

M. EBELING, JR.
 MEASURING AND THREAD CUTTING DEVICE FOR WINDING FRAMES.
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949,171.

Patented Feb. 15, 1910.

Fig:1

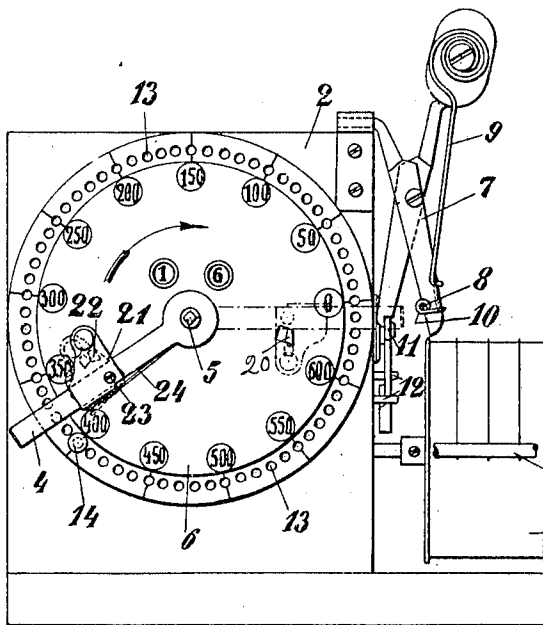


Fig:2

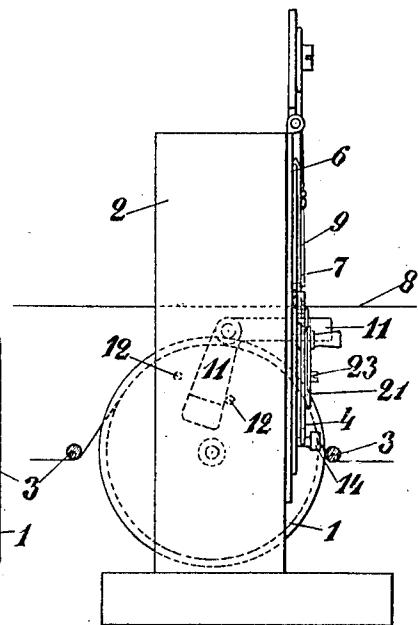
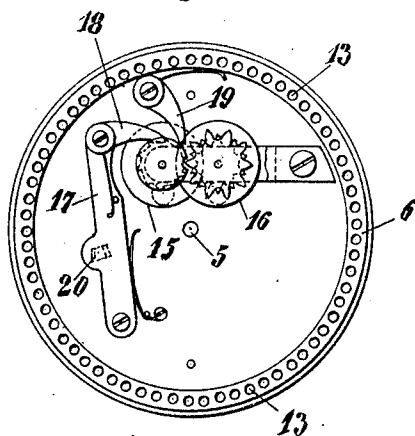


Fig:3



Witnesses:

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UNITED STATES PATENT OFFICE

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MEASURING AND THREAD-CUTTING DEVICE FOR WINDING-FRAMES.

949,171.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed February 16, 1909. Serial No. 478,317.

To all whom it may concern:

Be it known that I, MORITZ EBELING, JR., a citizen of the German Empire, residing at Barmen, in the Province of Rhenish Prussia and Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Winding-Frames and Thread-Measuring and Thread-Cutting Devices Therefor; 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.

This invention relates to measuring-clocks for winding-frames and doubling-frames and the like having automatic stopping devices.

Measuring devices already exist which stop the machine after a certain length of thread has been wound on the bobbins of winding-frames, doubling-frames and the like. These devices are in most cases so complicated that they involve a special construction of winding-frame or the like, and consequently can not be added to already existing machines. Their action through their arrangements being so complicated is of course not absolutely reliable. Such devices work either by the thread or threads before being wound on the bobbin running over a roller connected with the clock-work of a measuring-clock and consequently setting said roller in rotation, and by the rotating pointer when it has reached the zero point releasing the stopping device of the machine, or the stopping of the machine is brought about by a lever which rests against the circumference of the bobbin and is rotated in correspondence with its increasing diameter. In the latter case it is of course impossible to obtain bobbins containing exactly a determined length of thread, as the length varies materially with the thickness of the thread.

