Sept. 29, 1931. W. BOCK 1,825,626

YARN TENSIONING DEVICE

Filed March 30, 1928

FIG. I.

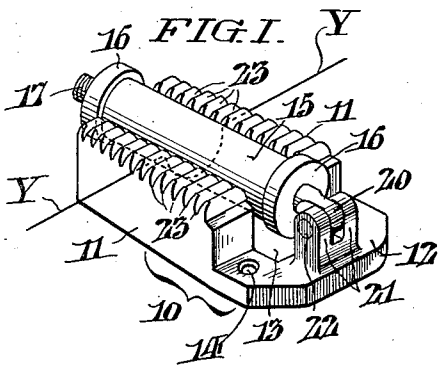


FIG. II.

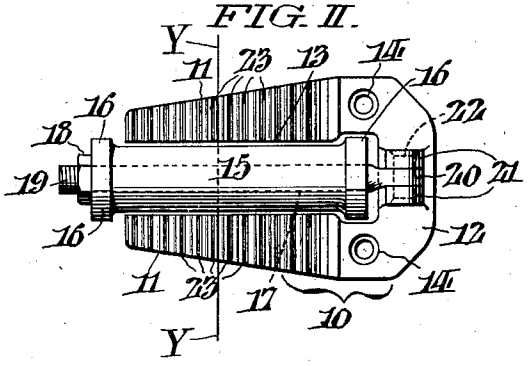


FIG. III.

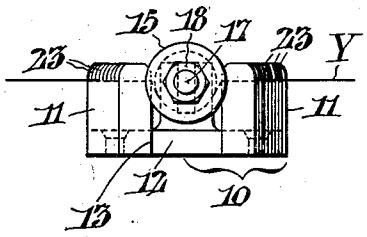
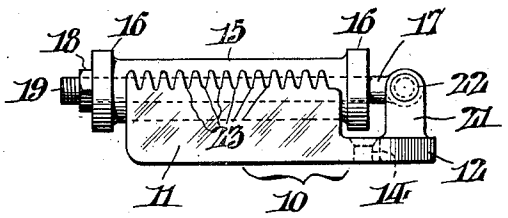


FIG. IV.



WITNESSES

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UNITED STATES PATENT OFFICE

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YARN TENSIONING DEVICE

Application filed March 30, 1928. Serial No. 265,849.

This invention relates to tensioning devices useful in connection with textile machinery such as yarn winding, knitting, sewing machines, etc.

The object of my invention is to provide a very simple and inexpensive device for the purpose indicated, capable of easy adjustment to increase or decrease the tension or drag induced in the yarn; of steadfastly maintaining the desired tension after adjustment; and of automatically adapting itself to variations in the speed of the yarn without faltering in its allotted function of maintaining the required tension.

How the foregoing, as well as other advantages, may be readily realized in practice will be apparent from the detailed description which follows of the typical embodiments of this invention shown in the drawings; whereof Fig. I is a perspective view of my yarn tensioning device in one form.

Fig. II is a plan view of the same.

Fig. III is an end elevation as viewed from the left of Figs. I and II; and,

Fig. IV is a side elevation as viewed from the bottom of Figs. I and II.

Referring first to Figs. I—IV of the illustrations, it will be observed that the embodiment there shown comprises a member 10 which has the shape of a horseshoe in plan, i. e. with side extremities 11, 11, connected at one end by a cross bar 12 and separated by a longitudinal interval or opening 13. The member 10 is furthermore pierced as at 14, 14 for passage of screws in effecting attachment to fixed parts of machinery with which the tensioning device is to be used. This opening 13 is occupied by an elongated weighted tensioning member 15, which is preferably made of porcelain or the like, affording a hard smooth outer surface for contact with yarn *Y*, and is fashioned to the configuration of a spool having end flanges 16. The tensioning member 15 is carried by an arm 17 which extends axially through it and whereto it is secured by a nut 18 engaging the screw threaded portion at 19. The opposite end of the arm 17 is flattened as at 20 to fit between a pair of ears 21 upstanding from the cross bar 12 of member 10 in line with its opening 13, and it is pivotally secured by means of a rivet pintle 22. With the described arrangement, the tensioning member 15 is accorded capacity for free up and down movement within the clearance opening 13 provided for it in the fixed member 10, while floatingly sustained by the yarn *Y* passing transversely of the device, as shown in Figs. I—III. In order that different tension may be selectively imposed and maintained on the yarn *Y*, the side extremities 11 of the fixed member 10 are serrated with provision of a multiplicity of transversely-aligned guide grooves 23. By electing between the grooves 23 the tension or drag induced in the yarn *Y* by the weight member 15 may be increased or decreased as desired or required, the restraint imposed being obviously at the maximum when the two grooves 23 nearest the pivot 22 are used, and at the minimum degree with employment of the pair of grooves 23 remote from said pivot. As an aid to obtain compensative graduation in the tension, the extremities 11 of the fixed member 10 are tapered in width, as manifested in Fig. III, so that the grooves 23 become shorter in length as the distance from the pivot 22 increases with consequent impartation of correspondingly less frictional restraint to passage of the yarn *Y*. During operation of the device, the tensioning member 15, by virtue of the freedom accorded it, rides easily on the yarn *Y* and, moreover, positionally adapts itself readily to suit changes in the speed of the latter.

Having thus described my invention, I claim:

1. A yarn tensioning devise embodying an elongated weighted tensioning member adapted to be floatingly sustained by the yarn, and a fixed member having a central longitudinal clearance slot and affording the tensioning member free pivotal support at one end for movement up and down within said slot, said fixed member also having serrations along each side of the slot providing a series of transverse grooves for selective guidance of the yarn crosswise of the tension member at different distances from its pivot to vary the drag induced.

2. A yarn tensioning device embodying an

elongated weighted tensioning member adapted to be floatingly sustained by the yarn, and a fixed member affording the tensioning member pivotal support at one end, said fixed member having tapering extremities extending along opposite sides of the tensioning member with serrations affording transversely-aligned grooves for guidance of the yarn crosswise of the device at different distances from the region of pivotal support, whereby, through selection as between the guide grooves, the effectiveness of said weighted member as well as the frictional restraint imposed on the yarn may be compensatively varied to effect changes in tension.

In testimony whereof, I have hereunto signed my name at Lansdale, Pennsylvania, this 13th day of March, 1928.

WILHELM BOCK.