(No Model.)

A. H. BAILEY.

THREAD CLEANING DEVICE FOR SPOOLING MACHINES.

No. 345,475. Patented July 13, 1886.

Fig 4.

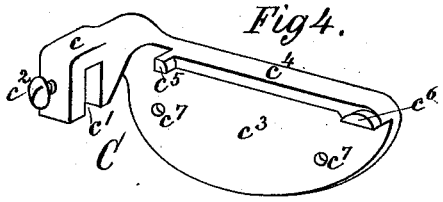


Fig 1.

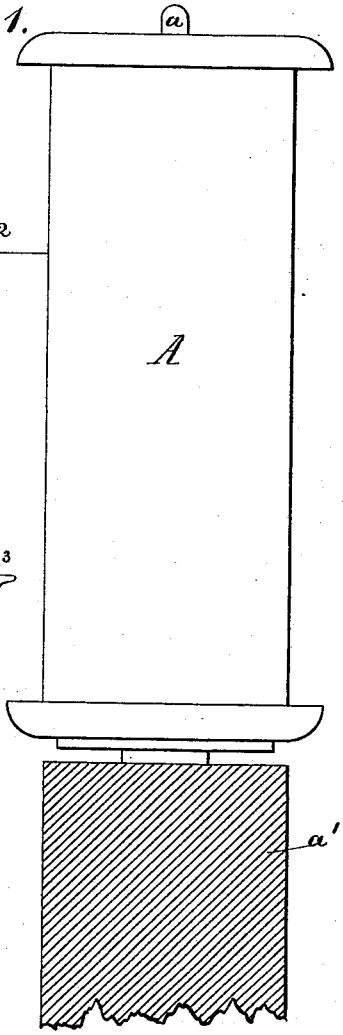
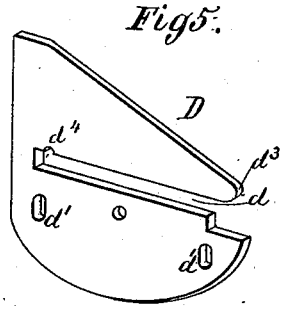


Fig 5.



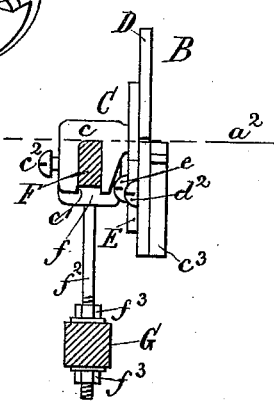


Fig 6.

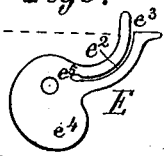


Fig 2.

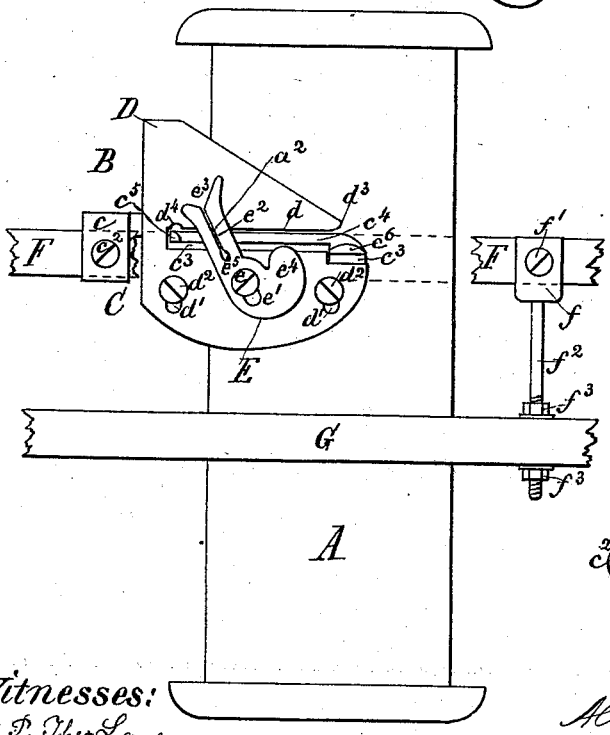
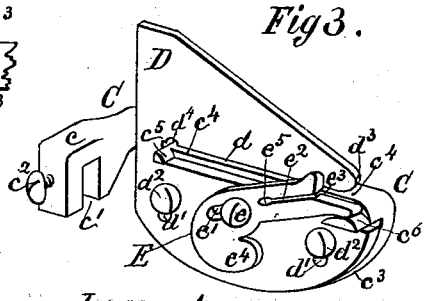


