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(54) Guide flyer for yarn or strand.

(57) The flyer comprises a body (1) having a flat cross section and having an aerodynamic profile, made of suitable mechanically strong material and provided with a longitudinal median channel (2) on whose bottom there is fitted a strip (3) made of steel or other suitable material and which is closed by another strip (6) made of steel or other suitable material, which is kept equidistant from and parallel to the preceding strip by bushes (8-108) made of ceramic or other suitable material, disposed between the said strips, at the sides of the channel. The said strips are fixed to the body of the flyer by means of screws, rivets or other suitable means (9-109) which pass through the said bushes.

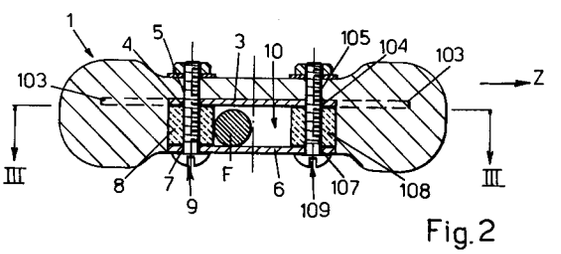

Fig.2

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The present invention relates to guide flyers for yarn, rope or other filament-like material, to be employed in doubling frames, rope-making machines, stranding machines, or similar machines, in other words to those structures which are connected in the form of a link between the opposite ends of the rotating part of the said machines and which have the function of guiding the yarn longitudinally, preventing its deformation by centrifugal force.

By contrast with the flyers of the known type in which the yarn is generally visible, the flyer according to the model forms a closed channel guide for the yarn which passes through it, in such a way as to prevent the yarn from being subjected to the effects of centrifugal force and also to those of what is called the dynamic wind.

The flyer according to the invention is also characterized by a simplified construction and by a high degree of reliability in operation.

The characteristics of the flyer in question, and the advantages deriving therefrom, will be clearly understood from the following description which refers to the figures on the attached sheet of drawings, in which

- Figure 1 is a plan view of a portion of the flyer;
- Figure 2 shows a transverse section through the flyer along the line II-II in Figure 1; and
- Figure 3 shows further details of the flyer in a section along the line III-III in Figure 2.

It may be seen from the figures that the flyer comprises a body 1 having a flat cross section and having a suitably aerodynamic profile, made, for example, from carbon fibre or from any other material, including composite material, suitable for the purpose.

The body 1 has a longitudinal channel 2, of rectangular section for example, in the median position on one face.

The bottom of the channel 2 is lined with a strip 3 made of steel or other suitable strong material having a low coefficient of friction and such that it does not damage the yarn to be guided. As shown by the broken lines in Figure 2, the strip 3 may have a width greater than that of the channel 2, so that opposite portions 103 of the strip, which may be pierced or bent into the form of a fin if required, are embedded in the body 1 to provide it with greater strength. This variant may enable the body 1 to be made from less expensive and less strong materials than the carbon fibre mentioned previously.

The strip 3 is provided with holes 4 and 104 located at short distances from the longitudinal edges of the strip and distributed over the whole length of the flyer with a constant and suitable spacing.

The body 1 is provided with holes 5-105 aligned with the holes 4-104.

The channel 2 is closed by a strip 6 of the same material as the strip 3, also provided with holes 7-107 at short distances from its longitudinal edges and aligned with the aforesaid holes 4-104 and 5-105. The strip 6 is kept parallel to the strip 3 and in the correct position to close the channel 2 by the interposition between the strips of identical bushes 8-108, made of ceramic or other suitable material, which are aligned axially with the holes 4-5-7 and 104-105-107 and through which pass bolts or screws 9-109 or other suitable means such as rivets or other devices by means of which the parts 6-8-108-3 are fixed to the body 1 of the flyer.

