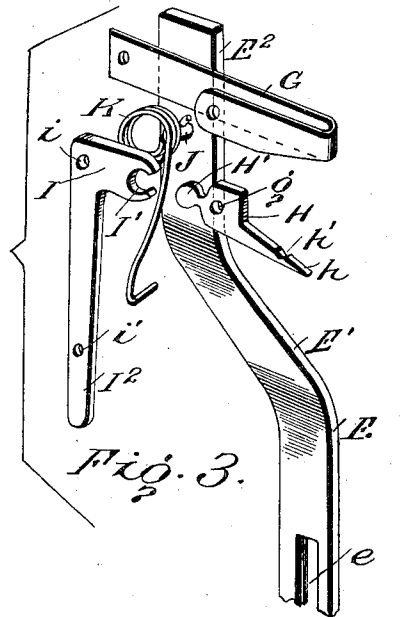
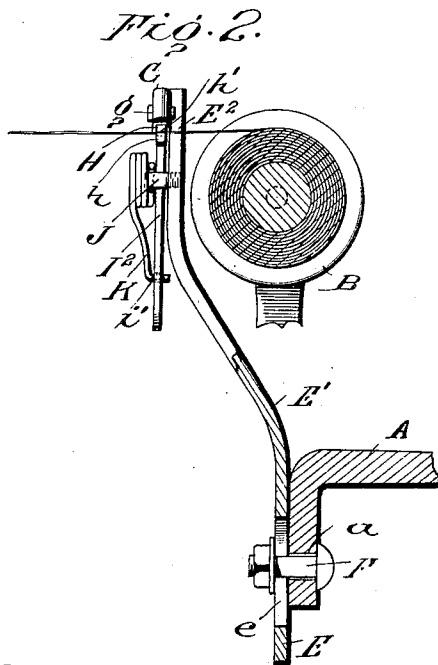
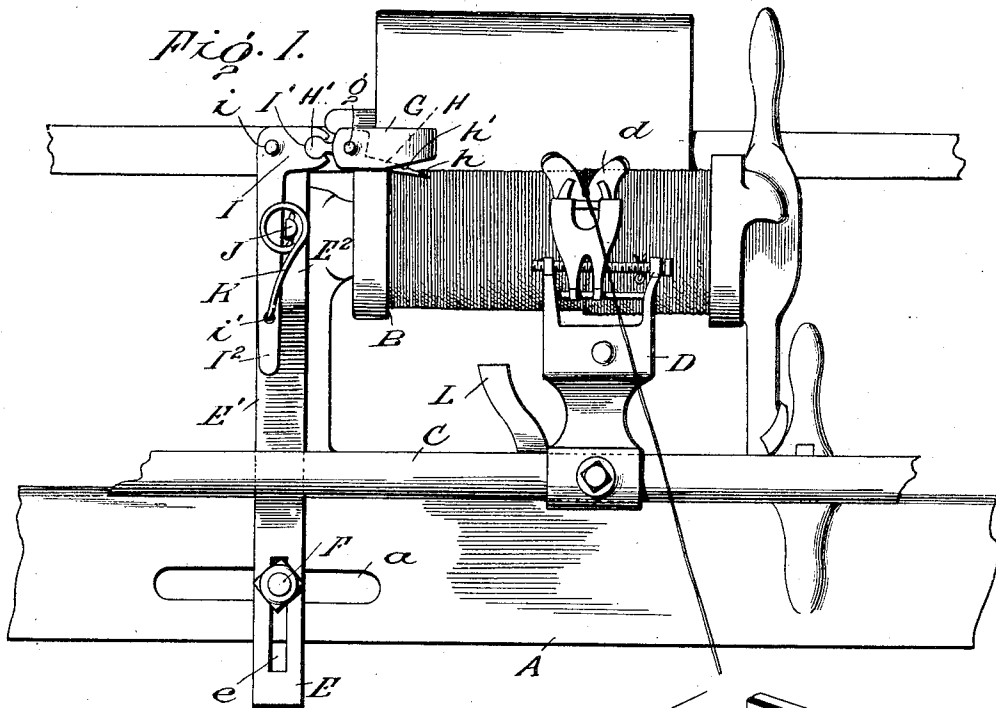


No. 828,671.

PATENTED AUG. 14, 1906.

J. M. LEONARD.
THREAD CUTTER FOR WINDING MACHINES.

APPLICATION FILED MAR. 31, 1905.



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JOHN M. LEONARD, OF SCRANTON, PENNSYLVANIA.

THREAD-CUTTER FOR WINDING-MACHINES.

No. 828,671.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed March 31, 1905. Serial No. 253,191.

To all whom it may concern:

Be it known that I, JOHN M. LEONARD, a citizen of the United States, residing at Scranton, in the county of Lackawanna, and State of Pennsylvania, have invented new and useful Improvements in Thread-Cutters for Winding-Machines, of which the following is a specification.

