Dec. 22, 1925. 1,566,807

C. J. BACON

THREAD GUIDE

Filed Jan. 31, 1924

Fig. 1.

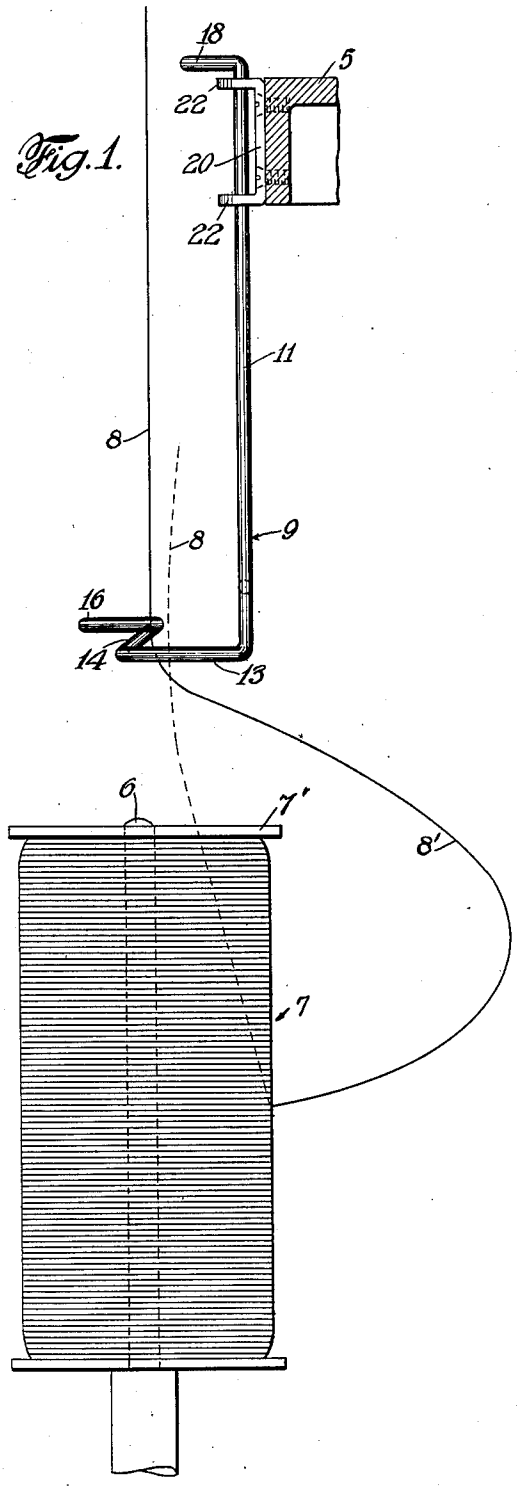


Fig. 2.

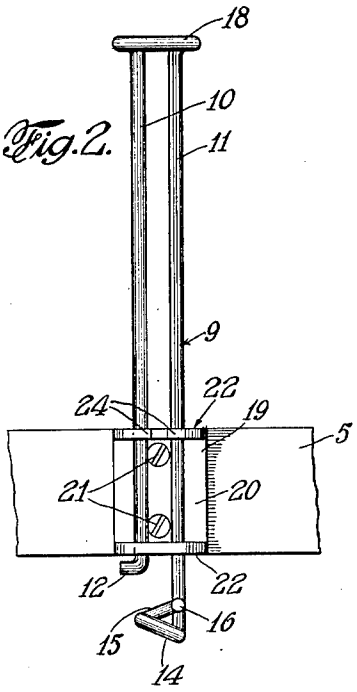


Fig. 3.

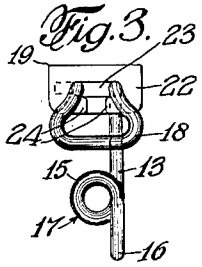
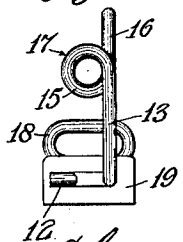


Fig. 4.



INVENTOR
Charles James Bacon
BY
Williams & Pritchard
ATTORNEYS

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UNITED STATES PATENT OFFICE.

