

T. J. SANDS.
SLUG OR BUNCH CATCHER FOR YARN.
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1,012,449.

Patented Dec. 19, 1911.

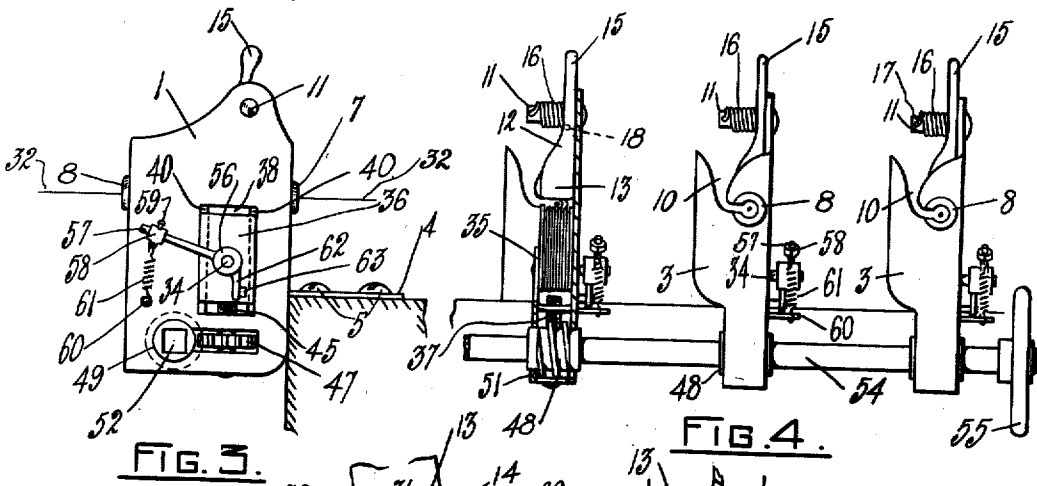
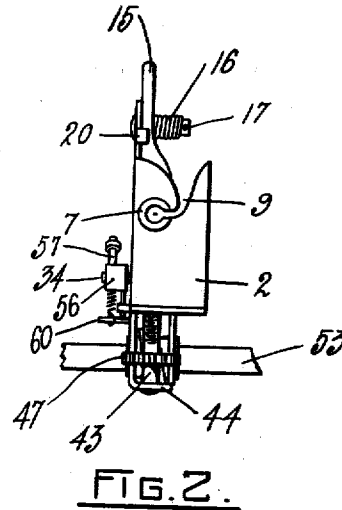
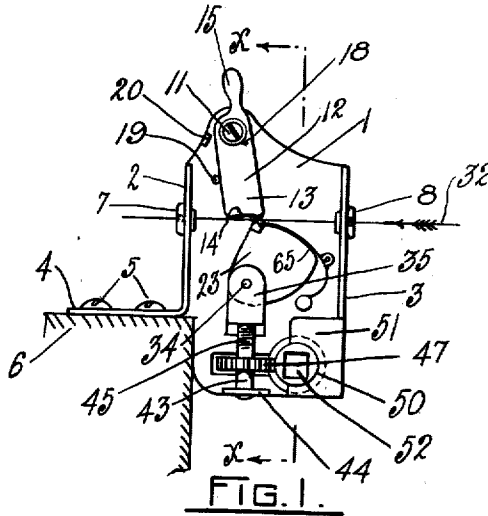


FIG. 3.

FIG. 4.

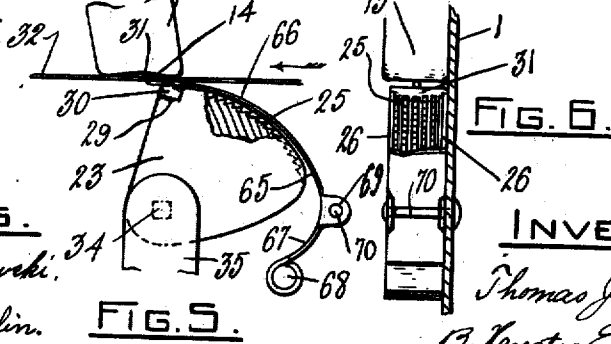


FIG. 5.

