March 11, 1930. G. LÜDORF 1,750,533

TAKE-UP DEVICE FOR RIBBON LOOMS

Filed Dec. 28, 1927

Fig. 1.

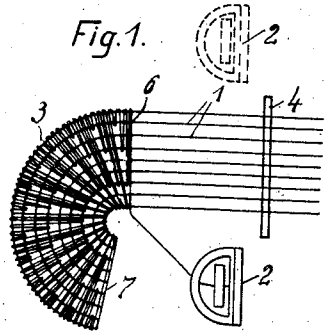


Fig. 2.

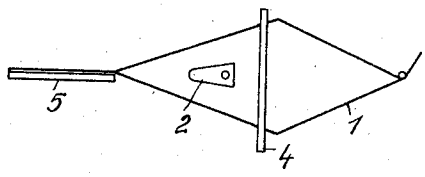


Fig. 3.

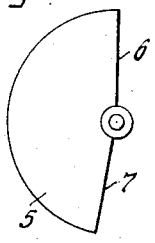


Fig. 4.

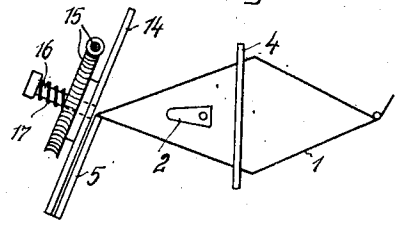
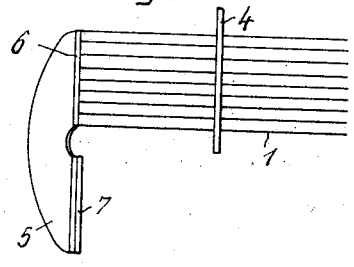


Fig. 5.



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UNITED STATES PATENT OFFICE

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TAKE-UP DEVICE FOR RIBBON LOOMS

Application filed December 28, 1927, Serial No. 243,158, and in Germany July 26, 1926.

Patent applications have been filed in Germany on July 26, 1926, Serial Sch. 79,565 VII/860; Austria on Nov. 7, 1927; Switzerland on Nov. 7, 1927; Belgium on Nov. 9, 1927; France on Nov. 10, 1927; Sweden on Nov. 11, 1927; Poland on Nov. 17, 1927; Czechoslovakia on Nov. 19, 1927; Italy on Nov. 23, 1927; England on Nov. 29, 1927.

The invention relates to a device which allows of taking up curved ribbon produced on mechanical looms so that no alteration of the shape of the ribbon takes place.

This is effected according to the invention by the curved ribbon element formed in known manner being conveyed in its formation to a suitably shaped unwinding table and is drawn off the latter by a device pulling in the direction of the arc of curvature of the ribbon.

It is possible to arrange the unwinding table in an inclined position and in this case taking up is preferably effected by a disc, the inside of which is rough rotating about the centre of the circle of curvature of the ribbon. The rough surface of the disc can be produced by covering it with an abrasive sheet, sand paper or the like.

Several forms of construction of the improved take up device are shown in the drawings.

Figures 1 and 2 are a plan view and side elevation showing the usual method of weaving the weft with the warp in the production of curved ribbon.

Figure 3 is a plan view of the unwinding table.

Figure 4 is a side elevation similar to Figure 2, but provided with an inclined unwinding table and a take up device consisting of a disc rotatable on an axis coincident with the center of curvature of the ribbon.

Figure 5 is a plan view to Figure 4; the take up device, however, is omitted.

The warp threads 1 which are used to form the curved ribbon, are shed in the usual manner by means of a harness or shaft and the weft is introduced into the shed by means of a shuttle 2 carrying the bobbin, and beaten up by a reed 4 at a point corresponding to the edge 6 of the unwinding table. The weft is not however passed right across the whole width of the ribbon at each pick, but succeeding picks may be of increasing width stepped from the periphery 3 inwards, as shown in Fig. 1. After several such stepped picks the weft is then again introduced over the whole width of the ribbon thus producing a curved ribbon element which is fed forward by the take-up on the unwinding table 5 towards the edge 7 where it is wound off.

The table 5 is preferably of approximately semicircular shape and arranged in an inclined position, as shown in Figs. 4 and 5. A disc 14 rotatable on an inclined axis coincident with the center of the curvature of the ribbon as well as of the table 5 is arranged in close proximity to the table 5. The disc 14 may be rotated by a worm gear 15, the worm wheel being fastened to the disc 14 and pivotally mounted on a bolt 16 fastened in any appropriate manner to the frame of the mechanical loom by which the curved loom is produced.

The inside face of the disc 14 is provided with a rough coating of for instance sand paper or other suitable material, by which good gripping of the ribbon is ensured, when the latter is taken up by the rotating disc 14 and fed forward on the table 5 towards the edge 7. The worm gear is forced against the table 5 along with the disc 14 by a spring 17 providing the requisite pressure.

I declare that what I claim is:—

1. A take up device for weaving curved ribbon, including in combination, a flat surface for supporting the ribbon and take up means cooperating with said support and rotatable on an axis coincident with the center of curvature of the ribbon to move

the ribbon over the support in the direction of its curvature.

2. A take up device for weaving curved ribbon, including in combination, an inclined table of approximately semicircular shape supporting the ribbon and a disc rotatable on an inclined axis coincident with the center of curvature of the said ribbon and having a roughened inside surface to move the ribbon over the table.

In testimony whereof, I have signed my name to this specification this 7th day of December, 1927.

GUSTAV LÜDORF.