My invention relates to improvements in thread-cutters for winding-machines, and pertains more particularly to that class in which the thread is automatically cut when the spool has become filled.

The object of my invention is to provide a device which is adapted to be readily attached to the ordinary winding-machine and which is adapted to automatically cut the thread when the predetermined amount of thread has been wound upon the spool, and thus preventing too much to be wound upon a spool, and thus obviating the waste of any of the thread.

Another object of my invention is to provide a more effective and less expensive device of this character than has heretofore been produced.

In the accompanying drawings, Figure 1 is a side elevation of a winding-machine, showing my device in operative position. Fig. 2 is an end view of Fig. 1, and Fig. 3 is an enlarged plan view of my device detached.

Referring now to the drawings, A represents a portion of the frame of a winding-machine, upon which is rotatably mounted a spool-carrying shaft upon which is mounted the spool B, which is adapted to revolve very rapidly, and thus the thread, cotton, or other material may be wound upon the spools. Below the said spool and at one side is a shaft or rod C, which moves longitudinally and carries an upwardly-extending arm D, which carries a thread-guide *d*, through which the thread passes, and by the longitudinal movement of the rod C the thread will be moved back and forth as the spool revolves, and thus the thread is evenly wound upon the spool in even layers.

My invention consists of a vertical rod or bar E, which has its lower end provided with an elongated vertical slot *e*, and passing through said slot and through a horizontal slot *a* in the frame A is a clamping-bolt F and by means of which the bar is either vertically or horizontally adjustable. The said arm or rod E above the vertical slot *e* is bent or curved outwardly, as shown at E', and thus

the upper end of the arm is thrown outward beyond the outer edge of the spool, the purpose of which will be hereinafter more fully described.

The upper end of the arm or rod E is provided with a straight portion E² above the curved portion E', and carried by the extreme upper end of said straight portion E is a laterally-extending member G, which extends across and in a line with the upper edge of the spool. The said arm, as shown, has its outer end doubled back upon itself for a short distance, and the lower edges of said doubled portion form cutting edges for the thread, which will be hereinafter more fully described. Pivoted between the said doubled portion of the arm or member G is a knife H, which is pivoted at *g* and has its outer end normally held in a downward position with its outer end *h* normally held below the lower edge of the arm G, and said upper edge of the knife is provided with a recess *h'*, which is adapted to receive the thread. The opposite end of the knife H beyond the pivot *g* is provided with a rounded portion H', which fits into a socket I', carried by the outer end of the arm I, and said arm is L-shaped and pivoted at *i* to the rod or arm E.

The downwardly-extending portion I² of the arm I extends down in a line with the shift-rod, the purpose of which will be hereinafter more fully described. The arm E is provided with a stop J, to which is secured one end of a coil-spring K, and the opposite end of the spring passes through an opening *i'* in the downwardly-extending arm I², and thus by the tension of the spring the said arm is held against the stop J, and through the medium of the socket-joint the knife is held in a downward position below the edge of the doubled portion of the arm G, and thus adapted to be in a line with the thread upon the spool becoming filled.

The shift-rod is provided with an adjustable arm L, which extends upon ends and is in a line with the downwardly-extending portion I², and thus during each time the guide travels back and forth across the spool the said arm L engages the downwardly-extending portion I², and thus the knife is oscillated or closed, and when the arm has been released the spring throws the knife in its normal open position.

The knife, as clearly shown in Fig. 2 of the drawings, is between the spool and guide and a sufficient distance from the spool so that

when the same has been filled the knife will not engage the same. The knife is also in a line with the upper edge of the spool and the guide. The thread is started upon the spool and the spool revolved, and the guide travels back and forth each time operating the knife; but the thread between the spool and the guide travels below the knife; but as the spool becomes filled the thread comes closer and closer to the knife, and when the predetermined amount has been wound upon the spool the knife is in a line with the outer face of the spool and the guide, and the thread travels up the incline face of the knife and enters the recess or depression. By the time the thread has entered said recess the arm carried by the shift-rod has engaged the lower end of the arm I^2 , and the knife is caused to oscillate, thus severing the thread or whatever is being wound upon the spool. It will also be seen that by vertically adjusting the bar E on the machine the predetermined amount of material may be increased or decreased, or by horizontally adjusting the same the device is adapted to be used in connection with spools of different lengths.

While I have shown and described my preferred form as a cutter for severing the thread after the spool has been wound to the desired fullness, it will be understood that other means might be employed. This means consists, instead of leaving the cutter-blade h sharpened, in having the same flat to form a clamping-surface, so that the thread would be firmly held between it and the member G when the spool has been wound to the desired fullness and the continued rotation of the spool breaks or severs the thread. It will be understood that the term "severs" would include either the cutter or the means for holding the thread and causing it to break.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A thread-cutter, comprising a frame, a thread-guide and means operated by the thread-guide for severing the thread when the spool is filled.