CHARLES JAMES BACON, OF BUFFALO, NEW YORK, ASSIGNOR TO DU PONT FIBERSILK COMPANY, INC., A CORPORATION OF DELAWARE.

THREAD GUIDE.

Application filed January 31, 1924. Serial No. 689,658.

To all whom it may concern:

Be it known that I, CHARLES JAMES BACON, a citizen of the United States, and residing at the city of Buffalo, county of Erie, and State of New York, have invented certain new and useful Improvements in Thread Guides, of which the following is a specification.

This invention relates to thread guides such as are particularly adapted to be used in connection with throwing machines.

One of the primary objects of the invention is to provide a device of the character mentioned which is so constructed as to facilitate threading thereof and permit ready adjustment of the same with respect to the spool or other thread carrying element thus permitting expeditious renewal or removal of such element.

Another object of the invention is to provide a device of the character mentioned in combination with a suitable bracket therefor, the two elements being so constructed as to permit the device to be readily assembled or disassembled as the occasion may require.

Other objects and certain advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings in which—

Figure 1 is a side elevation of the device embodying my invention the same being shown as attached to a suitable support and located directly above a spool or other thread carrying element.

Figure 2 is a front elevation of the device.

Figure 3 is a plan view of the device as viewed from above in Figure 2.

Figure 4 is a view of the device as seen from beneath in Figure 2.

In the drawings wherein for the purpose of illustration is shown what I at present consider the preferred form of my invention, the numeral 5 indicates a support which may be associated with or constitute a part of a throwing machine, not shown, with which is also associated a rotatable spindle or other similar member 6, adapted for the reception of a spool or other thread carrying element indicated as a whole by the numeral 7, from which the thread 8 is adapted to be removed or thrown by reason of rotation of the spool through the instrumentality of the spindle upon which the same is held. This thread, upon being thrown from the spool 7 is given a whirling motion which corresponds in direction to that of the spool 7, and as a result of such whirling motion, the thread is thrown outwardly in the form of a loop 8′, revolving about the axis of the spindle and describing in effect an oblate spheroid or substantially such a geometric figure. The thread, upon being removed from the spool, as a result of the whirling action to which the same is subjected, is given a twisting action, the extent of which is determined by the rate at which the thread is wound upon a suitable reel, spool or other thread receiving unit, not shown. As the thread is passing from the spool 7 to the above mentioned thread receiving or winding mechanism, it is guided in its course of travel by means of an adjustable, quick detachable and readily threaded guide, indicated as a whole by the numeral 9. This guide is preferably constructed from suitable spring wire which is bent intermediate its ends to provide a pair of legs 10 and 11 arranged in a parallel relation with respect to each other. The leg 10 at its lower end is bent at right angles to provide a stop 12 whereas the other leg 11 is similarly bent to provide an arm 13. This arm is curved as shown at 14 forming a connector or connecting element arranged at an angle with respect to the arm 13 as shown most clearly in Figures 1 and 2. The connector is bent upon itself to provide a yoke 15 which terminates in a finger 16 arranged in a parallel relation with respect to the arm 13 and projecting an appreciable distance beyond the adjacent portion of the arm 13, which with the connector 14, yoke 15 and finger 16 forms in effect an eyelet indicated as a whole by the numeral 17. By reason of the fact that the eyelet 17 is so formed and inasmuch as the finger 16 is spaced an appreciable distance from the arm 13 it will be readily appreciated that the thread 8 may be easily introduced into the eyelet by first placing the thread at the rear of the eyelet, as indicated by the dotted line shown in Figure 1, and thereafter bringing the upper end or portion of the thread forward through the space afforded between the finger 16 and arm 13, and under the projecting finger. The leg 10 being somewhat shorter than the leg 11 assures clearance for the thread.