FIG. 6.

WITNESSES.

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SLUG OR BUNCH CATCHER FOR YARN.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THOMAS J. SANDS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Slug or Bunch Catchers for Yarn, of which the following is a specification.

My invention relates to devices for the elimination of slugs or bunches from yarn and other filaments and has for its primary objects, in addition to the ends commonly sought, the prevention of abrasion or mutilation of the yarn during its normal passage through the device; to render the tripping device certain in action and capable of removal; to accommodate the device to be operated in a horizontal, vertical, or other position; to provide such a means for adjusting the clamping plate as shall be capable of simultaneous, accurate, and uniform operation in a plurality of catchers.

To these ends essentially, and to others which will be hereinafter pointed out, my invention consists in such novel construction of the parts, and arrangement and combinations of the same as form the subject matter of the appended claims.

In the accompanying drawings, which form a part of this specification, and in which like reference characters indicate like parts throughout the views, Figures 1, 2, and 3, are front, side, rear elevations respectively of a catcher embodying my invention, Fig. 4 is a side elevation of a gang or series of catchers, one of the same being shown in section on line *x x* of Fig. 1, Fig. 5 is an enlarged front elevation of the clamping plate and adjacent parts, said plate being partially broken away, and Fig. 6, a rear view of the same.

My device in its present form of embodiment comprises a sheet metal frame or body having a back wall 1 and integral intumed lateral side walls or flanges 2 and 3. One flange 2 has an integral attaching arm 4 extending either vertically, laterally, or otherwise therefrom, according to position of the particular block or rail to which it is desired to attach my device. In the present instance it is horizontally disposed, and is attached by screws 5 to the top of a rail 6.

In the upper portions of the walls 2 and 3 are mounted yarn guide eyes 7 and 8 respectively, located at the ends of down-

wardly and rearwardly directed guide slots 9 and 10.

Pivotally mounted above its center upon a pin or screw 11, fixed near the top of the body 1 and above the path of the yarn passing through the guide eyes, is a bearing member 12 comprising a solid portion 13 provided with a bearing face 14 upon its lower extremity preferably slightly concaved, and having also a vertical handle or arm 15 upon its upper extremity, whereby said bearing member may be moved in opposition to its spring when desired. This bearing member is downwardly and laterally pressed by a spiral spring 16 surrounding the pin 11 and has one extremity fixed in the pin, as at 17, and its other end engages the bearing member, as at 18. Excessive travel of the latter member in one direction is prevented by a stop or shoulder 19 in the body 1; and travel in the opposite direction is prevented by the stop 20. See Fig. 1.

The eccentrically mounted catcher or clamping plate 23 is of the usual substantially segmental outline having upon a portion of its periphery transversely disposed series of teeth 25 located intermediate marginal ribs or flanges 26. In a cavity 29 in the catcher adjacent the teeth is seated a block 30 provided with a transverse rib or abutment 31. This block is of hardened metal and is fixed in its seat in any convenient manner. This peripheral rib is interspaced from the teeth series 25 and is adapted to receive the impact of any knot or obstruction upon the yarn 32 passing through the eyes 7 and 8. The catcher, which is mounted in any convenient carrier, is in this instance fixed to a pin 34 journaled in front and back ears 35 and 36 rising from a base 37. The base and ears form the carrier, and the body 1 is cut away as at 38 to accommodate the rear ear 36, which slides in ways 40 upon the back of the body 1 at the margin of the cut away portion.

A pin 43, journaled at its lower end in a lug 44 upon the bottom of the body, is provided with a threaded upper portion 45 which loosely engages in a threaded perforation in the base 37. Fixed on the pin 43 is a pinion 47 engaging a worm 48 journaled at one end in an opening 49 in the body, and at the other end in an opening 50 in an intumed flanged portion 51 of the body. The worm is provided with an axial angular

opening 52 adapted to receive an angular key or rod 53 such for instance as shown in Fig. 2. When my devices are mounted in multiple a longer key is used, as 54 in Fig. 4, in which case an operating device is attached to the key in this instance a hand wheel 55.

