

April 26, 1938.

J. O. McKEAN

2,115,532

YARN CLEARER

Filed Oct. 29, 1936

2 Sheets-Sheet 1

Fig. 1.

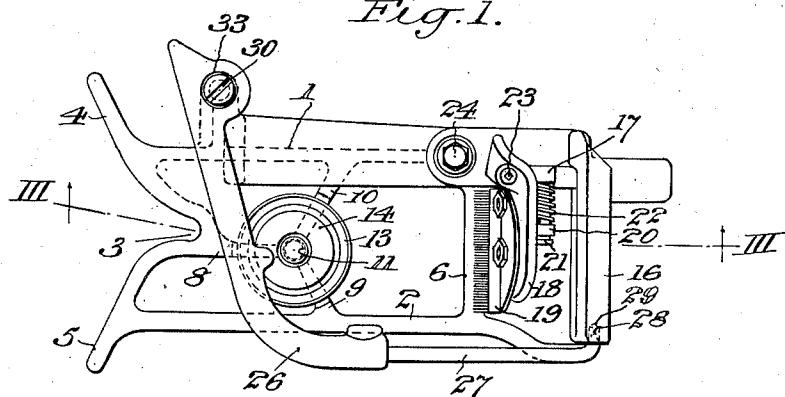


Fig. 2.

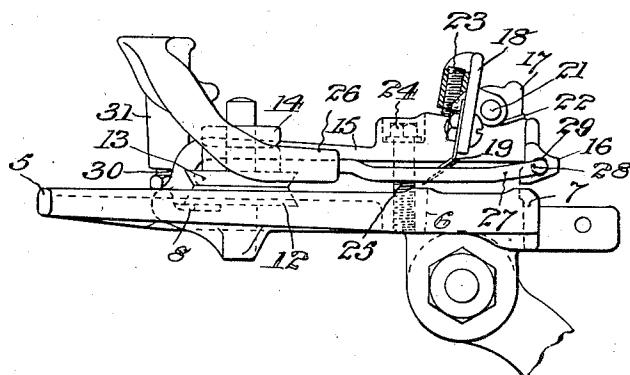
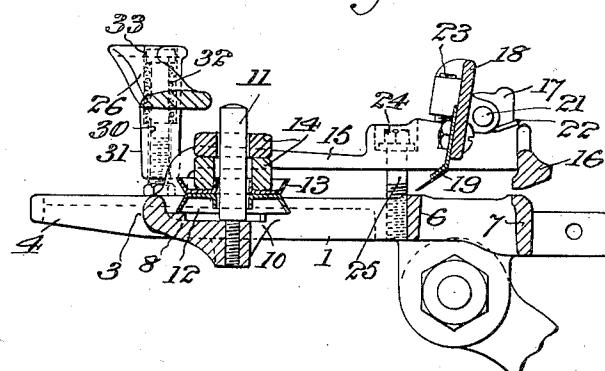


Fig. 3.



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Fig. 4.

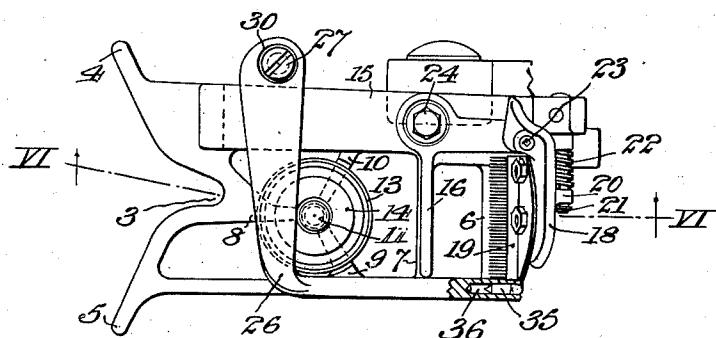


Fig. 5.

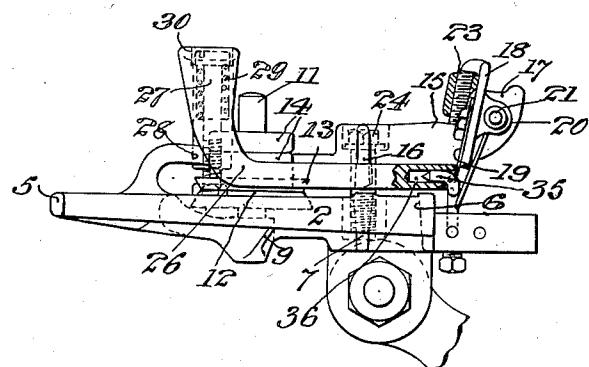
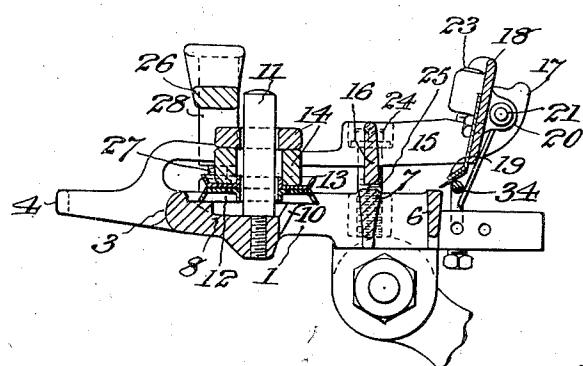


Fig. 6.



