July 8, 1952 W. C. HANSE 2,602,606

FLYER FOR UNWINDING CAKES AND OTHER PACKAGES

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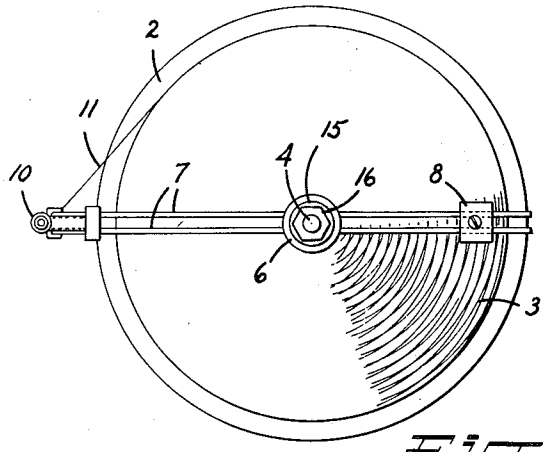


Fig. 1

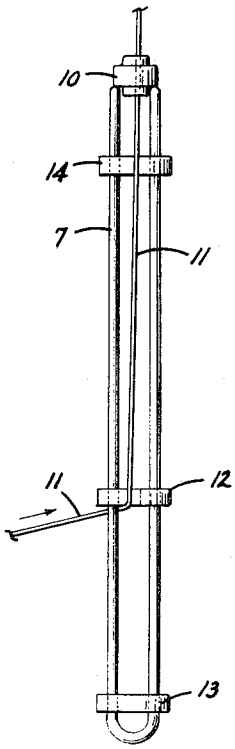


Fig. 3

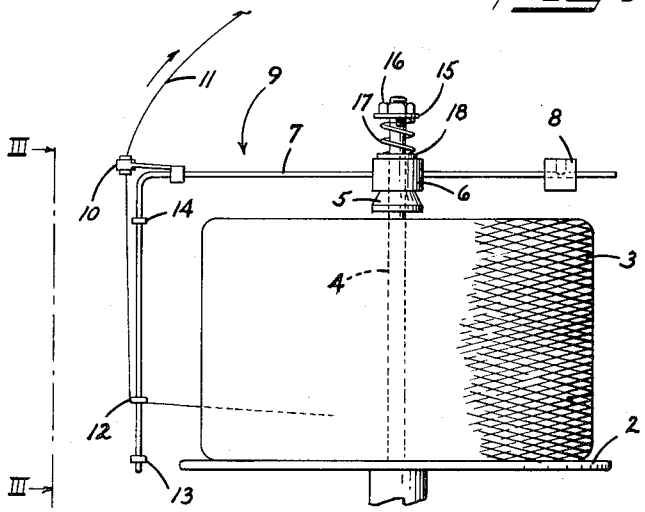


Fig. 2

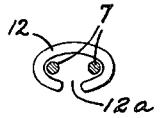


Fig. 4

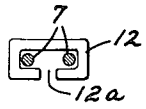


Fig. 5

INVENTOR.
WILLIAM C. HANSE
BY
Thomas R. O'Malley

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FLYER FOR UNWINDING CAKES AND OTHER PACKAGES

William C. Hanse, Philadelphia, Pa., assignor to American Viscose Corporation, Wilmington, Del., a corporation of Delaware

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5 Claims. (Cl. 242—128)

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This invention relates to improved flyers for unwinding cakes, cops, bobbins and other packages on which yarn, thread, strands and other filamentary materials are wound.

In devices of the prior art, the necessity often arose wherein it was expedient to replace the traveler on the flyer assembly, because of undue wear or the like. This usually meant that either most of the flyer had to be disassembled or the flyer had to be scrapped. This disadvantage of the prior art is overcome in the present invention.

The primary object of this invention is to provide an improved flyer and traveler with means for readily removing the traveler from the flyer.

Other objects and advantages of the present invention will become apparent from a study of the description of the drawings herein.

In the drawings:

Figure 1 is a top view of an illustrative embodiment of the invention,

Figure 2 is a side view,

Figure 3 is an end view of the vertical arm of the flyer of Figure 1,

Figure 4 is a modification using a circular shank traveler, and

Figure 5 is a modification using a straight shank traveler.

As shown in Figures 1 and 2, reference character 2 indicates a holder on which a wound cake is supported. This may be a cake 3 produced in a spinning pot, such as is used in the rayon industry. The spindle 4 which protrudes through the center of the cake has a collar 5 mounted near its free end. The spindle 4 may be made so that the cake fits loosely or tightly, however it is preferable that it fit tightly in order that it restrict rotation of the cake thereabout. The collar 5 supports a hub 6 rotatably mounted thereon. The hub 6 may be equipped with a plain, self-lubricating or anti-friction bearing, the main consideration being that the device be as free-running as possible.

The hub 6 supports the frame 7 mounted generally perpendicular to its axis of rotation. The frame 7 consists of two laterally displaced rods such as wire or the like. Although the frame 7 is mounted generally perpendicular in this case, it can be mounted at any angle and still produce good results. Adjustably mounted on the free end of the frame 7 is a counterweight 8, that smooths the rotation of the flyer assembly 9. The frame 7 is constructed in such a way that part of it is generally parallel to the generatrix of the cake or other wound package 3. This part of the

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frame may be constructed so that it is other than parallel to the cake, but it has been found that the best results are obtained when it is parallel. The wires, as shown in Figures 1 and 2, are in a common plane which extends transversely to a plane containing one of the wires and the axis of rotation of the flyer. Suitably mounted at the bend in the frame 7 is a porcelain eye 10, through which passes the yarn 11 from the cake 3, via the traveler 12 whose vertical travel is limited by stops 13 and 14.

