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THREAD TENSIONING DEVICE

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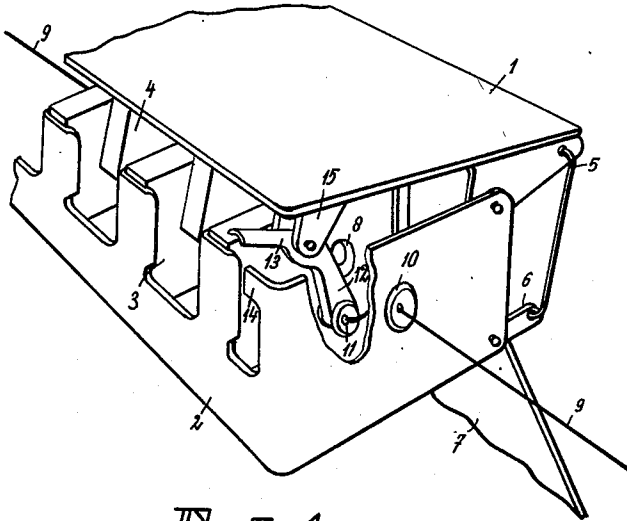


Fig 1

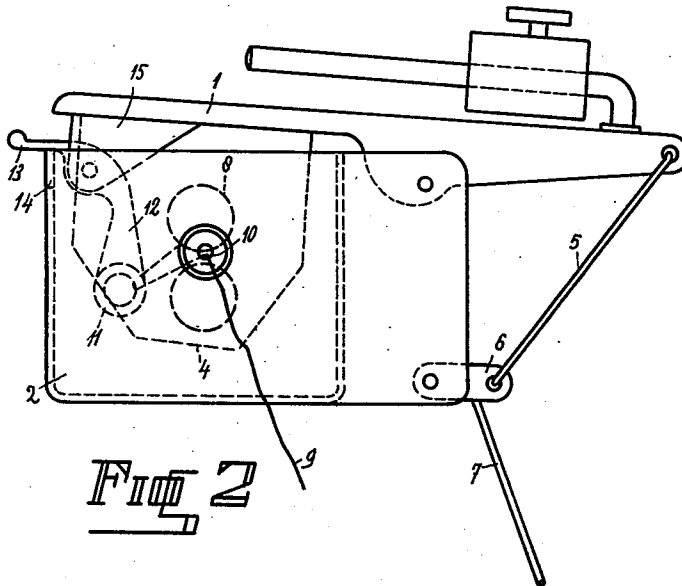


Fig 2

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THREAD TENSIONING DEVICE

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1 Claim. (Cl. 242—154)

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This invention relates to a thread tensioning device for a textile machine, consisting of a fixed and a movable jaw. Each jaw has outwardly directed extensions and the extensions of one of the jaws extend between those of the other jaw and the thread is guided between the extensions according to a zig-zag line.

These thread tensioning devices are generally used when warping yarns which form strong loops. The braking-off of the yarn is necessary to obtain a certain tension in the same when it is warped on the beam.

Crape-yarns, however, have the disadvantage of showing strong loops with the slightest tension differences. Therefore it is of importance that each tension difference which can occur during warping be directly neutralized. The best yarn brake which can serve for this purpose is that in which the thread is braked-off between jaws according to a zig-zag line.

However, it sometimes occurs that the tension in the thread is greater before it reaches the yarn brake, e. g. when the thread reaches the end of the cone or the velocity of the warping machine is altered.

To this end the yarn brake is provided with a thread tensioning device in such a way that the brake action can be controlled as the tension in the thread is altered.

According to the present invention this is attained in that the movable jaw in the working position also bears on the arm of a lever and the lever is so actuated by the thread that on increase of the thread tension, the jaws are moved apart by the lever.

An embodiment according to the invention utilizes a lever constructed as a bell-crank lever pivotally connected to the movable jaw, and the long arm of the lever is provided with an eye and the short arm bears against the stationary jaw.

Due to this, under a very small difference in tension, a large moment is effected which actuates the jaws of the yarn brake.

The invention will be elucidated by an embodiment shown in the drawing.

Fig. 1 is a view in perspective of a part of a yarn brake provided with a tensioning device according to the invention;

Fig. 2 is a side view of a yarn brake with tensioning device.

The yarn brake consists of a pivotal upper jaw or lid 1 and a stationary jaw 2. In the jaw 2 thread guiding members 3, for example of porcelain, are arranged, and which are provided with slots or holes 8. Similar members 4 are connected to the jaw 1 and extend between the members 3 of the stationary jaw.

By the weight of the jaw the thread which is tensioned through the holes 8 is bent according to a zig-zag line. The friction along the guiding members 3 and 4 causes a certain braking action on the thread. When the tension is increased the zig-zag line will be more stretched

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and tend to straighten out and the reverse occurs on slackening of tension, owing to which a substantially constant tension on the thread is obtained.

A very important detail is the air brake 7 which is connected with the jaw 1 through a lever mechanism 6 and a connecting rod 5.

By oscillation of the air brake 7 a tension average is obtained. When the thread 9 due to some cause obtains a greater tension the jaw 1 will be lifted.

When warping with very high velocity the tension can appear so abruptly that the jaw 1 does not rise rapidly enough and the thread 9 breaks.

A tension controlling device according to the invention serves to avoid this; in that it is connected to the jaw 1 by means of the bracket 15.

This tension controlling device consists of a bell-crank lever with arms 12 and 13 pivotally mounted on the bracket 15.

The arm 12 has a thread eye 11 which is spaced in a relatively large distance beyond the normal path of the thread 9 which passes from right to left through the device as viewed in Fig. 1. Owing to this the thread obtains a large loop. The arm 13 bears on a part 14 of the stationary jaw. When a pull is exerted on the thread loop, the arm 13 which is substantially shorter than the arm 12, will bear on the part 14 and, acting as a lever, lift the lid 1, owing to which the braking action is reduced.

During the operation the tension controlling device will seek a central position or remain in its closed position, i. e. in the position in which the jaws exert their normal brake action.

I claim:

A thread tensioning device for a textile machine comprising a stationary and a movable jaw, extensions on each said jaw, extensions on one of said jaws being extendable between those of the other said jaw, thread being guided between the extensions in a zig-zag line, a bell-crank lever pivotally connected to the movable jaw, one arm of said lever having an eye therein, the other arm of said lever bearing against the stationary jaw, said movable jaw in working position bearing on an arm of said lever, said lever being actuated by thread passing through said eye and on increase of thread tension said lever pivoting and said arm bearing against the stationary jaw forcing said jaws apart.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
828,203	Foster	Aug. 7, 1906
1,375,568	Cunniff	Apr. 19, 1921
1,403,454	Skedgell	Jan. 10, 1922
1,459,332	Hineline	June 19, 1923
2,102,109	Brueggemann	Dec. 14, 1937
2,283,767	Schoenberg	May 19, 1942