

No. 756,800.

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A. E. RHOADES.

CLOCK MECHANISM FOR WARPING MACHINES.

APPLICATION FILED FEB. 6, 1904.

NO MODEL.

Fig: 1.

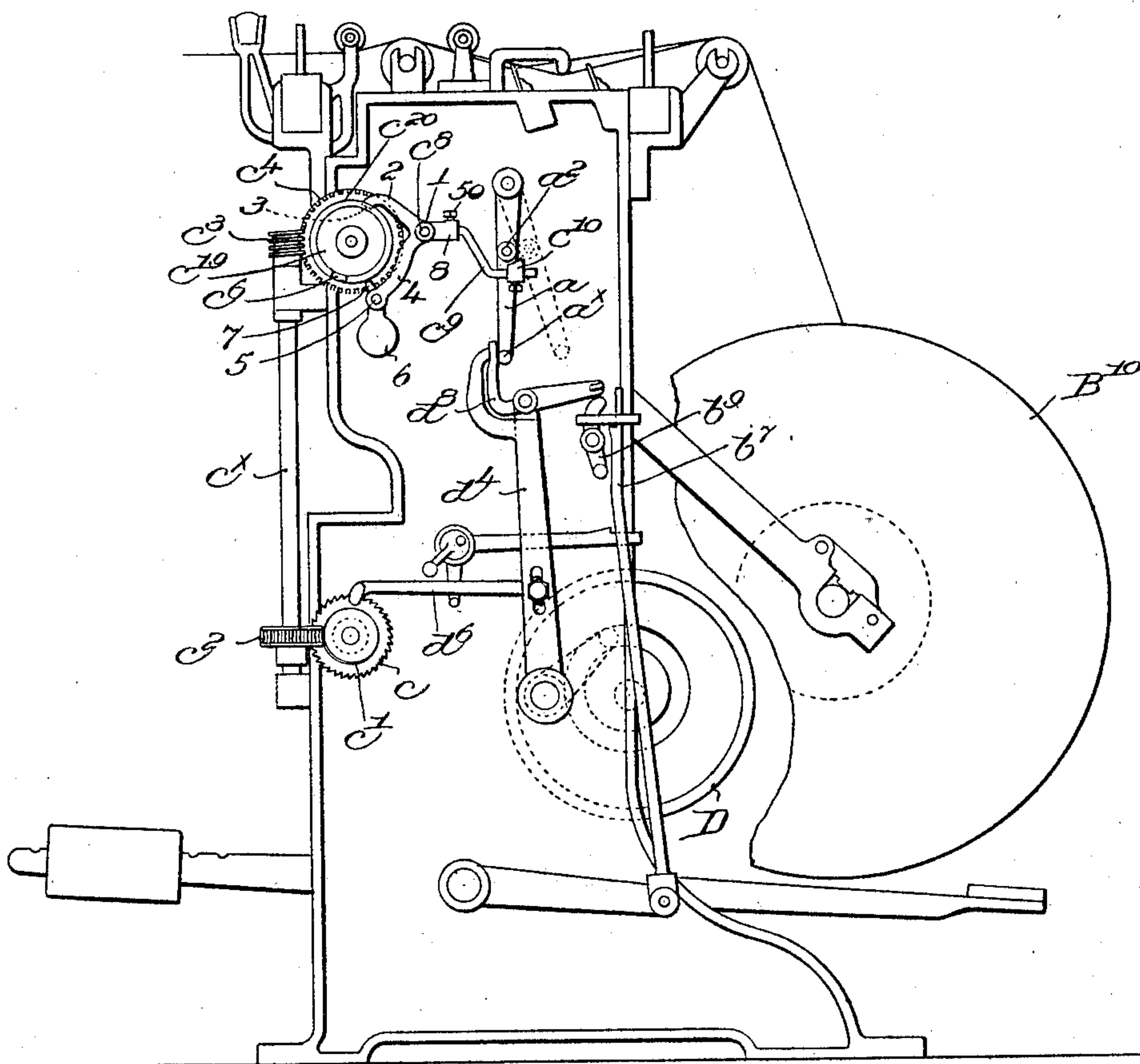
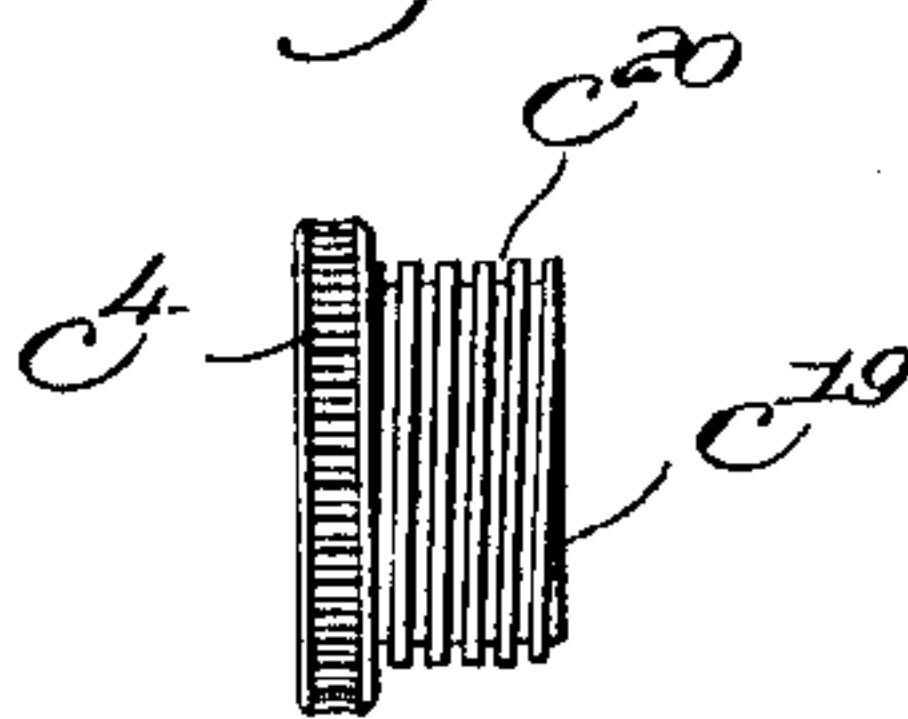


