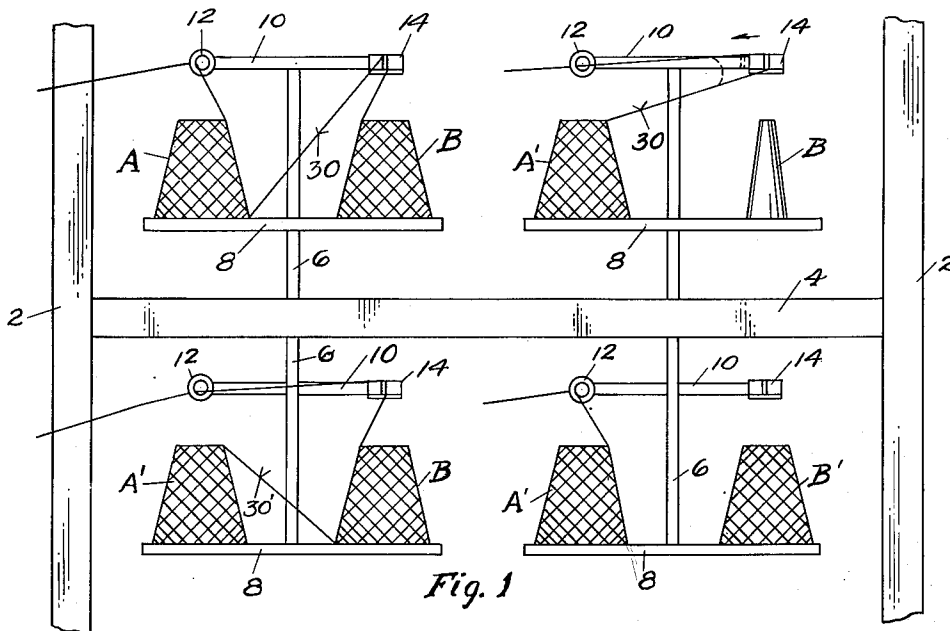
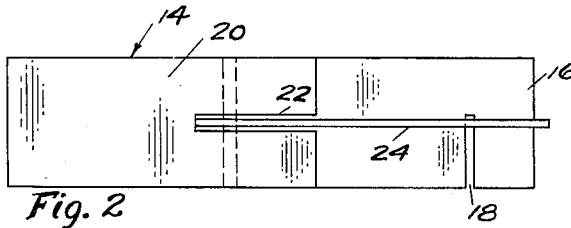
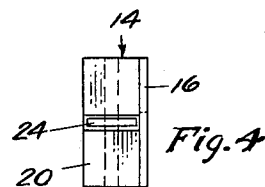
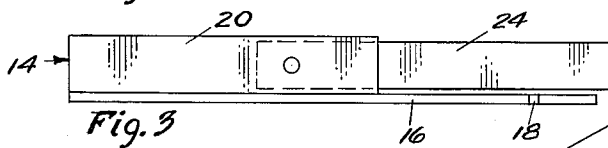
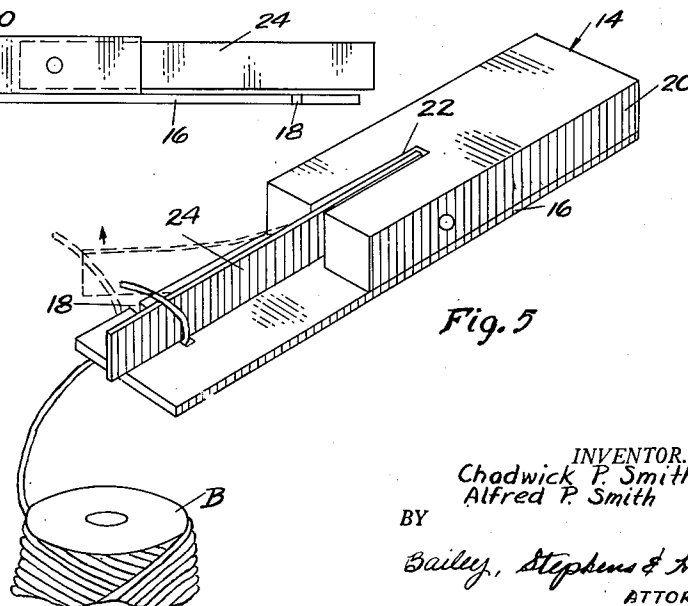