It is desirable that the clamping plate be assured of a tension in a direction opposite the direction of advance of the yarn. When my device is vertically mounted as herein shown the weight of the clamping plate effects this result in a passable manner, but improved results are attained by the following device. Upon the rear end of the pin 34 is fixed a hub 56 from which extends an arm 57 upon which is slidably mounted a block 58 adjustable by a clamping screw 59. Below the arm upon the body 1 is a pin 60 engaged by the end of a spring 61 attached to the block 58. Another arm 62 extends from the hub 56 at an angle to the first arm and is checked by a stop 63 upon the slide or ear 36.

To prevent the abrasion of the traveling yarn under normal conditions a means is provided for shielding the teeth. This consists of a curved shield 65 whose upper portion 66 normally rests upon the flanges 26 of the clamping plate covering the teeth 25, and whose lower portion 67 has attached thereto a counter weight 68. Intermediate its length the shield is provided with journal ears 69 to receive a pivot pin 70 fixed to the body 1.

In operation the yarn is drawn through the device from right to left in the direction of the arrows. An advancing bunch travels upon the upper surface of the shield out of contact with the teeth until the bunch contacts with the abutment 31, and thereupon the plate 23 is partially rotated thereby toward the left a sufficient distance to bring out from beneath the shield 66, into contact with the bunch, certain of the teeth 25 which, cooperating with the bearing member 12, either efface the bunch or break the yarn at that point.

What I claim is,—

1. In a device of the character described, the combination of a pivoted clamping plate provided with peripheral teeth, an abutment upon the periphery of said plate and interspaced from the teeth disposed in a cavity adjacent said teeth, an opposite bearing member adapted to cooperate with the clamping plate, means for guiding a length of yarn intermediate the clamping plate and the bearing member, and a shield normally covering said teeth.

2. In a device of the character described, the combination of a pivoted clamping plate

provided with peripheral teeth, an abutment upon the periphery of the clamping plate and interspaced from the teeth in normal contact with the yarn, a bearing member adapted to cooperate with the abutment, and means independent of the clamping plate and resting upon the clamping plate for shielding the teeth.

3. In a device of the character described, the combination with a frame and a bunch clamping plate pivotally mounted therein, of teeth upon the periphery of the clamping plate, peripheral ribs adjacent the teeth, an abutment upon the periphery of the clamping plate and interspaced from the teeth, a bearing member for cooperation with said abutment and a shield pivotally mounted upon the frame resting upon the ribs over the teeth.

4. In a device of the character described, the combination with the frame, of a carrier mounted in the frame, a pivot pin journaled in the carrier, a clamping plate fixed to the pin and provided with peripheral teeth, a hub fixed to the pin, angularly disposed arms upon the hub, a slide adjustably mounted upon one arm, a stop upon the carrier in the path of the other arm, a pin in the frame, and a spring connecting the last mentioned pin and the slide.

5. In a device of the character described, the combination with the frame, the bearing member, teeth and the clamping plate, of a carrier in which the clamping plate is mounted slidably in the frame, a pin journaled in the frame provided with threads engaging the carrier, a worm wheel fixed to the pin, and a worm mounted in the frame engaging the wheel, and provided with an axial key way.

6. In a device of the character described, the combination with a frame, of a pivotally mounted clamping plate having teeth upon its periphery and an abutment at one end of said teeth, a shield normally holding the bunch out of contact with the teeth until the bunch contacts with said abutment, said pivotally mounted means being arranged for cooperation with said abutment, said clamping plate being mounted for partial rotation by the bunch to bring from beneath said shield into contact with the bunch certain of said teeth, and a pivotally mounted member disposed above said clamping plate for cooperation with the said teeth to efface the bunch and break the yarn at such point.

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

THOMAS J. SANDS.

Witnesses:

HORATIO E. BELLOWES,
WALTER LOUIS FROST.