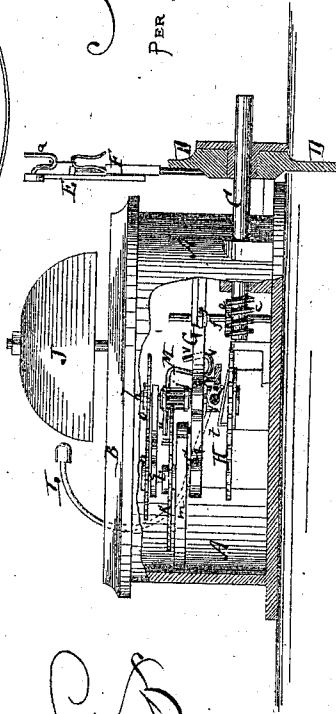
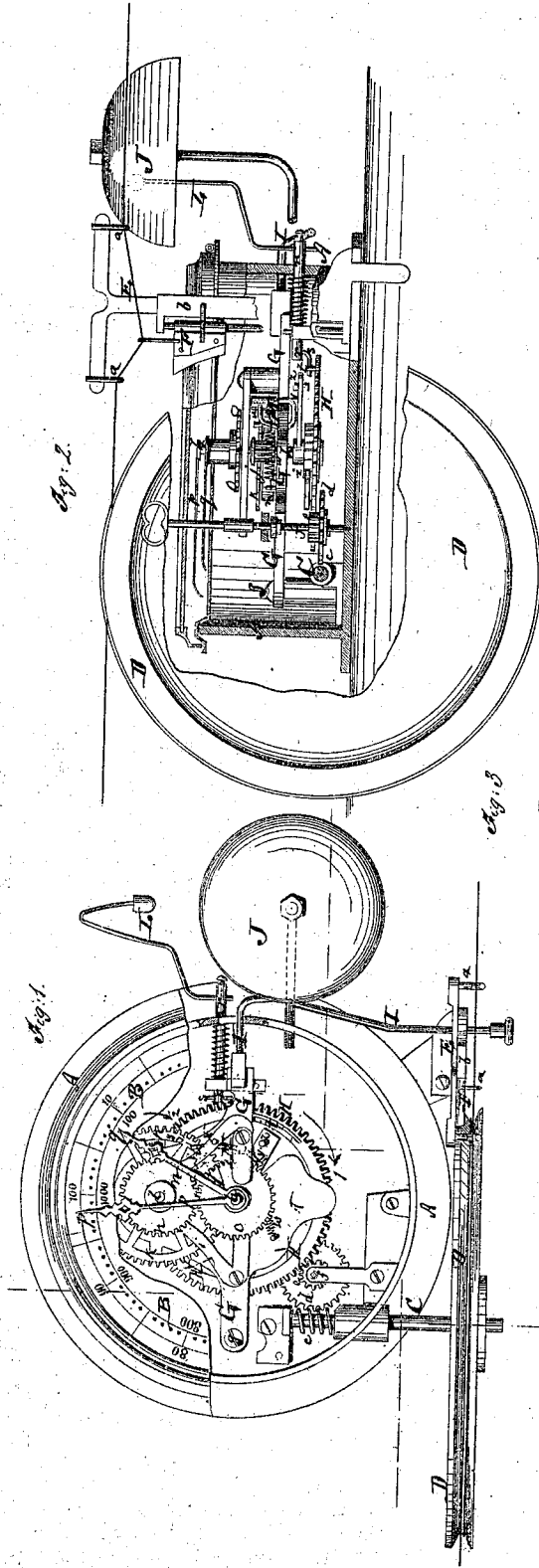


R. H. NORRIS.
SPOOLING GAGE.

No. 100,793.

Patented Mar. 15, 1870.



Inventor:
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United States Patent Office.

RICHARD H. NORRIS, OF PATERSON, NEW JERSEY.

Letters Patent No. 100,793, dated March 15, 1870.

IMPROVEMENT IN SPOOLING-GAUGE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, RICHARD H. NORRIS, of Paterson, in the county of Passaic, and State of New Jersey, have invented a new and improved Spooling-Gauge; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

Figure 1 represents a plan view, partly in section, of my improved spooling-gauge.

Figure 2 is a side view, partly in section, of the same.

Figure 3 is an end view, partly in section, of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to spooling-registers, and consists in certain improvements thereon, which will be specified hereinafter.

The invention consists in so hanging the frame which carries the main train of wheels, that one motion on a spring knob will at once release them, and throw the train and the hands moved by the same back to zero. Thereby a new start at counting can be taken whenever desired.

A, in the drawing, represents a cylindrical case of suitable size. On its face is arranged a dial-plate, B, which has figures marked near its edge to denote the number of yards that are measured.

C is a shaft fitted through one side of the case A, and provided with a wheel, D, at its outer end. The edge of this wheel is grooved, to receive the thread to be measured.

From the case projects a loose frame, E, which has two loops, *a a*, through which the thread is passed.

Between the loops *a* is suspended from the thread a weight, F, which serves as a brake.