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## UNITED STATES PATENT OFFICE

2,115,532

## YARN CLEARER

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Application October 29, 1936, Serial No. 108,169

## 10 Claims.

(Cl. 28—68)

In yarn winding machines it has been found that with some yarns a single slab catcher is not sufficient to properly clear the yarn. Therefore, it has been usual to provide separately mounted slab catchers through which the yarn was caused to pass on its way to the winding machine. This separate mounting of the slab catchers not only entailed the additional expense of the separate mountings but also required independent adjustments of the slab catchers. This separate mounting of the different slab catchers was also cumbersome and required additional skill and time to properly adjust the slab catchers with respect to each other and the machine, and also presented difficulties in the threading of the yarn without tangling it.

This present invention is designed to obviate the difficulties above set forth, by mounting the slab catchers on a common support and providing a single means for simultaneously adjusting the movable members of the slab catchers. This present invention also provides a common guard for the slab catchers and the tension device where it is used; for ensuring the proper threading of the yarn therethrough.

Practical embodiments of my invention are represented in the accompanying drawings, in which

Fig. 1 represents one form of my yarn clearer in top plan;

Fig. 2 represents a side view of the same;

Fig. 3 represents a vertical longitudinal section taken in the planes of the line III—III of Fig. 1, looking in the direction of the arrows;

Fig. 4 represents another form of my yarn clearer in top plan;

Fig. 5 represents a side view of the same; and

Fig. 6 represents a vertical longitudinal section taken in the planes of the line VI—VI of Fig. 4, looking in the direction of the arrows.

The yarn clearer in connection with which I have chosen to illustrate my invention is of the resilient yoke type comprising integrally connected lower and upper branches. The lower branch of the yoke is in the form of a skeleton frame having longitudinally disposed sides 1 and 2 connected at their front ends by a fork providing a yarn entrance groove 3 between the prongs 4 and 5, and at their rear ends by cross-bars 6 and 7 which serve respectively as the stationary lower members of a slab catcher of the comb type and a slab catcher of the blade type.

Immediately to the rear of the yarn entrance groove 3 the lower branch of the yoke is provided with a spider, the arms 8, 9 and 10 of which

form a base support for the usual yarn tension device of the weighted washer type. A pin 11 uprises from the spider, on which pin the lower washer 12, the upper washer 13 and the weights 14 are all loosely mounted.

In the form shown in Figs. 1 to 3 inclusive, the resilient upper branch 15 of the yoke is provided with a laterally disposed bar 16 which is developed into the upper member of the slab catcher of the blade type, which upper member 10 coacts with the lower blade member 7.

This resilient upper branch 15 of the yoke is also provided with an uprising ear 17 to which is yieldingly pivoted a crossbar 18 carrying the comb member 19 which coacts with the lower member 6 to form the slab catcher of the comb type. The yielding pivotal connection between the crossbar 18 and the ear 17 is herein provided for by mounting a lug 20 projecting rearwardly from the crossbar 18 on a pin 21 projecting laterally from the ear 17. A spring 22 serves to yieldingly hold the stop screw 23 against the upper branch 15 of the yoke to maintain the comb in its adjusted position. It will be seen that the lower and upper blade members 7 and 10 of the slab catcher of the blade type are formed integral with the lower and upper branches respectively of the resilient yoke. It will also be seen that the lower member 6 of the slab catcher of the comb type is formed integral with the lower branch of the said resilient yoke, while the upper member 18 with its comb 19 is pivoted to the upper branch 15 of the said yoke.

The simultaneous adjustment of the upper members of both the slab catcher of the blade type and the slab catcher of the comb type is provided for by a single device as follows:

An adjusting screw has its head 24 countersunk in the upper branch 15 of the resilient yoke and its shank 25 passes therethrough into threaded engagement with the side 1 of the lower branch of the yoke.

An upwardly yielding swinging guard 26 is provided for guiding the yarn into its running position through the tension device and both of the slab catchers when threading up the yarn. The said guard serves to prevent the unintentional mistreading of the yarn and its consequent tangling. This guard in its operative position projects over the tension device to prevent the unintentional removal of the tension washers. This guard is also provided with a bar 27 extending along the sides of the slab catchers to ensure the proper threading of the yarn between the tension washers and through the slab catchers.

The outer end of the guard bar 27 is turned inwardly to form a prong 28 which snaps into a hole 29 in the end of the upper cross member 16 to yieldingly hold the guard in its operative position.

