(No Model.)

2 Sheets—Sheet 1.

J. T. WILLMARTH.

THREAD SEVERING STOP FOR SPOOLING MACHINES.

No. 375,467. Patented Dec. 27, 1887.

FIG. 1.

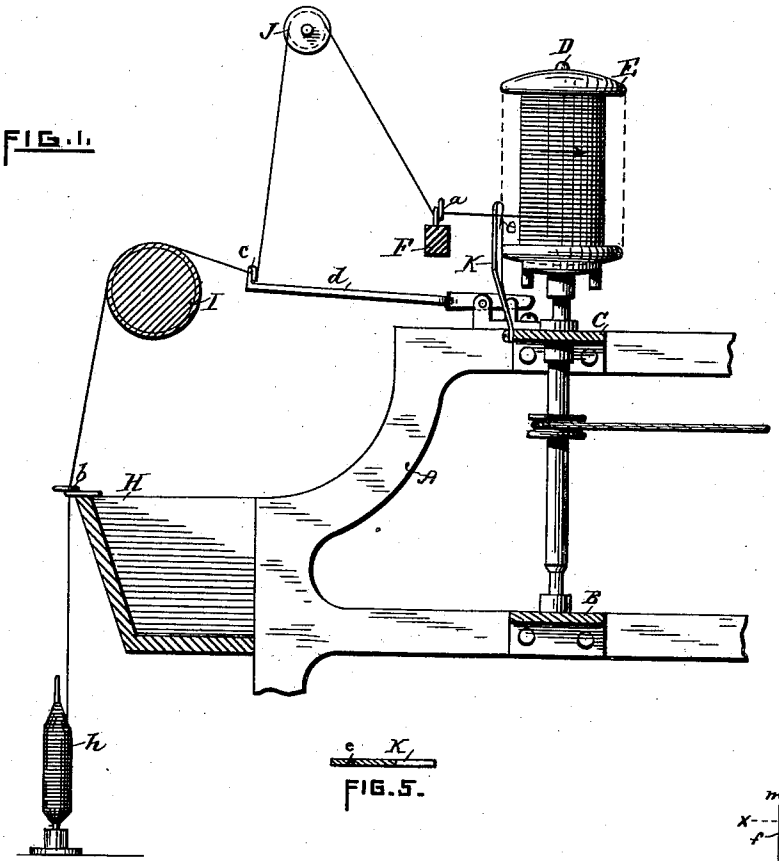


FIG. 5.

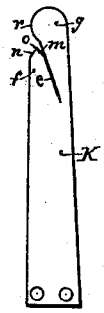


FIG. 3.

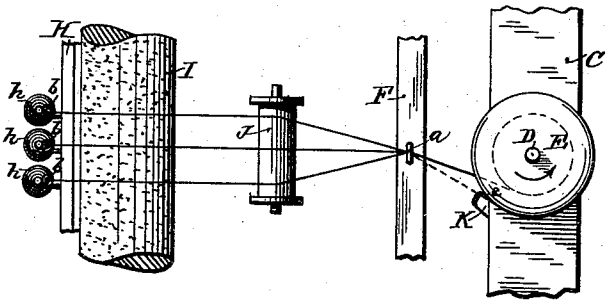


FIG. 2.

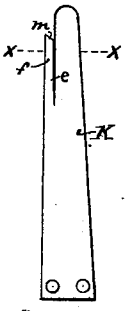


FIG. 4.

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(No Model.) 2 Sheets—Sheet 2.

J. T. WILLMARTH.

THREAD SEVERING STOP FOR SPOOLING MACHINES.

No. 375,467. Patented Dec. 27, 1887.

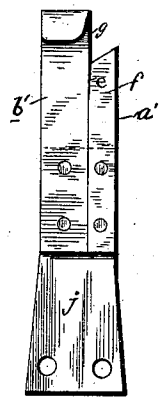


Fig. 6.

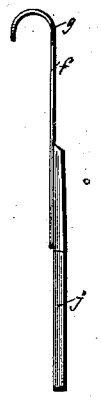


Fig. 7.

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UNITED STATES PATENT OFFICE.

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THREAD-SEVERING STOP FOR SPOOLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 375,467, dated December 27, 1887.

Application filed March 18, 1887. Serial No. 231,455. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. WILLMARTH, a citizen of the United States, residing at Pawtucket, in the State of Rhode Island, have invented a new and useful Improvement in Thread-Severing Stops for Spooling-Machines, of which the following is a specification.

In operating with spooling-machines there is great danger of waste and loss from the carelessness of operatives in allowing the thread to be wound upon the spools to excess, and it is very desirable to be able to prevent such excessive filling by means of automatically-operating devices; and my invention consists in the combination, with the wave-motion rod and the spindle, of an intermediate thread-severing device which is adapted to sever the thread upon the proper complete filling of the spool.