The guide 9 is attached to the support 5 by means of a bracket 19 and is adapted for

vertical adjustment therein. This bracket comprises a base 20 which may be secured to the support 5 by means of screws 21 and is so bent at opposite ends as to provide ledges or flanges 22, one of which is formed with an elongated opening 23 adapted for the reception of the legs 10 and 11 whereas the other is cut away to provide wings or lugs 24 embracing or engaging the legs 10 and 11. The wire from which the guide 9 is formed is more or less resilient and due to such inherent resiliency the legs 10 and 11 which are connected together by means of a yoke 18 formed integral therewith are normally urged outwardly into engagement with the flange 22 and the lugs 24 by reason of which engagement the device as a unit is frictionally held in a given adjusted position. The spaced flanges 22 prevent any longitudinal rocking movement of the guide 9, while the engagement of the parallel legs 10 and 11 with these flanges in the manner above described prevents any horizontal swinging movement of the eyelet-carrying arm 13, so that thereby the eyelet 17 during operation is securely held in position over the spool 7 and substantially in alignment with the spindle 6, as shown in Fig. 1.

In throwing machines of the type with which the device embodying my invention is adapted to be used, it is customary to employ a battery of spools or other thread carrying elements, from which the thread is thrown in the manner hereinbefore described. These spools are arranged relatively close to each other, and while the thread must be thrown a sufficient distance to clear the upper heads or flanges of the spools, one of which heads is indicated by the numeral 7', care must be exercised to prevent the thread from being thrown so far outwardly as to interfere with the whirling thread of the adjacent spool. With the device embodying my invention the distance to which the thread is thrown from the spool may be varied between limits, depending upon the distance at which the eyelet 17 is maintained from the spool. I have found that the eyelet may be maintained in its lowermost position, shown in Figure 1, representing a distance from the spool equal to approximately one and a quarter inches to obtain satisfactory results when a battery or row of spools are employed, which are placed approximately six inches from each other.

In view of the fact that the eyelet 17 is maintained relatively close to the spool 7 during operation, it becomes necessary to move the guide to its uppermost position, shown in Figure 2, so that clearance may be afforded between the device and the spool when it is desired to remove the empty spool, from which the thread has been unwound. With the eyelet positioned as shown in Figure 2, the removal of the empty spool may be easily accomplished and another spool filled with thread substituted for the previous spool after which the guide is again lowered to its position shown in Figure 1. Upward movement of the guide 9 is limited by the stop 12 while its downward movement is limited by the yoke 18, which is bent over at right angles to the legs 10 and 11.

In order to introduce the guide into the bracket 19, the leg 10 is passed upwardly through the opening 23, after which the eyelet or yoke 18 is so worked through the opening as to allow the leg 11 to enter therein, the leg 10 now being free. The guide is then moved upwardly to permit the leg 11 to enter the space afforded between the lugs 24. With the guide raised the leg 10 may then be introduced into the space afforded between the lugs 24, after which the guide is moved downwardly to permit the leg 10 to enter the opening 23, the leg 10 of course being so sprung as to permit the stop 12 to clear the lower flange 22 as the leg 10 enters the opening 23 and assumes a parallel position with respect to the leg 11, as shown. To remove the guide from its bracket the above mentioned steps are, of course, carried out in a reverse order. It will be appreciated that by reason of the peculiar construction of the bracket and guide, removal and substitution, such as is necessary due to occasional injury to the device, may be executed expeditiously thus obviating the necessity for long delays in the operation of the throwing machine in so far as any particular spool and reeling mechanism is concerned.

While I have shown and described what I at present consider the preferred form of my invention it is to be understood that certain modifications as to details of construction may be resorted to without departing from the spirit of the invention or the scope of the sub-joined claims.

I claim:

1. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of connected legs arranged in an adjacent relation to each other and having an eyelet associated therewith through which the thread is adapted to pass, said legs being adapted to co-operate for positioning the eyelet with respect to said source of thread supply.

2. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of connected legs arranged in an adjacent relation to each other and having an eyelet carried at one end thereof through which the thread is adapted to pass, and means for adjustably support-

ing said guide by said legs with respect to said source of thread supply.

3. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of connected legs arranged in an adjacent relation to each other and having an arm carried thereby, said arm terminating in an eyelet through which the thread is adapted to pass.

4. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in an adjacent relation to each other, said legs being connected together at corresponding ends, and an arm carried by the other end of one of said legs and terminating in an eyelet through which said thread is adapted to pass.

5. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a leg having an arm carried thereby, said arm terminating in a curved portion which in turn terminates in a finger maintained in a spaced relation with respect to said arm, said finger, curved portion and arm forming with each other an eyelet through which the thread is adapted to pass, and a second leg connected with the first mentioned leg and adapted to co-operate therewith for positioning the eyelet with respect to said source of thread supply.

6. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a leg having an arm carried thereby, said arm terminating in a curved portion which in turn terminates in a finger maintained in a spaced relation with respect to said arm, said finger, curved portion and arm forming with each other an eyelet through which the thread is adapted to pass, a second leg connected with the first mentioned leg, and means for adjustably supporting said device with respect to said source of thread supply.

7. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a leg having an arm carried thereby, said arm terminating in a curved portion which in turn terminates in a finger maintained in a spaced relation with respect to said arm, said finger, curved portion and arm forming with each other an eyelet through which the thread is adapted to pass, a second leg connected with the first mentioned leg, and means for adjustably supporting said device with respect to said source of thread supply, said means being in the form of a bracket having flanges associated therewith through which said legs are adapted to pass.

8. A thread guide adapted to be used in connection with a throwing machine comprising a pair of legs arranged in an adjacent relation to each other, said legs being connected together at corresponding ends by means of a yoke, an arm carried by one of said legs and terminating in a curved portion which in turn terminates in a finger spaced from said arm, said finger, curved portion and arm forming with each other an eyelet into which said thread is adapted to be passed through the space afforded between said finger and arm.

9. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in an adjacent relation to each other, said legs being connected together at corresponding ends by means of a yoke, an arm carried by one of said legs and terminating in a curved portion which in turn terminates in a finger spaced from said arm, said finger, curved portion and arm forming with each other an eyelet into which said thread is adapted to be passed through the space afforded between said finger and arm, and means for adjustably supporting said guide with respect to said source of thread supply.

10. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in an adjacent relation to each other, said legs being connected together at corresponding ends by means of a yoke, an arm carried by one of said legs and terminating in a curved portion which in turn terminates in a finger spaced from said arm, said finger, curved portion and arm forming with each other an eyelet into which said thread is adapted to be passed through the space afforded between said finger and arm, and means for adjustably supporting said guide with respect to said source of thread supply, said means being in the form of a bracket having flanges associated therewith through which said legs pass.

11. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in an adjacent relation to each other, said legs being connected together at corresponding ends by means of a yoke, an arm carried by one of said legs and terminating in a curved portion which in turn terminates in a finger spaced from said arm, said finger, curved portion and arm forming with each other an eyelet into which said thread is adapted to be passed through the space afforded between said finger and arm, and means for adjustably supporting said guide with respect to said source of thread supply, said means being in the form of a bracket hav-

ing flanges associated therewith through which said legs pass, one of said flanges being bifurcated to provide a pair of lugs embracing said legs, and to permit said legs to be introduced into the space afforded between said lugs.

12. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of connected legs arranged in an adjacent relation to each other and having an eyelet carried at one end thereof through which the thread is adapted to pass, and means for adjustably supporting said guide for sliding adjustment with respect to said source of thread supply, said means being adapted to engage both of said legs.

13. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of adjacent substantially parallel legs connected together and having at one end of the pair an eyelet through which the thread is adapted to pass, and means adapted to be engaged by said legs for adjustably supporting said guide for sliding adjustment with respect to said source of thread supply, said guide being resilient for thereby frictionally engaging said means to hold said guide in adjusted position.

14. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in adjacent relation to each other, said legs being connected together at corresponding ends, an eyelet carried by the other end of one of said legs and through which said thread is adapted to pass, and means adapted to be engaged by said legs for adjustably supporting said guide for sliding adjustment with respect to said source of thread supply, said guide being resilient for thereby frictionally engaging said means to hold said guide in adjusted position.

15. A thread guide adapted to be used in connection with a throwing machine with which is associated a source of thread supply comprising a pair of legs arranged in adjacent relation to each other, said legs being connected together at corresponding ends, an eyelet carried by the other end of one of said legs and through which said thread is adapted to pass, means for adjustably supporting said guide with respect to said source of thread supply, said means being in the form of a bracket through which said legs are adapted to slide, said guide being resilient for frictionally engaging the bracket to hold said guide in adjusted position, and stops on said guide to limit the extent of its sliding movement in each direction.

In testimony whereof, I have affixed my signature to this specification.

CHARLES JAMES BACON.