5 Also the prong 28 fitting into the hole 29 in the end of the upper cross member 16 serves to bridge the gap and prevent the yarn getting caught between the ends of the guard and the cross member, thus ensuring the uninterrupted 10 passage of the yarn through the blade slab catcher.

The guard is mounted for upwardly yielding and swinging movements as follows:

15 A pin 30 uprises from the lower branch of the yoke, upon which pin is rotatably mounted the depending hub 31 of the guard 26. A coil spring 32 is located around the pin 30 within a socket 33 in the hub 31, between the bottom of the socket and the head of the pin for permitting an upwardly yielding movement of the guard.

20 In the form shown in Figs. 4 to 6 inclusive, the slab catcher of the blade type is located between the tension device and the slab catcher of the comb type. In this form the guard bar 34 extends upwardly from the lower branch 1 of the yoke and it is provided with a prong 35 which snaps into a hole 36 in the end of the guard bar 26 to yieldingly hold the guard bar in its operative position.

25 30 It will be seen that by mounting the slab catchers on a single support, a single device may be used for simultaneously adjusting the movable members of the slab catchers to suit yarns of different sizes and characteristics. Furthermore, 35 it will be seen that by this arrangement a single guard may be used for both of the slab catchers as well as for the tension device when combined therewith, which guard may be swung on pin 30 out of the way for clearing the slab catchers as 40 well as for gaining access to the tension device.

It will be seen also that by placing the slab catchers in tandem formation the yarn may be passed in a right line therethrough.

45 It will also be seen that the movable members of the slab catchers are maintained in parallelism with their coacting members as the movable members are adjusted to suit yarns of various sizes.

50 It will also be seen that by providing a plurality of slab catchers through which the yarn is caused to run, the quality of the yarn is improved.

55 It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention, and hence I do not intend to be limited to the particular embodiments herein shown and described.

What I claim is:

1. In a yarn clearer, upper and lower supporting members, a plurality of slab catchers having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, and single 60 means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements.

65 70 75 2. In a yarn clearer, upper and lower supporting members, a plurality of slab catchers having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, single means for varying the distance between said upper and lower members to simultaneously adjust the re-

lationship of the said elements, and a guard located in position to direct the yarn simultaneously between the said elements when the yarn is being threaded.

3. In a yarn clearer, upper and lower supporting members, slab catchers of both the comb and blade types having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, a tension device located in line with said slab catchers, single means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements, and a guard located in position to direct the yarn simultaneously into said tension device and between the said elements when the yarn is being threaded.

4. In a yarn clearer, upper and lower supporting members, slab catchers of both the comb and blade types having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, a tension device located in line with said slab catchers, single means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements, and a guard located in position to direct the yarn simultaneously into said tension device and between the said elements when the yarn is being threaded, said guard being also adapted to prevent the accidental disassembly of the tension device.

5. In a yarn clearer, upper and lower supporting members, slab catchers of both the comb and blade types having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, single means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements, and a vertically yielding and laterally swingable guard located in position to direct the yarn simultaneously between the said elements when the yarn is being threaded.

6. In a yarn clearer, upper and lower supporting members, slab catchers of both the comb and blade types having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, a tension device located in line with said slab catchers, single means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements, and a vertically yielding and laterally swingable guard located in position to direct the yarn simultaneously into said tension device and between the said elements when the yarn is being threaded.

7. In a yarn clearer, upper and lower supporting members, slab catchers of both the comb and blade types having complementary elements carried by said upper and lower members arranged to permit the insertion of the yarn between said elements simultaneously by a lateral movement, a tension device located in line with said slab catchers, single means for varying the distance between said upper and lower members to simultaneously adjust the relationship of the said elements, and a vertically yielding and laterally swingable guard located in position to direct the yarn simultaneously into said tension device and

between the said elements when the yarn is being threaded, said guard being also adapted to prevent the accidental disassembly of the tension device.

5. 8. In a yarn clearer, upper and lower elongated supporting members, slub catchers of both the comb and blade types having complementary elements transversely disposed in said members, a tension device mounted in one of said members 10 in line with said slub catchers, a guard extending transversely of said members to prevent accidental disassembly of the tension device and extending longitudinally of said members to direct the yarn simultaneously into said tension device and 15 between the said elements when the yarn is being threaded.

9. In yarn clearer, a resilient yoke, slub catchers of both the comb and blade types comprising upper and lower blade members, both members

of the blade slub catcher being formed integral with the yoke, the lower member of the comb slub catcher being formed integral with the yoke and the upper member being mounted on the yoke, and means for springing the yoke to simultaneously adjust both slub catchers. 5

10. In a yarn clearer, a resilient yoke having upper and lower branches, slub catchers of both the comb and blade types comprising upper and lower members, both members of the blade slub 10 catcher being formed integral with said upper and lower branches respectively, the lower member of the comb slub catcher being formed integral with the lower branch of the yoke and the upper member being mounted on the upper 15 branch of the yoke, and means for springing the yoke to simultaneously adjust both slub catchers.

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