June 12, 1923.

1,458,917

A. C. BERGREN

YARN CLEANER

Filed Aug. 20, 1921

FIG. 1

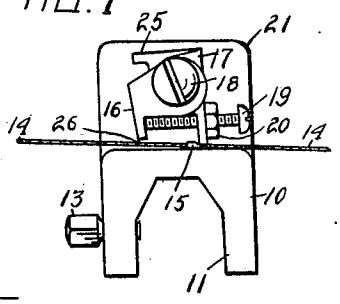


FIG. 2

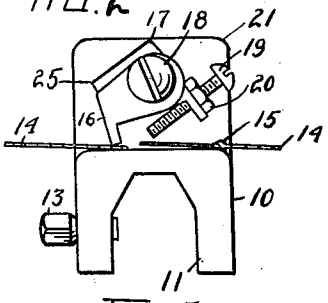


FIG. 4

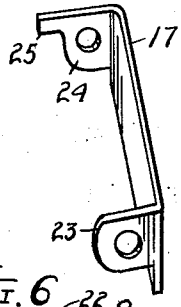


FIG. 3

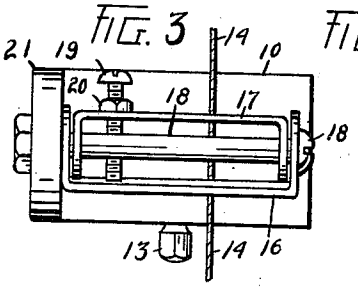


FIG. 5

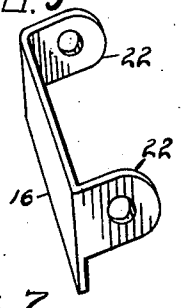


FIG. 6

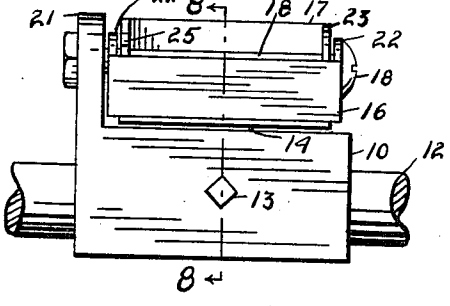


FIG. 7

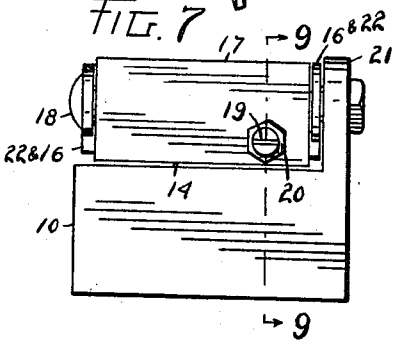


FIG. 8

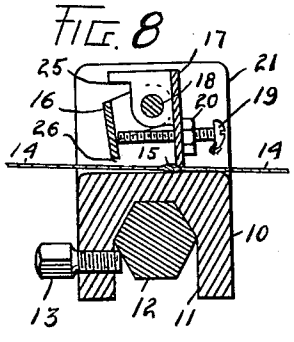
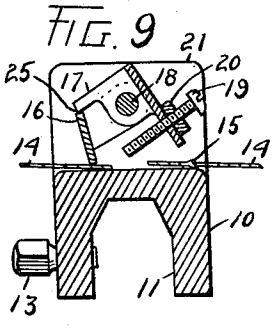


FIG. 9



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UNITED STATES PATENT OFFICE.

ANTON C. BERGREN, OF JAMESTOWN, NEW YORK.

YARN CLEANER.

Application filed August 20, 1921. Serial No. 493,940.

To all whom it may concern:

Be it known that I, ANTON C. BERGREN, a citizen of the United States, residing at the city of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Yarn Cleaners, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to devices for the removal of knots and bunches or slubs from yarn; and the object of the improvement is to provide a slub detector which is adjustable in its relation to the yarn and which the slub automatically actuates to catch and break the yarn; and second, to provide a slub detector of such simple construction that the movable leaves may be largely struck up from sheet metal by means of suitable dies, thereby greatly reducing the cost and at the same time providing parts of great durability and simplicity of adjustment; and the invention consists in the novel features and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is an end elevation of the yarn cleaner with the movable leaves in normal position and a slub about to engage the same; Fig. 2 is a similar end elevation with said leaves in the positions assumed by their action in breaking the yarn, showing the broken yarn and the slub with said leaves holding the yarn end. Fig. 3 is a top plan view of the slub detector. Fig. 4 is a perspective view of the rear leaf showing the preferred design for the same; Fig. 5 is a perspective view of the front leaf as struck up from sheet metal. Fig. 6 is a front elevation of the slub catcher with the yarn passing therethrough. Fig. 7 is a rear elevation of the slub detector. Fig. 8 is a sectional view of the slub detector at line 8—8 in Fig. 6 with the leaves about to be actuated by a slub; and Fig. 9 is a sectional view at line 9—9 in Fig. 7 after said slub detecting leaves have been actuated by said slub or bunch in the yarn.