Now the subject-matter of this application is a device for measuring the length of thread and for stopping the rotation of the bobbins, which can be applied to every existing winding-frame, doubling-frame or the like, without any alteration and which stops the motion at the instant at which the exact length of thread has been wound on the bobbin.

The distinguishing peculiarity of the device according to the present invention con-

sists in the stopping of the motion being effected by the pointer itself of a measuring clock, said pointer cutting the thread at the desired instant and thereby effecting the stopping of the machine as in the case of the ordinary breakage of a thread. A special stopping device is thus unnecessary, as the device which comes into action whenever a thread breaks and which is always provided on the machine can be employed.

One embodiment of the new device according to the present invention is represented in the accompanying drawing, in which:—

Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a back elevation of a registering device employed in this case.

1 is the drum or roller mounted revolvably on the measuring-clock 2, over which drum or roller the thread or threads before being wound on the bobbins are stretched, said thread or threads being passed under two rods or bars 3 at opposite sides of the drum, in such a way that the drum is set in rotation when the threads move longitudinally. This motion of the drum is transmitted in a well known manner by means of clock-work to the pointer 4 of the clock. The pointer 4 is secured on its spindle 5 in such a way that like the hand of a clock it can in a well known manner be set at any point of the dial 6, but that otherwise it moves with the rotating spindle 5.

A pair of scissors 7 for cutting the thread 8 when a sufficient or desired length has been wound, is arranged laterally on the clock casing. The thread 8 is drawn through an eye 10 formed at the end of a spring 9. The movable shank or blade of the scissors is subjected to the influence of said spring 9 and is normally kept in an open position by an angular catch 11 arranged laterally on the clock casing. As soon as the pointer 4 comes into the zero position the catch 11 is released by it, the scissors close and cut the thread so that the thread-guard suspended on it falls down and the machine is stopped as when an ordinary breakage of the thread occurs. The distance through which the catch 11 moves, is by means of the perpendicular arm limited by pins 12.

The dial 6 may suitably be provided with graduations indicating the number of meters and with an adjustable stop in order to facilitate the setting of the pointer when

many bobbins are to be wound with the same length of thread. This can be effected as shown in the drawing by arranging suitable holes 13 which are adapted to receive the stop 14 which can be pushed or screwed into said holes.

In order to do away with the trouble of counting the finished bobbins which wastes much time, a registering device is connected with the measuring-clock, which device always indicates the number of finished bobbins. Such a device consists, for example, of counting mechanism, such as that used in the case of billiards, which is moved on one number each time that a bobbin is finished. The counting mechanism consists of a number-disk 15 provided with the units and of a tens-disk 16 which engage together in such a manner that the tens-disk is never moved on another number until after the units disk has completed one revolution. The controlling mechanism for the units disk consists of ratchet-lever 17 provided with the pawl 18 and of a detent 19. All the parts are under the influence of suitable springs. Connected with the lever 17 there is a pin 20 which has an inclined surface and which projects through the dial. Against this pin there strikes, when the pointer 4 rotates, a pin 22 which is likewise beveled off laterally and which is situated on a lug 21 on the pointer and projects inward, this striking of the pin 22 against the pin 20 taking place as soon as the pointer has reached the neighborhood of the zero position. By this action the pin 20 connected with the lever 17 is pressed sidewise and the units disk is turned on through one tooth. On the pointer rotating farther the lever 17 with the pin 20 moves back into its initial position again and finally the pointer releases the device locking the scissors. In order that the backward rotation of the pointer into the original position from which it started may not be prevented by the pin 22 which comes against the pin 20, the lug 21 is able to turn sidewise about the point 23 into the position indicated by dotted lines in Fig. 1 in opposition to the action of a powerful spring 24, so that the pin 22 can pass the pin 20 and the pointer be turned backward into its initial or another position.