From Figure 2 it may be seen that an ideal continuous tubular guide 10 is formed in the channel 2 which is covered and closed, and that the yarn or strand F runs in this guide and is sheltered from the dynamic wind, being supported on the strip 3 or 6 which is towards the outside, and supported on the row of bushes 8 or 108 which is opposite the leading edge of rotation of the flyer. In the figures, for example, it is assumed that the strip 6 is towards the outside and that the direction of rotation of the flyer is as indicated by the arrow Z.

The dimensions of the guide 10 are suitably greater than the maximum diameter of the yarn or strand which is running in the flyer.

Claims

1. A guide flyer for yarn, strand or any other filament-like material (F), to be employed in doubling frames, rope-making machines, stranding machines or similar machines, characterised by the fact that it comprises a body (1) having a substantially flat cross section and having an aerodynamic profile, provided with a longitudinal median channel (2) on the bottom of which there is fitted a first strip (3) made of steel or other suitable material and which channel is closed by a second strip (6) made of steel or other suitable material, said second strip (6) being kept parallel to and equidistant from the said first strip (3) by bushes (8-108) made of ceramic or other suitable material, arranged between said first strip and said second strip at the sides of said longitudinal channel (2).

2. A guide flyer according to claim 1, characterised by the fact that the said first and second strips (3-6) are secured to the body (1) of the flyer by fastening means such as bolts, screws, rivets or other suitable means (9-109) which pass through the said bushes (8-108).

3. A guide flyer according to claim 1, characterized by the fact that the said first strip (3) is secured to the body of the flyer by means of portions (103) which extend beyond the sides of the longitudinal channel (2) and which are embedded in the said body (1), while the second strip (6) is secured to the body (1) of the flyer by fastening means such as bolts, screw, rivets or other suitable means (9-109) which pass through the said bushes (8-108).

4. A guide flyer according to any one of the preceding claims, characterised by the fact that the the said bushes (8-108) are arranged at the sides of the longitudinal channel (2) at suitable intervals of length, so as to suitably support the running yarn or rope (F) during operation of the guide flyer.