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THREAD GUIDE FOR CREELS

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THREAD GUIDE FOR CREELS

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This invention is directed to a thread guide for a creel. In particular, the invention is directed to a guide so constructed that the threads in adjacent cones vertically mounted in a creel can be tied together and made to run continuously through a fixed guide eye over one of the cones.

In creels it is customary to mount two or more cones adjacent one another with the tail thread of one cone tied to the top thread of a second cone so that as the thread is exhausted from the first cone, the thread continues to be pulled from the second cone. A fresh cone then replaces the exhausted first cone, but unless some special arrangement is made at this point, it is necessary to stop the drawing of the thread from the creel when the second cone is exhausted in order that the thread from the fresh first cone can be threaded through a guide eye. As these cones are constructed so that the thread is drawn from the apex of the cone, the cone remaining stationary, it has been proposed in the prior art to use but a single guide eye, which can be done in several ways as by mounting two or more cones with their longitudinal axes convergent toward the single guide eye. This arrangement makes it difficult to replace exhausted cones, besides requiring a rather expensive and clumsy mounting apparatus for holding the cones.

An object of the instant invention is to mount cones on simple racks in up-right position, and to provide means whereby the running of the thread from the second cone back to a new first cone can be achieved without stopping the creel for rethreading. Another object of the invention is to produce a means by which the capacity of the ordinary creel can be at least doubled by reason of providing a guiding means in which the creels can be mounted in up-right position with a continuous running of thread from one cone to another.

In general, these objects of the invention are obtained by constructing simple supports within the framework of a creel for holding the cones in vertical position. A fixed eye is provided for guiding the thread from the first cone while an especially designed spring leaf guide is mounted above the second cone in a pair of cones. When the second cone is running, the tail thread of the second cone is tied to the top end thread of a new first cone, and when the second cone is exhausted, the thread slips from the spring leaf guide, and being tied to the first cone, thus runs without stop from the first cone through the guide eye mounted there-above.

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The means by which these and other objects of the invention are obtained are more fully described with reference to the accompanying drawings in which Figure 1 is a side elevational view of a creel diagrammatically indicating the use of the novel guiding means; Figure 2 is a plan view of the guiding means; Figure 3 is a side elevational view of Figure 2; Figure 4 is an end view of Figure 2; and Figure 5 is a perspective view of the guiding means illustrated with a thread guided there-around.

In Figure 1 the creel frame is indicated by the uprights 2 connected by a cross-bar 4. For the purpose of illustration, this cross-bar is shown supporting four pairs of cones, each support consisting of a vertical member 6 having a cross beam 8 secured thereto and upon which a pair of cones is mounted, and having a cross-bar 10 for supporting a fixed guide eye 12 and a spring leaf guide 14.

As shown in Figures 2 to 5, this spring leaf guide is composed of a base plate 16 having a slot 18 cut a little more than half-way there-through, adjacent one end thereof. Upon the other end is mounted a block 20 secured to the base plate 16 in a convenient way and provided with a slot 22 in which is fastened one end of a spring leaf 24, this spring leaf extending across the slot 18. In Figure 5 the manner of threading this guide is shown, the thread from a cone B being passed upwardly through the slot 18 between the inner end of the slot and spring leaf 24, and then over top of spring leaf 24.

