. The cloth splitting attachment according to claim 3 wherein the thickness of the circular cutter blade determines the length of the weft thread ends projecting from one edge of severed cloth.

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U.S. Cl. X.R.

26—10.4; 139—302