Nov. 29, 1938. P. J. GRUEBEL 2,138,299

ADJUSTABLE YARN WINDER

Filed June 1, 1938

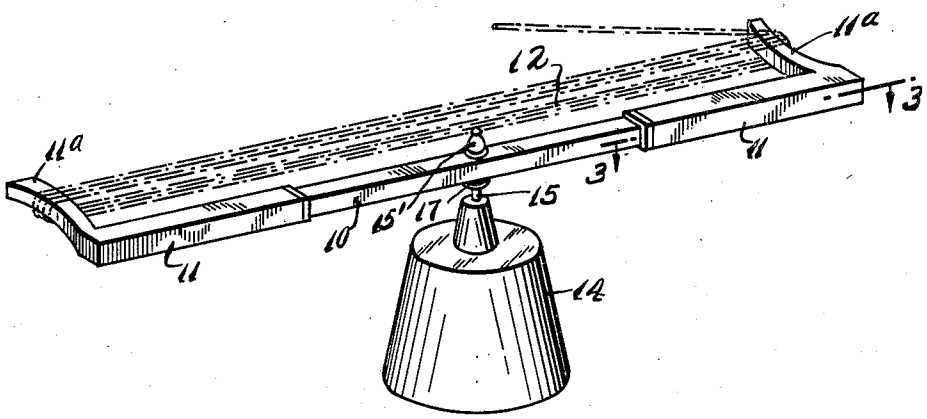


Fig. 1.

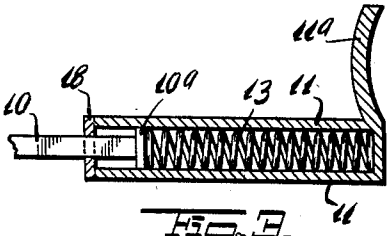


Fig. 3.

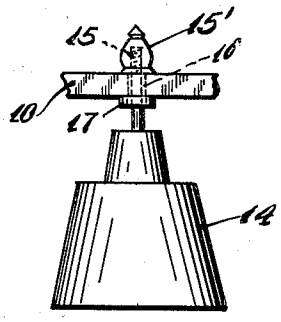


Fig. 2.

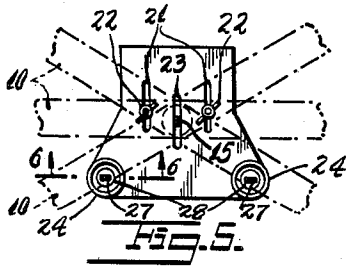


Fig. 5.

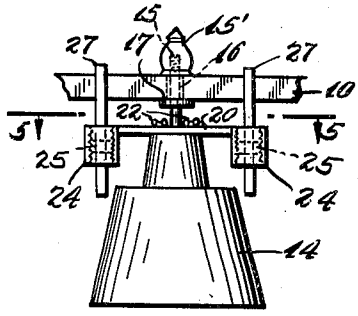


Fig. 4.

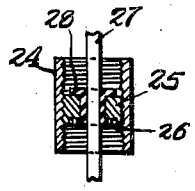


Fig. 6.

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ADJUSTABLE YARN WINDER

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7 Claims. (Cl. 242—113)

This invention relates to new and useful improvements in an adjustable yarn winder.

The invention has for an object the construction of a yarn winder which is characterized by an arm adapted to hold a skein of yarn between its end and formed from telescopic sections as hereinafter more fully explained.

Still further the invention proposes the use of resilient means associated with the sections of the arm for urging the sections outwards so that the arm is better adapted to hold the skein of yarn.

Still further the invention proposes the provision of a means for rotatively supporting said arm at its center so that it may rotate or oscillate during the drawing off of the yarn.

Another object of this invention is to provide resilient elements adapted to contact with said arm during its oscillation to limit the oscillation in a manner to make it more convenient to draw the skein off the winder.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a perspective view of an adjustable yarn winder constructed according to this invention.

Fig. 2 is a fragmentary elevational view of the central portion of Fig. 1.

Fig. 3 is a fragmentary sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary elevational view of an adjustable yarn winder constructed according to a modification of the invention.

Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary vertical sectional view on the line 6—6 of Fig. 5.

The adjustable yarn winder, according to this invention, includes an arm formed from several telescopic sections 10 and 11 and adapted to hold a skein of yarn indicated by the dot and dash lines 12. A resilient means 13 is arranged within certain of the telescopic sections for urging them relatively outwards. A means is provided for rotatively supporting the arm characterized by a support pedestal 14 having a vertical threaded post 15 upon which the center section 10 of the arm engages. The central section 10 is formed with an opening 16 through which the post 15 passes. A flange 17 is mounted on the post 15 for the purpose of supporting the arm. The arrangement is such that the arm may oscillate or rotate on the post 15. A threaded nut cap 15' is provided to engage the threaded portion of post 15 over the telescopic section 10.

The sections 10 and 11 of the telescopic arm are square or rectangular in cross section to prevent relative turning of these parts without interfering with longitudinal movements. The outer ends of the outer sections 11 are formed with curved headed portions 11a adapted to conveniently receive and hold the ends of a skein of yarn. In order to maintain the direction of the head portions 11a, the telescopic sections are arranged non-rotatively as already pointed out.

The ends of the section 10 of the arm pass through plates 18 mounted across the open ends of the telescopic sections 11. The extremities of the section 10 are formed with heads 10a which prevent the accidental disengagement of the sections from each other. The springs 13 engage against these enlarged ends 10a and the bases of the bores in these end sections.

In Figs. 4–6 inclusive a modification of the invention has been disclosed which distinguishes from the prior form in the provision of means for limiting the oscillation of the arm. When the skein is drawn off, the arm will naturally be caused to turn first in one direction and then in the other direction. For the convenience of the person drawing off the yarn it is advisable that the oscillation be limited since if the arm be allowed to turn too far in one direction there is the possibility that the strand of yarn will become twisted on the arm.

A bracket 20 is fixedly mounted on the pedestal 14. This bracket 20 is adapted to be adjusted forwards and rearwards. It is formed with several slots 21. Clamp screws 22 mounted on the pedestal 14 engage through these slots and by these clamp screws it is possible to fixedly mount the bracket as desired. The post 15 projects through an elongated slot 23 in the bracket 20 so as not to interfere with the adjustment of the bracket. At one of the sides the bracket 20 is formed with a pair of vertical tubular sockets 24. These sockets are arranged on opposite sides of the pivot 15. Each socket is threaded and provided with a nut 25. These nuts are formed with openings 26 adapted to

receive a suitable wrench by which they may be turned.

A vertical leaf spring 27 is mounted through a bushing 28 turnably arranged through an opening in the nut 25. Each leaf spring 27 is frictionally held so that it may be raised or lowered. The upper portion of each leaf spring 27 is in the path of motion of the arm 10 and is adapted to limit the oscillation of the arm.

The nuts 25 may be adjusted upwards or downwards so as to change the operative lengths of the upper portions of the springs 27 which are the only portions functioning. It is thus possible to set the springs to a position most suitable for a particular person to draw off the skein from the yarn winder.

The operation of the device is as follows:

The telescopic arms of the winder are compressed and a skein of yarn is engaged across the ends of the arm. When the sections of the arm are released they will be expanded by the action of the internal springs and so the skein of yarn will be securely held. The end of the yarn is drawn off and either wound into a ball or used as required. As the end is drawn, the arm of the winder will be caused to oscillate back and forth. For each turn of the yarn on the winder the arm of the winder will go through one cycle of oscillation.

The springs 27 will prevent the arm from oscillating through too great an amplitude which would result in the yarn coming off the winder much quicker than it should. If it comes off too quickly it will become entangled about the winder, which is objectionable.

The bracket 20 may be adjusted to space the springs 27 at various distances from the arm section 10. It is thus possible to control the amplitude of pivoting.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends and formed from several telescopic sections, resilient means within certain of said sections for urging the sections outwards, means for rotatively supporting said arm at its center, a stationary bracket, leaf springs adjustably mounted on said bracket and located on opposite sides of the pivot of said arm to limit motion of the arm to an oscillation of a predetermined amplitude.

2. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends and formed from several telescopic sections, resilient means within certain of said sections for urging the sections outwards, means for rotatively supporting said arm at its center, a stationary bracket, leaf springs adjustably mounted on said bracket and located on opposite sides of the pivot of said arm to limit motion of the arm to an oscillation of a predetermined amplitude, said bracket being adjustable to different fixed positions to differently space the springs from the arm.

3. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends, a pedestal, a vertical post mounted on said pedestal and engageable into a centrally disposed opening formed in said arm for pivotally supporting said arm so that said yarn may be easily drawn therefrom, and means for limiting the pivoting of said arm through a predetermined amplitude, comprising a bracket adjustably mounted on said pedestal parallel to said arm, leaf springs mounted on one side of said bracket on either side of the pivot of said arm and selectively engageable by said arm in various pivoted positions thereof for limiting its pivoting, and means for vertically adjustably supporting said springs for controlling their tension and flexing when struck by said arm.

4. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends, a pedestal, a vertical post mounted on said pedestal and engageable into a centrally disposed opening formed in said arm for pivotally supporting said arm so that said yarn may be easily drawn therefrom, and means for limiting the pivoting of said arm through a predetermined amplitude, comprising a bracket adjustably mounted on said pedestal parallel to said arm, leaf springs mounted on one side of said bracket on either side of the pivot of said arm and selectively engageable by said arm in various pivoted positions thereof for limiting its pivoting, and means for vertically adjustably supporting said springs for controlling their tension and flexing when struck by said arm, comprising vertical tubular sockets formed on said bracket, nuts mounted in said sockets and having openings, and rubber bushings mounted in said openings and being formed with openings through which said leaf springs frictionally extend so that they may be moved vertically with relation to said arm.

5. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends, a pedestal, a vertical post mounted on said pedestal and engageable into a centrally disposed opening formed in said arm for pivotally supporting said arm so that said yarn may be easily drawn therefrom, and means for limiting the pivoting of said arm through a predetermined amplitude, comprising a bracket adjustably mounted on said pedestal parallel to said arm, leaf springs mounted on one side of said bracket on either side of the pivot of said arm and selectively engageable by said arm in various pivoted positions thereof for limiting its pivoting, and means for vertically adjustably supporting said springs for controlling their tension and flexing when struck by said arm, said bracket being formed with an elongated slot arranged at right angles to said arm and through which said vertical post extends permitting said bracket to be adjusted upon said pedestal.

6. An adjustable yarn winder, comprising an arm adapted to hold a skein of yarn between its ends, a pedestal, a vertical post mounted on said pedestal and engageable into a centrally disposed opening formed in said arm for pivotally supporting said arm so that said yarn may be easily drawn therefrom, and means for limiting the pivoting of said arm through a predetermined amplitude, comprising a bracket adjustably mounted on said pedestal parallel to said arm, leaf springs mounted on one side of said bracket on either side of the pivot of said arm and selectively engageable by said arm in various pivoted positions thereof for limiting its pivoting, and means for vertically adjustably

supporting said springs for controlling their tension and flexing when struck by said arm, said bracket being formed with an elongated slot arranged at right angles to said arm and through which said vertical post extends permitting said bracket to be adjusted upon said pedestal, said adjustable mounting of said bracket, comprising clamp screws mounted upon said pedestal and engageable through elongated slots formed in said bracket parallel to said first-mentioned slot so that the position of said bracket may be adjusted with relation to said post to change the distance between said post and said springs for varying the amplitude through which said arm will pivot.

7. An adjustable yarn winder, comprising a resiliently extendible arm for holding a skein of yarn, a pedestal, a pin extending vertically from said pedestal and engaging into a centrally disposed opening formed in said arm for pivotally supporting said arm so that it may oscillate back and forth in a horizontal plane as said yarn is drawn therefrom, and headed elements extending horizontally and laterally from one side of the ends of said arm and between which said skein of yarn is stretched with the loops in vertical planes, said headed elements being formed with concaved outer faces into which the yarn engages to prevent the skein from slipping from the ends of the elements as the yarn is removed therefrom.

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