Like characters of reference refer to corresponding parts in the several views.

The numeral 10 designates the frame or support which is preferably of cast metal and provided with the lengthwise opening 11 on its under side to receive the supporting bar or rod 12 of the spinning machine, being attached to said rod by means of the set screw 13.

The yarn 14 with the slub 15 passes through over the upper surface of the frame 10. Said frame 10 has an upwardly extending end portion 21 upon the inner side of which the leaves 16 and 17 are pivotally mounted by means of a screw bolt 18 of suitable length.

Said leaves 16 and 17 are provided with the perforate end lugs, 22 on the front leaf 16, and 23 and 24 on the rear leaf 17, the upper edges of which lugs 22, 23 and 24 preferably extend in alinement with the upper edges of the leaves 16 and 17. The front leaf 16 is sufficiently longer than the rear leaf 17 to pivotally attach the rear leaf 17 within the lugs 22 on said front leaf 16, the lug 24 on the rear leaf 17 having a lug 25 which engages the upper edge of the front leaf 16, thereby limiting the upward pivotal action of the rear leaf 17 when actuated by a slub or knot.

The downward pivotal action of said rear leaf 17 is regulated by means of a set screw 19 and the set nut 20 which extends through the lower portion of the rear leaf 17 a sufficient distance to normally contact the inner wall of the front leaf 16 by the end of the screw 19. It is apparent by this simple arrangement that the movement of the two leaves 16 and 17 is limited by the lug 25 in one direction, and the set screw 19 and the frame piece 10 in the opposite direction. The set screw 19 also performs a second office, in adjusting the front leaf 16 a slight distance above the yarn 14 so that a slub 15 will pass through beneath said front leaf 16. The set screw 19 with nut 20 also performs a third office in just sufficiently weighting the lower edge of the rear leaf 17 so that it rides lightly upon the yarn 14 and will catch a slub or knot 15.

The jerk or pull of the knot or slub 15 upon the rear leaf 17 turns said rear leaf upward, causing the lug 25 to strike upon the upper edge of the front leaf 16, thereby causing said front leaf 16 to press downward upon the yarn 14, breaking or cutting the same through the violence of the upward impetus given by said leaf 17 from the swiftly moving yarn 14 and the pull of the slub or knot 15.

It is therefore apparent that the set screw 19 with its set nut performs a triple office as stated; that is, limiting the downward movement of the rear leaf 17; adjusting the normal position of the front leaf 16 above the

yarn 14 with a slight space as shown at 26 in Figs. 1 and 8 between the lower edge of the leaf 16 and said yarn so that a slub or knot will pass between said lower edge of the leaf 16 and the upper surface of the frame 10; and third, to so weight the lower edge of the leaf 17 that it will normally ride upon the yarn as it swiftly draws through beneath the same over the smooth surface of the frame piece 10.

What is claimed as new is:

1. In a device of the class described, a frame and means for attaching said frame to a winding frame, a fixed portion of said frame for the yarn to run over, a slub catcher having two independently movable leaves hinged on said frame above said fixed portion to shut thereonto, and means on one of said leaves to cause the other leaf to shut onto the yarn and clamp it against said fixed portion when said first named leaf is engaged by the slub.

2. In a device of the class described, a frame and means for attaching said frame to a winding frame, a fixed portion of said frame for the yarn to run over, a slub catcher having front and rear perforate lug ended leaves hinged on said frame above said fixed portion to shut thereonto, a set screw on said rear leaf to adjust the distance between the lower portions of said front and rear leaves to normally raise said front leaf above the yarn, and a lug on said rear leaf extending over said front leaf to move said front leaf downward to hold the yarn when said rear leaf is engaged by a slub or knot.

3. In a device of the class described, a metal frame piece having a set screw attachment to a rod on a winding frame, a flat surface of said frame for the yarn to run over, a screw a spaced distance above said flat surface, a front and a rear leaf pivotally mounted on said screw to shut onto said flat surface, an adjusting screw with set nut on said rear leaf to normally adjust said front leaf above the yarn and cause said rear leaf to ride on the yarn, and a lug on said rear leaf extending over the top of said front leaf to cause said front leaf to move downward onto the yarn and clamp it against said flat surface when said rear leaf is turned upward by the pull of a knot or slub.

In testimony whereof I have affixed my signature in the presence of two witnesses.

ANTON C. BERGREN.

Witnesses:
CORINNE V. SWANSON,
A. W. KETTLE.