Feb. 8, 1938. H. E. SCHMIDT 2,107,877

LOOM REED

Filed April 28, 1937

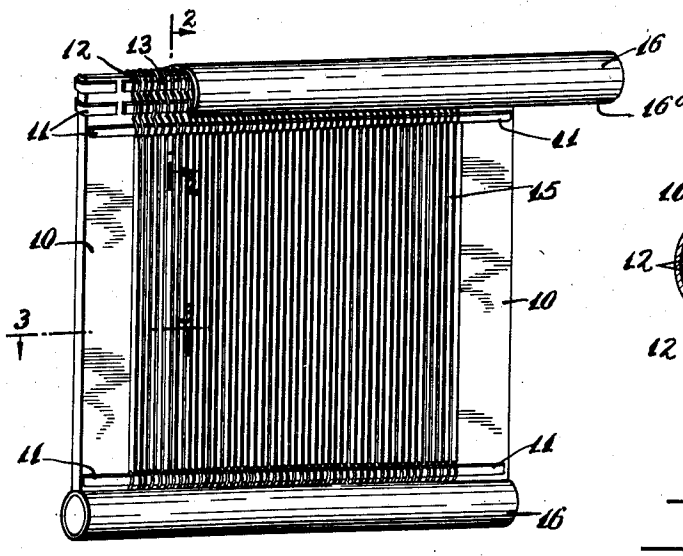


Fig. 1.

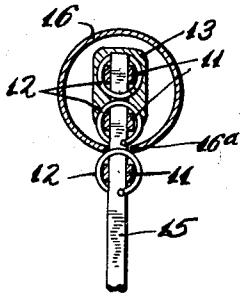


Fig. 2.

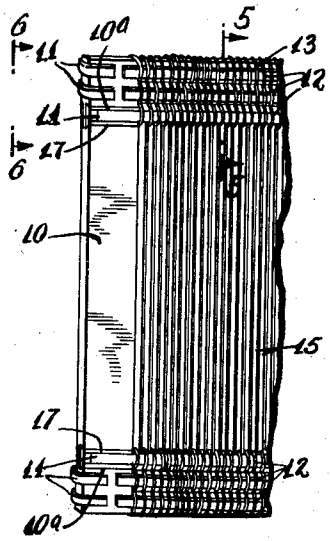


Fig. 4.

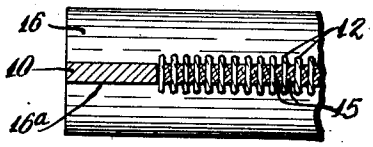


Fig. 3.

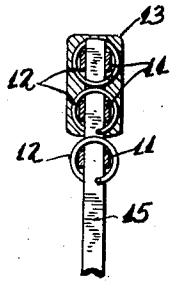


Fig. 5.

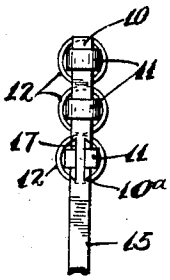


Fig. 6.

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LOOM REED

Hugo E. Schmidt, New Bedford, Mass.

Application April 28, 1937, Serial No. 139,396

2 Claims. (Cl. 139—192)

This invention relates to new and useful improvements in a loom reed and method for forming the same.

More specifically, the invention proposes the construction of a loom reed having dents supported in a manner to reduce the flexing ends of the dents by spreading the flexing areas to act as a cushion and reduce crystallization to materially reduce the fatigue and breakage of the dents.

More specifically, the invention provides for a helical spring to be positioned around several pairs of strips and to have wire dents extended therebetween and applying binding material upon the outer springs to form a rigid unit and spread the flexing areas to prevent crystallization and breakage.

Still further the invention provides that the binding material be applied in such a manner as to leave the inner springs free and possibly half of the adjacent springs to increase the width through which the dent may vibrate, permitting the free springs to vibrate therewith in order to produce a new type of loom reed which will operate more efficiently than those which are in common use.

Still further the invention provides for the addition of back members to be engaged over some of the helical springs to act as a support when the loom reed is positioned in the weaving machine.

Still further the invention provides for a means for adjustably supporting the strips on which the inner free springs are mounted for shifting the flexing areas of the dents.

Still further the invention provides that the inner strips be so constructed that they will engage into recesses in the sides of the end bars and that the recesses are to be of such width as to accommodate the end strips and dove-tailed elements which are shiftable to either side of the end strips to move the free spring along the length of the dents to shift the flexing area of the dents.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this device:

Fig. 1 is a perspective view of a loom reed constructed according to this invention.

