April 14, 1959 G. SABULA 2,881,653

BRAIDER CARRIER

Filed June 10, 1958

Fig. 1.

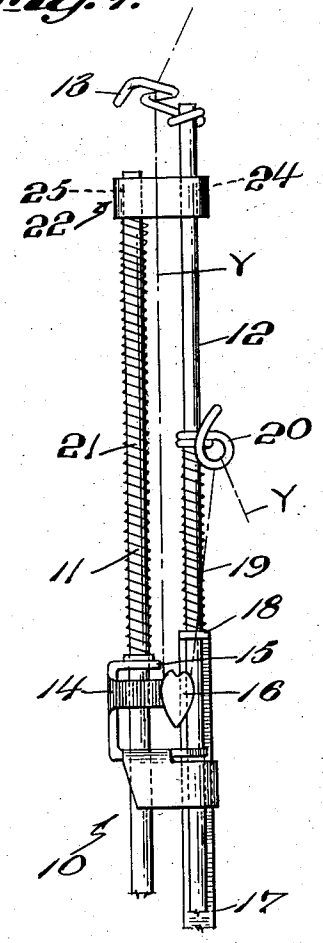


Fig. 2.

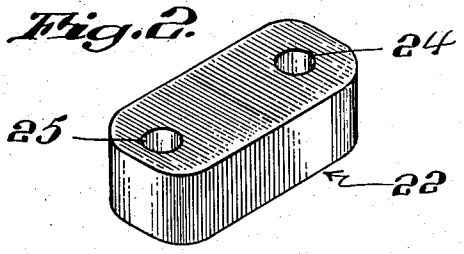


Fig. 3.

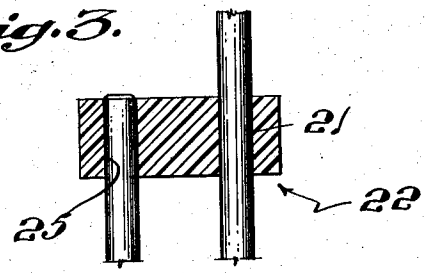
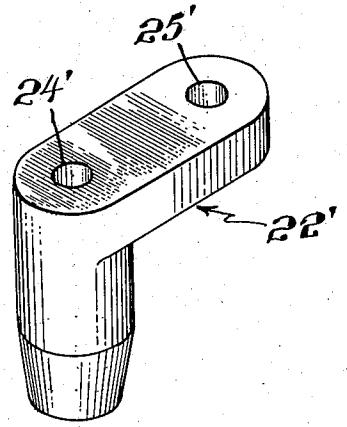


Fig. 4.



INVENTOR.
George Sabula
BY
Barlow & Barlow
ATTORNEYS.

United States Patent Office 2,881,653 Patented Apr. 14, 1959

2,881,653

BRAIDER CARRIER

George Sabula, Riverside, R.I., assignor to John W. Collier Co., Inc., a corporation of Rhode Island

Application June 10, 1958, Serial No. 741,131

3 Claims. (Cl. 87—56)

This invention relates to carriers for braiding machines, more particularly to a carrier of the type disclosed in Patent No. 2,211,730 issued August 13, 1940, to R. V. Olson.

A carrier of the type above referred to has a vertical reciprocating member generally called a "stop" acting in a bight of the yarn between the supply bobbin and the lead-off eye of the carrier. The stop is mounted on a first vertical upright about which is arranged a relatively lightweight tension spring, the lower end of which engages the stop. A latch actuating lift is slidably mounted on a second upright, paralleling the first upright, and is spring biased into engagement against said stop. Upward movement of the stop actuates the latch which in turn releases the supply bobbin for rotation so that a length of yarn is delivered in the known manner as required during the braiding operation. The upper end of the uprights are bridged by a link which is slidably mounted on the second upright and extends into engagement with the first upright and there serves as a stationary held abutment for the upper end of the said spring encircling the first upright.

The link is generally held in position by a downward acting spring pressure against which the link may be moved upwardly to free the end of the first upright and allow removal and replacement of the tension spring as required for different braiding operation. The link is subject to much abuse during the operation of the braiding machine and oftentimes a link will become disengaged from the uprights which is caused by the whipping action of the uprights. As a direct result of the abuse of the carrier, the uprights tend to move relative to each other and the link wears the slidably engaged upright. Rust often develops at this wear point and oftentimes it is impossible to remove a link.

An object of the invention is to improve generally on the type of link above mentioned.

Another object of the invention is to provide a link which will be constructed so as to be held on the uprights by frictional engagement therewith.

A more specific object of the invention is to manufacture the above link of a plastic material with an opening therethrough of a size to grip at least one of the above uprights through the tendency of the plastic material to recover to initial condition.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is an elevational view of a fragmentary portion of a braider carrier embodying the invention;

Figure 2 is a perspective view of the connecting link;

Figure 3 is a sectional view of the upper portion of Figure 1 shown on an enlarged scale; and

Figure 4 is a perspective view of a modified form of the connecting link.

