June 5, 1934. F. B. JAVERY 1,961,694

SPINDLE MOUNTING FOR CREELS

Filed Oct. 20, 1930 2 Sheets-Sheet 1

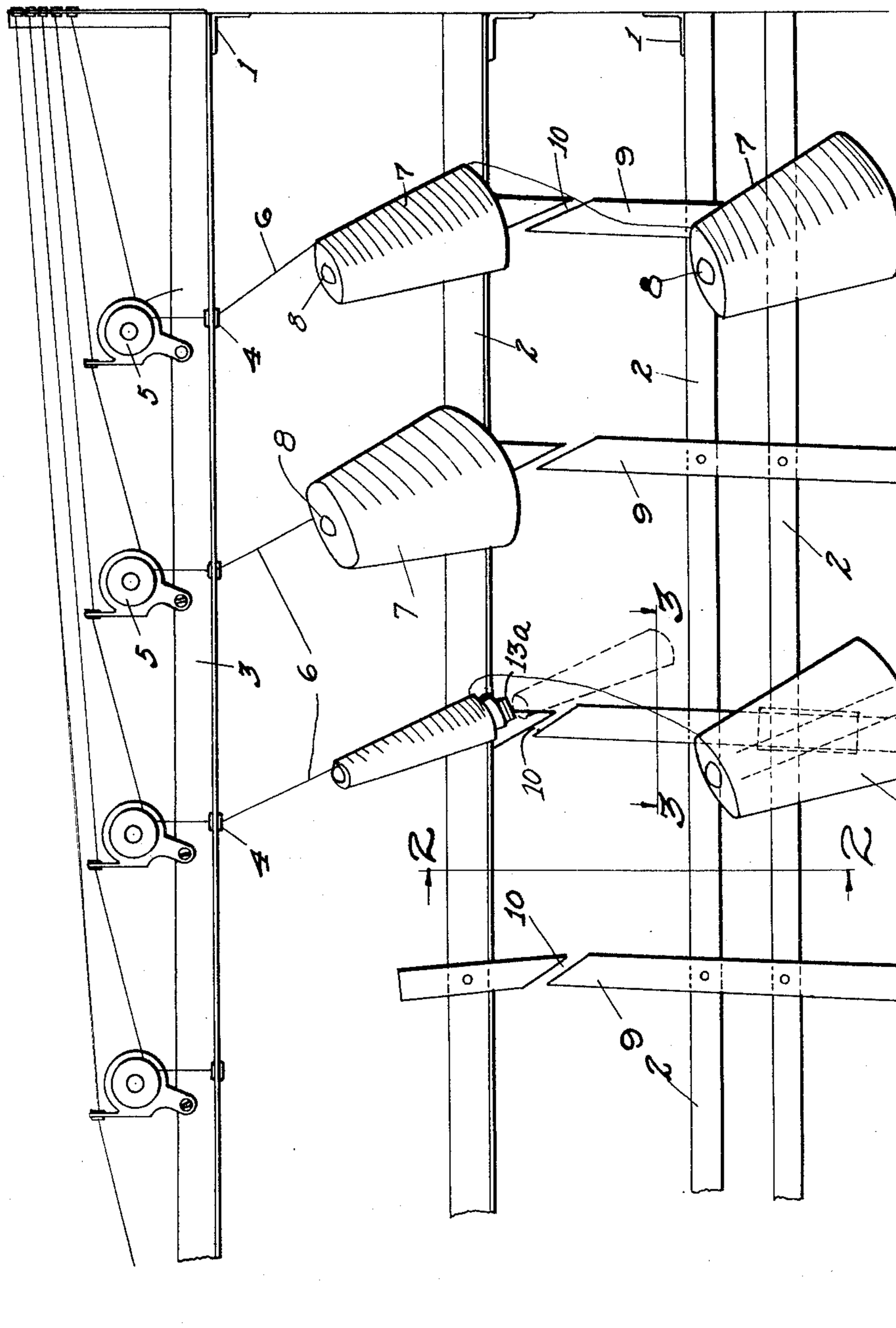

Fig. 1.

