(No Model.)

T. HANDLEY.

THREAD UNWINDER.

No. 385,857. Patented July 10, 1888.

Fig. 1.

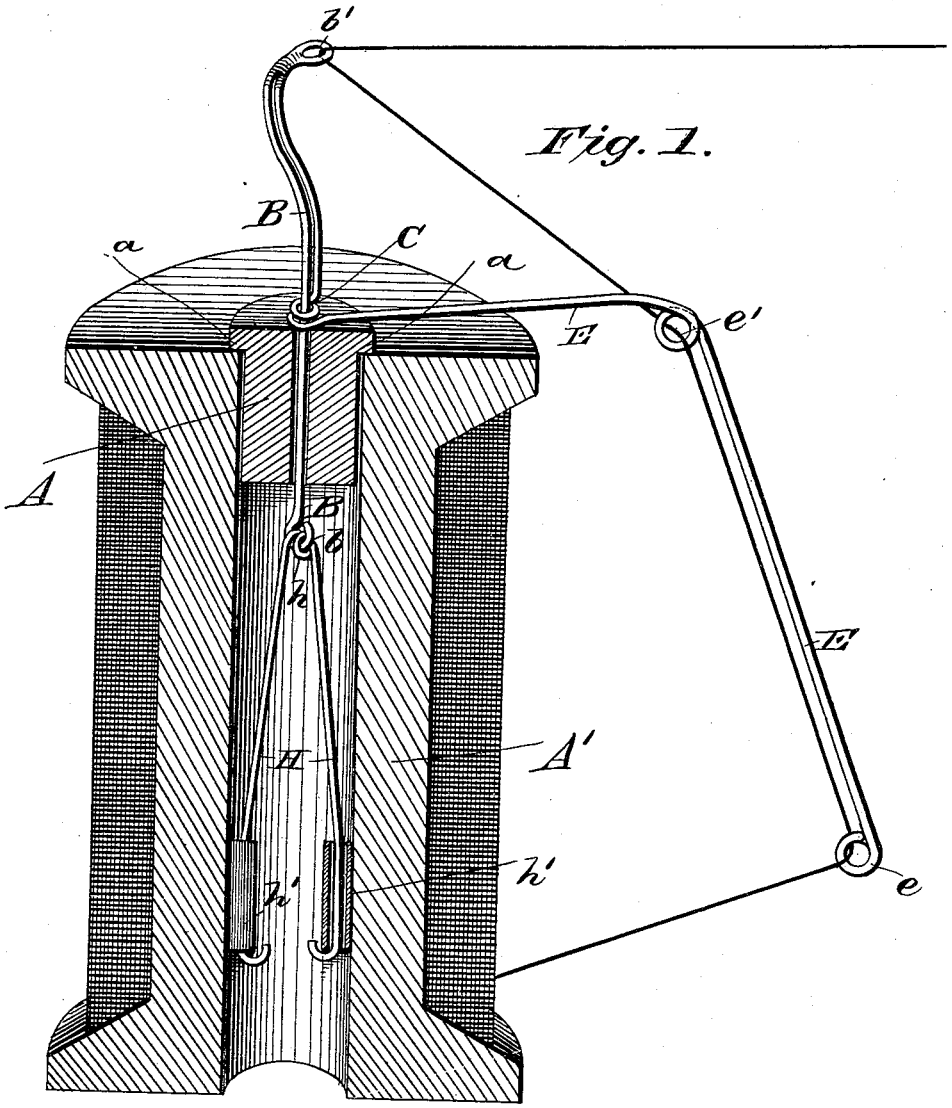
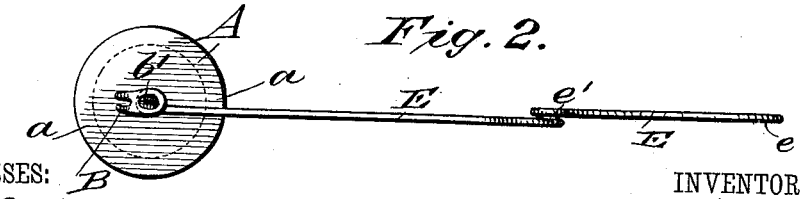


Fig. 2.