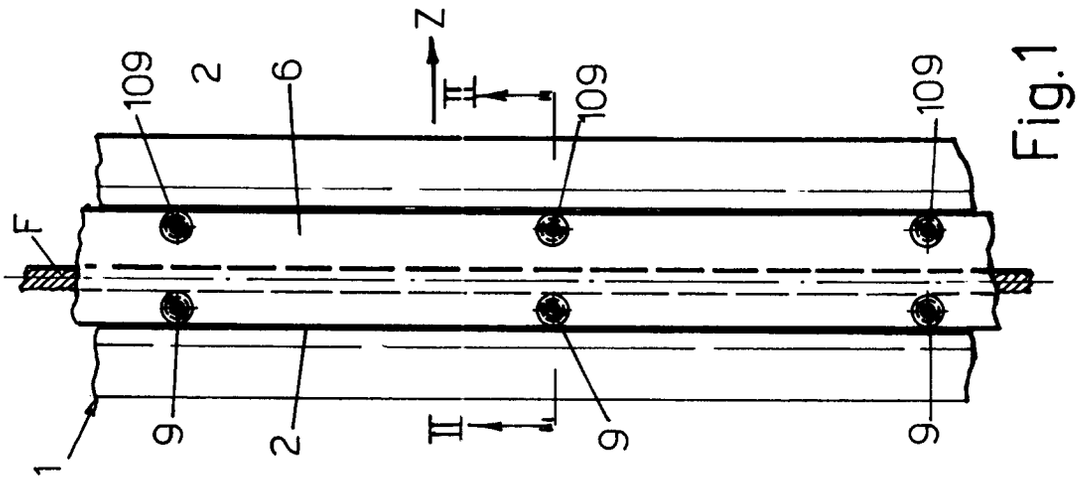

Fig.1

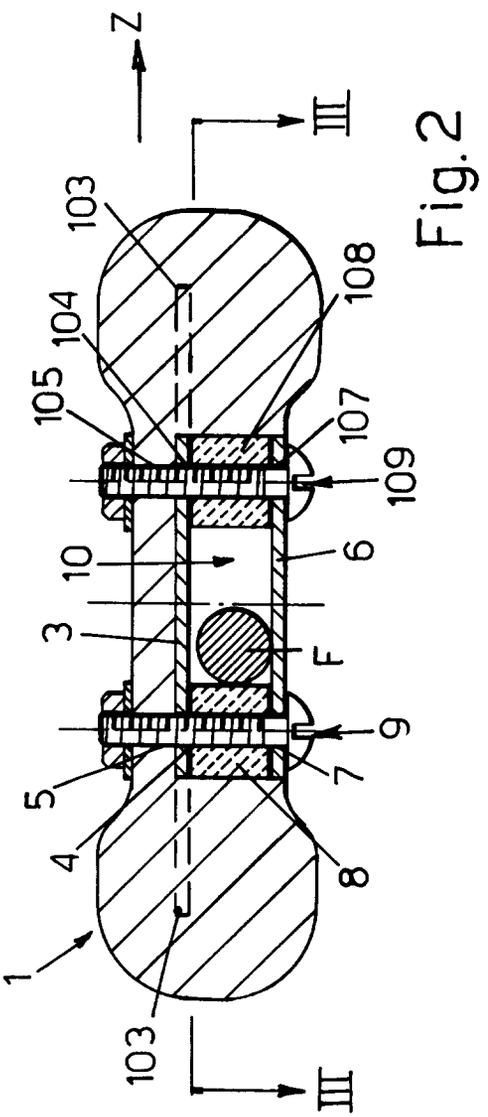

Fig.2

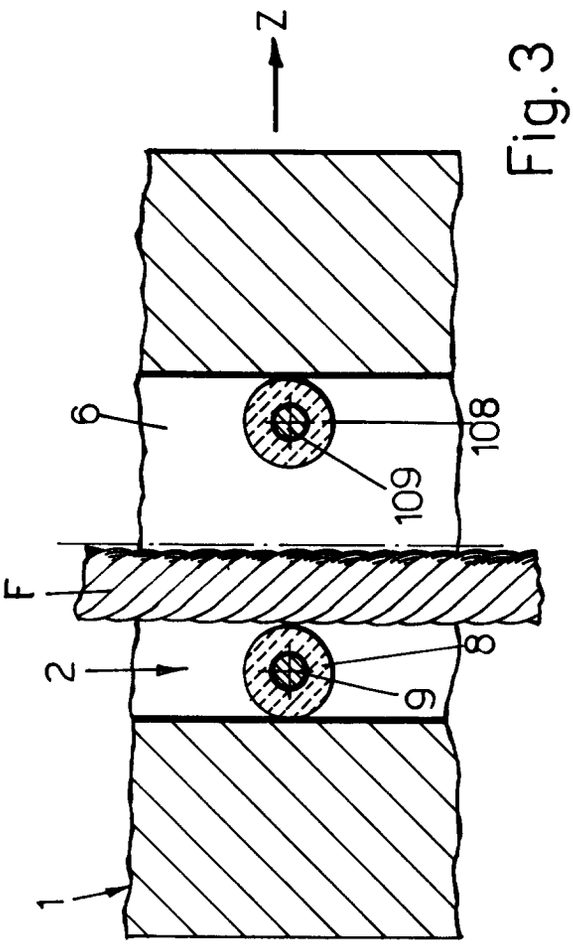

Fig.3

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EUROPEAN SEARCH REPORT

Application Number

EP 93 10 6184

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 793 819 (D.D.MADALOZZO ET AL) * column 2, line 33 - column 3, line 15 * ---	1,2	D07B3/10 D07B7/02

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

D07B
D01H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	13 AUGUST 1993	GOODALL C.J.

CATEGORY OF CITED DOCUMENTS

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