Jan. 7, 1941. B. HAYDEN 2,227,645

DOBBY CORD FOR LOOMS

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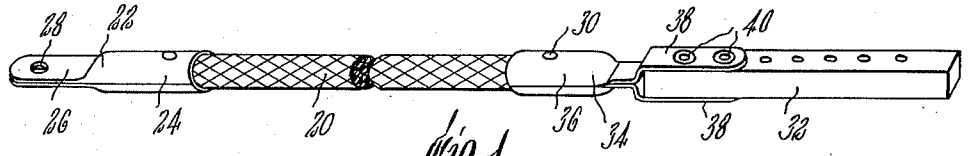


Fig. 1.

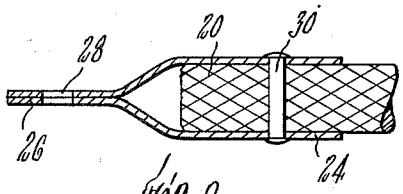


Fig. 2.

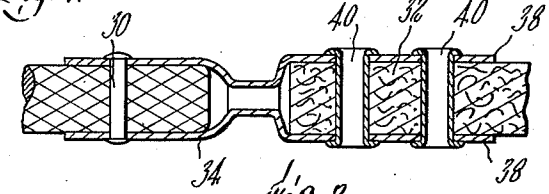


Fig. 3.

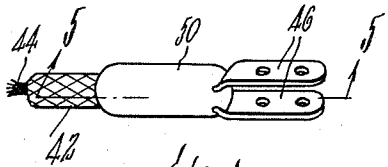


Fig. 4.

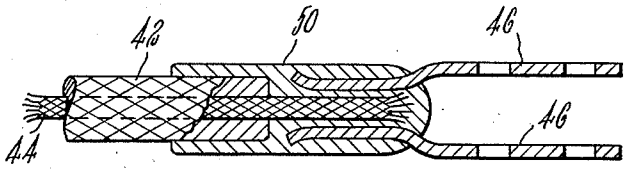


Fig. 5.

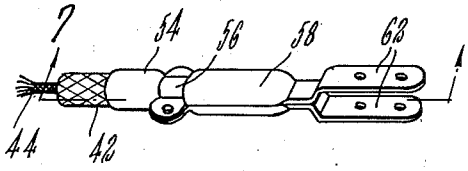


Fig. 6.

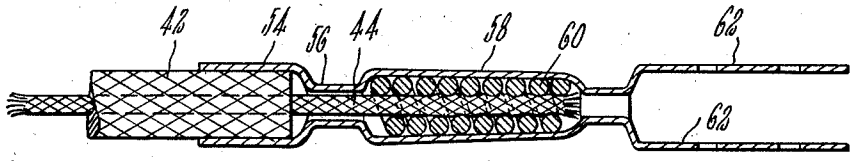


Fig. 7.

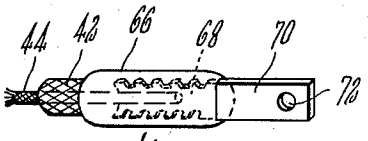


Fig. 8.

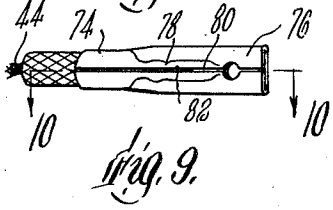


Fig. 9.

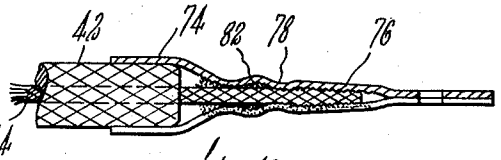


Fig. 10.

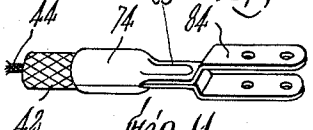


Fig. 11.

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Attys.