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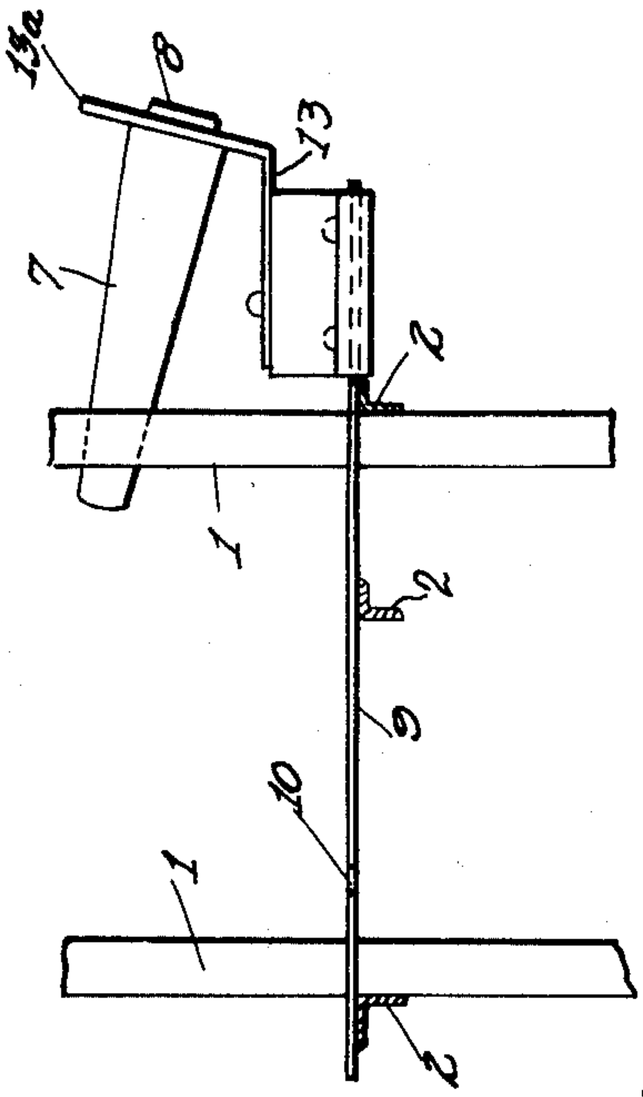

Fig. 2.

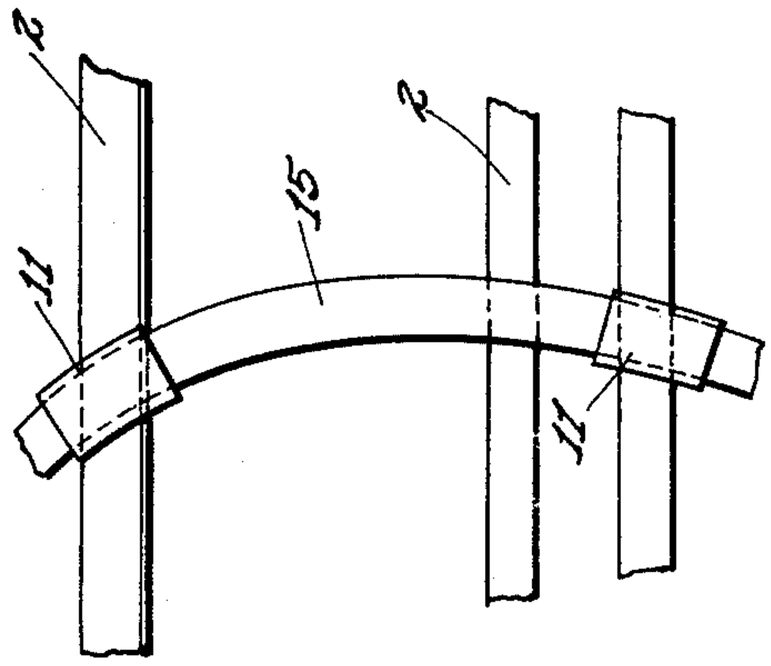

Fig. 5.

