The present invention refers to carriers for braiding machines, and more particularly to devices for providing a practically constant tension of the thread fed by the spool on the carrier.

One of the objects of the present invention is to provide a carrier for braiding machines in which the thread tension is kept at a practically constant value by a thread tension member the travel or displacement of which is particularly reduced.

Another object of the invention is to provide a carrier for braiding machines in which the danger of breaking the thread due to friction with the thread tension member or the sudden variation of thread feeding rate is considerably reduced with respect to the known carriers.

Still another object of the invention is to provide a carrier for braiding machines in which the friction caused on the thread by the thread tension member can assume different rates in correspondence to different positions of the thread tension member depending upon the thread tension.

Another object of the invention is to provide a carrier for braiding machines having a particularly reduced height owing to the reduced stroke of the thread tension member. The above and other objects of the invention will appear more clearly from the following detailed description of the embodiment of the invention in which examples with reference to the attached drawings.

Fig. 1 is a front view of a carrier according to the invention;

Fig. 2 is a sectional view of Fig. 1 through line II—II;

Fig. 3 is a sectional view of Fig. 2 through line III—III;

Fig. 4 is a sectional view of Fig. 2 through line IV—IV;

Fig. 5 is a plan view of a detail of Fig. 1;

Fig. 6 is a fragmentary modification of Fig. 1;

Fig. 7 is a front view of another form of carrier according to the invention;

Fig. 8 is a fragmentary view of the former with the thread tension member in a different position;

Fig. 9 is a plan view of a detail of Fig. 7.

The carrier shown in Figs. 1 to 5 comprises a base 1 having a vertical spindle 2 and spaced vertical short and long standards 3 and 4, respectively. A sleeve 5 is mounted for rotation on the spindle 2. The sleeve 5 has a flange 6 on its lower end, said flange having four radial projections or teeth 7 constituting a ratchet wheel.
the thread guide 24. In this case the position of this thread guide is below the uppermost position of the thread guides 17 and 18, so that, when the slide 15 rises due to the tension of the thread, the thread guide 24 is relieved from the thread and rises under the action of the spring 22; with this arrangement, of course, the position of the rod 21 is such as to engage with the ratchet 6–7 when lifted and to disengage therefrom when lowered.

The carrier represented by Figs. 7 and 8 differs from the former ones in that the rod 21 and the latch device are missing and the thread guide 24 is fixed on the piece 10 and is so low as to be relieved from the thread when the slide 15 with the thread guides 17, 18 is in its uppermost position, the thread tension being adjusted in this case by a brake device. When the position of Fig. 9 is reached, the friction on the thread, which has left the guide 24, is considerably diminished and the thread tension overcomes the brake resistance.

The brake device consists of a sleeve 28 loose on the standard 4 and bearing a shoe 28 urged against the thread on the spoon 8 by the action of a torsion spring 30 one end of which is fixed to the sleeve 28 and the other end is fixed to a crown bush 31. One of the indentations of said crown bush 31 engages a projection 32 of a plate 32 dovetailed in the top portion of the standard 4 so that the torque of the crown bush urges the plate 32 into engagement with the standard 4, while the plurality of such indentations affords a quick and easy means for obtaining an accurate regulation of the braking action through the spring 30.

The plate 32 is provided with an eyelet 33 acting as the final thread guide.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

2. In a carrier for braiding machines a thread spool spindle provided with a ratchet and mounted on a base, a slide on said standard having two thread guides, three thread guides supported by said standard, a spring urging said slide on standard in upward direction, and a latch engaging said ratchet and operatively connected with said slide.

3. In a carrier for braiding machines a thread spool spindle provided with a ratchet and mounted on a base, a slide on said standard having two thread guides, three thread guides supported by said standard, said thread passing through the first of said three guides, then through the second of said two guides, and then through the third of said three guides, two of said three guides being fixed on said standard and the third being slidable in a direction parallel to said standard, a spring urging said third guide on said standard, a spring actuated latch to engage said ratchet, and a latch engaging said ratchet and operatively connected with said slide.

4. In a carrier for braiding machines a thread spool spindle provided with a ratchet wheel and mounted on a base, a slide on said standard having two thread guides, three thread guides supported by said standard, said thread passing through the first of said three guides, then through the first of said two guides, then through the second of said three guides, then through the second of said two guides, and then through the third of said three guides, two of said three guides being fixed on said standard and the third being slidable in a direction parallel to said standard, a spring actuated latch to engage said ratchet and operatively connected with said slide, and the tension of the thread acting on said last mentioned guide to disengage the latch from the ratchet wheel.

5. In a carrier for braiding machines a thread spool spindle provided with a ratchet wheel and mounted on a base, a standard on said base, a slide on said standard having two thread guides, three thread guides supported by said standard, two of which are integral therewith and the third being slidable in a direction parallel to said standard, a spring urging said slide upward to a position below said first mentioned thread guide when said slide is in its highest position, a latch operatively connected with said guide and engaging said ratchet wheel when said slide is moved down by the thread.

6. In a carrier for braiding machines a thread spool spindle provided with a ratchet wheel and mounted on a base, two vertical rods on said base having different lengths, a piece resting on the end of the shorter standard and provided with a hole for the longer standard, a slide having two thread guides and sliding on said standard below said piece, helical springs on said standards between said piece and said slide for urging the latter downward, two thread guides supported by said piece one of which is vertically slidable with respect to said piece, a spring urging said slide upwardly, a latch connected to said slide and operatively connected with said ratchet wheel, and a resilient member engaging the longer standard above said piece and comprising a further thread guide.

FRANCESCO FERRUTA.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>663,296</td>
<td>McCahey</td>
<td>July 7, 1886</td>
</tr>
<tr>
<td>1,488,111</td>
<td>Goehringer et al.</td>
<td>Mar. 29, 1924</td>
</tr>
<tr>
<td>1,627,744</td>
<td>Dandy et al.</td>
<td>June 1, 1929</td>
</tr>
<tr>
<td>1,630,869</td>
<td>Messinger</td>
<td>Mar. 31, 1929</td>
</tr>
<tr>
<td>2,023,824</td>
<td>Cook</td>
<td>Mar. 17, 1936</td>
</tr>
</tbody>
</table>

FOREIGN PATENTS

<table>
<thead>
<tr>
<th>Number</th>
<th>Country</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>323,319</td>
<td>Great Britain</td>
<td>July 11, 1940</td>
</tr>
</tbody>
</table>