In case the thread breaks or becomes slack, it drops between the edge of the wheel D and a fixed post, *b*, and prevents the further motion of the wheel.

On the inner end of the shaft C is mounted a worm, *c*, which meshes into the teeth of a wheel, *d*; said wheel being, together with a pinion, *e*, that is connected with it, mounted upon a vertical arbor, *f*, that projects from the bottom of the case.

Within the case A is pivoted by a pin, *g*, a frame, G, which carries the main train of wheels, of which one (H) is held in gear with the pinion *e*, as in fig. 1.

A spring handle, I, projects from the frame G, through the side of the case A. When the knob on the end of the handle is pushed, it will move the frame G so as to carry the wheels H and *e* out of gear.

The wheel H is hung loose on its shaft *h*, but connected by pawl and ratchet *i* with the same, in such

manner that it may turn in one direction loose on the shaft, while in the other direction it will always revolve the same with it. The arrow 1, fig. 1, indicates the direction in which the shaft *h* is always in gear with H.

On the shaft *h* is mounted a pinion, *j*, which meshes into the teeth of a wheel, *k*, whose shaft *l* is hung on the frame G. A main-spring, *m*, tends to rotate the shaft *l* and wheel *k* in the direction of the arrow 2.

A wheel, *n*, on the shaft *l*, meshes into the teeth of a wheel, *o*, hung loose on the shaft *h*. One hand, *p*, is fastened to the shaft *h*, and one, *q*, upon the tubular shank of the wheel *o*, both hands being above the dial-plate.

J is a gong-bell fastened to the side of the case A.

L is the clapper for striking the same. The clapper is fastened to a spring rod, *r*, which holds it off the bell, but which has a projection ear, *s*, above the wheel H. On the wheel H is secured a cam, *t*, which once during every revolution reaches the ear *s* and moves the same, so as to wind the spring on the clapper-stem, thereby, when it releases the ear, applying the clapper and sounding the alarm.

M is a curved wire of peculiar form. It is pivoted to the frame G, and has one arm, *u*, above the face of the wheel *k*, and another arm, V, above the face of the wheel H. A spring, *w*, draws the latter arm away from a pin, *z*, that is fastened to a bar projecting from the shaft *h*.

The operation is as follows:

The thread to be spooled is wound once around the wheel D, and passed through the loops *a* and weight F, as indicated in fig. 2. As it is drawn along it will rotate the wheel D and shaft C, and the motion will, by the worm *c* and wheels *d e*, be transmitted to H, by which it is also transmitted to *k* and all the other wheels. The wheel H is so geared that it will make one revolution while hundred yards pass over the wheel D, and the wheel *o* is geared so that it makes one revolution during the passage of every thousand yards. The hand *p* will, therefore, show on the dial-plate the number of yards spooled, up to one hundred, while the hand *q* will on an inner scale show them up to one thousand. Whenever a hundred yards has been measured, the clapper is moved by the cam *t*, and the bell J struck. While the apparatus is thus in motion, the spring *m* is being wound up by the wheel *k*, and it will, as soon as the wheel H is thrown off the pinion *e* by the pusher I, unwind rapidly, and move all the wheels back to their original position and the hands to zero.

In order to effect an accurate stop, the wire M is provided. Just in reaching the zero position, a pin, *y*, on *k*, strikes the arm *u*, and moves thereby the other arm V in the way of the pin Z on H. Thus both wheels, *k* and H, are arrested at the proper point.

The wheel H is, by the pawl and ratchet, held so fast that it will in every direction move with the shaft *h*. Only if the latter is locked by the pin *x* and arm V, the wheel H may be turned independently opposite to the arrow 1, to bring the cam *t* in play at the desired time. To thus set the cam, a key may be applied to the arbor *f*, as in fig. 2, to wind the wheels,

In order to prevent the overwinding of the spring *m*, and the passage of the hands beyond the 1,000, or other largest figure, there is a pin, *x*, on the frame G, against which the pin *y* will force the arm *u* of the wire M, to lock the wheel *k* and prevent further action. The wheel *d* is hung loose on the shaft *f*, although tight enough to move together with the same. When the pin *x* stops the train of wheels, the wheel *d* may still be revolved, and the machinery will, therefore, not be injured by a sudden arrest of the hands and inner wheels.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. An instrument for automatically recording and announcing a given length of thread when wound upon the spool, consisting essentially of a dial-plate with yard notations thereon, the grooved thread-wheel D, the frame E having thread-loops *a a*, weight F, the worm *c*, the movable frame G holding main train of wheels, spring handle I, shaft *h* having pawl and ratchet connected therewith, cam-wheel H and ear *s*, the gong J, and clapper L, all arranged, connected, and operated as set forth.

2. The combination of wheel *k* having pin *y* thereon, wire M, spring *m*, and pin *x* on frame G, with the driving spur-wheel H having pin *z* thereon, connected and disconnected with the worm-shaft, as set forth, to alternately wind up and unwind the registering mechanism in the manner described.

RICHARD H. NORRIS.

Witnesses:

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