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DOBBY CORD FOR LOOMS

Boyd Hayden, Newton, Mass.

Application June 13, 1939, Serial No. 278,885

1 Claim. (Cl. 287—75)

This invention relates to improvements in dobby cords for looms. Such cords are used in looms for lifting the various heddles at suitable times for the formation of predetermined patterns in the goods woven on the loom.

Since power looms are customarily operated at speeds which are as high as practical, the dobby cords must raise and lower the heddles in short intervals of time. Hence the cords are subjected to constantly repeated jerks in ordinary use. It is important that the fastening devices by which the ends of the dobby cords are secured to the heddles shall be strong and durable so as to withstand the rough usage to which they are subjected in the regular operation of the loom.

It is an object of the present invention to provide end fittings for dobby cords which are simple and cheap but which are strong and durable so that the useful life of the dobby cord will be as extensive as possible.

For a more complete understanding of the specific structures by which these desirable results are obtained, reference may be had to the following description of certain embodiments of the invention, and to the drawing of which

Figure 1 is a perspective view of a dobby cord having end fittings embodying the invention.

Figure 2 is a longitudinal section on one end of the dobby cord shown in Figure 1, together with the fitting thereon.

Figure 3 is a longitudinal section of the other end of the dobby cord shown in Figure 1, with the fitting thereon.

Figure 4 is a perspective view of the end portion of a dobby cord with a modified form of end fitting thereon.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 is a view similar to Figure 4, but showing a different modified form of end fitting.

Figure 7 is a section on the line 7—7 of Figure 6.

Figure 8 is a perspective view of another modified form of end fitting on the end of a cord.

Figure 9 shows another modification of the invention.

Figure 10 is a section on the line 10—10 of Figure 9.

Figure 11 is a perspective view of an end fitting having spaced ears, but secured to the cord in the manner shown in Figure 10.

Dobby cords for looms must be flexible and durable and are usually made of woven cotton cord with or without a stranded wire center or core. In Figure 1 is illustrated a woven cotton cord 20 having at one end a fitting 22 consisting of a piece of sheet metal longitudinally bent to form a tubular portion of ferrule 24 embracing an end portion of the woven cord 20. Projecting longitudinally from this ferrule portion is a flat portion 26 formed by folding the outer end portion of the piece of sheet metal upon itself and pressing these folded end portions or ears against each other. This flat extension is preferably perforated as at 28 to receive a fastening element. The ferrule 24 may be secured to the end portion of the woven cord 20 by being pressed onto this portion so as to squeeze it tightly. A fastening means is provided for this ferrule portion to anchor the woven cord firmly therein. Such fastening means may consist of a pin 30 which extends diagonally through the ferrule 24 and the cord 20 therein, or may consist of inwardly projecting teeth formed on the ferrule itself so as to penetrate into the woven cord.

The other end of the dobby cord is customarily secured to a leather strap 32. According to the present invention, a rigid connector 34 is provided, this connector including a ferrule portion 36 embracing the end portion of the cord 20, and a pair of parallel spaced ears 38 which are adapted to receive the leather strip 32 between them. The connector 34 may be made of a single piece of sheet metal, a portion of which can be bent to form the tubular ferrule 36, the opposite end portion being shaped to form the parallel ears 38. Suitable anchoring means such as a pin 30 may extend through the ferrule 36 and the cord 20 therein to anchor the connector to the end of the cord. One or more fastening elements 40 may be inserted through the ears 38 and the leather strip between them so as to anchor the leather strip to the connector 34. As shown in Figure 1, a plurality of such elements 40 are preferably employed so as to distribute the stress on the leather strip.