Fig: 2.



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UNITED STATES PATENT OFFICE.

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CLOCK MECHANISM FOR WARPING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 756,800, dated April 5, 1904.

Application filed February 6, 1904. Serial No. 192,281. (No model.)

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Clock Mechanism for Warping-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to warping-machines provided with means to stop the winding of the yarn upon the beam when a predetermined length of yarn has been wound thereupon; and my invention has especial reference to what is technically termed the "warper-clock," which coöperates with or forms a part of the measuring mechanism and causes the stoppage of the warping-machine automatically when the desired length of yarn has been wound.

The warper-clock usually comprises a cylinder having a spiral thread or scroll and which is rotated slowly during the winding operation. A finger travels in the scroll and is thereby moved longitudinally along the cylinder until it drops into a notch at the end of the scroll, thereby causing the actuation of a stopping instrumentality. When the length of yarn corresponding to the entire scroll is to be wound, the finger is placed in engagement with such scroll at the inner or starting end thereof, and it must traverse its entire length before entering the notch, while for a shorter length of yarn the operative counts the proper number of turns or "wraps" of the scroll back from the notch and sets the finger at such point at the beginning of the winding. Heretofore the finger has engaged the scroll underneath—as, for instance, as is shown in United States Patent No. 624,541, granted to me May 9, 1899—and when setting the finger and counting the turns of the scroll the operative had to assume a cramped and inconvenient position below the scroll in order to accomplish the desired object.

In my present invention I have so constructed and mounted the finger that it engages the scroll almost directly on top in plain sight at

all times, making the setting operation much more convenient and easy to effect. I have also simplified the construction and have so mounted the weight which keeps the finger in engagement with the scroll that said weight moves bodily with the finger as the latter follows the scroll. As the weight moves with the finger it always hangs directly beneath it and is more certain and direct in its action.

The various novel features of my invention will be fully described in the subjoined specification, and particularly pointed out in the following claims.

Figure 1 is an end elevation of a warping-machine of usual construction with one embodiment of my invention applied thereto, and Fig. 2 is an enlarged front elevation of the scroll of the warper-clock.