Figure 1 is a partial section of a spooling-machine, showing the thread-severing stop. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged side elevation of the thread-severing stop shown in Fig. 1 as adapted to sever several threads. Fig. 4 is an enlarged side elevation of the thread-severing stop as adapted for operation upon a single thread. Fig. 5 is a transverse section taken in the line *x x* of Fig. 4, showing the inclined sides of the severing-slit. Figs. 6 and 7 illustrate the construction of the severing-stop in several parts.

In the accompanying drawings, A represents a portion of the frame of the machine; B, the step-rail, and C the bolster-rail; D, the spindle; E, the winding-spool, and F the wave-motion rod, provided with an eye, *a*, through which the thread passes onto the spool. The threads from the bobbins or cops *h* pass first through eyes *b* at the outer edge of the spool-box H and over the friction-bar I, thence under the hooks *c* of the stop-motion drop-lever *d* and over the roller J, thence collectively through the eye *a*, as is common in upright spooling-machines.

To the bolster-rail C is secured the thread-severing stop K, which is preferably made in one piece of sheet metal, and is provided with a narrow wedge-formed slit, *e*, adapted to receive and bind the threads, so that when so held the continued movement of the spool E will serve to sever the thread at the slit, thus preventing the continuously-rotated spool from drawing a surplus of thread from the bobbins or cops. The lip *f* of the severing-stop K, at one side of the slit *e*, is beveled upward and outward at the upper portion, *m*, as shown in Fig. 4, in order to carry the thread toward the slit *e* when the spool E has become sufficiently filled and when several threads are being simultaneously wound upon the same spool. I prefer to also bevel the lip *f*, as shown in Fig. 3 at *n*, from the highest point *o* downward and outward, so as to carry the threads away from the slit-opening until the spool has become properly filled, and I also provide the head *g* of the severing-stop with a protuberant edge, *r*, which serves to bring the several threads in proper line for entrance into the slit-opening upon the downward movement of the wave-motion bar when the spool has become properly filled with thread, thus securing the certain severance of all of the several threads, this latter form being shown in Fig. 3.

In the device shown in Fig. 3 the thread will be held up by the protuberant portion of the head, and will strike quickly down to the turning-point of the lip, whereas in the case of the device shown in Fig. 4 the natural running of the thread from the spool will not be interfered with until it is caught in the slit and severed.

The thread-severing stop K is secured to the rail C in such position that when the spool is properly filled the threads will draw from the eye *a* in line with the slit-opening, as shown by the broken line in Fig. 2, so that upon the downward movement of the eye *a* with the wave-motion rod the threads will be caught and held in the slit when the wave-motion rod and eye *a* are in about the position shown in Fig. 1. The thread will thus be severed at one uniform position on the spool, so that the severed end can always be readily found, its location being known, which is of itself a great convenience.

Instead of making the thread-severing stop in a single piece of sheet metal, the same may be made of two or more pieces secured to each other so as to form an open slit, into which the thread is to be drawn and severed upon the complete proper filling of the spool. A severing-stop of this class is shown in Figs. 6 and 7, in which the wedge-formed slit *e* for catching and breaking the thread is formed at the

joint between two sheet-metal plates, a' and b', which are riveted to the base j, the plate a' serving to form the lip f and the plate b' the head g.

The slit e, which receives and serves to sever the thread, is made with inclined sides, as shown in the enlarged cross-section, Fig. 5, in order that the end of the severed thread from the side of the bobbin or cop may be readily withdrawn from the slit.

It is not essential in practice that the thread be broken upon the downward movement of the wave-motion bar and upon the reversal of the thread-severing device. The thread can be broken at the upward movement of the said bar at the complete filling of the spool.

I claim as my invention—

1. In a spooling-machine, the combination, with the wave-motion rod and the spindle, of the intermediate thread-severing stop adapted to sever the thread upon the complete filling of the spool, substantially as described.

2. The combination, with the wave-motion rod and the spindle, of the intermediate thread-severing stop provided with the slit, and a lip having an upward and outward inclination at its end, substantially as described.

3. The combination, with the wave-motion rod and the spindle, of the intermediate thread-severing stop provided with the slit and a lip having an upward and outward and an outward and downward inclination at its end, substantially as described.

4. The combination, with the wave-motion rod and the spindle, of the intermediate thread-severing stop provided with the slit, a lip having an upward and outward and an outward and downward inclination at its end, and a head having a protuberant portion, substantially as and for the purpose specified.

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Witnesses:

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