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THREAD-UNWINDER.

SPECIFICATION forming part of Letters Patent No. 385,857, dated July 10, 1888.

Application filed February 14, 1888. Serial No. 264,023. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HANDLEY, of Willimantic, in the county of Windham and State of Connecticut, have invented a new and Improved Thread-Unwinder, of which the following is a full, clear, and exact description.

My invention relates to an improvement in devices for unwinding thread adapted for attachment with spools, and has for its object to provide an unwinding device or flier of simple and cheap construction capable of use with spools revolving at high speed, wherein the thread may be taken from the spool under uniform tension from either the top, bottom, or middle of the spool, and from beginning the full spool to the finish, and wherein also the centrifugal force generated by the revolving unwinder may be quickly overcome and the flier suddenly brought to a state of rest.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a vertical section through a spool having my device attached, and Fig. 2 is a plan view of the device.

In carrying out the invention, A represents a button loosely fitting the cylindrical bore of a spool, A′, provided at one end with a shoulder, *a*, adapted to rest upon the surface of said spool surrounding the bore, as illustrated in Fig. 1, and with a central aperture.

The body of the flier consists of a stout wire rod passed through the aperture in the button vertically upward to form the spindle B, having formed at the lower end below the button an essentially open eye, *b*, and at the upper end a closed eye, *b′*, having a smooth inner surface, which latter eye is made to align the center of the spool. The alignment is accomplished by curving the spindle B near the top and bringing the upper extremity to an essentially horizontal position, as illustrated in Fig. 1. The eye is formed by bending the wire upon itself and soldering or otherwise smoothly uniting the strands. The wire is now carried downward in a line parallel with its upward course to a point at or near the center of the spindle. At this point the said second strand is coiled about the body proper to form the stop C, and carried at right angles to the spindle over and away from the end of the spool, and again at an inclination downward and away from the body of the spool, forming the guide-arm E, the wire being coiled at the bend to form an eye, *e′*, and at the extremity of the guide-arm a loop or eye, *e*, is formed similar to the loop or eye *e′*. A tension device, H, is provided consisting of a piece of spring metal bent upon itself to form an eye, *h*, and two members radiating at an acute angle downward from the eye, which members are provided at their lower end with a sleeve, *h′*.

The tension H is detachably suspended from the lower end of the spindle with the members in contact with the walls of the spool-bore, the object of the sleeves being to present a smooth bearing-surface to slide easily on the walls of the spool-bore. When thus hung upon the spindle, the tension device becomes a part of the same and revolves with it, and the legs may be adjusted to hug the spool more or less closely, as may be found desirable, as more or less tension is required for different kinds of work.

In operation the thread from the spool is passed through the eyes of the guide-arm out through the upper spindle-arm to any desired point.

The device is intended to run at any rate of speed up to a very high speed, and the tension when properly adjusted will admit of easy action of the flier, and at the same time will control it, so as to bring the said flier to a dead stop when the draft upon the thread ceases by overcoming the centrifugal force, thus preventing any slack thread.

The button may be made of wood, metal, or other suitable material, and the remainder of the device may be constructed of any desirable metal.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a spindle provided with a closed eye at one end and an open eye at the other end, a button held upon the spindle between the eyes, and an angular guide-

arm projected from the spindle, of spring-arms detachably suspended from the lower end of the spindle, flexing in opposite directions, substantially as shown and described.

2. The combination, with a spindle provided with a closed eye at one end and an open eye at the other end, a button held upon said spindle, a stop above the button, and an angular outwardly-projecting guide-arm, of spring-arms detachably suspended from the lower end of the spindle, flexing in opposite directions, and sleeves mounted upon said arms, substantially as shown and described, and for the purpose specified.

THOMAS HANDLEY.

Witnesses:
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