Fig. 2 is an enlarged sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 1 but illustrating a modified form of the invention.

Fig. 5 is an enlarged sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is an end view as though looking in the direction of the line 6—6 of Fig. 4.

The loom reed, according to this invention, comprises a pair of spaced end bars 10 having a plurality of pairs of strips 11 on opposite faces of the end bars 10 and fixedly positioned at the ends of these bars. A helical spring 12 is positioned around each pair of strips 11, and wire dents 15 extend parallel to the end bars 10 and have their ends engaged between the coils of the springs 12. Binding material 13 is applied to the outer springs for forming a rigid unit of the loom reed.

The innermost springs 12 are free from binding material to permit the wire dents 15 to vibrate up to the point where the binding material has been applied. Since each innermost spring 12 is free of binding material this spring will vibrate with the wire dents 15 reducing the flexing ends of the dents by spreading the flexing areas, and act as a cushion to reduce crystallization at the fixed point of the wire dents. This binding material 13 may also be applied in a manner to permit half the width of the adjacent springs to be free of the binding material to materially increase the flexing area.

The strips 11 are fixedly attached to the end bars 10 by means of solder or other fastening substance, and the helical springs 12 are constructed of soft or tempered steel and of varying diameters so as to determine the space between the wire dents 15.

The binding material 13 is solder or similar material which will easily flow into all the cracks and crevices between the helical springs 12, the wire dents 15 and the strips 11. This binding material is applied while it is in a soft or heated condition by dipping the portion to which it is to be applied and then permitting it to cool to form a single unit of these members at the area which was dipped.

Backing members of any desired material may be applied to cover the helical springs 12 which have been made a unit by the binding material 13 for supporting the entire device in the weaving loom. For the purpose of illustration, the back member, as shown in Fig. 1 comprises a tube 16 having a split 16a along one side which will accommodate the thickness of the end bars

10 and the wire dents 15. As specifically shown in Fig. 2 the edges of the split 16a engage between the innermost and middle springs 12 and abut against the faces of the end bars 10 and the wire dents 15. The tubes 16 may be made to engage over all of the springs on either or both sides of the loom reed, or any number of them.

According to the modification shown in Figs. 4–6 the innermost strip 11 engages a recess 10a formed in the two faces of the end bars 10. The innermost spring 12 which is engaged around these strips 11 is free of any binding material and the purpose of this construction is to permit the strips 11 to be fixed along the width of the recess 10a to which the position of the spring 12 with relation to the wire dent 15 to reduce the flexing area of these dents.

Dove-tailed holding pieces 17 are positioned within the recess 10a and engage against the faces of the strip 11 to fixedly hold this strip in position within the recess 10a to prevent the strips from shifting while the spring 11 is vibrating with the dents 15. These dove-tailed holding pieces 17 may be withdrawn from the recess 10a permitting the strip 11 to be shifted either up or down (see Fig. 6) to change the position of each spring 12. When the desired adjusted position has been reached new dove-tailed holding pieces of different widths may be again positioned within the recess 10a to hold the strips 11 in their new fixed position. In other respects this form of the invention is similar to the previous form and similar parts may be identified by the corresponding reference numerals.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—

1. A loom reed comprising spaced end bars, a plurality of pairs of strips on the opposite faces of said end bars and fixedly positioned at the ends of said bars, a helical spring positioned around each pair of said strips, wire dents extended parallel to said end bars and having their ends engaging between the coils of said spring, and binding material engaged on the outer spring and half of the next adjoining spring for forming a rigid unit of said loom reed, said inner springs being free from binding material, and half the width of said adjacent spring being free from said binding material.

2. A loom reed comprising spaced end bars, a plurality of pairs of strips on the opposite faces of said end bars and fixedly positioned at the ends of said bars, a helical spring positioned around each pair of said strips, wire dents extended parallel to said end bars and having their ends engaging between the coils of said spring, and binding material engaged on the outer springs for forming a rigid unit of said loom reed, means for adjustably supporting said pairs of strips which support the inner free springs for shifting the flexing areas in said dents, comprising dove-tailed holding pieces engaging recesses in said side bars and engaging against said pairs of strips for fixedly holding said strips in position in said recesses.

HUGO E. SCHMIDT.