Referring to the drawing in more detail, **10** designates a carrier for a braiding machine and only so much of the carrier is shown as is believed necessary for understanding of the invention. The carrier is of a well-known construction and includes two vertical extending posts or uprights **11** and **12** which extend parallel to each other. The upright **12** is longer than the upright **11** and carries at the upper end thereof a lead off yarn guide or eye **13** from which a yarn Y is led to the braiding location. A yarn tensioning traveler **14** which is generally referred to as a stop by workers in the art since it additionally functions to actuate the stop motion of the machine is mounted for reciprocation on upright **11** and has oppositely disposed arms **15** which straddle upright **12** and retain the stop in proper alignment on upright **11**. A yarn guide **16** is carried by the stop and engages in a bight of the yarn Y between a supply bobbin and the lead off eye **13**. The stop **14** is provided to take up slack in the yarn during movement of the carrier from the outer portion of the carrier track to the inner portion thereof, and to pay out yarn with the movement of the carrier toward the outer portion of said track during which time yarn is drawn from the supply bobbin.

The let-off of yarn from the supply bobbin is controlled by a latch lift **17** which is slidably mounted on upright **12** by a portion **18** which encircles the upright and is normally at a location above the said arms **15** and in the path thereof to be engaged thereby and moved therewith against the pressure of a coiled spring **19** during the upwardly movement of the stop. The spring **19** encircles the upright **12** and the lower end of the spring abuts against portion **18**. The upper end of the spring engages against a yarn guide eye **20** which is fixed to upright **12** and to which the yarn is led from the supply bobbin.

The weight of the stop **14** is supplemented by spring pressure supplied by a relatively long, lightweight coil compression spring **21** which encircles the upright or tension spring rod **11**. The lower end of the tension spring **21** engages the stop and the upper end engages an abutment **22** or link which is the subject of the present invention.

The link **22** bridges the upper portion of the uprights **11** and **12** so as to maintain the same in parallelism. The link **22** comprises a generally rectangular block of a plastic material, such as "nylon," which has a tendency to recover to normal shape upon being deformed. The link **22** is slidably mounted on upright **12** by means of an opening **24** therethrough through which the upright **12** extends. The opening **24** is made of a size slightly larger than the diameter of the upright so as to provide a nice sliding engagement with the upright. A second opening **25** through the link is adapted to be inserted on the upper end portion of upright **11**. The opening **25** is made of a size so as to provide substantially frictional engagement on upright **11** to hold the same in position thereon and to allow removal from the upright. Purely by way of example, if upright **11** has a diameter of 0.156" then opening **25** may have a diameter of from 0.147" to 0.150". When the link **22** is inserted on the upright **11**, the walls of the opening **25** will be compressed and due to the tendency of the walls to recover or creep to normal size, the link will tighten about the upright **11** with sufficient friction to hold it against axial movement along upright **11** during the normal abuses to which a braider carrier is subjected by the operation of the braiding machine. When the spring **21** requires replacing, the link **22** is moved upwardly along upright **12** to disengage the link from upright **11** and then swung away to allow removal and replacement of the spring. Thereafter the link is returned into engagement with upright **11**.

If a longer bearing surface is desired along upright **12**, the link may take the form shown in Figure 4. In this form the link **22'** has an opening **24'** extending through the thickest portion of the link with the frictional engaging opening **25'** in the thinner portion.

From the foregoing it will be apparent that the link **22** is of a very simple construction consisting of a single block of a synthetic material pierced with two openings. It will be further apparent that the link is self-held in position on the uprights, thus eliminating clamp screws, coil springs and other elements heretofore employed for mounting and holding the link in proper position.

I have described the link as being preferably made from "nylon" material, in that I have found "nylon" to have proven satisfactory in actual usage for a long period. It is, however, contemplated to employ other synthetic plastics which are resilient or have the characteristic to recover or creep back to the normal shape.

I claim:

1. In a braider carrier having a first upright, a second upright extending in parallelism with the first upright, a link extending across said uprights and being slidably mounted on the first upright and having a second opening therethrough extending into frictional engagement with the second upright, said link being manually disengaged from the second upright for removal of a spring thereon, said link composed of a synthetic plastic material exhibiting the property of recovery whereby upon

the material about the wall of said second opening being compressed by engagement with the second upright the opening will tend to recover to original dimensions to tighten said wall about the upright.

2. In a braider carrier as set forth in claim 1 wherein said link is held against unauthorized movement along said uprights solely by the said frictional engagement of the said link with the second upright.

3. In a braider carrier having a first upright, a second upright extending in parallelism with the first upright, the first upright being longer than the other upright, a tension applying member slidably mounted on the second upright, a coil compression spring encircling said second upright and with the lower end of said spring engaging said tension member, and a link extending across said uprights and slidably mounted on the first upright, said link composed of a plastic material exhibiting the property of recovery, said link having an opening therethrough to frictionally engage the second upright and provide an abutment for the upper end of said spring, said link being frictionally held on said second upright and manually removably therefrom for removal of the said spring.

References Cited in the file of this patent

UNITED STATES PATENTS

2,240,488 Benson ---------- May 6, 1941