What I claim as my invention and desire to secure by Letters Patent is:—

1. The combination on a winding frame, doubling frame or the like, of a thread-measuring device having a rotating pointer, with a pair of scissors having one blade fixed and the other movable, a spring acting on the movable blade and having an eye adjacent to said fixed blade, through which eye the thread passes, and a catch normally locking said movable blade in its open position and arranged in the path of said pointer, which is adapted to release

the catch on striking it for the purpose set forth.

2. In combination with a thread-measuring device having a rotating pointer for a winding frame or the like, a pair of spring actuated scissors, a spring operating said scissors and adapted to guide the thread and a catch normally locking said scissors open and arranged to be struck and released by said pointer, substantially as set forth.

3. In combination with a thread-measuring device having a moving pointer, a thread-cutting device, a thread-guiding spring operating said cutting device and a catch normally locking said scissors open and arranged to be struck and released by said pointer, substantially as set forth.

4. The combination on a winding frame, doubling frame or the like, of a thread-measuring device having a rotating pointer, a pair of scissors having one blade fixed and the other movable, a spring acting on the movable blade and a catch in the form of a pivoted lever, having two arms normally locking said movable blade in its open position, and arranged with the end of one arm in the path of said pointer, which is adapted to release the catch on striking it for the purpose set forth.

5. A thread-measuring device for a winding frame or the like, having a movable pointer, in combination with a pair of scissors, a spring operating the latter, and a catch in the form of a pivoted two-armed lever, normally locking said scissors open and having one arm arranged to be struck by said pointer, the latter being thereby removed to release said scissors for the purpose set forth.

6. A thread-measuring device having a moving pointer, in combination with a cutting device, a spring operating the latter and a pivoted catch normally locking said cutting device out of operation, and comprising two arms, one of which is arranged to be struck by said pointer for moving said catch to free said cutting device therefrom, substantially as set forth.

7. A thread-measuring device having a moving pointer, in combination with a pair of scissors, a thread-guiding spring which operates said scissors and a pivoted two armed catch normally holding said scissors open and having one of its arms arranged in the path of said pointer, for freeing said catch and scissors, substantially as set forth.

8. The combination on a winding frame of a thread measuring device having a moving pointer, provided with a pin a thread-cutting device, a catch freed by the said pointer but normally holding said thread-cutting device out of action and a registering device provided with an operating lever, arranged to be struck and actuated by said pointer and also comprising counting mech-

anism for indicating the number of times that the thread-cutting device cuts the thread, substantially as set forth.

5 9. A thread-measuring device provided with a moving pointer having an inwardly extending pin and a dial having a hole therein, in combination with a thread-cutting device, a catch for holding the latter out of action, arranged to be struck and
10 freed by said pointer, and registering mechanism adapted to indicate the number of times that said cutting device cuts the thread, and provided with an actuating lever having a pin projecting through said
15 hole in the dial into the path of the pin on the pointer, said pins being correspondingly beveled laterally, substantially as set forth.

20 10. The combination of a thread-measuring device having a perforated dial and a moving pointer provided with a spring-influenced pivoted lug, carrying a pin, in combination with a thread-cutting device, a catch for preventing the action of the latter, arranged to be freed by said thread-

measuring device, a registering device 25 adapted to indicate the number of times that the thread-cutting device cuts the thread, and an actuating lever for said registering device, said lever being provided with a pin arranged in the path of the pin on the
30 pointer, so that said lever may be operated thereby, substantially as set forth.

11. A thread-measuring device having a rotary pointer, in combination with a pair of scissors having one blade fixed and the
35 other movable, a spring acting on the movable blade, and a catch normally locking said movable blade in its open position, but arranged in the path of said pointer to be released thereby, substantially as set forth. 40

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

MORITZ EBELING, Jr. [L. S.]

Witnesses:

OTTO KÖNIG,

HEINR. AHLEFELDER.