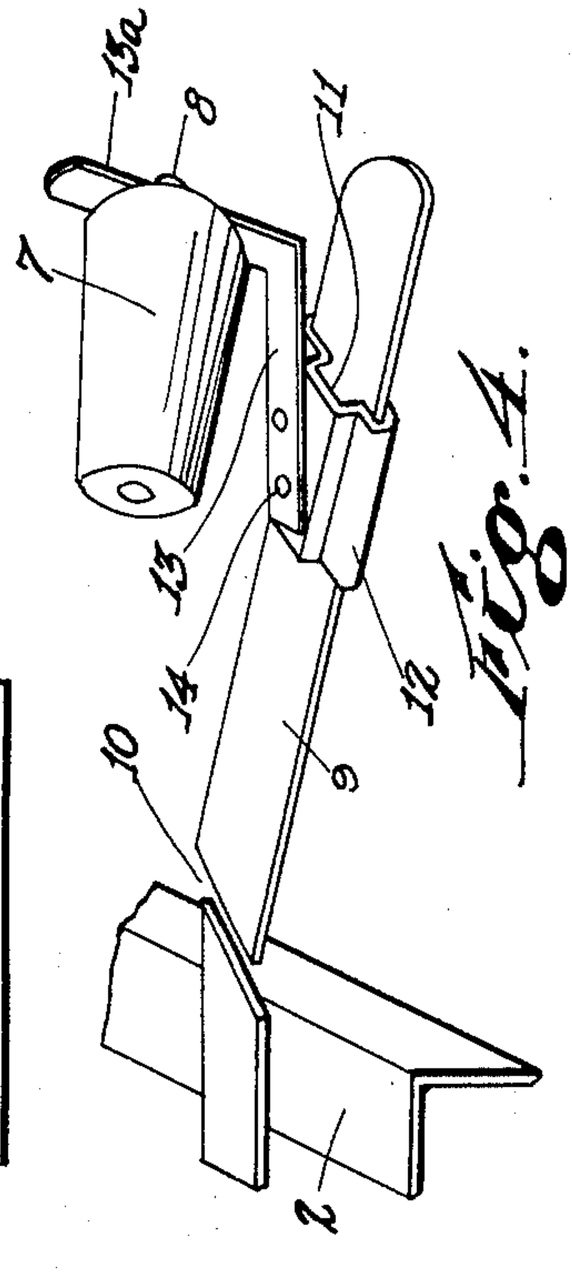

Fig. 4.

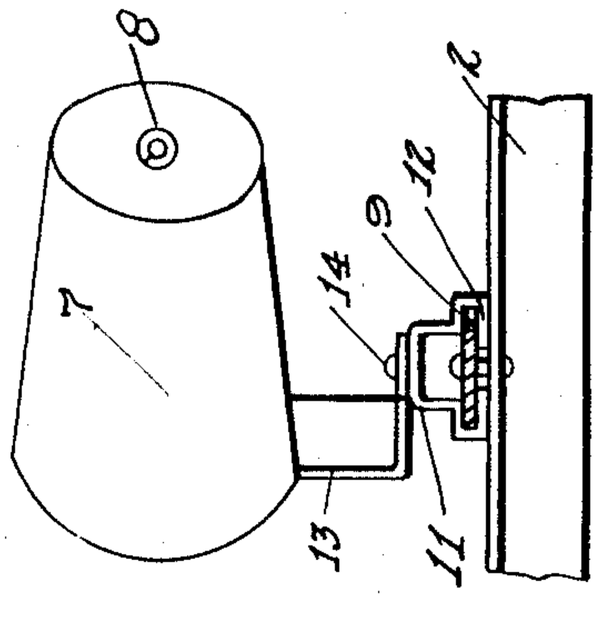

Fig. 3.