Fig 3.



Witnesses:
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Robt. L. Fenwick

Inventor:
Albert H. Bailey
by his Attys
Mason, Fenwick & Lawrence.

UNITED STATES PATENT OFFICE.

ALBERT H. BAILEY, OF NASHUA, NEW HAMPSHIRE.

THREAD-CLEANING DEVICE FOR SPOOLING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 345,475, dated July 13, 1886.

Application filed April 19, 1886. Serial No. 199,306. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. BAILEY, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Thread-Cleaning Devices for Spooling-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in certain novel constructions and combinations of parts in a thread-cleaning device for spooling-machines, whereby the thread is freed from knots, rough portions, or swells, and has an even smooth surface imparted to it, and thus the knots or swells are prevented from passing through the cleaner to the spool, as will be hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the improved thread-cleaner, its supporting devices, a winding-spool, its spindle, and the supporting-rail thereof. Fig. 2 is a front elevation of the same, showing one of the supports and the rail-guide partly broken away, in order to allow a full view of the parts in the rear. Fig. 3 is a perspective view of the thread-cleaner detached from its support. Fig. 4 is a perspective view of the frame portion of the thread-cleaner. Fig. 5 is a perspective view of the thread-cleaner plate. Fig. 6 is a modified construction of the thread-cleaner dog.

In the drawings, A denotes a spool mounted upon a spindle, *a*, and supported by a rail, *a'*, of ordinary construction, and such as is found in spoolers. The thread a^2 of said spool is drawn by the revolving spool through the thread-cleaner B. This thread-cleaner consists of three separate adjustable parts, a cleaner-frame, C, a cleaner-plate, D, and a cleaner-dog, E. The cleaner-frame C consists of a clamp-head, *c*, having an open vertical slot, c', by means of which it is fitted upon a supporting guide-bar, F, and a set-screw, c^2, bearing against said guide-bar, and thus fastening the clamp-head *c*. A vertical plate, c^3, joins the clamp-head *c* at a right angle, having a horizontal flange, c^4, with two lugs, c^5 c^6, at its end portions. Below the flange c^4 two screw-threaded holes, c^7, are provided for the reception of two screws, as d^2, Figs. 1, 2, and 3. Clamped to the plate c^3 is the cleaner-plate D, which is a hard-metal plate of suitable shape, having an open horizontal slot, *d*, and two vertical slots, *d'*. Two screws, d^2, are passed through the slots *d'* into the aforesaid holes c^7 of the cleaner-frame, by which means the cleaner-plate can be vertically adjusted upon the cleaner-frame, and when so adjusted the flange c^4 of the cleaner-frame, with its lugs, occupies a portion of the slot *d*, and thereby narrows the same to the size of the thread intended to be passed through it. Upon the cleaner-plate D the metal cleaner-dog E is loosely attached by means of a screw, *e*, which passes through a longitudinal slot, *e'*, of the same and allows it to turn and slide upon the cleaner-plate D. This cleaner-dog is provided with a narrow slot, e^2, terminating with a right-angled flare, e^3, the slot e^2 being of suitable width for the thread to be passed through. The lower portion of the cleaner-dog is to be provided with an eccentric extension, e^4, whereby the dog is overbalanced on the pivot-screw *e* and thrown forward upon the lug c^6 of the cleaner-frame, when its slot e^2 is not occupied by the thread a^2. In this latter position (seen in Fig. 3) the angular flare e^3 facilitates the introduction of the thread into the slots e^2 and *d*, inasmuch as the lower face of the flare is flush with the upper surface of the flange c^4, while above it the slot *d* terminates with an upper flare, d^3, which stands in advance of the upright portion of the flare e^3. The edges of the slots *d* and e^2 are square, but smooth and sharp, so that they do not cut the thread, but only scrape down such portions of it which render it irregular in thickness or uniformity. The thread passing through the said slots is freed from the said irregularities, and the scraped-off portions accumulate at either side of the thread in the said slots, each succeeding scraped-off portion pushing the preceding portion along the slots until the scrapings reach the ends of the slots. The scrapings on one side of the thread finally reach the open ends of the slots and thence drop down. The scrapings on the other side of the thread move toward the closed ends of the slots, where there are enlarged terminations d^4 and e^5, respectively, whereby said scrapings are prevented from jamming and will lose their hold and