The manner of employing this guide is illustrated in successive steps in Figure 1. The cones are stationary, and as they do not revolve it is necessary that the thread be pulled vertically from the cones, otherwise the thread would break. The top end of the thread from cone 8 is passed through the fixed eye 12 and the lower end of the thread on cone A tied as indicated at 30 to the upper end of the thread on cone B, this thread from cone B being passed through guide 14 in the manner illustrated in Figure 5. When the thread from cone A is exhausted, note the lower left-hand side of Figure 1, the thread from cone B is drawn over guide 14 through eye 12 without stopping the operation of the creel. The lower end of the thread on cone B is then tied at 30' to a fresh cone A' placed beneath guide 12.

In the upper right-hand corner of Figure 1 the thread position is illustrated at the time when the thread on cone B is exhausted and thread is to be drawn from the new cone A'. If a fixed eye were used in place of a spring leaf guide 14,

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the thread could not be pulled from cone A' without breaking, as the thread would not be pulled vertically from the top of the new cone A'. However, the thread being passed over spring leaf 24 of guide 14, a pull on the thread occurs as the thread does not momentarily unwind from cone A' as it is being pulled substantially horizontally therefrom. This causes leaf 24 to be pulled by the thread and flex toward guide 12, thus allowing the thread to pass over the end of leaf 24 and escape from slot 18 in guide 14. The thread from cone A' then runs directly through guide 12 vertically above this cone as indicated in the lower right-hand side of Figure 1. Exhausted cone B is then ready to be replaced by a fresh cone B', the upper end thread of fresh cone B' to be tied to the lower end thread of the running cone A' and the operation of drawing the thread from the creel proceeding without stop as indicated in the upper left-hand side of Figure 1.

It is thus apparent that fresh cones can be continuously inserted in the creel without stopping the running of the creel, and this can be accomplished by using the simple spring leaf guide 14. Any number of cones B can be employed with a single cone A, as long as each cone B has a spring leaf guide mounted above it. At the same time, the cones can be mounted vertically utilizing simple up-rights and cross members, and the capacity of existing creels can be at least doubled by this inexpensive construction. Consequently, not only is the time required to draw threads from a creel materially lessened by reason of the elimination of the stoppage of the creel to insert and tie together fresh cones, but floor space can be saved by increasing the capacity of each creel. It is clear that in textile mills where both time and floor space are very critical elements, very important results are produced by the instant invention.

While the invention has been illustrated showing a flat blade-like leaf spring 24, it is apparent that any form of flexible member can serve the purpose regardless of shape as long as the principles of the invention are observed, that is the member must be strong enough to support the thread passing over the member, and at the same time flexible enough to permit the thread to escape the guide. Furthermore, the invention is

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applicable to the continuous drawing of thread in any process and thus is not limited to a creel. In addition the flexible guide will operate in any position as well as in the vertical position described, to guide thread from the top of stationary cones, tubes, bobbins, or like thread packages.

Having now disclosed the means by which the objects of the invention are obtained,

We claim:

1. In a creel having a plurality of vertically mounted thread cones tied end to end, guiding means comprising a stationary thread guide positioned above and in alignment with the axis of a first cone, a second guide positioned above and in alignment with the axis of a second cone and being threaded therefrom, the thread from said first and said second cones continuously passing through said first guide as said cones are alternately emptied and replaced, and said second guide including means for releasing the thread when the thread is exhausted from said second cone.

2. In a creel as in claim 1, said releasing means comprising resilient means for holding said thread.

3. A thread guide comprising a base member having a slot therein, a leaf spring, and means mounting said leaf spring over said slot for flexure in the direction of the length of said slot.

4. A thread guide, a base member having an opening therein, and resilient guide means mounted adjacent said opening, said resilient means being displaceable across said opening.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
494,490	Rhoades	Mar. 28, 1893
795,769	Houghton	July 25, 1905
992,324	Yale	May 16, 1911
1,364,987	Fleming	Jan. 11, 1921
1,642,805	Carlson	Sept. 20, 1927
1,765,590	Javery	June 24, 1930
2,466,852	Keith	Apr. 12, 1949