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SPINDLE MOUNTING FOR CREELS

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Application October 20, 1930, Serial No. 489,951

4 Claims. (Cl. 242—131)

The present invention relates to creels or spool stands, such as are employed for supporting a plurality of yarn packages or spools so that the yarn or thread may be evenly led from the packages for winding on a warp beam, or for any other purpose.

The invention relates particularly to that type of creel in which the yarn or thread is drawn from the ends of the packages in the general direction of the longitudinal axes of the packages, this type of creel being known as an end delivery creel, as distinguished from that type of creel in which the threads are drawn tangentially from the cylindrical packages. In end delivery creels, as heretofore constructed, it has been customary to arrange the spindles in pairs with respect to a stationary thread controlling device through which the thread is drawn from the packages with the spindles arranged on opposite sides of the point of draft. With such an arrangement, it is possible to draw the thread continuously from first one spindle of the pair and then the other, although such an arrangement results in an increase in an overall length of the creel due to the space occupied by the packages which are held in reserve while a thread is being drawn from the other package of each pair.

According to the present invention, there is provided a creel in which the spindles, supporting both the active package and the reserve package, are arranged substantially in alinement with the stationary thread guiding device through which the thread is drawn, thereby insuring a great reduction in the overall dimensions of the creel employing a given number of spindles. In addition, the invention contemplates an improved mounting of the package spindles so that an exhausted spindle can be readily withdrawn and a spindle containing a fresh package placed in the active position without interfering with the other active spindles, or checking the passage of the thread. The above and other advantageous features of the invention will hereinafter more fully appear, with reference to the accompanying drawings, in which:—

Fig. 1 is a plan view showing a portion of a creel embodying the invention, with certain spindles removed to show the construction.

Fig. 2 is a vertical sectional view along the line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a transverse sectional view along the line 3—3 of Fig. 1, looking in the direction of the arrows.

Fig. 4 is a fragmentary view in perspective, looking from the rear side of the creel.

Fig. 5 is a fragmentary view showing a modification of the invention.

Like reference characters refer to like parts in the different figures.

Referring first to Figs. 1 and 4, the portion of the creel shown comprises upright frame members 1, 1 for supporting spaced horizontal frame members 2, 2, with a bar 3 supported above and in front of each pair of members 2 for carrying a set of spaced thread eyes 4 and thread tensioning devices 5. As shown at the right in Fig. 1, a thread 6 leads through each thread eye 4 from one of a pair of yarn packages 7, each mounted on a stationary spindle 8 with the axes of both packages 7, pointing toward the thread eye 4.

It will be evident from a consideration of Fig. 1 that the several pairs of yarn packages 7 are arranged so that only the active packages from which thread is being drawn are mounted on the frame member 2 nearest the row of thread eyes 4. The reserve packages 7 are arranged almost in alinement with the corresponding active packages so that the overall length of the creel is determined only by the necessary spacing between adjacent active packages. As a result, a given length of creel embodying the present invention carries substantially twice as many packages as a creel in which the active and reserve packages of each pair are positioned substantially equi-distant from the corresponding thread eye.

As previously pointed out, the invention also contemplates the provision of means whereby an exhausted package can be removed from the creel without interference with the threads leading to the other active packages, as well as means whereby the reserve package of a pair may be conveniently shifted to replace the exhausted package for continuous drawing off of the thread. One preferred embodiment of such package positioning means consists in providing a track 9 for each pair of packages 7, each track 9 extending between the spaced horizontal frame members 2, 2. Each track 9 consists of a flat bar with a gap 10 intermediate its ends with the portions of the bar on opposite sides of the gap 10 extending at slightly different angles. As best shown in Fig. 3, the edges of each track 9 are raised above the surface of the supporting frame members 2 so as to receive a slide 11 with flanges 12 bent around

the edges of the bar so as to retain the slide 11 on the track while permitting free sliding movement thereof. Each slide 11 carries a right angle bracket 13 secured to the top of the slide, at an angle, by screws 14, and the upright portion 13*a* of each bracket carries a package spindle 8 inclined upwardly slightly from the horizontal, so that a package 7 will stay on the spindle 8, see Fig. 4.