drop down. During the winding of the spool its diameter gradually increases and its thread a^2 is laterally moved away from the center of the same, thereby tilting the cleaner-dog gradually over toward the lug c^5 until it comes in contact therewith, whereby the cleaner-dog is prevented from further tilting, and allowing the thread to leave its slot e^2. The guide-bar F rests in a number of forked heads, f, with fastening set-screws f', which heads are provided with screw-shanks f^2 and nuts f^3. These screw-shanks are inserted into a reciprocating bar, G, and clamped to it by said nuts, as seen in Figs. 1 and 2. The bars F and G have a vertically-reciprocating motion, whereby the thread is properly guided to the spool, as in ordinary spoolers. I have shown in Figs. 2 and 3 the cleaner-dog provided with a straight slot, e^2; but as it is sometimes preferable that the slots d and e^2 should at their crossing-point stand at a right angle to each other, I therefore have shown a cleaner-dog in Fig. 6 provided with a curved slot, the curve being of such construction that at almost any position of the cleaner-dog during the operation of the machine the intersecting portions of the slots d and e^2 will form a right angle. I propose using my within-described thread-cleaner projecting from the clamp c either to the right or left hand, as found most desirable.

What I claim is—

1. In a thread-cleaning device, a thread-cleaner, B, its respective parts, C and D, forming a stationary horizontal slot, and its movable or tilting part E, provided with a slot which crosses the horizontal slot, substantially as and for the purpose described.

2. The combination of the cleaner-frame C, the cleaner-plate D, and slotted dog E, the said plate having slots d d', and the cleaner-frame a lateral flange, c^4, and screws d^2, substantially as described.

3. The combination of the cleaner-frame C, having the lateral flange c^4, cleaner-plate D, having slot d, and means for adjustably securing said plate upon said frame, whereby the passage between the plate and frame is made adjustable in width, with a swinging cleaner-dog, E, having slot e^2, substantially as described.

4. The combination of the cleaner-plate D, having slot d and flare d^3, the cleaner-dog E, having slot e^2 and flare e^3, and the cleaner-frame C, having flange c^4 and lugs c^5 c^6, substantially as and for the purpose described.

5. The combination of the cleaner-frame C, having the lateral flange c^4, cleaner-plate D, and a cleaner-dog, E, the plate being formed with a slot, d, having an enlarged clearing or discharging termination, d^4, and the dog E, with a slot, e^2, having a similar discharging or clearing termination, substantially as described.

6. The combination of the cleaner-frame C, having the downwardly-slotted clamp-head c and flange c^4, cleaner-plate D, having slot d, and swinging cleaner-dog E, having slot e^2, with the vertically-reciprocating guide-bar, F, substantially as described.

7. The combination of the cleaner-frame C, having the downwardly-slotted clamp-head c, and flange c^4, cleaner-plate D, having slot d, swinging cleaner-dog E, having slot e^2, guide-bar F, and the feed-bar G, having vertically-adjustable supports f f^2 f^3, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT H. BAILEY.

Witnesses:
ROSWELL T. SMITH,
B. B. WHITTEMORE.