2. A thread-cutter, comprising a frame, a knife carried thereby and in a line with the outer periphery of the spool, a thread-guide and means operated by the thread-guide for operating said knife.

3. A thread-cutter, comprising a frame, a pivoted knife carried thereby and in a line with the outer periphery of the spool, a thread-guide and means operated by the thread-guide for operating said knife.

4. A thread-cutter, comprising a frame, a pivoted knife carried thereby and in a line with the outer periphery of the spool, and a reciprocating thread-guide mechanism adapted to operate said knife.

5. A thread-cutter, comprising a frame, a

pivoted knife carried by the frame in a line with the outer periphery of the spool, a thread-guide adjacent the spool and means operated by said thread-guide for operating said knife.

6. The combination with a winding-machine, of an arm carried thereby, a knife carried thereby in a line with the outer periphery of the spool, a thread-guide adjacent said spool, and means operated by the thread-guide for operating said knife.

7. The combination with a winding-machine, of an arm carried thereby, a knife carried by the arm in a line with the outer periphery of the spool, a thread-guide adjacent said spool, and an arm carried by the guide and adapted to operate said knife.

8. The combination with a winding-machine, of an adjustable arm carried thereby, a pivoted knife carried by the arm, an intermediately-pivoted lever having a socket connection with said knife, and means for operating said intermediately-pivoted lever.

9. The combination with a winding-machine, of an arm carried thereby, a pivoted knife carried by the arm, an intermediately-pivoted lever having a socket connection with said knife, a spring normally holding the lever in a position with the knife open and means for operating said lever.

10. The combination with a winding-machine, having a spool and guide adjacent each other, an arm carried by the machine and having a laterally-extending cutting member carried thereby, an L-shaped intermediately-pivoted lever having a socket connection with said cutting member, and means operated by said guide for oscillating said lever, whereby the knife is oscillated.

11. The combination with a winding-machine having a spool and guide adjacent each other, an upright carried by the machine and having a laterally-extending arm carried by the upper end thereof, a pivoted knife carried by said lateral arm, an L-shaped lever pivotally supported by said upright, a socket connection between said lever and the pivoted knife, and means for reciprocating said lever.

12. The combination with a winding-machine having a spool and guide adjacent each other, an upright carried by the machine, a laterally-extending member carried by the upper end of said upright and the outer end thereof turned back and forming a doubled portion, a knife pivoted between said doubled portion, means for normally holding the outer end of the knife below said doubled portion, and means for bringing said knife up between said doubled portion.

13. The combination with a winding-machine, having a spool and guide adjacent each other, an upright carried by the machine, a laterally-extending member carried by the upper end of said upright and having its outer

end turned back forming a doubled portion, a knife pivoted between said doubled portion, an L-shaped lever intermediately pivoted to the upright, and having a socket connection
 5 with the inner end of the knife, a spring normally holding the lever in a position with the outer end of the knife below the doubled portion, and means carried by the guide for operating said lever, whereby the knife is carried
 10 between said doubled portion.

14. A thread-cutter, comprising a frame, a thread-guide and means operated by the thread-guide for holding the thread when the spool has been wound to the desired fullness.

15 15. A thread-cutter, comprising a frame, a thread-guide and means operated by the thread-guide for holding and severing the thread when the spool has been wound to the desired fullness.

20 16. A thread-cutter, comprising a frame, a thread-guide and means automatically operated by the thread-guide for clamping the thread and holding the same when the spool has been wound to the desired fullness.

25 17. The combination with a winding-machine having a spool and guide adjacent each other, an upright carried by the machine, a laterally-extending member carried by the upper end of said upright, a pivoted clamping member carried by the outer end of said
 30 laterally-extending member, and means for bringing said clamping member in engage-

ment with the laterally-extending member, whereby the thread is held and the continued rotation of the spool severs the thread. 35

18. The combination with a winding-machine having a spool, a thread-guide on a line with the upper edge of said spool, an upright carried by the machine, and having a laterally-turned end extending between the spool
 40 and guide and on a line with the upper edge of the spool, a clamp pivoted to said laterally-turned end, means operated by the guide for operating said clamping means, whereby
 45 the thread is held thereby when the spool is wound to the desired fullness, and the continued rotation of the spool severs the thread.

19. The combination with a winding-machine having a spool and guide adjacent each other, an upright carried by the machine, a
 50 knife pivotally carried by the upper end of the upright and in a line with the outer periphery of the spool, a lever connected to said knife and means carried by the thread-guide
 55 for operating said lever, whereby the thread is severed when the spool has been wound full to its outer periphery.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN M. LEONARD.

Witnesses:

WILLIS T. LEONARD,

CHARLES H. WOODMANSEE.