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A. M. BELLWOOD

SLUG CATCHER

Filed Oct. 12, 1923

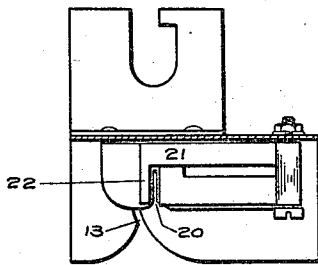


Fig 1

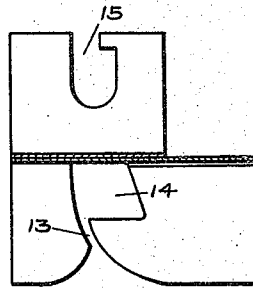


Fig 5

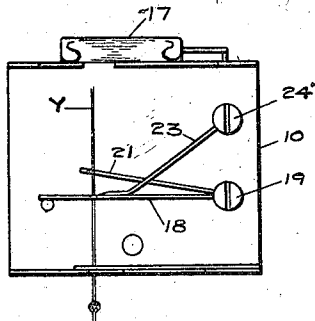


Fig 2

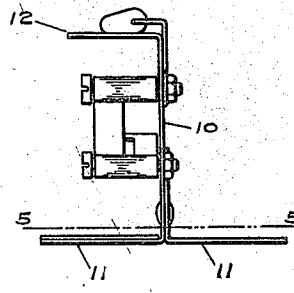


Fig 3

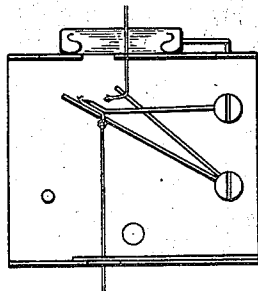


Fig 4

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## UNITED STATES PATENT OFFICE.

ANDREW M. BELLWOOD, OF FARNUMSVILLE, MASSACHUSETTS, ASSIGNOR TO THE  
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## SLUG CATCHER.

Application filed October 12, 1923. Serial No. 668,071.

*To all whom it may concern:*

Be it known that I, ANDREW M. BELLWOOD, a citizen of the United States, residing at Farnumsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Slug Catcher, of which the following is a specification.

This invention relates to a device for cleaning yarn by preventing the passage of knots, slugs, dirt or other irregularities during the winding operation. The device is particularly designed for catching and severing the yarn upon the appearance of an enlarged, soft, loosely twisted spot in the yarn commonly termed a "slug." Knots and hard lumps in the yarn may be easily detected by passing the yarn through a narrow slot but soft slugs cannot be thus detected, as they flatten out and pass readily through any slot which will permit passage of the yarn itself. Special provision is necessary therefore for the removal of such slugs from yarn or thread.

It is the object of my invention to provide an improved device which will prevent the passage of such slugs and other similar irregularities and which will sever the yarn upon the appearance of such irregularities.

My improved device is of simple construction, is reliable in operation, and possesses important advantages over any prior devices for this purpose with which I am familiar.

In its preferred form my invention includes a freely movable slotted detecting member and a knife or severing device movable with said slotted member to operative position.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

A preferred form of the invention is shown in the drawings in which—

Fig. 1 is a plan view of my improved slug catcher;

Fig. 2 is a front elevation thereof, with the parts in normal running position;

Fig. 3 is a side elevation of the device as shown in Fig. 2;

Fig. 4 is a front elevation similar to Fig. 2, but showing the parts in operative or severing position; and

Fig. 5 is a sectional plan view, taken along the line 5—5 in Fig. 3.

Referring to the drawings, my improved slug catcher comprises a sheet metal stand or frame 10 having a base 11 and an upper flange 12. The base 11 is slotted as indicated at 13 in Figs. 1 and 5, said slot communicating with a thread guiding opening 14. The rear portion of the base 11 is also provided with an opening 15, permitting the device to be readily inserted and clamped beneath the head of a binding screw.

A porcelain thread guide 17 is mounted on the upper flange 12 and provides a smooth guiding surface over which the yarn Y may be drawn by the winding machine upon which the device is used.

A detecting member 18 is pivoted at 19 on the stand 10 and is provided with a narrow slot 20 (Fig. 1) through which the yarn passes. This slot is of sufficient width to permit of free passage of the clear yarn but will prevent the passage of knots, dirt or other foreign material.

A yarn guiding element 21 is spaced above the member 18 but is mounted to move as a unit therewith about the pivot 19. The parts 18 and 19 may be conveniently formed from a single piece of sheet metal and the part 21 is provided with a forward projection 22 which extends parallel to the slot 20 and is approximately vertically aligned therewith.

A knife or severing device 23 is pivoted at 24 on the stand 10 and normally rests upon the detecting member 18, with its cutting edge slightly withdrawn from the slot 20 as indicated in Figs. 1 and 2.

The parts are normally in the position shown in Fig. 2, with the yarn Y running freely through the slot 20 and past the knife 23 and guiding projection 22. If a knot or other obstruction or irregularity in the yarn or thread engages the detecting member 18, the member 18 will be swung upward upon its pivot 19, carrying with it the knife 23. The cutting edge of the knife is thereby moved across the slot 20 to the position indicated in Fig. 4, while at the same time the guiding projection 22 draws the yarn sharply against the edge of the knife, insuring the severing thereof.

The parts 18, 21 and 23 are all of very light construction, so that they will move freely upward when engaged by a soft or loosely twisted slug as well as when engaged

by a knot or other positive obstruction. Accordingly, my device is well adapted for severing the yarn and preventing the continued winding thereof upon the appearance  
5 of any irregularity which is not readily brushed away by passage through the slot 20.

All of the parts are exceedingly simple in construction and there is nothing whatever about the device to require resetting or ad-  
10 justment. When once in position, the device will operate for an indefinite period without further attention.

Having thus described my invention and the advantages thereof, I do not wish to be  
15 limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:—

1. A slug catcher comprising a stand, a detecting member pivoted thereto and hav-  
20 ing a narrow transverse thread guiding slot therein, and a knife positioned above said member and normally in inoperative position with its cutting edge adjacent said slot, said knife being movable with said member  
25 on upward movement thereof to advance its cutting edge across said slot and sever the yarn passing upward therethrough.

2. A slug catcher comprising a stand, a detecting member movably mounted thereon  
30 and having a yarn guiding element spaced therefrom but movable as a unit therewith,

and a normally inoperative severing device positioned between said member and said guiding element and movable with said parts and also relative thereto to operative sever-  
35 ing position.

3. A slug catcher comprising a stand having upper and lower fixed yarn guiding portions, a detecting member movably mounted  
40 on said stand between said upper and lower guiding portions, a yarn severing device movably mounted on said stand above said detecting member and normally in inoperative position, and an additional yarn guid-  
45 ing element positioned above said severing device and movable as a unit with said detecting member.

4. A slug catcher comprising a stand, a detecting member pivoted thereto and hav-  
50 ing a narrow thread guiding slot therein, a knife pivoted to said stand above said member and normally resting on said detecting member with its cutting edge adjacent said slot, and a yarn guiding element positioned  
55 above said knife, said guiding element being movable as a unit with said detecting member and being substantially aligned with the slot therein.

In testimony whereof I have hereunto affixed my signature.

ANDREW M. BELLWOOD.