Figures 4 and 5 illustrate a modified form of end fitting especially adapted to be mounted on the end of a woven cord having a stranded wire core. As shown, the end portion of the woven covering 42 is stripped from the wire core 44 so that the core is exposed. A pair of metal elements 46 are assembled with the stripped end portion of the core 44 as indicated in Figure 5. A die-casting 50 of zinc or other moderately hard metal is formed about the stripped end portion of the core and the adjacent portions of the metal members 46. This die-casting 50 also preferably embraces a portion of the woven cover of the cord so that the cut end of the woven cover is enclosed and the cord and elements 46 are firmly and rigidly connected. The elements 46 include

parallel projecting ears similar to the ears 38, these ears being spaced to receive between them the leather strip 32.

Figures 6 and 7 illustrate another modified form of end fitting adapted for use with woven cords having wire cores. This consists of a piece of sheet metal shaped to form at one end a tubular ferrule 54 embracing the end portion of the woven cover of the cord. An end portion of the wire core 44 is stripped and inserted through a constricted portion 56 of the end fitting into a casing portion 58 which contains a helical coil 60 of stiff wire. After the stripped end portion of the wire core 44 has been inserted into the coil 60, the casing 58 is strongly pressed, particularly toward its outer end, that is, toward the right as shown in Figure 7, so that the wire coil 60 is flattened to some extent and grips the outer end of the stripped core 44 to anchor the fitting securely to the wire core. The fitting also includes an end portion consisting of a pair of ears 62 which are flat and parallel and are spaced to receive between them the leather strip 32. Suitable pins or grommets may be employed in the manner shown in Figure 3 to secure the fitting to the leather strip 32.

Figure 8 shows another modified form of end fitting consisting of a metal piece which is secured to the end of the cord by a die-casting 66. The metal piece is provided with an internal portion 68 bent into channel form or cut away to receive the stripped end portion of the wire core 44, and an external extension 70 which may be provided with a suitable perforation 72 to receive a fastening element. The edges of the internal portion 68 of the metal piece may be serrated, if desired, to anchor the metal piece more positively within the die-casting 66.

Figures 9 and 10 show an end fitting consisting of a piece of sheet metal longitudinally bent to form a ferrule portion 74 embracing the end portion of the woven cover of the cord, and a flattened portion 76 which embraces the stripped end portion of the wire core 44. Instead of bending the sheet metal so that the seam will be along the side edge of the projecting portion, as shown in Figure 1, the sheet metal may be bent so that the seam extends down one face of the extension 76 as shown in Figure 9. The portion of the extension 76 which immediately surrounds the stripped end 44 of the wire core may be indented at one or more places as indicated at 78 so as to grip the core, and the inner surface may be knurled or serrated to grip the wire core more securely. The fitting may be additionally secured to the wire 44 by locally heating the extension 76 and introducing solder through the seam 80. The solder 82 will be drawn in by capillarity if the parts are clean and a suitable flux has previously been provided, so that the solder will fill in the small spaces between the wire core 44 and the adjacent portions of the extensions 76, making a secure joint.

Figure 11 shows a fitting made of a piece of sheet metal and secured to a cord having a wire center in the manner shown in Figure 10. The sheet metal is shaped so that a portion thereof forms a ferrule 74 to grip the end of the woven cord. An intermediate portion 83 is pressed tightly against the stripped end portion of the wire core 44 to pinch the core, and the other end portion of the fitting consists of a pair of parallel ears 84 spaced to receive between them a strap such as is shown in Figure 1. The inner surface of the sheet metal piece is preferably knurled or serrated so as to furnish a more adequate mechanical grip on the wire core and woven cover. The joint may also be strengthened by running solder into the seam to fill the spaces between the core and adjacent interior surfaces of the fitting in the manner indicated in Figure 10.

It is evident that various modifications and changes may be made in the particular embodiments of the invention herein shown and described without departing from the spirit or scope of the invention as defined in the following claim.

I claim:

In combination with a woven cord having a wire center, an end fitting comprising a metal piece having an inner portion and an outer portion, said inner portion being disposed adjacent to a stripped end portion of said wire center, and a die-casting enveloping said inner portion of the metal piece and stripped portion of the wire center.

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