The frame 7 is constructed so that the traveler 12 can be replaced by squeezing the two rods, wires or the like together, which action allows the traveler to be removed. These rods or wires are resilient so that they will regain their original shape after a traveler has been removed and a new one replaced.

Figures 4 and 5 show two types of travelers that may be used in this invention. As shown, the internal diameters or dimensions of the traveler are different, the longer dimension adapting the traveler to slidably embrace the rods 7 without distortion thereof, and the space within the interior of the traveler as viewed in Figures 4 and 5 (i. e. in a direction at right angles to the plane of the traveler) is ovate or elongate. The gap 12*a* is disposed in one of the longer sides of the traveler so that, in operation, the traveler cannot rotate relative to the parallel rods 7 of the frame. In operation, the traveler is mounted on rods 7 with the closed side of the traveler towards the package 3 and the gap away from the package. It is important that any type traveler used must have a gap 12*a* in it so that it can be removed from the frame.

As shown in Figure 2, the flyer assembly 9 may be modified so that it can be used on a cake holder that is in any position from the horizontal to the vertical. The free end of the spindle 4 is threaded to accommodate the lock nut 16, which bears upon a washer or the like 15 holding the spring 17 against the washer or the like 18 which creates a bearing surface for the flyer hub 6. With an assembly of this sort, it is easy to remove this spring device because it does not have to be in place when the cake holder 2 is in the horizontal position.

In operation, the thread, strand, yarn or other filamentary material is taken from the cake 3 and passes through the traveler 12 and from there through the porcelain eye 10. As the yarn is drawn off the cake, the flyer rotates and the traveler reciprocates between the two stops 13 and 14. The frame 7 is of such a resiliency that it will

give if a snag or the like is encountered in the unwinding process, thus minimizing yarn breakages.

Although this invention has been described with reference to improvements shown, it will readily be appreciated that numerous changes may be made without departing from the spirit and scope of the invention as described in the appended claims.

I claim:

1. A flyer comprising a flyer frame, means for rotatably mounting the frame about an axis, a traveler carried by the frame, the traveler having an internal elongated space and a gap in one of its longer sides, the frame having a plurality of resilient parallel wires which are sufficiently stiff to serve as guides for the traveler and, because of their resiliency, are readily contorted for easy removal of the traveler, said wires lying in a common plane transverse to a plane through one of the wires and the axis of rotation.

2. A flyer frame, means for rotatably mounting the frame about an axis, a traveler carried by the frame, the traveler having an internal elongated space and a gap in one of its longer sides, the frame having two resilient parallel wires which are sufficiently stiff to serve as guides for the traveler and, because of their resiliency, are readily contorted for easy removal of the traveler, said wires lying in a common plane transverse to a plane through one of the wires and the axis of rotation.

3. A flyer comprising a hub, means for rotatably mounting the flyer on an axis inclined to the horizontal, a frame mounted substantially perpendicular to the axis of rotation of the hub and having an outer portion extending downward substantially parallel to the generatrix of the outer surface of a wound package being unwound, a traveler carried by the frame, the traveler having an internal elongated space and a gap in one of its longer sides, the frame having two resilient parallel wires which are sufficiently stiff to serve as guides for the traveler and, because of their resiliency, are readily contorted for easy removal of the traveler, said wires lying in a common plane transverse to a plane through one of the wires and the axis of rotation.

4. A flyer comprising a hub, means for rotatably mounting the flyer on an axis inclined to the horizontal, a frame mounted substantially perpendicular to the axis of rotation of the hub and having an outer portion extending downward substantially parallel to the generatrix of the outer surface of a wound package being unwound, a traveler carried by the frame, the traveler having an internal elongated space and a gap in one of its longer sides, two stops on said outer portion for limiting the movement of the traveler, the frame having two resilient parallel wires which are sufficiently stiff to serve as guides for the traveler and, because of their resiliency, are readily contorted for easy removal of the traveler, said wires lying in a common plane transverse to a plane through one of the wires and the axis of rotation.

5. A device for unwinding a strand from a wound package thereof comprising a spindle for holding the wound package, a flyer rotatably mounted on the spindle, said flyer comprising two resilient parallel wires parallel to the generatrix of the outer surface of the package being unwound, said wires lying in a common plane transverse to a plane through one of the wries and the axis of rotation, and a traveler slidably carried about the wires, the traveler having an internal elongated space through the farthest spaced portions of which the wires are adapted to extend, and a gap in one of the longer sides of the traveler.

WILLIAM C. HANSE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
508,166	Cowan	Nov. 7, 1893
712,558	Lehman	Nov. 4, 1902
1,238,606	Weil	Aug. 28, 1917
2,031,655	Jabouley	Feb. 25, 1936
2,257,837	Burge et al.	Oct. 7, 1941
2,275,545	Miller	Mar. 10, 1942
2,285,667	Kontz	June 9, 1942
2,451,352	Nau-Touron	Oct. 12, 1948
2,461,586	Bouret	Feb. 15, 1949