Referring again to Fig. 1, it is evident that with a number of pairs of packages 7 mounted on the tracks 9, the forward row of packages 7 will point at the thread eyes 4 at a considerable angle, due to the angular displacement between the brackets 13 and the slides 11. The rear row of packages 7 will also point towards the eyes 4, although at a different angle, the displacement between the axes of the packages of each pair being due to the fact that adjacent portions of each track 9 are at different angles on opposite sides of the slot 10. When the yarn has been almost exhausted from a package 7, as indicated on the second track from the left in Fig. 1, it is possible to remove the empty spindle by seizing the upright portion 13*a* of the bracket 13 and pulling it rearwardly. When this occurs, the location of the slot 10 allows the slide 11, and accordingly the spindle, to continue to point in substantially the same direction, as indicated by the dotted lines, until it is freed from the track in the space between the track on which the slide is moving and the next adjacent track. As soon as the exhausted spindle has been removed, the other spindle of the same pair, with a full package thereon, is pushed forward on the same track 9 until it occupies the same position as the previously withdrawn spindle, as indicated on the third track from the left in Fig. 1.

The slot 10 has no effect on the forward movement of the slide carrying the spindle with the reserve package and since the base of one package is connected to the tip of the other the thread continues to be drawn off the reserve package, without interruption. When a package from the rear row has been pushed forward to take the place of an exhausted package, it is an easy matter for the operator to place a fresh package in the space made vacant, without in any way interrupting the drawing of thread from the package which has just been moved forward. This is indicated on the fourth track from the left in Fig. 1.

From the foregoing, it is evident that a creel embodying my improved spindle mounting can be kept in continuous operation by reason of the convenient manner in which an exhausted spindle can be withdrawn and a spindle carrying a fresh package placed in an active position. It will also be evident that a creel embodying the present invention will show a great reduction in its overall length, as compared to a creel utilizing the same number of packages both active and in reserve, with the packages arranged in side by side relation.

Referring to Fig. 5, there is shown a modification in the form of track for supporting a pair of spindle slides 11. In this modification, the track 15 is made arcuate in form so that the spindle bracket slides 11 can be readily moved from an inactive to an active position. Since no slot is provided in the modified track 15, it is necessary to push the slide carrying an exhausted spindle forward until it clears the end of the track, whereupon it may be withdrawn in the same manner as described with reference to Fig. 1.

I claim,

1. An end delivery creel comprising a thread guide, a track extending in the direction of said guide, a pair of spindles for supporting thread packages slidably mounted on said track, the latter having means providing for withdrawal of said spindle nearer said guide from said creel by movement of said spindle away from said guide independently of the other spindle and without movement of said other spindle.

2. An end delivery creel comprising a thread guide, a track extending in the direction of said guide, a pair of spindles for supporting thread packages slidably mounted on said track, the latter having means providing for withdrawal of the spindle nearer said guide from said creel by movement of said spindle away from said guide independently of the other spindle, said track also providing for advance of said other spindle into the normal position of the spindle nearer said guide.

3. An end delivery creel comprising a thread guide, a track extending substantially in the direction of said guide, a pair of package-supporting spindles slidably mounted on said track, the latter having means to provide for removal of the spindle nearer said guide from said track by movement of said spindle away from said guide without interfering with the other spindle on said track.

4. An end delivery creel comprising a thread guide, a track extending substantially in the direction of said guide, a pair of slides on said track, a spindle mounted on each of said slides for supporting thread packages, said track having means thereon to provide for removal of the slide nearer said guide from said track by movement of said slide away from said guide without affecting the position of the other slide on said track.

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