I have for convenience herein illustrated my invention in connection with a warping-machine such as shown in my patent hereinbefore referred to, the winding-drum D, beam B¹⁰, rocker-arm d⁴, having the pivoted latch d⁸ thereon, the shipper b⁷, and knock-off lever b⁹, normally vibrating arm a, having a stud a^x to at times coöperate with the latch d⁸, and the ratchet-wheel c, forming a part of the measuring mechanism and driven by the pawl d⁶, connected with the rocker-arm d⁴, being all substantially as shown in said patent and operating as therein set forth. As in said patent, the measuring mechanism comprises the ratchet-wheel c, having an attached worm c', meshing with the worm-gear c², fast on an upright shaft c^x, mounted to rotate in bearings on the frame of the warping-machine, said shaft having at its upper end a worm c³, which drives the warper-clock, the latter comprising a cylinder c¹⁹, having a deep spiral thread or scroll c²⁰, Fig. 2, provided with a notch or slot c⁶ at its outer end. (See Fig. 1.) The cylinder has an attached worm-gear c⁴ in mesh with and rotated by the worm c³, all substantially as in said patent, though so far as concerns my invention the rotative movement of the clock can be effected by any other well-known or usual mechanism. A rod c⁸ extends outward from the frame, and on said rod the hub 1 of a finger 2 is mounted to

slide and rock, the finger extending forward above the clock and having a downturned end 3 to travel in the scroll c^{20} , the finger thus co-operating with the scroll at its top portion and in plain sight. The hub 1 of the finger has a downturned arm 4 extended beneath the clock-cylinder c^{19} and provided with a lateral pin 5, on which is fulcrumed the weight 6, said weight having an upturned lug 7, which normally lies close to the scroll and prevents the finger from accidentally leaving the scroll. The face of the lug 7 is wider than the scroll-groove to prevent the entrance of said lug thereinto.

Inasmuch as the weight moves bodily with the finger, it is always directly beneath it and acts in a direct manner, obviating a weighted lug having its face as wide as the length of the clock-cylinder, as in my patent referred to.

When it is desired to disengage the finger from the scroll, the operative swings the weight to the right, Fig. 1, throwing the lug 7 down, and then the finger can be swung up on the rod c^8 out of the scroll.

The rearward extension 8 of the hub 1 has adjustably secured thereto, as by a set-screw 50, a stop-rod c^9 , having a shoulder or head c^{10} normally held out of the path of movement of the long roll or stud a^2 , extended laterally from the vibrator a , substantially as in Patent No. 624,541.

The operation will be manifest from an inspection of the drawings, as when the finger 2 reaches the end of the scroll its end 3 drops into the notch c^6 and the shoulder c^{10} of the stop-rod c^9 moves behind the roll a^2 , when the vibrator swings into dotted-line position, Fig. 1, and prevents return movement of the vibrator. Thereupon the latch d^8 is caused to operate the knock-off lever b^9 , and the shipper is released to effect shifting of the belt and stoppage of the machine.

It will be manifest that the setting of the clock-finger can be readily effected in full view of the operative while standing at the front of the machine, and the counting of the turns of the scroll can be readily and accurately accomplished.

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

1. In a warping-machine, measuring mechanism, including a warper-clock having a scroll, a cooperating finger to engage the scroll at the top thereof, and a weight movable with the finger.

2. In a warping-machine, measuring mechanism,

including a warper-clock having a scroll, a finger adapted to cooperate with the scroll at the top thereof, a support on which the finger is mounted to rock and also to move longitudinally of the scroll, and a weight movable with the finger to retain it in engagement with the scroll.

3. In a warping-machine, measuring mechanism, including a warper-clock having a scroll, a finger adapted to cooperate therewith at the top of the scroll, and a weight movable with the finger and located beneath the scroll, to prevent accidental disengagement of the finger and scroll.

4. In a warping-machine, measuring mechanism, including a warper-clock having a scroll, a finger adapted to cooperate with the scroll at the top thereof, a support on which the finger is mounted to rock and also to move longitudinally of the scroll, a depending arm rigidly connected with the finger and extended under the scroll, a weight fulcrumed on the arm, and a lug normally held by the weight in position to prevent disengagement of the finger and scroll.

5. In a warping-machine, measuring mechanism, including a warper-clock having a scroll, a fixed support parallel to the axis of the clock, a hub mounted to rock and slide thereon and having a finger and a divergent arm, both rigidly connected with the hub, said finger extending above and having its tip in engagement with the scroll, the arm projecting beneath the latter, and a retaining device mounted on said arm to cooperate with the scroll and prevent disengagement of the finger and scroll.

6. In a warping-machine, measuring mechanism adapted to effect the operation of a stopping instrumentality when a predetermined length of warp has been wound, said mechanism including a warper-clock having a scroll, a cooperating finger adapted to engage the scroll at the top thereof, a fixed support on which said finger is mounted to rock and also to move longitudinally of the scroll, and a weighted retaining device bodily movable with the finger and adapted to cooperate with the scroll to prevent disengagement of the finger and scroll.

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

ALONZO E. RHOADES.

Witnesses:

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